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MONETARY POLICY AND CORPORATE FINANCE DECISIONS OF FIRMS: EVIDENCE FROM SELECTED SUB-SAHARAN AFRICAN COUNTRIES

BY

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DECLARATION

I, Emma Ofosu-Appeah, do hereby declare that this thesis has not been submitted in whole or in part to any other university or institution. I declare that this thesis is a record of my original work. All references used in this work have been fully acknowledged. I am solely responsible for any shortcomings that may be present herein.

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CERTIFICATION

We hereby certify that this thesis was supervised in accordance with procedures laid down by the University of Ghana.

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Prof. Emmanuel Sarpong-Kumankoma (Supervisor)

DEDICATION

This research is dedicated to my parents, siblings and friends for their love and support they showed me during my master's program.

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LIST OF ABBREVIATIONS

AST	Asset structure
CCC	Cash conversion cycles
CEO	Chief executive officer
CON	Firm-level control variables
GDP	Gross domestic product
GMM	Generalized method of moments
IMF	International Monetary Fund
INV	Investments
IRR	Internal rate of return
LEV	Leverage
MPR	Monetary policy rate
OCF	Operating cashflow
OLS	Ordinary least square
RBC	Real Business Cycle Theory
ROA	Return on assets
SGMM	system generalized method of moments
SSA	Sub-Saharan Africa
SUR	Seemingly unrelated regressions
TQ	Tobin's Q
WCM	working capital management
WDI	World development Indicators

ABSTRACT

The importance of corporate finance in firm growth and economic development is an issue of significant importance. There has been a lot of attention on factors that affect corporate finance decisions. Macroeconomic tools, such as monetary policy, have been identified as major determinants of interest rates, cost of capital, and savings, amongst others, which in turn affect investment, financing, and working capital management decisions. Conclusive studies that examine whether monetary policy affects corporate finance decisions of firms in Africa, especially in sub-Saharan Africa (SSA), remain scarce. This study, therefore, seeks to critically examine whether monetary policy affects the corporate finance decisions of firms in selected SSA countries. The research used the system generalized method of moments (sys-GMM) estimator proposed by Arellano and Bover (1995) and Blundell and Bond (1998) to examine the relationship between monetary policy and corporate finance decisions. The study used panel data on 50 listed non-financial firms from 2010 to 2022 from the four largest stock exchange markets in sub-Saharan Africa, namely: Ghana, Nigeria, South Africa, and Kenya. The results of the study indicates that contractionary monetary policy negatively affects investment, financing decisions, and overall working capital management. The study also found that a firm's size and economic growth affect the impact monetary policy has on corporate investment and financing decisions. Furthermore, firm-level variables such as firm age, size, leverage, earnings, Tobin's Q and MPR dummy are noted to have an impact on firms' corporate finance decisions. The study contributes to the corporate finance literature by examining whether monetary policy affects corporate finance decisions in selected sub-Saharan African countries. The findings of this study have implications for policymakers.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

All organizations across the world are established with the aim of being financially profitable and sustainable. In the pursuit of financial sustainability, organizations must seek to optimize their available resources, including financial resources. This optimization is typically achieved through corporate finance decisions, which serve as the life-giving force for corporate entities by shaping the decisions that ensure profitability and sustainability (Parrino et al., 2021).

Graham (2022) and Vernimmen et al. (2022) define corporate finance decisions as those made by financial managers to achieve organizational goals. Optimal corporate finance decisions are aimed at sustainably minimizing costs, increasing profits, and maximizing shareholders' wealth. These decisions encompass capital budgeting, capital structure, and working capital management. Optimal investments and revenue-generating potential for firms require sound decision-making (Olayinka, 2022; Aras & Yildirim, 2018).

According to the literature, capital budgeting decisions, or investment decisions, play a vital role in business cycles and are primarily responsible for a firm's output (Winberry, 2021). Capital budgeting involves the efficient allocation of a firm's scarce resources among its productive assets to ensure value addition. Investment decisions may include expanding projects, purchasing new plants and machinery, among other options (Farooq et al., 2022; Sureka et al., 2022). Investment decisions are crucial for the growth and expansion of firms, as they increase productivity and promote economic stability (Oladele & Nubong, 2022; Sun et al., 2021). Investment decisions have attracted extensive research due to their impact on shaping the productive capacity of firms

(Bokpin et al., 2018; Naeem & Li, 2019). Despite their critical role, firm-level investment decisions ultimately depend on the volume of corporate financing available.

Indeed, corporate financing decisions influence both capital and non-capital project decisions within a firm. Optimal financing decisions aim to maximize profits while minimizing finance costs, financial distress, and bankruptcy risks by achieving an optimal mix of debt and equity financing sources (Bajaj et al., 2021; Boateng et al., 2022; Rahman et al., 2019). According to one of the pillars of finance theory, for capital and non-capital projects of firms to be viable, the internal rate of return (IRR) should be greater than or equal to the project's cost of capital (Li, 2019). This implies that the cost of obtaining funding significantly influences how firms are managed. Financing decisions made during periods of economic policy uncertainty tend to raise the cost of capital, restricting the pool of viable investments that could otherwise be explored (Chen et al., 2023). An exemplary policy that can affect cost of capital and, in turn, overall corporate finance decision is the monetary policy decision of central banks. Central banks can adopt tightening or contractionary policies that restrict the flow of money in circulation in an economy and vice versa. In 2022, Ghana recorded an average monetary policy rate of 25.95%, reflecting the cost of capital required to fund businesses. This implies that businesses must make returns higher than the monetary policy rate to remain sustainable. When the cost of capital exceeds expected returns, firms may be unable to reach their maximum potential, making financing decisions critical for growth.

While corporate investment and financing decisions primarily focus on the long term, working capital management addresses the firm's short-term investment and financing needs. Baños-Caballero et al. (2021), Sensini and Vazquez (2021), and Brealey et al. (2020) describe working capital decisions as a vital component of a firm's management because they sustain business

continuity. Working capital decisions concern current assets and liabilities, focusing on managing cash, receivables, inventory, payables, and liquidity to facilitate effective daily operations. Optimal working capital management ensures a firm's smooth operation by balancing profitability and risk (Fernández-López et al., 2020; Panda et al., 2021). Properly managed working capital allocates resources efficiently, generating value and improving performance (Shubita, 2019). However, when current liabilities exceed current assets, firms may struggle to meet short-term obligations and customer demand, potentially disrupting operations. Poor working capital management can lead to customer attrition and strained supplier relationships. Therefore, it is crucial for firms to effectively manage their working capital (Baños-Caballero et al., 2021).

Overall, when optimal corporate finance decisions regarding long-term assets, financing, and working capital are made, firms can realize their maximum potential (Ernayani & Sari, 2017). According to Gherghina et al. (2020), firm growth is a significant driver of economic growth, especially in developing countries. This highlights the importance of optimal corporate finance decisions as a component of sustainable economic growth, as they enhance an economy's productive capacity (Dang et al., 2020; Olusegun, 2022; Durante et al., 2022; Mesagan & Yusuf, 2019; Mutenyo et al., 2022; Soetan & Oke, 2018). Many sub-Saharan African countries are struggling with economic growth and face declining GDP growth rates (Nkwatoh, 2018). Given the link between firm growth and economic development, examining these dynamics holds meaningful implications for policy and practice.

1.2 Research Problem

It is widely accepted that suboptimal corporate finance decisions can lead to financial distress, bankruptcy costs, and other adverse consequences (Çam & Özer, 2022; Sari & Sedana, 2020). Optimal corporate finance decisions are therefore regarded as crucial for both firm growth and

economic growth (Khan, 2022). Due to the significant implications of suboptimal financial decisions, research efforts have been directed toward examining factors that affect the optimality of corporate finance decisions. These decisions are not made in isolation but are influenced by a variety of factors broadly classified as firm-specific, industry-specific, and macroeconomic (Chang et al., 2019; Settembre-Blundo et al., 2021; Ren et al., 2022).

A number of studies have investigated industry-level and firm-specific factors that impact corporate finance decisions. Research by Bhagat and Bolton (2019), Hakimah et al. (2019), Puni and Anlesinya (2020), Abang'a et al. (2022), and Coleman and Wu (2021) suggests that corporate governance and agency issues significantly influence corporate finance decisions.

Firm-level characteristics, such as age, size, and asset structure, also play a role in shaping corporate finance decisions, as indicated by Li and Islam (2019), Hashmi et al. (2020), Dirman (2020), Du et al. (2021) and Rahman and Yilun (2021). These firm-specific characteristics help direct investment, financing, and overall management decisions within a firm (Al-Slehat et al., 2020; Husna & Satria, 2019; Triani & Tarmidi, 2019).

Other studies also examined the interaction of external and industry factors on optimal corporate finance decisions. On evolving technological advancement adaptation, Li and Islam (2019), Sheikh and Wang (2011), Chang and Andreoni (2020), and Chugunov et al. (2021) indicate that, huge capital costs required to finance investment in advanced technology are sourced both internally and externally, and these financial requirements can affect capital structure composition. Sub-optimal decisions relating to corporate financing or capital structure can lead to financial distress (Gupta & Mahakud, 2022; Shrestha et al., 2019; Männasoo et al., 2018). Gross domestic product (GDP) and economic growth can also impact industry growth and influence market competition, encouraging firms to spend on capital projects to improve productivity and product

quality (Asongu & Odhiambo, 2019; Estevão et al., 2020; Peprah & Adekoya, 2020; Oxelheim, 2019; Soukhakian & Khodakarami, 2019; Mubeen et al., 2020; Vu et al., 2019). High taxation and inflation can also affect corporate finance decisions by reducing profitability, retained earnings, and shareholders' wealth, disrupting working capital management and the investment projects a firm can embark on (Lu et al., 2023; Andoh & Cantah, 2022; Jacob, 2022; Simon et al., 2019; Abille & Mumuni, 2023).

At the core of corporate finance decisions lies the issue of cost of capital, and monetary policy is a major policy that can affect a firm's cost of capital and financing. Cost of capital is key in determining how much a firm can borrow to fund its production capacity, support its capital investments, and hold its inventory. This key financing cost is directly influenced by interest rates, which are a function of monetary policy (Bräuning &Ivashina, 2020). The neoclassical theory propounded by Jorgenson (1971) indicates that interest rates directly affect the cost of capital required for firm financing. Auclert (2019) further indicated that traditional monetary policy affects firms primarily through the credit channel, impacting interest rates and the demand for money. The study goes on to argue that for less developed countries, monetary policy affects economic activities through the absorption of liquidity and the level of reserve money available, which in turn affects the money supply and overall liquidity in a bid to achieve inflation targets. Auclert (2019) and Morais et al. (2019) further indicate that balance sheets, cost of capital, and internal rates of return are aspects of the firm most affected by changes in monetary policy. Monetary policy that supports credit to firms is seen to encourage growth and investment among firms. Prasetyo (2019) argues that, productivity and growth of firms are the gateways to the economic and financial stability of a country. It is therefore necessary to examine factors that would accelerate the productivity of firms.

In essence, the role of monetary policy cannot be excluded from the discussion of a firm's productivity and corporate finance decisions due to its effect on interest rates, firms' cost of capital, and ultimately a firm's long-term investment or capital budgets, long-term financing or capital structure, as well as short-term investment and financing decisions. There is, therefore, a need to examine whether monetary policy affects corporate finance decisions in sub-Saharan Africa due to the scarcity of evidence on the topic.

Few studies have been conducted in developed countries to investigate the impact of monetary policy on a firm's corporate finance decisions. Studies like Cloyne et al. (2023), Lin et al. (2021), and Morais et al. (2019) indicate that corporate finance decisions of small and young firms are mostly affected by monetary policies due to their exposure to interest rate fluctuations and capital expenditure adjustments. Other studies, such as Bergström (2022) and Mehar (2023), suggest that economic growth affects the transmission of monetary policy changes to firms and other economic agents. According to their studies, the level of economic growth through indicators such as inflation and gross domestic products affects the rate of monetary policy transmission process to firms. Lieberknecht and Hartwig (2020) assert that monetary policy adjustments can affect companies' profit through high interest rates, which in turn affects production capacity and overall optimal corporate finance decisions. These findings, however, cannot be generalized to cover firms in sub-Saharan African countries, as expectations of similar outcomes may not be met due to the differential financial systems across these countries and the varying levels of monetary policy adjustments.

In studies on sub-Saharan Africa, Moran and Queralto (2018) indicate that monetary policy impacts interest rates and affects overall firm growth and performance. Close predecessor studies, such as Pillah (2023) and Asongu et al. (2021), examined how monetary policy affects private

investment through the interest rate channel of monetary policy and demand for money-saving using treasury bill interest rates. These studies suggest that monetary policy tightening or contraction should increase capital accumulation and, in effect, increase private investments. However, these studies show that as monetary policies tightened, interest rates rose, leading to a more significant decline in investment decisions by firms, despite increased savings and capital accumulation. Pillah (2023) and Asongu et al. (2021) also attribute the low investment levels to the financial distress that firms faced and the additional financial burdens that firms would incur if they took on more debt. Ndikumana and Sarr (2019) also conducted a study on the implications of credit financing on firm decision-making in sub-Saharan Africa. The study, using bank lending rates, indicates that monetary policy adversely affects investments and national development goals. Few of these studies considered the impact of monetary policy rates through treasury bill rates and bank lending rates on firms' corporate finance decisions.

Undoubtedly, monetary policy and firm productivity are important for sustainable economic development (Dang et al., 2020; Mesagan et al., 2019; Tang et al., 2022; Tran, 2021). Therefore, there is a need to examine whether monetary policy, which also reflects a macroeconomic stance, affects corporate finance decisions in SSA due to the scarcity of literature on the topic (Asongu et al., 2021; Berg & Portillo, 2018; Modugu & Dempere, 2022; Ndikumana &Sarr, 2019; Agbonrofo & Olusegun, 2023). This study seeks to answer questions of whether monetary policy affects the corporate finance decisions of firms in selected countries in SSA.

1.3 Objectives of Study

The aim of this research was to examine whether firm-level corporate finance decisions of selected countries in the sub-Saharan African region are affected by monetary policy instruments, with the focus on the following specific objectives:

i. To examine whether firm investment decisions are affected by monetary policy.
ii. To examine whether firms' corporate financing decisions are affected by monetary policy.
iii. To examine whether working capital decisions of firms are affected by monetary policy.
iv. To examine whether corporate finance decisions are affected by the interaction of monetary policy and firm size.
v. To examine whether corporate finance decisions are affected by the interaction of monetary policy and economic growth.

1.4 Research questions

i. What is the impact of monetary policy on firm-level corporate investment decisions?
ii. What is the monetary policy on firm-level corporate financing decisions of firms?
iii. What is the impact of monetary policy on working capital management decisions of firms?
iv. What is the impact of the interaction of monetary policy and firm size on corporate finance decisions?
v. What is the impact of the interaction of monetary policy and economic growth on corporate finance decisions?

1.5 Significance of the Study

This study enhances our understanding of whether monetary policy impacts corporate finance decisions of firms, considering the potential effect of firm growth on economic growth and development. This study is relevant to research, practice, and policymaking.

In the area of academia, this study will add to the existing body of knowledge on firm corporate finance decisions. This study seeks to understand whether a firm's corporate finance decisions are affected by monetary policy.

Practically, the study is also very important to policymakers since firm growth impacts economic development. A study of this nature will enable policymakers to know the dynamics of firm-level corporate finance decisions and how the right policy instruments are needed to help firms achieve their goals. This will also enable policymakers to gain a better understanding of the impact of monetary policy on corporate finance decisions to facilitate the careful design and implementation of monetary policy to aid the growth of firms.

1.6 Study Limitation

This research selected complete data on non-financial listed firms from the four largest stock exchange markets in sub-Saharan African countries, which skews data collected towards listed non-financial firms with complete data set. As a result, it may not be prudent to generalize the findings of the study to all non-financial firms.

1.7 Work Organization

This study is organized into five chapters. Chapter One introduces the background of the study and includes the statement of the problem, objectives of the study, research questions, as well as

the contribution and limitations of the study. Chapter Two provides a theoretical and empirical literature review on the concepts of monetary policy, corporate finance decisions, and the impact of monetary policy on firms' corporate finance decisions. Chapter Three discusses the methodology and tools used for analyzing secondary data, including the sample size, data sources, and variables employed in the study. Chapter Four presents the data analysis and interpretation of the empirical results. Finally, Chapter Five summarizes the research findings and offers conclusions and recommendations based on the study's results.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a comprehensive review of the available literature on broad areas of corporate finance and monetary policy, which provides a solid foundation for this study. The chapter has two major sections; the first part synthesizes, describes, and critically analyses the conceptual and theoretical aspects of monetary policy and how corporate finance decisions can be impacted by monetary policy at the firm level. The other section focuses on a comparative analysis of the empirical research on these phenomena.

2.2 Conceptual and Theoretical Review

This section seeks to discuss theories such as the monetary policy transmission mechanism, the real business cycle theory, the Tobin's Q theory, dynamic capital structure of firms, the net working capital management theories proposed by finance literature and how they affect corporate finance decisions. These theories seek to give insights into how corporate finance decisions are made.

2.2.1 Monetary Policy

Monetary policy is a macroeconomic tool used by central banks to regulate the money supply within an economy, with the goal of achieving macroeconomic stability (Loayza & Schmidt-Hebbel, 2002). It involves the application of various monetary instruments, including interest rates, government securities, and the regulation of cash in circulation, to foster price and financial stability as well as overall economic growth (Khan, 2011; Ndubuisi, 2015). To meet these

objectives, central banks may implement expansionary policies that increase credit availability, lower lending rates, stimulate capital formation, and promote economic growth. Economic conditions often shape the stance of monetary policy that central banks adopt (Claridge & Box, 2000; Mojon, 2000). For instance, in periods of high inflation and challenging macroeconomic conditions, central banks may adjust monetary policy to restore price stability. These adjustments are facilitated through the monetary policy transmission mechanism, which operates through various stages to influence prices, economic agents, and overall growth.

The monetary policy transmission mechanism is observed to impact an economy's financial system in the initial stage (George, 2000). According to Lindberg et al. (1997) and Pétursson (2001), this stage involves influencing the financial system by affecting interest rates, asset prices, liquidity, and the exchange rate of the domestic currency. Consequently, monetary policy affects broader economic conditions by influencing the spending decisions of individuals and firms. These spending adjustments impact aggregate demand, ultimately affecting inflation rates and overall economic growth (Reed & Ghossoub, 2012).

2.2.2 Monetary Policy Transmission Mechanism

The Monetary Policy Transmission Mechanism (MPTM) explains the link between monetary policy instruments and the achievement of macroeconomic objectives. As noted earlier, monetary policy affects prices, economic agents, and economic growth through this transmission mechanism. Studies like Mehar (2023) and Bergström (2022) indicate that economic growth levels and sizes of firms can affect the transmission mechanism of monetary policy. The MPTM can be

broadly categorized into four main channels: the interest rate channel, the asset price channel, the exchange rate channel, and the credit channel (Gigineishvili, 2011; Mishkin, 2011).

The interest rate channel, according to Li et al. (2022), is based on the IS-LM model, which denotes investment-savings and money supply. In this channel, changes in monetary policy rates shift the LM curve (the money supply curve), affecting both short- and long-term interest rates due to changes in the money supply (Mishkin, 1996). In developed countries, interest rate channels effectively meet monetary policy targets because they have well-developed financial systems that facilitate the rapid transmission of policy changes (Kovanen, 2011). An increase in the monetary policy rate impacts the money market by raising interbank rates, treasury bill rates, and rates on other short-term instruments, which may increase the cost of variable loans (Iddrisu & Alagidede, 2020). Long-term effects are influenced by short-term interest rate changes, affecting borrowing costs in both money and capital markets. Rising borrowing costs can drive up prices, impacting aggregate demand as inflation expectations grow, affecting the consumption of durable goods and business investment, and ultimately influencing economic growth (Pétursson, 2001).

The asset price channel is another MPTM pathway through which monetary policy affects investment and consumption. A contractionary monetary policy raises interest rates, leading to higher discount rates, which reduces asset values and deters investment and consumption among firms (Pétursson, 2001). Reduced asset values lower collateral values, impacting firms' ability to borrow and expand operations, affecting aggregate demand, investment, and economic growth (Ivanov & Lovrinović, 2008).

The exchange rate channel represents another means by which monetary policy impacts the economy. Pétursson (2001) explains that central bank decisions can affect a domestic currency's

exchange rate. When domestic interest rates rise relative to foreign rates, market expectations lead to currency appreciation as domestic financial assets become more attractive. However, higher interest rates can also drive inflation, prompting investors to sell domestic currency to avoid losses, which increases supply and causes the currency to depreciate over time. This depreciation raises import prices and lowers export prices, negatively impacting the balance of trade and economic growth (Fischer, 2016; Mankiw, 2000).

The credit channel is also a significant transmission mechanism, particularly in developing economies, where high credit demand makes this a primary monetary policy pathway (Khan, 2011; Olweny & Chiluwe, 2012). This channel examines how monetary policy changes affect credit availability, cost, and allocation within the financial system. It has two primary components: the bank lending channel and the balance sheet channel. The bank lending channel operates through changes in bank deposits and reserve requirements; a contractionary policy reduces deposits and raises reserve requirements, limiting banks' capacity to issue loans and increasing credit costs, which can restrict firms' investment opportunities (Farajnezhad et al., 2016; Uchendu, 1996). The balance sheet channel emphasizes how interest rate changes influence firms' expected returns, where higher discount rates decrease asset and collateral values, lowering creditworthiness and firms' ability to finance operations (Oliner & Rudebusch, 1994; Jiménez et al., 2012).

Through its various channels, the MPTM impacts interest rates, credit availability, and asset prices, which influence money supply, investment decisions, financing options, and firms' overall management (Gertler & Gilchrist, 2007; Warjiyo & Juhro, 2019). Ultimately, the transmission mechanism influences prices and the behaviors of economic agents.

2.2.3 Monetary Policy and Price

Monetary policy affects interest rates, which in turn impact inflation, asset values, and domestic currency values—ultimately influencing prices. The risk-taking behavior of economic agents, as outlined by Angeloni and Duca (2015), further explains how monetary policy affects prices. In developing economies, such as sub-Saharan Africa (SSA), monetary policy is often transmitted through the credit channel due to a reliance on external financing (Dwumfour et al., 2022). During periods of expansionary monetary policy, interest rates decrease, affecting bank deposits and liabilities. Lower interest rates encourage banks to take on higher risks in pursuit of yield, often lending to riskier borrowers and making riskier investments (Apel & Claussen, 2012; Borio et al., 2017; Jiménez et al., 2013; Rajan & Parulkar, 2006). Consequently, the increased credit availability allows firms, as rational economic agents, to expand their operations by borrowing at reduced costs, ultimately impacting asset prices, incomes, and cash flows.

Lower interest rates leads to reduced discount rates, enhancing the value of firms' assets and collateral, reducing default probabilities, and motivating banks to assume more risk. This results in increased bank asset portfolios and net worth (Borio & Zhu, 2008; Greenwald & Stiglitz, 2003). Prolonged low interest rates may prompt economic agents to assume that these conditions will persist, encouraging them to take on more external credit due to low capital costs. Consequently, expansionary monetary policy can lower financing costs, production costs, and general price levels. Economic agents may respond by increasing consumption and investment, which boosts aggregate demand and economic growth. However, firms must maintain optimal credit levels to minimize the risks of high interest costs and potential bankruptcy (Boyd & De Nicolo, 2005).

Conversely, in times of monetary contraction, economic agents face heightened risks as the opportunity cost of holding money rises (Kashyap & Stein, 2000). Savings are often redirected

into interest-earning assets, increasing bank deposits. Banks, needing to cover higher obligations to lenders, raise lending rates, thereby increasing borrowing costs for firms. This reduces the credit accessible for operations, raises production costs, and may ultimately raise price levels. Furthermore, contractionary policies raise banks' reserve requirements and interbank borrowing rates, reducing the money supply and curtailing the ability to offer low-interest financing. The high borrowing costs prompt firms to decrease credit dependency due to bankruptcy risks, thereby limiting investments in profitable ventures (Goodhart, 2008; McDonald & Paulson, 2015). High production costs from elevated interest rates are likely to translate into price increases, reducing consumption, investment, aggregate demand, and overall economic growth (Fasanya et al., 2013; Twinoburyo & Odhiambo, 2017).

The theory of firms' risk-taking behavior aligns with prospect theory, which posits that firms' decisions are relative to a reference point, balancing risk and return (Tsai & Luan, 2016). When capital costs are high, firms tend to reduce investments and borrowing due to the increased financial burden and bankruptcy risks. This approach impacts firms' capacity to pursue valuable investments.

The impact of these price changes on corporate finance decisions can also be linked to signaling theory. According to signaling theory, monetary policy adjustments, which influence price levels, send signals that affect firms' corporate finance decisions, guiding how they allocate resources and manage investments in response to evolving economic conditions.

2.2.4 Real Business Cycle Theory

The real business cycle theory (RBC), a macroeconomic theory propounded by Kydland and Prescott (1991) and further developed by Mankiw (1985), Parkin (1989), and Justiniano et al. (2010), discusses the distributional effect of monetary policy. According to the RBC theory, monetary policy shocks, especially contractionary policies, have real effects on prices and output. Price level movements are in response to shocks from demand for outside money or external financing as a result of central bank policies (King & Plosser, 1982). Changes in monetary policy instruments of central banks affect interest rate and price level movement in an economy (Bartscher et al., 2022), an observation which is contrary to the initial real business cycle model of Kydland and Prescott (1991), which argued that fluctuations in businesses and economic activities could be attributed to real factors such as technology shocks rather than monetary policy shocks.

Real business cycle theory suggests that investment channels are influenced by changes in prices and interest rates (Justiniano et al., 2010; Bartscher et al., 2022; Fagereng et al., 2021). These investment shocks are noted to affect cost of capital and, in turn, productivity and overall output. Changes in interest rates are noted to be the main drivers of business cycles in emerging economies through their financial markets (Aguiar and Gopinath, 2007). Investment channels are strongly correlated with credit spread and change in interest rate, and hence disruptions in interest rate affect optimal investment decisions that firms can undertake (Bernanke, 2023). Firms and businesses in emerging and developing markets, particularly, are noted to be heavily dependent on financial institutions and intermediaries. Fluctuations in interest rates as a result of monetary policy adjustments and risk premiums of financial institutions affect the cost of borrowing for firms and overall corporate finance decisions (Luginbuhl & Elbourne, 2019).

Bernanke (2023) indicates that changes in prices of financial assets affect balance sheets of firms. This means that contractionary policy is likely to increase interest rate, price and cost of capital, which may consequently reduce the value of firms' assets due to soaring interest and discounting rates. High discounting factors reduce the price or value of a firm's assets, which reduces the collateral value and creditworthiness and vice versa in expansionary periods. For example, low-collateralized firms may give negative signals to the financial market to restrict credit availability (Bessler et al., 2011; Bokpin et al., 2018; Grosse-Rueschkamp et al., 2019). Contractionary monetary policy changes reduce the pool of viable investment that firms could have explored (Ruslan et al., 2018) and vice versa for expansionary monetary policies. Contractionary monetary policy will restrict the use of debt financing that firms can take on to support their operations due to high cost of capital, finance costs, and bankruptcy risk, which will negatively impact their operations and influence their corporate decision-making (Mokhova & Zinecker, 2014; Jiang et al., 2022).

The real business cycle theory, similar to the signalling theory, asserts that firms convey to stakeholders how macro-level conditions would influence operations and corporate decisions (Greenwald et al., 1984; Bernanke & Gertler, 1995; Brigham and Houston, 2013; Tarmidi, 2019). Managers and investors of firms are seen to be rational economic agents who are attracted to favorable opportunities (Yasar et al., 2020). In decision making, investors and managers are likely to make decisions that seek to maximize shareholders' value and improve their business operations (Akorsu, 2014; Van Zijl et al., 2017; Baños-Caballero et al., 2014; Demir & Ersan, 2017).

In conclusion, the behavior of firms is driven by signals and rational choices. Hence, price changes will impact overall corporate finance decisions firm can undertake (Ismawati & Haryono, 2007).

2.2.5 Monetary Policy and Investment Decisions

The relationship between monetary policy and corporate investment decisions can be explained by Tobin's Q theory. The Tobin's Q theory, according to Tobin (1969), indicates that the transmission of monetary policy affects the real economy through the asset price channel, the interest rate channel, and the credit channel. The theory argues that an increase in nominal interest rate affects real interest rate, cost of capital of firms and the demand for external credit (Jorgenson, 1963). Monetary policy changes made by central banks affect interest rates, prices and discounting rates used in investment decisions. High discount rates emanating from high interest rates reduce the asset value of firms, which affects stock prices for equity financing and collateral value needed to raise debt finance. Firms with viable investment opportunities may be restricted due to high financing costs as a result of low collateral values (Jeenas & Lagos, 2024).

Besides, in making investment decisions, firms would have to consider the adjustment cost involved in investment project. According to Rousseau and Kim (2008) and Zubair et al. (2020), firms undertake investment decisions when there exist valuable growth opportunities. This means investment decisions would be concerned about the impact of monetary policy changes, particularly contracting policies on the rate of adjustment on their cost of capital and capital structure (Cloyne et al., 2018; Verona, 2020). According to the Tobin's Q theory, to have optimal investment decisions, there should be equality of the expected return of the investment project to the cost of capital.

The Tobin's Q theory considers how the price fluctuations, and cost function adjustments affect cost of investment decisions (Zhang & Zheng, 2020). This theory argues that for firms to make optimal investment decision, they would have to consider adjustment cost associated with the investment projects in addition to the original cost of capital (Yoshikawa, 1980). Monetary policy

changes such as contractionary policy may cause investment projects to have huge adjustment cost, low asset and collateral values which may adversely affect optimal investment decisions.

2.2.6 Monetary Policy and Corporate Financing Decisions

The dynamic capital structure theory can be used in discussing the relationship between monetary policy and corporate financing decisions. Developed by Goldstein et all. (2001), the dynamic capital structure theory explores how firms adjust their capital structure in response to changing market conditions, including monetary policy. According to this theory, monetary policy would impact the financing constraints of an enterprise, affect financing decisions, and lead to changes in capital structure (Gertle & Gilchris, 1994). Monetary policy adjustments may lead to an increase in interest rates through the transmission channels. This monetary policy change may lead to interest rate and price spikes which may eventually lead to high capital costs. Meanwhile, high cost of capital poses a risk of high financial costs and bankruptcy (Miloud, 2022; Saif-Alyousfi et al., 2021). Firms tend to be circumspect about the use of debt finance and may tend to adjust their capital structure to avoid huge financing costs and prevent the risk of bankruptcy (Khan et al., 2021).

Additionally, the dynamic capital structure theory suggests that credit assessment and monetary policy impact the financing decisions firms make (Oliner & Rudebusch, 1995). Firm's assets value may decline in times of high interest rates due to high discounting factors (Kruk, 2021; Jiang et al., 2022). This may reduce collateral values and affect the ability of firms to obtain debt financing. Firms with high asset size may be able to borrow at competitive rates, while small firms with lower asset value may face constraint in raising debt finance (Kumar et al., 2020; Brusov & Filatova,

2023). Firms in developing economies may speedily adjust their capital structure due to the impact of monetary policy and price adjustment on their operations (Priyan, 2024; Cooley & Quadrini, 2006).

Thus, the dynamic capital structure theory holds the view that monetary policy affects the capital of firms through its credit channel. Changes in monetary policy may cause firms to reduce dependence on debt financing and adjust their capital structure to reduce high financial cost and bankruptcy risk. Monetary policy adjustment also influences the asset value of firms and affects their ability to obtain external financing through debt.

2.2.7 Monetary Policy and Working Capital Decisions

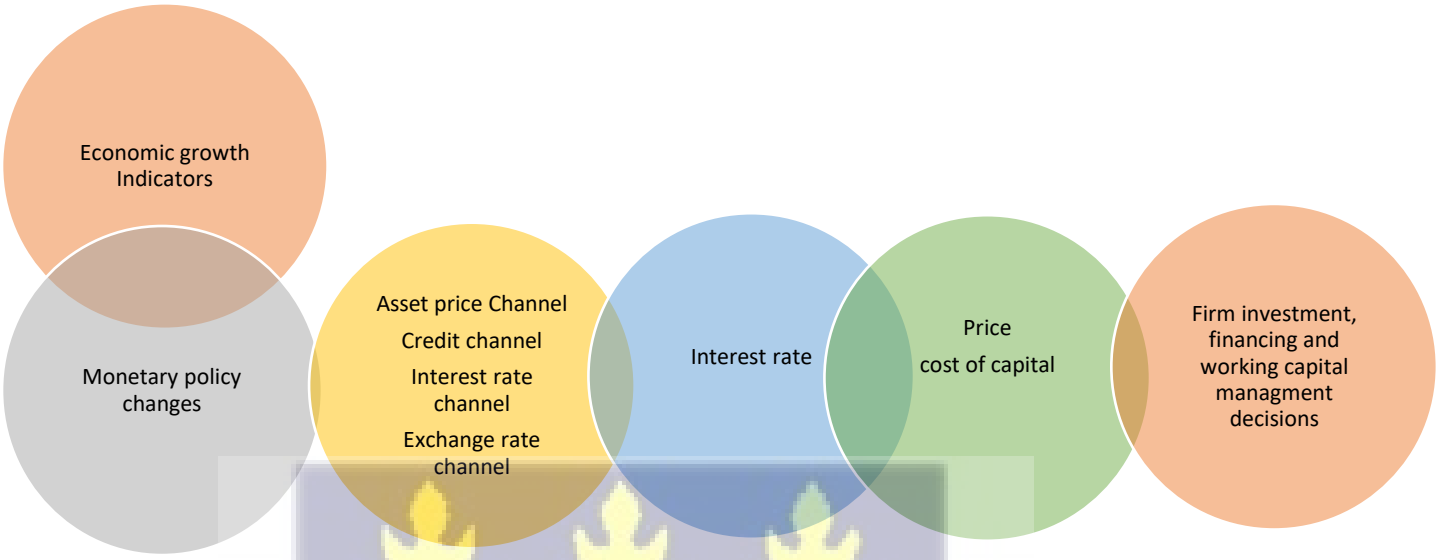
In exploring the relationship between monetary policy and working capital management decisions, the net working capital theory, propounded by Batjargal (2003), can be used in explaining how economic policies, such as monetary policy, are transmitted to the broader economy. The net working capital management decisions of firms considers how firms manage their inventory levels, debtors balances and trade payables (Mandipa & Sibindi, 2022). Firms in developing economies may depend on trade credit financing options to support their operation (Deari et al., 2020). Monetary policy adjustment such as contractionary policy adjustment, through its transmission channels, particular the credit channel, may lead to high interest rates and affect price. High prices may lead to increased supplier cost which may further be borne by firms and other economic agents. Balance sheet information of firms may reflect these price hikes and cause high trade payable balances. Firms in effect may have high cost of operation which may affect overall performance (Bagchi, 2013; Lukic, 2023).

Similarly, interest rate and price adjustments caused by monetary policy changes, which are characterised by contractionary policy adjustments, particularly in developing countries, may cause inventory and trade credit days of firms to increase (Amponsah-Kwatiah & Asiamah, 2021). As nominal income of economic agents declines in the midst of unfavourable economic indicators such as high interest rates, economic agents, in response, may reduce their expenditure and consumption. This may affect firms' profitability levels and overall performance (Ibrahim et al., 2021).

2.3 Conceptual Framework

Economic growth conditions influence central banks to take monetary policy action to restore price stability. Monetary policy works through the various transmission channels to affect interest rates and prices. In SSA and other developing economies, the credit channel is the most common channel monetary policy operated due to the high dependence on credit or bank lending financing to support the operation of economic agents (Ndikumana, 2016). Monetary policy is noted to affect the risk-taking behavior of economic agents such as banks which affects the credit supply and allocation in an economy. This is further noted to affect the interest rate, price, and cost of capital of firms. Cost of capital further affects firms' investment, financing, and working capital management decisions. Firms as rational economic agents use signals from macroeconomic policy adjustment to evaluate how their business operations will be affected by such policy changes (Berg et al., 2015; Farajnezhad, 2022; Onaga et al., 2023). The decision-making of firms is guided by these policy changes in their quest to optimize their investment opportunities and the use of credit to support their operations.

Figure 2.1 Conceptual Framework Diagram



2.4 Empirical Review

For several decades to date, developing economies in the sub-Saharan African region have been characterized by low economic growth. This has raised concerns about how to achieve economic growth. Industrialization through firms' growth is noted to positively impact economic growth (Bokpin et al., 2018). A lot of concerns have been raised on how to achieve firm growth to promote economic growth and development (Afolabi & Ogunjimi, 2020).

Several studies have identified that optimal corporate finance decisions can impact firm growth and productivity which can affect the overall economic growth of a country. Soetan and Oke (2018) and Mutenyo et al. (2022), for instance, in their studies indicate that firm investment, financing, and working capital management decisions are important drivers of firms' growth.

Firms' growth is an important driver of job creation, productivity, and economic growth in sub-Saharan Africa. The need for optimal corporate finance decisions is crucial given the high rate of unemployment and poverty amongst others in the Sub-Saharan African region.

Given the need to achieve sustainable firm growth and development, corporate firms are required to make multiple decisions to improve their operation and validate their continuity. Most studies on corporate finance decisions have examined internal and external factors that can affect firm performance other than monetary policy impact on economic growth. Studies that examined how corporate finance is affected by monetary policy have focused on developed economies (Cloyne et al., 2023). This section reviews the available empirical literature on corporate finance decisions and monetary policy.

2.4.1 Internal Factors and Corporate Finance Decisions

Corporate finance decisions are critical to a firm's success and sustainability as they determine how capital is raised, invested, and managed to optimize shareholder value and achieve long-term strategic goals. Internal factors such as corporate governance structures, ownership structure, cash flow patterns, leverage levels intricacies, amongst others, play pivotal roles in guiding decision regarding financing, investment, and working capital management decisions (Basdekis, 2023; Chow et al., 2018). This section highlights a few predecessor discussions that have been made about internal factors and how they affect the corporate finance decisions of firms.

2.4.1.1 Internal Factors and Corporate Investment Decisions

This section highlights discussions that have been made by previous studies about the impact of internal factors on corporate investment decisions of firms. As indicated by studies such as Ho (2005) and Alodat et al. (2022), corporate governance is an internal or firm-level framework that determines how a firm is managed, directed, and controlled. Corporate governance refers to

measures or structures that ensure the interests of stakeholders are met by keeping management accountable for decisions they make. Shahid and Abbas (2019) indicate that corporate governance strategies can increase investor confidence and attract investment opportunities. Using the fixed effects model and a panel data set of 230 non-financial listed companies within Asia, Shahid and Abbas concluded that good corporate governance structures increase investment confidence and, by extension, corporate investments. Firms with good corporate governance structures have diversified board structures and competent committees that ensure that profitable investment opportunities are undertaken, capital resources are properly allocated, and efficient risk management strategies are adapted to achieve organizational objectives, corroborating findings of similar studies conducted by Al-Gamrh et al. (2020), Alodat et al. (2022), and Coleman and Wu (2021).

Ownership structure of firms is also seen to affect their corporate finance decisions. Firms with large ownership structures are seen to be more diversified and have better monitoring skills and voting powers to ensure the right financial decisions are undertaken (Tayachi et al., 2023; Zhang, 1998). Firms with large ownership are able to enhance value due to diverse skills and expertise. This increases the confidence of investors to contribute capital and to undertake investments. Firms with large ownership make more prudent investment due to diverse experience and expertise from their ownership (Badertscher et al., 2013; Brown & Petersen, 2011).

Firm size, according to Rashid et al. (2022), affects investment decisions of firms. Using the robust two-step system generalized method of moments and a dynamic panel data set from non-financial firms listed on the Pakistan stock exchange, it was noted that although uncertainty surrounding investments affects large, medium and small firms, the adverse effects of uncertainties are quite stronger for small firms than medium and large firms. These findings support the phenomenon of

size-based asymmetries in the effects of uncertainty on investment, similar to findings of Kumar & Ranjani (2018), who in a study conducted in India on manufacturing firms identified that small firms are most exposed to uncertainties that surround investment decisions.

2.4.1.2 Internal Factors and Corporate Financing Decisions

This section highlights discussions from previous studies on the impact of firm internal factors on corporate financing decisions. Good corporate governance structures sustains investors' confidence as they prevent excessive risk-taking and ensure optimal levels of debt and equity. In sub-Saharan Africa, Okyere et al. (2021) has established, using a fixed and random effects model, that corporate governance structures, such as board size, board composition, and board diversity, influence the capital structure decisions of firms. Rich experience and diversity from boards prevented firms from taking excessive risk, ensuring optimal capital structure levels were maintained. Similar conclusions were made by Aluko and Ibrahim (2020) from their study conducted in sub-Saharan Africa using the two-stage least squares estimator or the GMM estimation model. They establish that sound corporate governance has a positive relationship with the financial development of firms as the existence of strong and sound corporate governance structures plays a crucial role in increasing investor confidence to provide finance to achieve firms' objectives.

In terms of firm ownership, firms with large ownership structures are seen to be diversified and have better voting powers and management to ensure the right financial decisions are undertaken (Tayachi et al., 2023; Zhang, 1998). This increases the confidence of investors to contribute capital and to undertake viable investments. Firms with large ownership are likely to be less excessively dependent on external financing as they may attract more investors (Abang'a et al., 2022; Ayaydin & Durmus, 2016; Sun et al., 2016). Tayachi et al. (2023) show that ownership concentration

positively affects capital investment and financing due to the confidence in the ownership and their strategy for growth.

Firms' cash flow and retained earnings are also among other factors that influence the financing decisions they undertake. Firms with large cash flow balances can channel funds into profitable investment activities to aid growth. A study conducted by Nguyen and Dong (2013) in Vietnam between 2006 and 2010 using the generalized method of moments asserts that corporate finance decisions are positively affected by high cash flow and retained earnings as it reduces finance costs and lowers the dependence on external financing.

Leverage levels of firms as identified by predecessor studies influence the financing decisions of firms (Akinlo, 2012; Borio, 1990; Poursoleiman et al., 2020; Qamar et al., 2016). Firms with high leverage and risk levels are seen to be less creditworthy. As a result, these firms find it difficult to obtain financing as external financing available to them comes with high interest rates. Ayeni (2020) shows that financing firms with high capital needs and high leverage inhibit good corporate finance decisions due to high interest rate costs. Countries in sub-Saharan Africa are constrained by huge financing gaps, causing firms to borrow at higher finance costs inhibiting them from obtaining external finance support.

2.4.1.3 Internal Factors and Working Capital Management Decisions

In discussing how corporate internal factors affect working capital management decisions, Gill et al. (2010), using the general least square model with a cross-section weight of seven industries in America, indicate that CEO duality, board size, and composition are internal governance factors that ensure accountability for working capital. Owing to management's accountability function, due to corporate governance structures, management maintained adequate liquidity and reviewed credit and payable terms with market conditions and firm risk appetite to avoid excessive risk.

Firms with good corporate governance structures can better manage their inventory level and negotiate payment terms, which improves cash flow efficiency and profitability of the firm due to their diverse expertise and experience (Jana, 2018; Kayani et al., 2021). In a study to investigate how corporate governance affects working capital, Fiador (2016), using a pooled OLS regression, also found that internal governance characteristics such as board size, board independence, and CEO duality exert influences on the efficacy of working capital management and its components due to their diverse expertise. Overall, corporate governance structure affects working capital management decisions and investor confidence (Nazir & Afza, 2009; Baños-Caballero et al., 2021; Lazaridis & Tryfonidis, 2006; Raheman & Nasr, 2007; Tran et al., 2017).

It is equally noteworthy that firms' cash flow and retained earnings influence the working capital management decisions firms undertake. Stubelj (2014) and Husna and Satria (2019) in their studies observe that profits signal high retained earnings and optimal use of working capital, which increased firms' potential to attract investment opportunities. Similarly, Nobanee and Haddad (2014), using listed Japanese non-financial firms between the periods of 1990 and 2004, found that firms' working capital decisions are positively influenced by short cash conversion cycles and high cash flow.

Additionally, studies have observed that leverage is a factor that affects working capital management decisions. That is, firms with high leverage may be constrained by the ability to acquire supplier credit. Such firms usually have a high cost of capital, which may affect their operations since suppliers may be skeptical on providing credit to such firms. Meanwhile, restrictions in supplier funding may affect firms' ability to undertake viable investment decisions and optimize their working capital management decisions (Alter & Elekdag, 2020; Cronqvist et al., 2012; Kahl & Nilsson, 2019; Miller, 2005; Zariyawati et al., 2010).

2.4.2 Macrolevel Factors and Corporate Finance Decisions

Macro-level factors are external factors that impact corporate finance decisions. Such factors are not controlled by firms. Examples of such factors are political stability, GDP growth, exchange rates, and inflation, among others. This section discusses how these external factors affect the corporate finance decisions of firms.

2.4.2.1 Macrolevel Factors and Corporate Investment Decisions

This section highlights discussions that have been made by previous studies about the impact of external factors on corporate investment decisions of firms. Awad et al. (2021) argue that political instability affects corporate investment decisions. In a study to examine how political stability affects investment decision among Palestine firms using time series data spanning from 2008 to 2017, Awad et al. (2021) confirmed the transaction cost theory that firms are rational economic agents and weigh the costs and benefits of decisions they intend to undertake. Firms that operate in economies with peace and stability are likely to be profitable, and more likely to expand their corporate finance decisions. Similarly, Kapri (2019) in a study to evaluate the effect of political stability on corporate finance, argues that firms that operate in a politically stable economy can attract more investment and improve their business operations through improved exports which enhances inventory level and working capital efficiency.

Equally importantly, it has been observed in the literature that investment decisions are determined by exchange rates. A study conducted by Akobeng (2017) within the period of 1981 to 2010, using the dynamic two-step system generalized method of moment estimator, concluded that exchange rate and terms of trade are statistically significant to firms' investment decisions. Economies with favourable exchange rates and terms of trade among others were able to support firm growth and expansion. Ayeni (2020) who shares similar conclusions from a study to investigate determinants

of private sector investment using the advanced econometric technique of ARDL Co-integration between the periods of 1980 and 2019 in Gambia concluded that exchange rate policies significantly affect the cost of imported capital goods and overall investment decisions.

The available literature also identifies GDP growth rate as an external factor that affects investment decisions of firms. Ngoma et al. (2019), using panel data for countries in sub-Saharan Africa between the periods of 2000 and 2017 and the Panel Corrected Standard Error (PSCE), observed that GDP has a strong positive relationship with investment decisions of firms. This was attributed to the fact that a high GDP rate in an economy signals a potential to yield good returns on investments. This attracted business confidence and encouraged firms to invest in infrastructure and expansion to increase returns. Mose et al. (2020), using the random effect model, also observed that increasing GDP affects domestic credit availability and significantly increases firms' investment in Kenya, Rwanda, and Burundi, due to easy access to financing.

On the subject of Inflation, studies such as Çelik et al. (2016), Corugedo et al. (2011), Mathuva (2015), Soukhakian and Khodakarami (2019) examine the effects of macro factors, including inflation on the operational ability of firms. These studies indicate that interest rates affect the price of goods in an economy. These price changes affect the cost of capital of firms which affects a firm's ability to obtain credit and undertake investments.

2.4.2.2 Macrolevel Factors and Corporate Financing Decisions

This section of the study highlights discussions by previous studies about the impact of external factors on corporate financing decisions of firms. In evaluating how political instability affects corporate financing decisions, economies that have political instability are noted to have high interest rates, inflation, and exchange rates as investors pull away and restrict credit availability in an economy. Firms in unstable political economies have their financing decisions negatively

impacted as there is low credit availability and restricted access to foreign markets, amongst others (Asiamah et al., 2019; Farooq et al., 2021; Saleem et al., 2020).

Mokhova and Zineckera (2014) and Tran (2021), using manufacturing firms in emerging economies, found that GDP growth has a negative relationship with debt financing. That is, in periods of high economic growth, firms have increased profit through increased consumption and higher demand. Firms can plough back this profit and reduce their dependency on external financing options. Similar conclusions were shared by other studies conducted in similar developing economies (Dias et al., 2009; Dincergok & Yalciner, 2011; Camara, 2012). These studies argue that GDP growth boosts economic performance, which increases credit supply in an economy. This may reduce interest rates and the cost of capital of firms. They further argue that high GDP indicates that companies are making more profit. This profit can be ploughed back into business operations to reduce external financing dependency (Broadberry & Gardner, 2022; Ibhagui, 2020; Izvorski et al., 2018; Ngoma et al., 2019).

Exchange rate was also identified by studies such as Baker and Nofsinger (2010), Dekle and Ryoo (2007), Mubeen et al. (2020), and Salomao and Varela (2022) to affect the financing decisions of firms. That is, exchange rates affect the currency's value. In periods when the exchange rate rose, currency value depreciated and vice versa. Economies with low currency values, therefore, need more currency units to undertake projects thereby increasing the cost of finance required to make credit financing unattractive for such firms.

Interest rate hikes are known to increase financing costs available to firms. Financing availability gap coupled with high inflation rates makes it difficult for firms to obtain funding for their activities, hence negatively affecting firms' financing decisions (Baldini & Poplawski-Ribeiro, 2011; Bandura, 2022; Ibrahim et al., 2022). According to Chang et al. (2019) and Jan and Rafiq

(2011), debt issuance is reduced in periods of economic contractions characterised by high interest rates restraints which financially constrain firms from obtaining external financing options such as debt financing, affecting the potential of firms to expand and explore viable investment opportunities.

On the subject of Inflation, studies such as Hussain et al. (2021), Panda et al. (2021), Soukhakian and Khodakarami (2019) examine the effects of macro factors, including inflation on the operational ability of firms. These studies argue that indicators such as inflation may cause interest rate adjustment to ensure economic stability, which may affect the prices of goods in an economy. These price changes may affect the cost of capital of firms which in turn affects a firm's ability to obtain credit to support their operations.

2.4.2.3 Macrolevel Factors and Working Capital Management Decisions

This section explores previous studies about the impact of external factors on working capital management decisions. With regard to working capital management, Nyeadi et al. (2018), using the General Method of Moments (GMM) in their estimation, noted that GDP growth has a significant inverse relationship with working capital. Using manufacturing firms from different sectors, the study observed that high GDP signals translations improve investor confidence and increase money supply leading to optimal investment in working capital management. Salawu and Alao (2014), using regression analysis of 60 firms in Nigeria, similarly, observed that GDP growth has a negative relationship with working capital management as it reduces cash conversion cycles of firms. They argue that high GDP promotes the profitability of firms and reduces external financing dependency.

High inflation through interest rate changes also affects the cash flow and profitability of firms, which also affects consumption patterns of firms and other economic agents. Changing

consumption patterns affect the demand for goods and services, which affects inventory turnover and the operational effectiveness of firms (Imegi et al., 2023; Mills,1996).

Simon et al. (2019), using a panel regression estimation technique, also analyze the implications of inflation on corporate finance decisions of firms in Nigeria. The research shows that inflation has a negative relationship with working capital management. Inflation rate affects price, which affects the WCM variables in improving the performance of firms. Return on assets and return on equity are likely to decline due to price changes and reduced consumption (Olarewaju et al., 2020).

2.4.3 Monetary Policy Transmission Mechanism

Monetary policy transmission describes how central bank actions, like interest rate changes, influence the economy through channels such as interest rates, credit, and exchange rates. While developed economies experience more efficient transmission, emerging markets face complexities like market inefficiencies amongst others. This section discusses a few empirical studies on monetary policy transmission mechanism.

Studies such as Apere and Karimo (2014), Mbutor and Uba (2013), and Misati and Nyamongo (2011) indicate that through the credit channel and interest rate fluctuations, monetary policy tends to affect the cost of finance, especially in sub-Saharan Africa as firms in SSA are characterized by low economic growth and high credit dependency. These high interest rates affect output, infrastructural development of firms, and overall economic growth in the sub-Saharan African region. Keynes (1930) and Gigineishvili (2011) share similar views that monetary policy affects economic variables such as interest rates which may subsequently affect investment, financing, and overall management decisions of economic agents.

In South Africa, a study conducted by Bonga-Bonga (2010) indicates that interest rates are affected by monetary policy shocks through the credit channel. From the study, monetary policy through the credit channel transmission mechanism affects a bank's ability to supply credit, which affects interest and cost of capital and interest expense of firms. The study further indicates a positive relation between business cycles and expansionary monetary policies, similar to a study conducted by Du Plessis (2007) and Kamara and Zuo (2020). These studies indicate that central banks, in the quest to achieve stable inflation and reduce unemployment, amongst others, make monetary policy adjustments that affect the risk-taking ability of banks to supply credit, which consequently affects interest rates, price, and cost of capital. Their studies show that output increased when there was a positive monetary policy shock, and a negative monetary policy shock increased interest rates causing a decline in output and production.

Firms in the sub-Saharan African regions are mostly dependent on external financing through credit channels and the bank lending channel to undertake their business activities. Hence, negative monetary policy shocks tend to significantly affect firms in this region (Olweny & Chiluwe, 2012). Similar, studies have corroborated that monetary policy through the credit channel affects the financial system and cost of capital. Where there are positive shocks, interest rates are seen to decline, both for short- and long-term interest rates and vice versa for negative shocks. These shocks affect the cost of funds available for output expansion, infrastructure expansion, and business survival potential (Misati et al., 2011; Misati & Nyamongo, 2011; Sheefeni, 2013).

Expansionary monetary policy enables firms to easily have access to credit which encourages the growth of private investment as compared to contractionary monetary policies which restricts credit access. Mohan (2008) indicates that monetary policy is a prime anchor which can allow the growth of businesses thrive. Short-run changes in money supply lead to adjustments in the

production and output of goods and services, due to the high cost of capital for firms and industries (Kuttner, 2018).

Some studies also argue that contractionary monetary policy adjustments can lead to increased capital accumulation from increased saving due to high interest rates and effectively increase investments (Bernanke & Gertler, 1995). Okumoto and Akarara (2016), however, indicate in a study conducted in Nigeria that capital accumulation can only be effective when there is proper infrastructural development through firm expansion and employment of human resources. Their study indicates that capital accumulation witnessed great difficulty even though monetary policy rates and interest rates were high, because proper infrastructural development was not available to facilitate this saving.

Effective monetary policy adjustments should target increased production through increased credit availability, which can promote economic development. This makes it prudent for monetary authorities to take caution in making monetary policy adjustments as they can influence corporate investment, financing, and working capital management which can affect industry and overall economic growth (Apere & Karimo, 2014).

2.4.4 Monetary policy and corporate finance decisions

Monetary policy significantly influences corporate finance decisions, in areas of investment, capital structure, and working capital management. A substantial body of empirical literature has examined these dynamics, with most studies focusing on developed economies where financial systems are well established and monetary policy transmission mechanisms are relatively well understood. This focus has left a gap in the understanding of the unique dynamics at play in developing economies. This section seeks to discuss how monetary policy affects the corporate finance decisions of firms.

2.4.4.1 Monetary Policy and Corporate Investment

This section highlights discussions that have been made by previous studies about monetary policy influences on the corporate investment decisions of firms.

There have been several studies in developed countries on the relationship between monetary policy and corporate finance decisions, specifically investment decisions (Durante et al., 2022; Huang et al., 2012; Jeenas, 2019; Nguyen & Dong, 2016; Poursoleiman et al., 2020; Soetan & Oke, 2018; Yang et al., 2017; Dang et al., 2019; Zulkhibri, 2013). These studies indicate that monetary policy through its transmission channel affects the financial system, which affects price asset values and sends signals to economic agents to adjust their business strategy decisions and how they affect monetary policy.

Vithessonthi et al. (2017) support the school of thought that indicates that increased monetary policy increases interest rates and discourages investment. Their study sought to evaluate how monetary policy affects firms' investments in Germany, Switzerland, and Thailand. They observe that monetary policy, through the credit channel, affects the lending rate banks make available to firms in their country of study. They highlight that due to the external financing dependency levels and high inflation rate of firms in the country of study, the cost of capital required for investment projects was very high. This made monetary policy have a pivotal role in the investment decisions firms undertook. Monetary policy rate adjustments overtime increases the cost of finance of firms and slows down investment decisions.

Ottonello and Winberry (2020) also investigated how monetary policies and financial frictions affect corporate investment decisions using firm-level data from 1990 to 2007 in Europe. Their study identifies that high-risk firms or firms with high debt levels are less responsive to investment opportunities because their marginal cost of investment finance is steeper than that of low-risk

firms. These firms had to borrow at high interest rates due to the high leverage levels and low credit ratings. This made firms unresponsive to investment opportunities due to the high cost associated with investment.

Cloyne et al. (2023) also indicate that firms with lower credit ratings and low incomes are classified as highly risky firms and may face difficulty in accessing credit. These groups of firms are sensitive to borrowing and require external financing to run their business. Fluctuations in interest rates through monetary policy adjustments may restrict these firms from accessing the credit needed for expansions due to their low collateral levels; these restrictions may impede their investment projects. Cloyne et al. (2023) indicate that investment is crucial in business circles and recommend that monetary policy adjustments undertaken should promote the growth of firms and industries.

Olweny and Chiluwe (2012) allude to the fact that contractionary monetary policy increases interest rates, which may in effect reduce liquidity circulation through reduced consumption and increase savings. This increased saving is expected to increase capital accumulation and investments. However, Ellis (1940) has a contrary view to this notion. His study indicates that the driving force of investment and increased production is not savings, but the demand factors that affect production and investment. Ellis (1940) indicates that saving in developing countries in periods of high interest rates and inflation is caused by hoarding which restricts consumption and does not automatically transform savings into investments. The study further indicates that saving through interest rate increments does not automatically lead to investment. However, cost of capital, capital stocks, level of economic activities, uncertainties, and expectations are some drivers of corporate investment decisions.

Monetary policy and interest rates, as identified by several studies, have a crucial role in determining investment activities firms undertake. Interest rates are affected by monetary policy

rate adjustments. These interest rates have an impact on the cost of capital required to finance investment projects. Firms with viable investment projects may forgo profitable investment projects due to the high cost of capital required. Karim and Azman-Saini (2013), using annual firm balance sheet data of listed firms in Malaysia and the dynamic generalised method of moments (GMM), found that interest rate adjustments significantly affect the investment decisions of firms. Firms with profitable investment projects may suspend projects because the cost of capital exceeds the internal rate of return on the project.

In sub-Saharan Africa, monetary policy has undergone several adjustments due to high inflation rates and price instability, among others. These monetary policy changes affect interest rates and financing available to firms to pursue viable investment projects. Olweny and Chiluwe (2012) examined how interest rates affected industries over 13 years from 1996 to 2009 and indicated that money supply and private investment have a positive relationship. This positive relationship suggests that the effect of a loose or expansionary money policy is to augment investment, whereas tightening the money supply in an economy will, overtime, diminish private sector investment due to the effects of high interest rates and cost of capital. Agbonrofo and Olusegun (2023), using the Dynamic Heterogeneous Panel Auto Regressive Distributed Lag (ARDL) model, also corroborated that manufacturing firms in sub-Saharan Africa are impacted by macro-economic factors such as interest rate, exchange rate, cost and availability of credit to the private sector. Their study indicate that soaring interest rates augments cost of capital which significantly decreases output through its negative impact on investment.

Some alternative studies, such as Kutu and Ngalawa (2016), however, assert that monetary policy through the credit channel does not have significant impacts on investment decisions in sub-Saharan Africa. This contrasted with several of the former studies by indicating that industrial

productivity output is not directly affected by the bank lending channel, balance sheet channel, and interest rate shocks. Their study indicates that industrial outputs are most affected by exchange rate shocks. Sudden changes in the money policy did not significantly impact investment and industrial output growth in the short run. Kutu and Ngalawa (2016) used the Structural Vector Auto Regression (SVAR) model to investigate the effect of monetary policy shocks on investment and industrial output in South Africa using monthly data for the period from January 1994 to December 2012 and uncovered that uncertainty and monetary policy tightening through the credit and bank lending channel did not have any significant effect on investment and industrial output.

2.4.4.2 Monetary Policy and Corporate Financing

This section highlights discussions that have been made by previous studies about the impact of monetary policy on corporate financing decisions of firms. As indicated by studies such as Titman et al. (2004) and Kogan and Papanikolaou (2013), capital stock is a major determinant of firms' investment and operational decisions. This has made the financing decisions of firms a very relevant issue that has gained prominence, especially in the sub-Saharan African region, since the region has been characterized by low investment and constrained capital. Studies have examined how factors such as monetary policy impact the financing decisions of firms.

Rocheteau et al. (2018) sought to examine how central banks' policies affect the financial and capital structure decisions of firms. They observed that in situations where firms are dependent on external financing sources, an adjustment in monetary policy affects the credit channel especially, which also affects interest rates and bank lending rates. They found that these interest rate adjustments determine firms' costs of capital. Hence, adjustments in monetary policy may significantly impact the cost of capital and financing ability of firms.

Cloyne et al. (2018) also conducted a study to evaluate the impact of monetary policy on the investment and financing decisions of firms. In line with the neoclassical model, they emphasized that a firm's user cost of capital and expected returns can be affected by interest rate changes. The study adopted the notion of the financial accelerator theory, which argues that indirect changes in interest rates in periods of expansionary policies cause firms to borrow more to support their operations. This affects the value of the firms' assets and net worth enticing them to borrow more. Where these expansionary monetary policies are followed immediately by tightening monetary policy adjustment, the profit-generating ability of firms and their ability to settle financial liabilities or obligations are affected. Monetary policy expansions that are immediately followed by contractionary monetary policy affect firms' profits and overall growth potential. This conclusion is similar to studies conducted by Kiyotaki and Moore (2018), and Bernanke (1999).

Jiang et al. (2022) used the high-dimensional factors model to analyze how monetary policy uncertainty or changes affect capital structure of firms and how firms must adjust their capital structure to meet changing monetary policy demands in China. It was discovered that monetary policy works mainly with the real economy through commercial banks. The bank's risk appetite affects the funds it makes available to firms and the interest rate that comes with it. The constraints of monetary policy as a macroeconomic factor affect the interest of stakeholders of firms who may want to undertake viable projects but may not have enough capital. They also concluded their study by indicating that sharp changes in monetary policies disrupt optimal financial or capital structure decisions of firms and economic growth at large.

In sub-Saharan Africa, Bokpin et al. (2018) emphasize the importance of monetary policy in financial accessibility in a study which investigates how access to finance impacts firm performance in the sub region. Their study along with reports from the World Bank (Bank, 2007)

indicates that finance plays a very significant role in the economic growth and development of nations by empowering firms with resources to achieve desirable firm objectives. Countries with underdeveloped institutions suffer financial constraints (Beck & Wieland, 2009). Firms in these developing countries are mostly dependent on external financing options. As a result, these firms face a lot of constraints due to poor credit availability, according to Pinegar and Wilbricht (1989). Alluding to this, Yartey (2011) observes that, in Ghana, a large proportion of asset expansions is financed from external debt; hence, firms have high debt to equity ratios. This makes the firms highly vulnerable to changes in economic conditions such as contractionary monetary policy changes. Firms in the SSA region may not have their growth potential fully maximized due to the challenges associated with access to funds and the high cost involved.

2.4.4.3 Monetary Policy and Working Capital Management

Operational efficiency through optimal working capital decisions affects firm profitability and growth. Monetary policy has been identified by several studies to affect working capital decisions.

Dbouk et al. (2020) used the dynamic panel model, GMM (Generalized Method of Moments), to determine factors that affect the working capital decisions of firms. The study found that macroeconomic uncertainties such as monetary policy changes increase working capital and inventory levels. Hence, this provides empirical evidence that in periods of economic uncertainties, firms face higher demand. This was attributed to the fact that economic agents, as risk-taking agents, increase their demand in periods of monetary contractions as they expect more price hikes. This increases the safety stock levels of firms and their current asset values. This may reduce liquid cash available to the company, which can affect firm performance.

Cheng (2019) used listed non-financial enterprises in China from 2000 to 2010 to study the impact of economic policy uncertainty on corporate working capital management. Cheng's (2019) findings indicate a negative relationship between operating capital management efficiency and economic policy uncertainty. Working capital management was reduced when economic uncertainties and monetary policy adjustments arose. Receivable and accounts payable days were noted to increase in periods of economic uncertainty. High receivable days reduced the cash holding of the firms as it took more time to collect the amount owed by debtors, and the high payable days constrained firms' ability to obtain external financing to support their operations. This constrained firms' ability to increase stock levels through trade credit and cash. Their study concluded that in periods of economic policy uncertainty, firms found it difficult to manage their working capital management. Similarly in China, Cui et al. (2021), using a regression estimation for listed Chinese firms from 2017 to 2017, allude to the findings of Cheng (2019), indicating that uncertainty in economic policies and changes in monetary policy rates give a negative exposure to working capital management.

Farhan et al.'s (2021) study which evaluates working capital management policies in India indicates that, for the study area, industrial firms' working capital management decisions are affected by monetary policy shocks. Their study indicates that commercial banks' ability to give credit is affected by monetary policy rates. Small firms tend to be mostly affected by monetary policy adjustments and economic uncertainties as larger firms may have alternative sources of acquiring funds. Similarly, Senan et al. (2021), using the GMM estimation model, indicate from their study that monetary policy is a determinant of firm working capital management policies. Their study indicates a negative relationship between monetary policy shocks and working capital

management due to the restrictions monetary policy adjustment poses on credit availability to enable smooth firm operations.

Anton and Afloarei (2020), using the ordinary least squares estimation technique, analyzed firms' working capital management decisions within 719 firms on the Warsaw stock exchange between the periods of 2007 and 2016. Their study observed that the profitability of firms stems from their working capital management. The study further found that monetary tightening has an impact on the working capital management efficiency of the firms. Monetary policy shocks negatively affect firms' operations due to high financial costs and liquidity issues affecting their overall profitability.

Salawu and Alao (2014), in evaluating the determinants of working capital management of firms in Nigeria between 2000 and 2009, found that, apart from firm-level factors or internal factors that affect the firm's working capital management operations, monetary policy shocks are also a notable determinants of working capital management which determines the stock level firms can have due the availability of funds. Where trade credits are involved, monetary policy affects the interest payable and the overall profitability levels of the firms. Their study also found that monetary policy negatively impacts firms' working capital.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter explains the procedures that were followed to achieve the research objectives. The objective of this chapter is to describe the techniques chosen and to provide justification for the variables selected for the study. The chapter also provides information on the data sources, the sample size used for the study, the specification of the models, the econometric technique, and the justification for the variables. The chapter is structured as detailed. Section 2 briefly explores the design of the study. The research design explains the motivation for using the quantitative approach to analyze the data and discuss the results. Section 3 presents the econometric model for achieving the objectives of the research. Section 4 analyses the sources of data and justification of the sample used.

3.2 Research Design

The aim of this study is to examine how corporate finance decisions of firms in sub-Saharan Africa are affected by monetary policy. The basic generalization from the literature suggests that monetary policy adjustment through the transmission mechanism affects interest rate, and credit supply, which affects the price and cost of capital of firms. Linking the monetary policy to corporate finance decisions, the real business cycle theory and the signaling theory indicates that firms as rational economic agents will evaluate how monetary policy will affect corporate finance decisions. This monetary policy changes in evaluating how it affects overall corporate finance decisions and the prudency to undertake such decisions. The strength and reliability of this linkage are dependent on the country's level of economic growth (Dickman, 1982; Li et al., 2022; Trichet,

2006). Based on the aforementioned, the study seeks to test the relationship between monetary policy and corporate finance decisions.

The method adapted for this study is purely a quantitative approach as it employs some statistical and econometric techniques to estimate and interpret our findings. The quantitative approach is considered because it is very effective for determining the causality between two or more concepts and reduces the likelihood for researchers to influence the findings of their study because the analysis is based on numerical values and rigorous tests (Yauch & Stendel, 2003).

3.3 Econometric Specification

In testing the effect of monetary policy on corporate finance decisions, given the linkage between monetary policy and price, we used empirical models that examine how corporate investment, financing, and working capital management decisions are affected by monetary policy.

The investment decision of firms was modeled as being dependent on monetary policy, economic growth, and firm-level independent variables. The empirical specification equation (1) is adapted from Gulen and Ion (2016) and Yang et al. (2017). The model was designed to test the effect of monetary policy on corporate investment decisions, given relevant controls. Investment decisions are defined to be a function of the lag of the previous years' investments, monetary policy, size, return on assets, Tobin's Q, operating cash flow, the earnings (operating profit) of the firm, and the error term.

Firm financing decision was similarly modeled to be dependent on monetary policy, economic growth, and firm-level variables. The model was to test how monetary policy changes impacted firm financing decisions. The study adapted the work of Nagpal and Jain (2021). Financing,

measured as capital structure or DEBT, is the ratio of total long-term borrowing to total assets. The financing equation (2) is a function of the lag of DEBT, monetary policy, age, size, returns of assets, the asset structure of the firm, and the error term.

In evaluating the effect of monetary policy on working capital management (WCM), we follow the work of Cheng (2019) to test how monetary policy impacts WCM, given relevant controls. The working capital management equation (3) is a function of the lag of working capital management, monetary policy, economic growth, operating cash flow, leverage, return on assets, firm size, and the error term. Consequently, the empirical model for the study is given as

$$INV_{it} = \beta_1 INV_{i,t-1} + \beta_2 MPR_{i,t} + \beta_3 GDP_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 ROA_{i,t} + \beta_6 OCF_{i,t} + \beta_7 TQ_{i,t} + \beta_8 EARN_{i,t} + \beta_9 MPR\ dummy_{i,t} + \omega_i + \delta_t + \varepsilon_{i,t} \quad \ldots\ldots(1)$$

$$DEBT_{i,t} = \alpha_1 DEBT_{i,t-1} + \alpha_2 MPR_{i,t} + \alpha_3 GDP_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 ROA_{i,t} + \alpha_6 AGE_{i,t} + \alpha_7 AST_{i,t} + \alpha_8 MPR\ dummy_{i,t} + \omega_i + \delta_t + \varepsilon_{i,t} \quad \ldots\ldots(2)$$

$$WCM_{i,t} = Z_1 WCM_{i,t-1} + Z_2 MPR_{i,t} + Z_3 GDP_{i,t} + Z_4 SIZE_{i,t} + Z_5 ROA_{i,t} + Z_6\ OCF_{i,t} + Z_7 LEV_{i,t} + Z_8\ MPR\ dummy_{i,t} + \omega_i + \delta_t + \varepsilon_{i,t} \quad \ldots\ldots(3)$$

In testing if changes in monetary policy have differential impacts based on the level or size of economic growth in an economy or the size of the firm, the equations above are modeled with interaction terms, MPR*GDP and MPR*SIZE. This follows intuition from studies such as Cecchetti (1999), Kashyap et al. (1993), Farajnezhad et al. (2016), Marshal and Toby (2021) and Mojon (2000) who indicate that economic growth influences monetary policy transmission efficiency as economic growth has impacts on consumption and investment of economic agents affecting credit demand and the financial sector. This allows the financial sector to pass changes in the central bank's policy rates to borrowing rates (Bernanke & Blinder, 1992; Mishkin, 1996),

making monetary policy adjustments dependent on the level of economic growth of an economy. Besides, the economic growth of an economy indicates the level of economic performance that influences central banks' monetary policy adjustments to achieve macroeconomic stability (Kapounek & Lacina, 2006; Zhang & Zhang, 2020). Economic growth can be proxied by annual GDP growth.

Firm size, according to Bernanke and Blinder (1992) and Kashyap et al. (1993), influences how monetary policy shocks affect firms. According to these studies, contractionary monetary policy affects bank-dependent firms more. Monetary policy changes are noted to affect smaller firms more as they may have low information asymmetries and low ability to borrow from alternative sources due to low collateral. Hence, firm size, notably small firms may be bank-dependent and may have their corporate finance decisions affected by monetary policy changes (Ehrmann & Fratzscher, 2004). Monetary policy may have differential impacts on firms based on their size (Durante et al., 2022). The augmented model is therefore given as:

$$INV_{it} = \beta_1 INV_{i,t-1} + \beta_2(MPR_{i,t} * GDP_{i,t}) + \beta_3(MPR_{i,t} * SIZE_{i,t}) + \beta_4 MPR_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 OCF_{i,t} + \beta_8 TQ_{i,t} + \beta_9 EARN_{i,t} + \beta_{10} MPR\ dummy_{i,t} + \omega_i + \delta_t + \varepsilon_{i,t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

$$DEBT_{i,t} = \alpha_1 DEBT_{i,t-1} + \alpha_2(MPR_{i,t} * GDP_{i,t}) + \alpha_3(MPR_{i,t} * SIZE_{i,t}) + \alpha_4 MPR_{i,t} + \alpha_5 SIZE_{i,t} + \alpha_6 ROA_{i,t} + \alpha_7 AGE_{i,t} + \alpha_8 AST_{i,t} + \alpha_9 MPR\ dummy_{i,t} + \omega_i + \delta_t + \varepsilon_{i,t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

$$WCM_{i,t} = Z_1 WCM_{i,t-1} + Z_2(MPR_{i,t} * GDP_{i,t}) + Z_3(MPR_{i,t} * SIZE_{i,t}) + Z_4 MPR_{i,t} + Z_5 SIZE_{i,t} + Z_6 ROA_{i,t} + Z_7 OCF_{i,t} + Z_8 LEV_{i,t} + Z_9 MPR\ dummy_{i,t} + \omega_i + \delta_t + \varepsilon_{i,t} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

For both original and augmented models, INV, DEBT, WCM, MPR, GDP, SIZE, ROA, OCF, TQ, EARN, AGE, AST, LEV, MRP Dummy represent investment decisions, financing decisions, working capital decisions, monetary policy, firms' size, return on asset, operating cash flow,

operational earnings, age, asset structure, leverage of firms and MPR time dummy variable. The subscript i denotes the cross-sectional dimension and t represents the time series dimension. The left-hand variable of the equation represents the dependent variable while the right-hand variable represents the independent variables. The $\mu_{i,t}$ is known as the random effects, where μ_i is the firm-specific effects and v_{it} is the random term.

3.4 Variables

3.4.1 Dependent Variables

Corporate finance decisions mainly take the form of investment, financing, and working capital decisions as in previous chapters. These corporate finance decision components are the dependent variables in analyzing corporate finance decisions. This section of the study seeks to justify these variables and indicate how they are measured.

Investment Decisions

Investments may take the form of buying new plants and machinery amongst others. Investment decisions are decisions to increase firm value through asset addition (Sureka et al., 2022), Investment of firms is captured in the investment section of the cash-flow statement. With reference to previous studies such as Gulen and Ion (2016) and Yang et al. (2017), we define investment as capital asset additions which is taken from the cashflow statement and is divided by the total fixed asset value of the firm (Table 3.1).

Corporate financing Decisions

Corporate financing or capital structure decisions also look at the composition of sources of finance the firm uses to manage its activities. Firms may decide to invest with internal funds, debt

financing, or equity financing methods. Capital structure which is measured as DEBT in this study seeks to measure the debt burden of a firm. This follows the work of Nagpal and Jain (2021) according to which we measure capital structure or DEBT as the ratio of total long-term borrowing to total assets (Table 3.1).

Working Capital Management Decisions

Working capital management refers to how firms manage their day-to-day activities. Working capital manages the current assets and current liabilities of firms. To measure the working capital management efficiency (WCM) we follow the work of Baños-Caballero et al. (2010) and Cheng (2019). Working capital is calculated using the cash conversion cycle which measures the receivable days, adds inventory days, and subtracts payable days. The cash conversion cycle reflects the average time firms take to convert their current assets into cash (Table 3.1).

3.4.2 Independent Variables

This accounts for other factors other than variables of interest that may also impact firm corporate finance decisions.

3.4.2.1 Monetary Policy

The impact of monetary policy on all sectors of the economy is an issue of importance and as such cannot be underestimated. The central bank monetary policy rate, according to Surico (2007), is a mechanism used by central banks to regulate the supply of money in an economy and reflect monetary policy objectives.

Firms tend to pick signals from monetary policy and economic growth indicators to influence their investment decisions. According to Gulen and Ion (2016), firms' investment decisions are

positively impacted by periods of increased credit supply through expansionary monetary policy and improved economic growth.

Monetary policy through credit availability affects a firm's ability to access external sources of funds to support their financing decisions and their working capital management decisions. Studies like Benito (2005), Hu (1999) and Loayza and Schmidt-Hebbel (2002) argue that increases in interest rates increase the cost of capital and finance costs of firms which can negatively affect their investment and day-to-day operations.

3.4.2.2 Economic growth

The GDP annual growth rate was used as a proxy for the level of economic growth. GDP annual growth was used because it measures how much countries can increase or decrease the output of goods and services year on year. This gives an overview of economic activities, which is key in assessing economic performance. GDP was used to determine how economic growth or level of economic activities influence corporate finance decisions (Barro & Lee, 1994; Bhargava, 2001; Hanushek & Woessmann, 2010).

3.4.2.3 Firm Size

Firms generally are able to access the financial market with more ease as they grow and mature. Growing firms are likely to have larger firm size and may enjoy economies of scale and therefore incur less transaction costs relative to other smaller firms. Firms with larger sizes may acquire more external funding by using their reputation and economies of scale to pay lower interest. From Table 3.2, the proxy for firm size is the logarithm of total assets of firms as used by other studies (Fort et al., 2013; Manos & Ah-Hen, 2003; Vu et al., 2019).

3.4.2.4 Profitability

We use return on asset as a proxy for a firm's profitability. Firms' profitability signals a potential for high returns which attracts investors to invest in viable investment projects. This improves financing conditions and operational activities of a firms. Profitability is defined as the ratio of net profit to total assets (Table 3.2). The ratio of net profit to total assets as a measure of profitability is used in several studies such as Titman and Wessels (1988) and Abor et al. (2009). These previous studies indicate that firms with high profitability are likely to attract lenders to boost their financial management functions.

3.4.2.5 Operating Cashflow

Operating cash flow of a firm is all cash generated from the business's main activities. It captures all cash transactions that move in and out of the firm (Anton & Afloarei, 2020). For the study, operating cashflow (OCF) is measured as net operating cashflow divided by total asset (Table 3.2). Net operating cashflow is taken from the cash flow statement and is measured as net profit adjusted for non-cash expenses and changes in working capital components namely inventory, payables and receivables. Firms with high cashflow have better working capital management which increases potential for investment expansions (Boisjoly, 2009).

3.4.2.6 Tobin's Q

Tobin's Q is a proxy for growth potential. According to Tobin (1969), Tobin Q is measured as the market value of a company divided by its assets' replacement cost. The formula can be expressed as market value divided by total asset. Tobin Q measures the relative value of a company's stock (Table 3.2). Firms with Tobin Q greater than one have more potential for growth since their market values are greater than their replacement costs (Verona, 2020).

3.4.2.7 Asset Structure

Asset structure is measured as the firms' fixed assets to total assets (tangibility) (Table 3.2). Firm's optimal financing mix needed for investment and firm management depends on the asset structure. Firms with high ratios of fixed assets to total assets often have reduced costs of financial distress due to their higher liquidation value and collateral value.

3.4.2.8 Earnings

Earnings measures the operational income of firms. For this study earnings is measured as the operating income of a firm, divided by the firm's total assets (Table 3.2) as used in Nagpal and Jain (2019). This will capture the return the firm makes from its main business activities or projects; this return will exclude general expenses the firm incurs. This is used because it helps understand how the core business function of a firm affects its investment decisions. Firms with high operating profits are likely boost investor confidence which can lead to higher investments.

3.4.2.9 Age

Firm age is used as a proxy for the firm's reputation (Table 3.2). The literature suggests that the longer firms stay in business, the more they can establish themselves enabling them to have broader access to finance. Older firms have lower debt ratios given that they are higher-quality firms (Hall et al., 2004; Petersen & Rajan, 1994). For this study, firm age is defined as the number of years that a firm has been in operation. Firm age is expected to affect corporate financing as older firms are expected to have more creditworthiness due to accumulated experience and market credibility over time (Anyadike-Danes & Hart, 2017; Coad et al., 2018).

3.4.3.0 Leverage

Leverage is the amount of debt a firm uses to fund its assets to increase the prospective returns on the capital of the firm. The leverage ratio generally provides a signal of how a firm's assets and

operations are financed. Consequently, it also represents the magnitude of how firms utilize their borrowed funds. High-levered firms are considered to be risky due to their high finance cost obligations. High-levered firms are noted to be constrained by access to external financing due to their high risk of default (Nissim & Penman, 2003). Leverage is, therefore, used to test how the capital structure of a firm affects its ability to attract financing. From Table 3.2, LEV is computed as the ratio of debt to assets of a firm (Abuhommous, 2017).

3.4.3.1 MPR Dummy

To ensure robustness and reliability of the results of the study. Dummy variables were introduced to control for the time effect in the data model. Dummy variables of tightened monetary policy is used to reflect the monetary policy tone. In the binary variable, 1 equals the tightened monetary policy rate and 0 otherwise, following the model of Romer et al. (1990), Romer and Romer (1994), and Kearns and Manners (2018).

According to Modugu, K. P., & Dempere, J. (2022), and an IMF regional economic outlook report on Sub-Saharan Africa for 2022, during the period from 2015 to 2022, SSA countries experienced economic growth but also faced challenges such as high public debt levels and inflationary pressures. This period also witnessed the COVID-19 pandemic, which led to significant economic disruptions and changes in monetary policy responses. These factors led to increased public debt levels and inflation rates, potentially leading to higher monetary policy rates.

Given these factors, the period 2015-2022 saw notable monetary policy adjustments due to the pandemic and global economic shifts. The dummy variable takes the value of 1 in periods of tightened monetary policy rate and 0 if otherwise.

Table 3.1 Summary and Description of Variables Employed

Variable	Definition	Proxy/ measurement	Source	Expected Sign
INV	Investment	Ratio of investment in capital asset additions/ total fixed asset	Stock market -Annual financial report	-
DEBT	Leverage	Total long-term borrowing/ total asset	Stock market -Annual financial report	-
WCM	Working Capital Management	Receivable day + inventory days - payable days	Stock market -Annual financial report	+
MPR	Monetary Policy Indicator	Represented by the monetary policy rate	World Development Indicators (WDI)	–/+
GDP	Economic Growth	Represented by annual GDP growth rate	International Monetary Fund (IMF)	–/+
ROA	Profitability	Net income/ total asset	Stock market -Annual financial report	–/+
TQ	Tobin q (firm value)	(Total liability+ market capitalization)/ total asset	Stock market -Annual financial report	+
AST	Asset Structure	Ratio of fixed assets to total assets	Stock market -Annual financial report	-
EAR	Earnings	Ratio of operating profit to total assets	Stock market -Annual financial report	+
SIZE	Firm Size	Natural logarithm of a firm's total assets	Stock market -Annual financial report	–/+
AGE	Firm Age	Number of years since the incorporation of the firm	Stock market -Annual financial report	–/+
LEV	Leverage	Total liabilities divided by total asset	Stock market -Annual financial report	-
OCF	Operating Cashflow	Net operating cashflow divided by total assets	Stock market-Annual financial report	–/+
MPR Dummy	Dummy Variable	Dummy variable with the value of "1" if MPR was high and "0" if otherwise	World Development Indicators (WDI)	–/+

3.5 Sample and Data Sources

3.5.1 Sources of Data

This study covers 50 firms across the four largest stock exchanges in the sub-Saharan African region which are Ghana, Nigeria, South Africa, and Kenya. The number of countries and the time period are based on the data available from World Development Indicators (WDI), the International Monetary Fund, and the annual financial reports of the firms. The stock exchanges of these countries had about 500 non-financial listed firms in total. The study, however, considered firms with complete data years as this has the potential of leading to more robust findings (Kleinbaum & Klein, 1996; Lee, 2021; Wang et al., 2019). The study selected 50 non-financial firms that had complete data from their annual reports. These selected non-financial listed firms

allowed the investigation of the impact of changes in monetary policy on the corporate finance decisions of firms. The countries are selected based on the availability of data. The available data spans a period of thirteen years, ranging from 2010 to 2022. The study used secondary data in the analysis because it is relatively less expensive, and can be accessed easily and faster in comparison with primary data (Rabianski, 2003).

3.5.2 Study Sample

The study selects 50 listed firms in the four largest stock exchange markets in the sub-Saharan African region. These firms were selected because they meet

the complete data as part of their survival criteria. According to Kleinbaum and Klein (1996) and Wang et al. (2019), complete data sets provide more robust and effective results as compared to incomplete data sets. The number of countries and the time period are based on the data available from the four largest stock exchange markets in sub-Saharan Africa, World Bank Indicators (WDI), and the International Monetary Fund (IMF). The data spans over thirteen years, ranging from 2010 to 2022.

3.6 Econometric Technique

The study employed the System Generalized Method of Moments (sys-GMM) propounded by Arellano and Bover (1995), Blunder and Bond (1998), and Roodman (2006) to examine the relationship between monetary policy and corporate finance decisions of firms. The sys-GMM approach introduces the lagged dependent variables as instrumental variables and controls for endogeneity issues, unlike the static and OLS models. It also addresses the problem of unobserved heterogeneity by accounting for time-invariant omitted variables and the concern of reverse causality and the sys-GMM technique is applied to address these issues of estimation. The

introduction of the instrumental variable eliminates correlation with the error term and ensures a high correlation with the relevant independent variables (Bende-Nabende et al., 2001). The study spans from 2010 to 2022 and focuses on 50 listed non-financial firms in SSA countries satisfying the GMM condition which specifies that the period (t) for the study is smaller than the number of individuals and is a panel data analysis (Nickell, 1981; Roodman, 2006). The sys-GMM is consistent, asymptotically normal, and valid for Gaussian inference even with highly persistent panel data and free of initial conditions on the level (Oseni, 2016). The sys-GMM has been shown by Agung (2000) and My Tran et al. (2019) to be effective for studies such as this.

3.6 Chapter Summary

This chapter has summarized issues regarding the empirical models adopted for the study. The data for the study were obtained from annual financial reports of firms, IMF, World Bank Indicators (WDI). The study has a time span of 13 years, ranging from 2010 to 2022. The sample size is 50 firms from the 4 largest stock exchanges in sub-Saharan African. The Sys-GMM technique estimated technique was used in carrying out the analysis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

In this chapter, the results that were obtained from the analysis described in the previous chapter are presented. Each set of results is accompanied by interpretations and a discussion of the findings. The discussions begin with an account of descriptive statistics on the nature and features of the dataset and the extent to which it can affect the findings of the study. The results of the correlation estimation between variables describe the kind of relationship between the variables and how it is likely to influence the findings. Subsequently, the diagnostic tests are analyzed, and the findings of regression results are used in determining how monetary policy and other firm-level factors affect the investment, financing, and working capital management decisions of firms.

4.2. Summary and Descriptive Statistics

This section presents descriptive statistics for variables employed for the study. It displays the observations, mean, standard deviation, minimum and maximum values of the study variables to provide relevant insight into the attributes of the dataset that was used in this study.

Investments (INV) had a mean of 18.9% indicating that on average firms increased their fixed assets by about 18.9% per annum. This investment level could be described as below optimal comparing this average to other developing countries such as Vietnam which recorded an average investment of 73.27% in similar periods (Tran et al., 2017). The standard deviation of 21.50% suggests that investment levels in fixed assets are dispersed across firms, implying that some firms may be characterized by high investment in fixed asset while others may have very low investment

levels. The maximum and minimum values of investment are 2.67535 and 0 suggesting how varied investment additions are amongst firms. It also indicates that some firms were able to triple their fixed asset additions while other firms did not. This also implies that the study considered a wide range of firms with varying investment levels.

Long-term Debt (DEBT) refers to the level of long-term debt financing firms consider in their business operations. Firms in SSA, on average, have about 47% of their total assets financed through long-term debt, indicating that firms in the SSA region are heavily dependent on long-term credit financing. The standard deviation of 30.75% recorded for the study also indicated that firms' dependency on long-term debt financing values are dispersed from the mean value, suggesting that firms' dependency on long-term debt varies widely among firms. This indicates that some firms depend more on long-term debt financing than others. Firms with low DEBT usually have high profits and retained earnings. The study also recorded an average maximum and minimum value of 0.134% and 96.05% respectively (Table 4.1). The maximum value indicates how high some firms depend on long-term debt to finance their total assets as compared to the minimum DEBT value.

Working capital management (WCM), also known as the firm's cash conversion cycle, recorded an average value of about 45 days, with a standard deviation of about 89.50961 days (Table 4.1). This indicates that it takes firms, on average, 45 days to purchase inventory, receive revenue from debtors, and pay their creditors. This could be described as relatively high considering that other firms in other developing countries on the average record cash conversion cycles of about 23 days with a standard deviation of 32 days (Yasir, 2014). Firms with high cash conversion cycles may be characterized with low cash flow and profit and it will take the firm more time to convert their current asset values into cash. The standard deviation of about 89 days also indicates how working

capital management days are dispersed from the mean. The maximum value of working capital days is on average 376 days, meaning that on average it took some firms more than one year to purchase stock, retrieve receivables from debtors, and pay creditors, indicating high cash conversion cycle days. The minimum working capital day of -345 days (Table 4.1) indicates a high supply of credit and longer periods to settle their supplier obligations.

Monetary policy rate (MPR) also had an average of 16.50% which is relatively high compared with other developing countries such as Malaysia and Morocco, which have had their monetary policy averaging 6% in similar periods (Tobal & Menna, 2020). South Africa, for the 13-year study period, recorded the lowest monetary policy rate of 7.04% while Ghana recorded the highest value of 25.95417% in 2022. The standard deviation of 3.923% indicates how monetary policies are clustered around the mean. This implies that the average monetary policy rate does not vary from country to country. Economies with high monetary policy are often characterized by high interest rates, low savings and investments, among others.

Economic growth (GDP) for countries selected from the SSA region averaged 3.954%. The study also recorded a standard deviation of 3.24%, indicating how economic growth is clustered around the mean. This further implies that most countries selected for the study were characterized by similar economic growth rates. According to the World Bank and IMF report in 2023 and 2021 respectively, economic growth in other developing economies averaged 3% to 6%, indicating that values for firms sampled for the study are consistent with economic growth levels of other developing economies. Firms operating in economies with increasing economic growth are characterized by increased demand and production (Kuznets, 1971). The highest economic growth rate of 14.07% was recorded by Ghana, while South Africa recorded the lowest economic growth rate of -5.69%.

Earnings (EARN) from normal operations of the firms had a mean value of 25.1709. This indicates that from normal operation, firms were able to make a gross return of about 25%. Operational returns of firms in SSA are noted to be consistent with other developing economies. High gross or operating profit returns reflect firm growth potential from core business operations. The standard deviation value of 82.68% shows that the operational earnings of firms are dispersed from the mean, which implies that operational profit for a firm may vary slightly from firm to firm. Firms characterized by high cost of production are usually noted to have lower operational returns and vice versa. The highest operating profit recorded for the study had a value of 92.89% while the minimum had a value of -42.361 (Table 4.1).

Return on assets (ROA) on average also has a mean value of 11.11%, indicating that firms are able, on average, to yield a return of about 11.2% for assets owned. Firms' net yield values are loosely clustered around the mean, with a standard deviation of 25.1657%. This means that the net profit level of firms does not vary widely from the average return on assets. It can also be observed that while some firms had a maximum return on asset value of 318%, others recorded return on asset values as low as -157.752% (Table 4.1). Firms with higher ROA values have the potential to invest more as compared to those without.

Tobin's Q (TQ), which captures the growth potential of a firm, recorded an upward mean value of 1.004349. Firms with a TQ values greater than 1 have a potential for growth as they may be able to easily replace their assets. Firms sampled for the study have an average TQ value greater than 1, indicating their potential for growth. However, growth potential for the study sample is noted to be widely dispersed across firms, as the study recorded a high standard deviation of 1.016759. Some firms recorded growth potential as low as of 0.0005935, while others recorded a high growth potential and asset replacement ability of 6.650933 (Table 4.1), indicating how wide TQ values

are spread across firms in SSA. High TQ values have the potential for growth and more investments.

Asset structure (AST) on average has a mean value of 45.18%, meaning that, on average, firms had 45.14% of their total assets comprising fixed assets. Most of the firms sampled for the study were engaged in manufacturing activities. However, less than half of their total assets comprised fixed assets. This indicates that firms in the sub-Saharan Africa terrain may not be involved in intense manufacturing. This may also connote that firms do not invest heavily in their fixed asset expansion. Asset structure also has a standard deviation of 24.21%, indicating a wide dispersion of asset structures among firms in the sub-Saharan region. The lowest asset structure recorded 0.0599%, indicating that some firms had less than 1% of their fixed asset, comprising fixed assets while the maximum asset structure recorded a value of 96.83%.

On average, size (SIZE) also had a mean value of 6.425157 and a standard deviation value of 1.348632, which can be considered relatively low as other developing economies had a average value of 12.3 for firm size (Hashmi, 2020). The standard deviation indicates that sizes of the firms were averagely spread across the mean. The study sample recorded a minimum value of 1.739297 and a maximum value of 8.789701 (Table 4.1). This indicates that firms sampled for the study consisted of relatively small and large firms. Larger-sized firms on average are expected to have large assets, better collateral value, higher access to funding, and better performance.

Age which is also an independent variable has a mean value of 41.4 years and a standard deviation of 18.9 years. The maximum value of the firms was 94 years and the minimum value was 7 years (Table 4.1). Firms sampled for the study had firms as young as 7 years and older firms aging almost a century. Firms with higher operational years are expected to perform better on average.

Leverage also captures the total borrowing of firms. On average, leverage had a mean value of 0.650358 and a standard deviation of 0.427267. This shows the wide dispersion of leverage levels amongst firms. This indicates that some firms were highly dependent on external financing support whilst others were not. The maximum value for leverage recorded was 0.001337 and a maximum value of 1 (Table 4.1). On average, total assets were financed by 65% of total debt. This shows that firms in the SSA region may be highly dependent on debt or external financing.

Operating cash flow (OCF) had a mean value of 0.1467594 and a standard deviation of 0.1540528. Operating cash flow had a maximum value of 0.9157949 and a minimum value of -0.21936. This means on average cashflow from operating activities averaged about 14.7% of total assets. Average cashflow from the operations of the firm is lower than the average monetary policy rate. Firms in this region may find it difficult to obtain finance as their cashflow from operations cannot be sufficient to settle interest expense; hence, such firms may be financially constrained. Also, the operating cash flow is spread across firms in the regions. This suggests that some firms recorded high operational cash flow values as compared to others.

The interaction of monetary policy and economic growth recorded an average of 64% and a wide standard deviation value of 53% indicating how dispersed the values are from the mean. The interaction also had values as high as 189% and as low as -9%. The interaction between monetary policy and firm size also recorded an average value of 102% and a very wide standard deviation of about 30%. The interaction also recorded values as high as 209% and as low as 28%.

The MPR dummy to control time effect in the data set recorded average of 62% and a wide standard deviation value of 47%. This indicates the monetary policy tone in SSA. On average 62% of the yearly MPR rates were high within periods of 2010 to 2022.

Table 4.1 Summary and Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
INV	650	0.189335	0.215027	0	2.67535
DEBT	650	0.472053	0.307492	0.0001304	0 .96048
WCM	650	44.9002	89.50961	-345.407	375.8641
MPR	620	16.18734	3.923745	7.041667	25.95417
GDP	650	3.954305	3.236873	-5.96336	14.04712
MPR*GDP	650	0.649985	0.534564	-.099466	1.897046
MPR*SIZE	650	1.022565	0.3018539	0.2797939	2.090681
ROA	650	0.111623	0.251657	-1.57752	3.180316
TQ	650	1.004349	1.016759	0.00594	6.650933
AST	650	0.451403	0.250462	0.000599	0.968274
EAR	650	0.251709	0.826819	-0.42361	0.92889323
SIZE	650	6.356773	1.361796	1.739297	8.789701
AGE	637	41.02669	18.84739	7	94
LEV	650	0.650358	0.289608	0.001337	1.421628
OCF	650	0.1467594	0.161764	-0.21936	0.9157949
MPR Dummy	650	0.615384	0.486504	0	1

Source: Author's Construction. INV, DEBT, WCM, MPR, GDP, EAR, ROA TQ, SIZE, LEV, AGE, OCF and MPR Dummy denote capital investments, long-term leverage, working capital days, monetary policy rate, return on assets, Tobin's Q, asset structure, operational earning of firms, size, age, total leverage, and operating cashflow and MPR time dummy variable respectively.

4.3 Correlation Matrix

The correlation matrix shows the relationship between variables considered for the study. Investment decisions have a positive relationship with monetary policy, operating cash flow, return

on asset, and Tobins Q. This implies that firms' investment decisions in the SSA region have a positive relationship with monetary policy. This suggests that firms pursue corporate investment decisions even when contractionary monetary policy adjustments are made. The correlation matrix also indicates that an increase in operation cash flows, firms' growth potential (Tobin's Q), and return on asset influences an increase in the investment decisions of firm. Firm age and size were also noted to have negative relationships with investment decisions, implying that as firms age and their size increases, they may reduce the level of investments they undertake.

For financing decision of firms, monetary policy rate, GDP, firm size and asset structure have a positive relationship with financing decisions of firms. This suggests that in periods of monetary policy increment, firms were still dependent on external financing. The correlation matrix also suggests that economic growth, firm size and asset structures of firms had a positive relationship with financing decisions. This may be because as firms' size and asset structures increased the collateral value of the firm also increased, affecting their ability to obtain more debt. Economic growth is also likely to increase credit supply and the ability of firms to obtain external funding to support their operations. Return on asset of firms was noted to have a negative relationship with firm financing decisions as firms can plough back retained profit to support their operations, reducing their dependency on credit financing.

Working capital management has a positive relationship with asset structures of firms. This suggests that as the asset tangibility of firms increases, the working capital days of the firms also reduce as high asset tangibility may improve the tenacity of firms and increase trade credit and payable days. Tobin Q values have a negative impact on working capital management decisions. The correlation matrix also serves as a useful tool for detecting multicollinearity. From Table 4.2, none of the variables exhibited high correlations to raise concern for multicollinearity with the

exception of the interaction on monetary policy and economic growth. The severity of this high correlation was further tested with the Variance Inflation factor.

Table 4.2 Correlation Matrix

	INV	DEBT	WCM	MPR	GDP	SIZE	ROA	OCF	TQ	EAR	AGE	AST	LEV	MPRGDP	MPRSIZE
INV	1														
DEBT	0.0839*	1													
WCM	0.1272*	-0.0977	1												
MPR	0.119*	0.1035*	-0.052	1											
GDP	0.0457	0.1035*	-0.0503	0.0797*	1										
SIZE	-0.0577	0.1741*	0.0397	-0.0129*	-0.1041	1									
ROA	0.0819*	-0.0792*	0.0559	-0.0129	0.0312	-0.0347	1								
OCF	0.101*	0.0122	-0.0511	0.0456	0.0501	0.0512	0.3327	1							
TQ	0.1806*	0.0877	-0.0853*	0.1886*	0.1535*	-0.3037*	-0.0767	-0.0355	1						
EAR	0.018	-0.0741	0.0373	-0.0322	-0.066	-0.0329	0.4512	0.0813	-0.1078	1					
AGE	-0.1314*	0.0086	-0.0162	-0.0698	-0.0658	0.0514	-0.0516	-0.0016	-0.1432	-0.0109	1				
AST	-0.246*	0.1061*	0.2482*	-0.053	0.0504	0.0815	-0.1219	0.0113	-0.0204	-0.0586	0.1151	1			
LEV	0.0587	0.7288	-0.121	0.068	0.0065	0.2991	-0.2094	0.013	0.0068	-0.1955	0.0899*	0.1482*	1		
MPRGDP	0.0655	0.1056	-0.0607	0.3305	0.9476	-0.1346	0.0211	0.0467	0.2037	-0.0775	-0.087	0.0387	0.0121	1	
MPRSIZE	0.0612	-0.0078	-0.048	-0.0169	0.006	0.2363*	0.1472*	0.119	0.8424	0.2219	0.06708	0.8796	0.00001	0.0002	1

***p<0.01, ** p<0.05, * p<0.1

Source: Author's Construction. INV, DEBT, WCM, EAR, ROA TQ, SIZE, MPR, GDP, LEV, AGE, OCF denote capital investments, long term leverage, working capital days, operational earning of firms, return on assets, Tobin's Q, size, monetary policy rate, economic growth, total leverage, age and operating cashflow respectively.

4.4 Variance Inflation Factor

The Variance inflation factor is an econometric tools used to test the severity of multicollinearity amongst independent variables. Multicollinearity refers to the high correlation between two or more independent variables. Multicollinearity may make the regression coefficients unstable and can also lead to inflated standard errors, reducing the reliability of the model (Wooldridge, 2016). Using the rule of thumb, VIF above 10 indicates multicollinearity. Having VIF's less than 10 implies that the models specified do not suffer from multicollinearity. This shows that the standard errors of the model estimates are not inflated and biased (Gujarati & Porter, 2009). Table 4.3 tests the correlation of variables used in running the basic model (equations 1, 2 and 3), which examined the effect of monetary policy on corporate finance decision without any interacting effect. The results show VIF values less than 10, indicating that there is no issue of multicollinearity.

Table 4.3 Variance Inflation Factor

Variable	VIF	1/VIF
EAR	1.28	0.766220
ROA	1.45	0.675348
TQ	1.20	0.830717
SIZE	1.25	0.800571
AGE	1.05	0.951746
OCF	1.15	0.866331
AST	1.12	0.895978
MPR	1.06	0.939116
LEV	2.52	0.397493
GDP	1.06	.939653
MPR Dummy	1.30	0.769003
MEAN VIF	**1.31**	

Source: Author's Construction: EAR, ROA TQ, SIZE, AGE, OCF, AST MPR, LEV, GDP and MPR Dummy denote operational earning of firms, return on assets, Tobin's Q, size, age and operating cashflow, monetary policy rate, total leverage, economic growth and mpr time dummy variable, respectively.

Another VIF test was run for variables considered in the augmented model in Table 4.4. The results of the VIF indicate the presence of multicollinearity as GDP and the interaction between MPR*GDP recorded values greater than 10. From the literature, to address issues of multicollinearity, one of the highly correlated variables can be removed (Wooldridge, 2016). In running the augmented model, the economic growth variable (GDP) was dropped to resolve the issue of multicollinearity in the dataset.

Table 4.4 Variance Inflation Factor for Augmented Model

Variable	VIF	1/VIF
EAR	1.31	0.764922
ROA	1.48	0.675089
TQ	1.21	0.828053
SIZE	3.06	0.326286
AGE	1.05	0.950300
OCF	1.15	0.866886
AST	1.12	0.892480
LEV	2.52	0.397151
GDP	23.42	0.042706
MPR	4.11	0.243384
MPR*GDP	26.08	0.038342
MPR*SIZE	4.13	0.241856
MPR Dummy	1.33	0.754361
MEAN VIF	**5.53**	

Source: Author's Construction. EAR, ROA TQ, SIZE, AGE, OCF, AST MPR, LEV, GDP, MPR SIZE, and MPR*SIZE MPR Dummy denote operational earning of firms, return on assets, Tobin's Q, size, age and operating cashflow, monetary policy rate, total leverage, economic growth, interaction of monetary policy and economic growth, the interaction between monetary policy and firm size and mpr time dummy variable respectively.*

4.5 Empirical Results and Discussions

This section presents diagnostic tests to assess the model's reliability and validity. The section also discussed the regression results to test the relationship between monetary policy decisions and corporate investment, financing, and working capital management decisions.

An initial Ordinary Least Squares (OLS) regression was run to test for the relationship between monetary policy and corporate investment, financing, and working capital management decisions. The residuals of the regression using the Breusch-Pagan / Cook-Weisberg test and Breusch Godfrey LM test were used to test for the presence of heteroscedasticity and auto correlation. These tests indicate the presence of autocorrelation and heteroscedasticity in the data set. From the literature, the presence of heteroscedasticity produces inefficient estimators and makes hypothesis tests unreliable. The inconsistencies of the standard errors make inferences from the hypothesis unreliable (Greene & Liu, 2021; Wooldridge, 2016). The presence of auto correlation also indicates that the model may be misspecified or an important variable may be omitted, leading to incorrect conclusion on the relationship between the variables.

The System Generalized Method of Moment (SGMM) was adapted to correct issues of auto correlation and heteroscedasticity found in the data set. The SGMM introduces lagged dependent variables to remove correlation between the regressor and the error terms. It does this by eliminating time-invariant unobserved effects that may be causing autocorrelation. Also, the SGMM allows error term to vary across time periods which resolves the issue of heteroscedasticity (Arellano & Bover 1995; Blundell, 1998; Wooldridge, 2016). Discussions from the diagnostic test used in assessing the presence of heteroscedasticity and auto correlation are presented below.

4.5.1 Heteroscedasticity

Heteroscedasticity is said to be present in a given regression model when the variance of the error term is not constant across different samples of the population. The presence of outliers, misspecification of models, inaccurate transformation of data, skewed distribution of regressors, and variables with different units of measurement are some of the causes of heteroscedasticity. As discussed earlier, one effect of heteroscedasticity is that it produces inefficient estimators and makes hypothesis tests unreliable (Wooldridge & Zhu, 2020).

Table 4.5 displays the results for the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity. The null hypothesis states that the variance is constant in the residuals. The p-values being less than 0.05 for the investment decision equations suggest that we can reject the null hypothesis and conclude that heteroscedasticity is present in the dataset for investment decisions.

Table 4.5 Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of INV
chi2(1) = 7.55
Prob > chi2 = 0.0060
Ho: Constant variance
Variables: fitted values of DEBT
chi2(1) = 0.00
Prob > chi2 = 0.9948

Ho: Constant variance

Variables: fitted values of WCM

chi2(1) = 1.17

Prob > chi2 = 0.28

4.5.2 Serial correlation/Autocorrelation

Serial correlation is said to be present in a dataset when there is a correlation between the errors over time. This situation arises when the data is manipulated or when the model used is not appropriately specified. Also, spatial ordering or event inertia can result in serial correlation. If issues of autocorrelation are not corrected, biased and inaccurate estimates will be produced and wrong inferences might be made (Wooldridge, 2020). The Breusch-Godfrey LM test for autocorrelation was used as it is an appropriate model for standard regressions. According to Drukker (2003), the Breusch-Godfrey test concludes that the errors are not serially correlated when the correlation between the first difference of the residuals and that of their lags is less than 0.5 after running series of simulations.

Table 4.6 presents the results for the Breusch Godfrey LM test for autocorrelation in the panel dataset used in the study. The null hypothesis states that there is no first-order autocorrelation. However, since the p-value is less than 0.05, we reject the null hypothesis and conclude that the error terms are correlated across the time, and hence auto correlation is present in the dataset.

Table 4.6 Breusch-Godfrey LM test for autocorrelation

INV

Lags (p)	Chi2	Prob>Chi2
1	7.404	0.0065

H0: no serial correlation

DEBT

Lags (p)	Chi2	Prob>Chi2
1	0.027	0.008695

H0: no serial correlation

WCM

Lags (p)	Chi2	Prob>Chi2
1	11.193	0.008

H0: no serial correlation

4.5.3 Regression Results

The study presents the regression results for sys-GMM in Tables 4.6 and 4.7. It presents the coefficients for all the variables and their standard errors which are put in parenthesis. First and foremost, the AR (2) is not significant in all the results. This indicates that some lags of the instrumental variables which are used as instruments capture endogeneity. Secondly, the number of instruments is less than the number of groups as suggested by the sys-GMM model. Finally, a probability greater than the chi-square shows that the result is robust. Table 4.6 presents the regression output of the main model which examines how monetary policy affects corporate investment, financing and working capital management decision.

Table 4.7 Regression 1: Monetary policy and corporate finance decisions

VARIABLES	INV (1)	DEBT (2)	WCM (3)
L.INV	0.976***		
	(0.0363)		
L.DEBT		-0.874***	
		(0.02)	
L.WCM			0.849***
			(0.021)
MPR	-0.0537**	-0.012*	0.791**
	(0.0012)	(0.001)	(0.271)
GDP	-0.0077	0.00136	-0.643
	(0.0026)	(0.0019)	(0.971)
SIZE	-0.00462	0.0024	11.603
	(0.0036)	(0.004)	(2.3850)
ROA	0.0534**	-1.104**	18.65
	(0.023)	(0.0729)	(23.86)
OCF	0.0181		-36.13*
	(0.060)		(20.31)
LEV			-20.12*
			(9.3300)
AGE		0.00054	
		(0.0003)	
AST		0.0928*	
		(0.314)	
TQ	0.0445**		
	(0.0054)		
EAR	-0.00121		
	(0.008)		
MPR Dummy	-0.0346*	-0.0318*	-1.179
	(0.020)	(0.015)	(6.776)
Constant	0.084	-0.016	35.36
	(0.045)	(0.038)	(24.34)
Observations	600	588	600
Number of entities	**50**	**50**	**50**
Number of instruments	18	19	19
AR(1) (P-value)	0.005	0.021	0.034
AR(2) (P-value)	0.559	0.134	0.63
Hansen Statistics (P-value)	0.487	0.38	0.19

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Source: Author's Construction. Note: INV represents capital investment, Debt represents borrowing made in year, WCM also represents working capital management days. MPR, OCF, SIZE, AGE, OCF, ROA, AST, TQ, EAR denote monetary policy rate, operating cashflow, size, age, return on asset, asset structure, Tobin's Q, and earning respectively.

4.6.1 Monetary policy and firm investment decisions

The results of the regression show that past values of investment decisions positively affect the current investment decision of firms at a 1% significant level, implying that firm investment in the previous year is likely to positively increase investment the firms can undertake in current year periods due to firm persistence and consistency. This may also be due to investor confidence from previous investment decisions (Gill et al., 2018).

The results of the regression also show a negative relationship between monetary policy rate and investment decisions of firms. Monetary policy negatively affects investment decisions of firms at a 5% level of significance. This implies that contractionary monetary policies increase the cost of capital of firms, which is likely to reduce the investment firms can undertake. This reduction in investment can also be explained by the real business cycle theory and the risk-taking behavior of firms, which indicates that price increments influence the cost of capital which may cause firms to delay or abandon viable investment opportunities. The distributional effect of monetary policy, according to the real business cycle, affects output through interest rate and price. This is evident in the regression results, as tightening monetary policy rates is seen to negatively affect overall investment decisions that firms can undertake. This also follows similar predecessor studies such Yang et al. (2017) and Wan and Lee (2023), who observed that in periods of tightening monetary policy, investment decisions were negatively affected. Tumale et al. (2021) also in a study conducted in SSA indicated that firms in countries with tightening monetary policy rate experienced low investment due to high cost of capital and price.

Tobin's Q is an independent variable that has a positive relationship with investment decisions of firms at a statistically significant level of 5%. Tobin's Q indicates the growth potential of a firm. Therefore, an increase in Tobin's Q is likely to attract more investors and increase the investment decisions firms can undertake. This finding is similar to the findings of Dang et al. (2020) and Cao et al. (2019), who found that higher Tobin's Q values indicate a firm's ability to replace assets at their market price, signalling high growth potential. Cao et al. (2019) indicate that firms are financed by both inside and outside investors. Hence, to attract investments, firms need to assure investors of value for money through their asset replacement potential, in line with the signalling theory. Firms with higher TQ are likely to have more potential to increase their investment, as it increases investors' confidence and encourages firms to pursue more investment decisions (Verona, 2020).

Return on assets is also seen to have a positive relationship with investment decisions of firms at a 5% statistical significance level from the regression. This implies that, on average, as a firm's net return on assets increases, it will be able to use its profit to increase the investment decisions it can undertake. Firms with high profits have more potential to grow and expand their investment decisions (Seo and Soh, 2019). Studies conducted by Guerard et al. (2020) and Hala et al. (2020) indicate similar findings that firms in selecting investment opportunities will consider those that will yield the highest return causing the positive relationship between return on asset and investment decisions of firms. This corroborates the results of the study from Table 4.7 that return on asset has a positive relationship on investment.

MPR Dummy was seen to have a negative relationship with investment decisions of firm, at a 10% level of significance which suggests that investment decisions reduce in periods of monetary contraction. The intuition behind this lies in the fact that a monetary tightening raises the cost of

capital and limits the availability of long-term funds. This can be linked to the real business cycle theory and the signalling theory which suggests that price increments influence the cost of capital, which may cause firms to delay or abandon viable investment opportunities in periods of monetary contraction, interest rates and prices increase. This affects cost of capital, which tends to reduce viable investment decisions a firm can undertake (Ghosh et al., 2021; Rafique et al., 2021).

4.6.2 Monetary policy and financing decisions

From the regression in table 4.7, past values of financing decisions influence current financing decisions negatively at a 1% statistical significance level. Firms with high debt from previous years are likely to have high finance costs and financial burdens. This is likely to reduce the debt financing firms can employ in the current year to manage their leverage and bankruptcy risks.

The results from the regression also show that there is a negative relationship between monetary policy rate and DEBT of firms. Monetary policy negatively affects the financing decisions of firms at a 10% level of significance. This implies that tightening monetary policy rates may increase the cost of capital for firms and their financial burdens. This high cost of capital may restrict the capital or funds that firms can borrow to support their operations. This can be linked to the capital structure theory of firms, which suggests that firms with high cost of capital as a result of high interest rates are likely to have lower asset values due to high discounting rates, limiting the level of debt financing firms can use to support their operations, which is also in line with the findings of De Marco et al. (2021) and Li et al. (2022) that contractionary monetary policy negatively affects the cost of financing and financing decisions of firms.

Return on assets (ROA) is also seen to have a negative relationship with debt. ROA is seen to significantly affect debt at a 5% significant level. This implies that as firms increase their net profit, it will reduce their external credit dependency. External financing through debt usually comes with

finance cost and increased cost of operations of firms. Firms with high profits as rational economic agents will reduce their dependency on external financing and plough back profits to support their operations and minimize interest or finance expense. The real business cycle theory and the signalling theory of firms suggest that firms as rational economic agents seek to minimize cost. Hence, firms with high return on asset will reduce their dependence on debt financing in periods of tightening monetary policy rates and plough back returns (Ali & Shaik, 2022). This corroborates findings of Li et al. (2022) and Nazir et al. (2022) that return on assets has a negative relationship with debt, as firms will be more reliant on business profits than debt financing, particularly in periods of high interest rates.

Asset structures of firms are also seen to have a positive impact on financing decisions of firms and are statistically significant at 10%. This implies that as firms' asset tangibility increases, their collateral value also improves, and their ability to obtain external financing to support their operational activities increases. Firms with high asset tangibility improve investors' confidence to provide funding to support their operations, which is in line with findings of Li et al. (2022), Naeem and Li (2019), and Zubair et al. (2020). The capital structure theory of firms suggests that firms with high asset value are noted to be more creditworthy during credit assessments. Such firms are more likely to easily obtain debt financing to support their business operations (Soesetio et al., 2022). Hence, asset structures of firms are likely to have a positive relationship with financing decisions.

MPR Dummy was seen to have a negative relationship with investment decisions of firm at a 10% level of significance. This suggests that firms reduce debt financing options to support their operations in periods of monetary contraction, as monetary tightening raises the cost of capital and limits the availability of long-term funds. This can be linked to the capital structure theory that

suggests that firms aim to have optimal capital stock and hence will reduce debt financing options, which will increase their risk of high finance cost and bankruptcy (Durante et al., 2022; Poursoleiman et al., 2020).

4.6.3 Monetary policy and firm working capital management decisions

The results of the regression also show that past values of financing decisions influence current working capital management decisions negatively. Previous years' cash conversion cycle days are likely to be persistent in current years as well. This may be because the firms might be faced with similar working capital management conditions from previous years. Firms with high working capital management days or cash conversion cycle days are likely to still have persistent outcome in current years if working management strategies remain the same (Akpadaka & Edeh 2024 et al., 2024; Wassie, 2021).

The results of the regression also show that there is a positive relationship between monetary policy rate and working capital management decisions of firms. Monetary policy affects the WCM decisions of firms significantly at a 5% level of significance. Tightening monetary policy rates is likely to increase the cash conversion cycle, as it will take a longer time for firms to sell their inventories and recover their receivables due to price hikes and surging inflation as a result of high interest rates that come with contractionary monetary policy. In linking this to the real business cycle theory and net working capital theory, economic agents may reduce consumption due to the decline in their nominal income (Amberg et al., 2022; Alverez et al., 2021). Final consumers may reduce their expenditure as a result of price hikes due to increasing interest rates. This may affect firms' liquidity as their capital may be trapped in their current asset (Cheng, 2019).

Also, contractionary monetary policy may increase the time firms have to settle their payable obligations, as tightening monetary policy rates may affect the liquidity of inventory and receivables to settle other payable obligations. This may affect the ability of firms to obtain supplier financing and the smooth running of operations (Alvarez et al., 2021). This corroborates the findings of Dbouk et al. (2020) and Soukhakian and Khodakarami (2019) that monetary policy negatively affects WCM decisions of firms, as it affects the ability of firms to convert their current asset into cash and to settle their current liabilities.

Operating cash flow (OCF) of firms is seen to have a negative relationship with working capital management decisions which is statistically significant at 10%. High cash-flow from operating activities indicates the resilience of firms, which is likely to attract supplier financing to support a firm's operations. This supplier financing may increase payables and payable days, which would reduce the cash conversion cycle, similar to findings by Soukhakian and Khodakarami (2019) and Zimon and Tarighi (2021).

Leverage (LEV) is seen to have a negative relationship with working capital management. LEV is seen to significantly affect working capital management at a 10% significant level. This indicates that firms' operations may be largely financed by short-term debt, such as trade credits amongst others. These short-term financing options are likely to increase the payables and the payable days of firms (Amponsah-Kwatiah & Asiamah, 2021). These high payable days are likely to reduce cash conversion cycles and working capital management days of firms, which is similar to the findings of Akbar et al. (2022) and Salaw and Alao (2014). These empirical studies indicate that firms, especially in SSA, are highly dependent on debt and, hence, tend to take on trade credit to finance their operation. These firms may have high leverage levels and payable days, causing reduced cash conversion cycles.

Table 4.8: Monetary policy and corporate finance decisions with interaction effects (Regression 2)

VARIABLES	INV (4)	DEBT (5)	WCM (6)
L.INV	0.609***		
	(0.0453)		
L.DEBT		-0.722***	
		(0.0149)	
L.WCM			0.993***
			(0.0033)
MPR*GDP	-0.007	-0.129**	-5.831
	(0.059)	(0.044)	(28.49)
MPR*SIZE	0.00076*	0.00096	0.0045
	(0.006)	(0.0004)	(0.1980)
MPR	-0.0436**	-0.066*	0.520**
	(0.01)	(0.018)	(0.59)
SIZE	0.0254**	0.0039	21.582
	(0.0102)	(0.0053)	(3.7750)
ROA	0.0342	-0.0181	17.08
	(0.0375)	(0.0288)	(12.87)
OCF	0.0211		-39.66*
	(0.0460)		(20.98)
LEV			-15.95*
			(14.026)
AGE		0.00041	
		(0.0029)	
AST		0.0428*	
		(0.0259)	
TQ	0.0251**		
	(0.0084)		
EAR	-0.00175		
	(0.0801)		
MPR Dummy	-0.0065*	-0.0031*	-3.458
	(0.002)	(0.006)	(9.845)
Constant	0.113**	0.00828	19.77
	(0.05)	(0.03)	(16.77)
Observations	650	638	650
Number of entities	50	50	50
Number of instruments	18	19	19
AR(1) (P-value)	0.014	0.003	0.002
AR(2) (P-value)	0.595	0.696	0.28
Hansen Statistics (P-value)	0.221	0.154	0.422

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Source: Author's Construction. Note: INV represents capital investment, Debt represents borrowing made in year, WCM also represents working capital management days. MPR GDP, MPR*SIZE, OCF, SIZE, AGE, OCF, ROA,*

AST, TQ and EAR denote monetary policy rate interaction with economic growth, monetary policy interaction with firm size, operating cashflow, size, age, return on asset, asset structure, Tobin's Q, and earning respectively.

Table 4.7 presents the regression output of the main model with an interaction between monetary policy and economic growth (MPR*GDP) and monetary policy and firm size (MPR*SIZE). For investment decisions, all variables with significant coefficients maintained their signs and significance with results in the basic model (regression 1), with the exception of firm size. Firm size was found to have a positive relationship with investment decisions of firms at a statistically significant level of 5%. Large firm size may be as a result of firm asset. This increases the value of firms and reflects a firm's persistence towards expansion. Firms with larger sizes are therefore likely to build more investor confidence and signal a potential for growth and investment decisions (Banchi et al., 2022; Schoemaker, 2021). This is also in line with the real business cycle theory and the Tobin Q theory which suggests that firms with larger assets due to their replacement cost ability, are able attract investors and withstand monetary policy shocks as compared to firms with smaller asset values (Buch et al., 2019; Husted et al., 2020). Hence, firms with large sizes are likely to have positive relationships with their investment decisions.

Additionally, the interaction between monetary policy and firms' size has a positive relationship with firms' investment decisions at a 10% significance level. This suggests that the interaction of monetary policy with firm size has a differential impact on corporate investment decisions. This may be because, based on the size of firms, monetary policy adjustments may not have a significant impact on the corporate investment decisions firms undertake. As firm size increases, firms may have higher collateral values reducing the impact of monetary policy shocks. Also, as firms' size increases, they may be able to obtain finance from other sources, reducing the impact of monetary

policy on their investment decisions (Ghosh & Sensarma, 2004). Firm size, as indicated by Tobin's Q theory and the real business cycle theory, can attract investors due to their asset values and asset replacement cost ability. Firm size builds investors' confidence and signals growth potential, increasing the ability of firms to attract financing to support their operations, when monetary policy rates are uncertain (Banchi et al., 2022; Schoemaker, 202l; Buch et al., 2019; Husted et al., 2020).

Similarly, for financing decisions of firms, all significant variables also maintained their sign and significance with the basic model (regression 1). The results from regression 2 also show a negative relationship between the interaction of monetary policy and economic growth in corporate financing decisions. This may imply that the effect of increasing economic growth with monetary policy rates reduces firms' dependency on debt financing. This may suggest that increasing economic growth increases aggregate consumption and demand in an economy. This may result in firms having higher profits in periods of high economic growth, reducing firms' dependency on external financing sources to support their operations (Ridlo & Wardani, 2020). The negative relationship between monetary policy and economic growth may also imply that in periods of high monetary policy rates, firms as rational economic agents reduce the use of debt financing due to the risk high interest expense and bankruptcy have on their operations irrespective of the economic growth levels the economy faces (Ottonello & Winberry, 2020; Huang et al., 2022).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter which is made up of five sections concludes the thesis. Section 5.1 introduces the chapter. Section 5.2 presents a summary of the findings of the empirical study. Section 5.3 draws conclusion for the findings from the empirical study. Section 5.4 outlines policy recommendations based on the findings from the study. Section 5.6 ends the chapter, providing areas for further research.

5.2 Summary

The motivation for the study was to establish that firm corporate finance decisions are imperative for firm growth. Optimal corporate finance decisions are essential for economic growth, particularly in developing countries as well-structured corporate finance decisions are vital for sustainable economic growth through increased productivity and industrial growth.

Optimal corporate finance decisions are affected by macroeconomic factors such as monetary policy. While some scholars have examined how monetary policy affects corporate finance decisions in developed economies, the impact of monetary policy on developing economies in sub-Saharan Africa remains an area of keen interest with little empirical evidence.

The objective of the study was to examine whether monetary policy affects corporate finance decisions, specifically firm investment decisions, financing decisions and working capital management decisions. The study took 50 firms from the four largest stock exchanges in sub–Saharan Africa, namely: Ghana, Nigeria, Kenya and South Africa over a thirteen-year period, from 2010 to 2022.

Overall, the results show that contractionary monetary policy has a negative impact on the investment decisions of firms as it increases interest rates and cost of capital. High cost of capital reduces cashflow from viable investment opportunities of firms, making them unattractive. These results suggest that the lagged dependent variable of investment had a positive influence on investment decisions, indicating that past values of investment are likely to affect positively the investment decisions firms take in the current year. Other firm-level independent variables, such as earnings, size, and return on assets, were also seen to have a positive impact on the investment decisions firms undertake, while contractionary monetary periods represented by MPR dummy was seen to have a negative relationship with investment decisions.

With reference to objective two, which examined whether monetary policy affects firm financing decisions, the study shows that contractionary monetary policy reduces DEBT or Long-term borrowing. This is because firms are sensitive to cost of capital changes. Contractionary monetary policy tends to increase interest rates and cost of capital and the financial burden of firms. This in effect deters firms from optimizing the use of debt financing to support their operation. The study also found that the lagged dependent variable, return on asset and MPR dummy have a negative relationships with debt whilst, age had a positive relationship with debt.

In line with objective three of the study, it was identified that monetary policy has a positive relationship with cash conversion cycles or working capital management days. This means that as monetary policy rate increases, working capital days increase. This means that it takes firms on average longer days to recover short-term debts, sell their inventories and pay their liabilities. The study also found that the lagged dependent variable has a positive relationship with WCM days, indicating persistency. Firms with high cash conversion cycles are likely to have similar situations

in current years. The results also indicate that firm operating cashflow and leverage have a positive impact on working capital management decisions of firms.

For objective four, it was identified that the interaction of monetary policy and firm size has a positive relationship with firm investment decisions. This implies that as firm size increases, firms have a larger collateral base to attract investors for expansion. Also, Firms with large sizes have a stronger reputation and can attract investors to aid in expansion.

Lastly, for objective five, the interaction between monetary policy and economic growth was also seen to have a negative effect on firm financing decisions. This implies that firms in environments with increasing economic growth are likely to perform well and have high profits. These firms can plough back these profits, reducing their dependency on the use of long-term financing options.

This clearly indicates that for optimal corporate finance practices, firms need to have stable macro and microeconomic conditions. Monetary policy is seen to be a macroeconomic policy that can influence the rate at which firms can obtain finance to expand their investment portfolios and effectively manage their short-term operations.

5.3 Conclusions

The study sought to examine the linkage between monetary policy and corporate finance decisions, namely: investment, financing and working capital management decisions in sub–Saharan Africa. In all 50 firms across the four largest stock exchanges in the sub-Saharan African region, which are Ghana, Nigeria, South Africa, and Kenya were covered. Using a quantitative approach of the sys-GMM estimation technique the study examined whether or not monetary policy affects corporate finance decisions.

The study found that contractionary or tightening monetary policy has a negative impact on investment, financing, and working capital management decisions of firms in sub-Saharan Africa. In line with the real business cycle theory of firms and the signalling behavior of firms, it was found that contractionary monetary policies affect interest rates and cost of capital of firms, which in turn affects the viable investment opportunities firms can undertake. Similarly, it was observed that high cost of capital restricts the use of debt financing firms may need to support their operations which affects cost of production and operation. This may equally affect the ability of firms to convert their current asset into cash which may negatively affect their cashflow and general operation. Similarly, the study found that firm-level variables such as size, earnings, leverage, return on assets and MPR dummy are likely to affect corporate finance decisions.

5.4 Recommendations

Based on the findings, it can be recommended that, to achieve optimal corporate finance decisions of firms, the government and central banks should consider the following recommendations.

From the findings of the study, contracting monetary policy through its transmission channel, is likely to increase interest rates and prices of goods and services such as credit finance cost. This may affect the ability of firms to use debt financing to support their operations due to high-cost credit, which can retard investment and firm growth. It can be recommended therefore that expansionary monetary policy will be beneficial for firm growth and investment, as expansionary monetary policy is likely to reduce the interest rates which is likely to influence cost of capital of investment projects by making credit more available and attractive to support their investment potential.

SSA countries are usually characterised by high economic growth indicators such as inflation, interest rates, exchange rates, etc. In managing these economic challenges, central banks tend to

pursue contractionary monetary policy. Unfortunately, these monetary policy adjustments affect interest rate and price, making it difficult for firms to obtain credit to support their business operations. Firms with high financing costs are likely to have high cost of capital, making viable investment opportunities unattractive. This may also affect the ability of firms and businesses to grow and expand. Given the importance of industrialization through firm growth in SSA, it can be recommended that central banks pursue expansionary monetary policy or have well balanced monetary policies to enable firms optimize the use of debt financing, as expansionary monetary policies will reduce the cost of obtaining debt financing and reduce overall business cost. This is likely to enable firms pursue profitable investment decisions, expand business operations and promote overall economic growth.

Overall, it can be recommended that central banks should have a well-balanced monetary policy design, which could be through expansionary monetary policy design to enable firms reduce finance cost, expand capital projects and better manage their working capital management decisions. Governments and central banks should work to ensure monetary policy decisions create stable macroeconomic environments that will aid firms' growth, industrialization and economic development.

5.5 Recommendations for Future Research

Future research can analyze the effects of monetary policy on other corporate finance areas such as dividend decisions of firms. In addition, due to the dense population of small and micro enterprises in SSA, further research can be conducted to ascertain the effect of monetary policy on unlisted firms of both small and micro enterprises in sub–Saharan Africa.

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