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THE INTERPLAY BETWEEN LIQUIDITY GLUTS, CREDIT MARKETS AND ECONOMIC GROWTH IN SUB-SAHARAN AFRICA





September 2025

MBONGENI WELCOME SHONGWE

THE INTERPLAY BETWEEN LIQUIDITY GLUTS, CREDIT MARKETS AND ECONOMIC GROWTH IN SUB-SAHARAN AFRICA

BY

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STUDENT NUMBER: 2753295

A PhD Thesis Submitted in Fulfilment of the Requirements for the

Degree of Doctor of Philosophy

of the

University of the Witwatersrand, Johannesburg

September 2025

Supervisor: Professor Imhotep Paul Alagidede

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DECLARATION

I, Mbongeni Welcome Shongwe, hereby declare that the thesis, which I submit for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg, is my original work and has not been submitted by me for a degree at this or any other tertiary institution.

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Date: September 2025

THE INTERPLAY BETWEEN LIQUIDITY GLUTS, CREDIT MARKETS AND ECONOMIC GROWTH IN SUB-SAHARAN AFRICA

ABSTRACT

Liquidity gluts, characterized by excess liquidity in the financial system, have become a significant concern in many Sub-Saharan African (SSA) economies. These surpluses can lead to destabilizing effects on credit markets, asset prices and broader economic performance. While liquidity can stimulate economic growth by promoting investment and consumption, when mismanaged, it can also result in inflationary pressures, asset bubbles and inefficient capital allocation. Macroeconomic policies, particularly those related to monetary and fiscal measures, are critical in mitigating the detrimental effects of liquidity gluts. However, the effectiveness of these policies across SSA countries has remained underexplored, particularly with respect to their role in addressing the root causes of liquidity surpluses and ensuring sustained economic growth.

Despite the growing importance of liquidity management in SSA, there is limited empirical research on the specific drivers of liquidity gluts and how they affect credit markets and economic growth in the region. Much of the existing literature focuses on general macroeconomic policies without deeply exploring the mechanisms through which liquidity surpluses impact credit markets, asset prices and economic stability. Additionally, there is a lack of comprehensive analysis on the role of institutional factors, such as the behaviour of pension funds and government expenditure, in shaping liquidity dynamics. The relationship between liquidity and economic growth is often oversimplified, neglecting the complexity of how excess liquidity can either stimulate or hinder development, depending on its proper channelling.

This study fills these gaps by providing a detailed and systematic analysis of liquidity gluts in SSA, focusing on their causes, transmission mechanisms and impacts on economic growth. The research introduces a novel approach by combining advanced econometric techniques—such as ARDL models, VAR and GMM to assess both short-term and long-term relationships between liquidity surpluses and key economic variables. It also uniquely integrates institutional dynamics, such as the role of pension funds and government expenditure, in explaining liquidity management challenges in the region. By offering insights into the effectiveness of macroeconomic policies in mitigating liquidity-related risks, this study contributes to a more nuanced understanding of liquidity management in SSA. Furthermore, the research provides actionable policy recommendations for improving financial intermediation, strengthening banking regulations and promoting targeted public investments to channel excess liquidity into productive sectors, thus supporting sustainable economic growth across the region.

The study finds that while liquidity surpluses can drive economic growth by stimulating investment and borrowing, their impact varies significantly across Sub-Saharan Africa (SSA). Countries like Ghana and Botswana have successfully channelled excess liquidity into productive investments, promoting economic growth. However, in nations such as Equatorial Guinea and Lesotho, external dependencies, such as oil revenues and inflationary pressures, have hindered the effective use of liquidity, limiting broader economic development. The research also highlights the role of institutional factors, such

as pension fund investments and government fiscal policies, in shaping liquidity dynamics. Excess liquidity has been found to distort credit markets and inflate asset prices, leading to potential asset bubbles and undermining market stability.

Policy implications suggest that SSA countries need improved coordination between monetary, fiscal and financial policies to manage liquidity effectively. This includes aligning government spending with investments in productive sectors like infrastructure and manufacturing to absorb excess liquidity. Strengthening banking regulations and financial intermediation is crucial to avoid inflationary pressures and market distortions. Furthermore, regulating institutional investors and establishing early warning systems to monitor liquidity imbalances can help stabilize credit markets. These measures will help countries harness liquidity for sustainable economic growth, reduce the risks of economic overheating and strengthen resilience to external shocks.

The study provides valuable insights into liquidity management in Sub-Saharan Africa (SSA), but it has several limitations. First, while the research focuses on a subset of SSA countries, the findings may not be fully generalizable across the entire region due to the diversity in economic structures, institutional frameworks and external dependencies. Additionally, the study relies heavily on quantitative econometric methods, which, while robust, may not capture the full complexity of informal markets and the broader socioeconomic factors that influence liquidity dynamics in SSA. Another limitation is the potential data constraints in some countries, which could affect the accuracy and completeness of the analysis, particularly in smaller or less developed economies.

Future research could expand on this study by incorporating a more diverse set of countries across the region, including those with different levels of development and varying external dependencies, to examine whether the observed patterns hold universally. It would also be beneficial to include a deeper qualitative analysis of institutional dynamics, exploring how governance structures, political economy factors and informal sectors influence liquidity management. Additionally, future studies could investigate the long-term effects of liquidity surpluses on socioeconomic outcomes such as income inequality and poverty reduction, as well as explore the role of digital financial innovations in improving liquidity management in SSA.

Keywords: Asset Prices, Credit Markets, Economic Growth, Financial Intermediation, Institutional Factors, Liquidity Gluts, Macroeconomic Policies, Sub-Saharan Africa (SSA)
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2. Mbongeni, S. W., & Alagidede, I. P. (2024). Triggers of Liquidity Glut in Southern Africa. Journal of Economic and Financial Sciences. ISSN: 1995-7076 (PRINT), ISSN: 2312-2803 (ONLINE). Retrieved from https://jefjournal.org.za .
3. Mbongeni, S. W., & Alagidede, I. P. (2024). Evaluating Macroeconomic Policy Strategies for Managing Liquidity Surpluses in Africa. International Review of Economics and Finance, 3(1), 66–83. ISSN: 1059-0560. Retrieved from https://www.journals.elsevier.com/international-review-of-economics-and-finance

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DEDICATION

With a heart full of gratitude, I dedicate this project to the Almighty God, whose grace and strength have guided me every step of the way. Your unwavering support has illuminated my path throughout this journey and I am eternally thankful for your divine presence in my life.

To my beloved friends and the entire Shongwe family: your steadfast love and encouragement have been my sanctuary during this endeavor. Your financial, spiritual and emotional support has been a beacon of hope, helping me navigate the challenges of this journey. I cherish the laughter, the shared moments and the unwavering belief you have shown me—each of you has left an indelible mark on my heart.

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CHAPTER 1: INTRODUCTION

1.1 Background

Liquidity gluts, defined as an oversupply of low-cost money within a financial system that exceeds the demand for credit, have become a significant concern in many Sub-Saharan African (SSA) economies. While liquidity can stimulate economic growth by promoting investment and consumption, mismanagement can lead to financial instability, inflationary pressures and asset bubbles. The effectiveness of macroeconomic policies, particularly monetary and fiscal measures, is critical in mitigating the detrimental effects of liquidity gluts. However, the role of these policies in addressing the root causes of liquidity surpluses and ensuring sustained economic growth in SSA remains underexplored.

The phenomenon of liquidity glut in SSA has garnered attention due to its potential negative consequences on financial stability. Excessive borrowing and speculative activities often accompany liquidity gluts, posing challenges that increase the vulnerability of the financial system (Kastrati, 2022; Saxegaard, 2006). The influx of excessive liquidity distorts market signals, leading to misallocation of resources and artificially inflated asset prices. This misallocation hampers economic growth and impedes the optimal utilization of available resources, potentially hindering long-term development prospects (Parosa, 2019).

Moreover, liquidity gluts can exacerbate income inequality, benefiting primarily those with access to financial markets while leaving others behind (Kyei-Mensah, 2023). This socioeconomic inequality not only erodes social cohesion but also poses risks to long-term economic stability. In SSA, the reliance on commodity exports and the influx of foreign investment contribute to excess liquidity, particularly when effective management measures are lacking. Countries like Angola, Nigeria and Ghana exemplify how high global commodity prices can lead to significant liquidity surpluses (Nissanke, 2019; Saxegaard, 2006).

This study aims to fill the gaps in existing literature by providing a systematic analysis of liquidity gluts in SSA, focusing on their causes, transmission mechanisms and impacts on economic growth. By employing advanced econometric techniques, the research will assess both short-term and long-

term relationships between liquidity surpluses and key economic variables. Additionally, it will integrate institutional dynamics, such as the role of pension funds and government expenditure, to explain liquidity management challenges in the region. The findings will offer actionable policy recommendations for improving financial intermediation and promoting targeted public investments, ultimately supporting sustainable economic growth across SSA.

1.2 Problem Statement

Liquidity gluts in African countries present formidable challenges for credit markets and economic growth, exerting significant macroeconomic imbalances and constraining credit availability, thereby adversely affecting foreign investment, remittances and overall economic growth (Eichengreen et al., 2021; Kyei-Mensah, 2023). Despite extensive exploration in the existing literature by esteemed authors such as Acharya (2022), Agénor (2010), Mayer (2021), Canuto (2014) and Saxegaard (2006) on the macroeconomic implications of liquidity gluts and the employed policy tools to counter their adverse effects, a notable empirical gap persists in comprehensively understanding the specific effectiveness of such policies within African contexts. Previous studies have primarily focused on theoretical frameworks and general policy recommendations, often overlooking the nuanced dynamics of liquidity management in diverse African economies. This lack of specificity highlights the need for targeted research that evaluates the actual outcomes of policy interventions in addressing liquidity gluts.

Calderón and Boreux (2016) noted that African countries are characterized by high levels of external debt, a lack of domestic resources and high inflation, leading to increased vulnerability to liquidity gluts. For instance, data from the IMF reveals that inflation rates in some African countries have reached alarming levels, with rates exceeding 20% in certain cases. Additionally, the African Development Bank reports that external debt burdens in Sub-Saharan Africa have been steadily rising, reaching an average of 59% of GDP in 2022, with countries such as Ghana, Zambia and Ethiopia exceeding the debt sustainability ratios. These statistics underscore the significant challenges faced by African countries in managing liquidity gluts and their subsequent impact on economic stability and growth.

The impact of liquidity gluts on credit markets holds immense significance that cannot be overstated. Such events can precipitate the contraction of credit markets, leading to a sharp downturn in economic output and heightening the risk of recession as investors retreat from the market (Bernanke, 2018). This decline in output exacerbates the already high levels of

unemployment, poverty and inequality (Calderón & Boreux, 2016). Developing countries, particularly those in Africa, encounter additional challenges in navigating the repercussions of liquidity gluts due to weak regulatory frameworks, limited institutional capacity and constrained fiscal space for implementing countercyclical policies (Mayer, 2021; Edo, 2020; Taskinsoy, 2023).

Consequently, policymakers often resort to employing macroeconomic measures such as quantitative easing, increased public expenditure and tax incentives to alleviate the adverse effects of liquidity gluts on credit markets and foster economic growth in African nations (Latif, 2023). The persistent recurrence of liquidity gluts in African countries, despite previous policy interventions, is well-supported by empirical research. Arestis (2017) has extensively documented the iterative application of macroeconomic policies, including measures such as lowering interest rates, quantitative easing, increased public spending and tax incentives, in response to liquidity gluts in African countries. While this work has contributed to understanding the policy responses to liquidity gluts, it also highlights a critical weakness in the existing literature. The cyclical recurrence of policy interventions underscores the insufficiency of existing policy responses in effectively addressing and mitigating the adverse effects of liquidity gluts on credit markets and economic growth, particularly in Sub-Saharan Africa. This cyclical nature of policy responses points to an underlying lack of durable resolution to the challenges posed by liquidity gluts, thereby emphasizing the need for a comprehensive understanding of the never-ending cyclical policy conundrums inherent in addressing liquidity gluts in African contexts.

In addition to Arestis's seminal work, Latif (2023) and Taskinsoy (2023) have made significant contributions to understanding the challenges of liquidity gluts in African countries and the corresponding policy responses. Their research focuses on the difficulties faced by developing countries, particularly those in Africa, in navigating the effects of liquidity gluts due to weak regulatory environments, limited institutional capacity and constrained fiscal space for countercyclical policies. However, a notable limitation in their research is the lack of rigorous empirical analysis of the outcomes of actual policy responses to liquidity glut episodes in African countries. While their work provides valuable insights into the practical challenges, there is a pressing need for quantitative analysis and evidence-based evaluation of the effectiveness of specific policy interventions in addressing liquidity gluts. This gap in empirical research limits the comprehensive understanding of the effectiveness of macroeconomic policy interventions in

African contexts and the potential for tailored, context-specific policy frameworks.

Thus, while Taskinsoy and Latif's literature contributes to the practical understanding of the challenges faced by African countries in managing liquidity gluts, it falls short in providing a comprehensive empirical analysis of policy outcomes. This highlights the importance of further research that combines practical insights with rigorous empirical analysis to evaluate the effectiveness of policy interventions in mitigating the adverse impacts of liquidity gluts on credit markets and economic growth in African contexts. Such research would provide valuable guidance for policymakers in designing context-specific policy frameworks to address the unique circumstances of individual countries and enhance their capacity to effectively manage liquidity gluts.

1.3 Research Objectives

The primary objective of this study is to assess the efficacy of macroeconomic policies in alleviating the detrimental effects of liquidity gluts on credit markets and economic growth in Sub-Saharan Africa. Specifically, the research investigated the implementation of monetary and fiscal measures in a sample of Sub-Saharan African countries, evaluating their effectiveness in mitigating the impact of liquidity gluts on credit markets and their subsequent influence on economic growth.

The specific objectives of the study are to:

1. Identify the causes and triggers of liquidity gluts in a subset of SSA countries that are susceptible to excess liquidity[1].
2. Analyse the impact of liquidity gluts on credit markets in SSA and their transmission mechanism to asset prices and returns.
3. To investigate the effectiveness of macroeconomic policies in mitigating the effects of liquidity gluts.

[1] South Africa, Nigeria, Angola, Ethiopia, Kenya, Tanzania, Ghana, Côte d'Ivoire, Uganda, Mozambique, Zambia, Cameroon, Senegal, Democratic Republic of Congo, Equatorial Guinea, Liberia, Rwanda, Sudan, Chad, Mali, Niger, Burkina Faso, Malawi, Guinea, Benin, Tunisia, Mauritius, Botswana, Namibia, Eswatini and Lesotho.

1.4. Research Questions

The study seeks to answer the following research questions:

1. What are the causes and triggers of liquidity gluts in Sub-Saharan African (SSA) countries that are susceptible to excess liquidity?
2. How do liquidity gluts impact credit markets and economic growth in SSA and what are the transmission mechanisms to asset prices and returns?
3. How do liquidity gluts influence the effectiveness of macroeconomic policies?

1.5 Significance of the study

The study on the interplay between liquidity gluts, credit markets and economic growth in Sub-Saharan Africa (SSA) is of paramount importance due to the region's unique economic challenges and opportunities. Recent events, such as the liquidity surges experienced in Nigeria and Kenya, highlight the urgent need for effective macroeconomic policies. In Nigeria, rising oil prices have led to a significant liquidity glut, resulting in inflationary pressures and currency depreciation. Similarly, Kenya's burgeoning tech sector has attracted substantial foreign investment, creating a liquidity surplus that strains local credit markets. In 2023, Nigeria experienced a significant liquidity glut as rising oil prices led to increased capital inflows, which, while initially beneficial, resulted in inflationary pressures and currency depreciation. Similarly, Kenya's burgeoning tech industry attracted substantial foreign investment, creating a liquidity surplus that strained local credit markets and exacerbated economic inequalities. These instances underscore the critical need for policymakers and investors to understand how to navigate the complexities of liquidity management effectively.

Given the limited policy flexibility and sluggish global economic growth, it is crucial to thoroughly examine how macroeconomic policies can alleviate the adverse impacts of liquidity gluts. African countries possess unique economic, political and social contexts that demand tailored policy responses. This study aims to provide invaluable insights into the effectiveness of macroeconomic policies within these contexts, specifically addressing the negative effects of liquidity gluts on credit markets and economic growth. In a global economic climate characterized by trade disputes and policy uncertainties, identifying effective macroeconomic policies to counteract unfavourable economic effects becomes increasingly critical for both policymakers and investors.

The urgency of addressing liquidity gluts is further amplified by their potential to exacerbate existing economic inequalities and hinder long-term development prospects. For instance, Zambia's liquidity surplus has paradoxically coincided with elevated borrowing costs for small and medium-sized enterprises (SMEs. This outcome is not anomalous but rather indicative of deeper structural and institutional constraints within the financial system. Despite the availability of excess liquidity, banks in Zambia have adopted a risk-averse stance, driven by concerns over creditworthiness, macroeconomic volatility, and regulatory compliance. This cautious approach has led to tighter lending standards, disproportionately affecting SMEs that typically lack substantial collateral or formal credit histories. Additionally, asset price inflation fueled by surplus liquidity has redirected financial flows toward speculative investments, reducing the incentive for banks to extend credit to productive but riskier sectors. Expectations of monetary policy tightening have further discouraged long-term lending, as financial institutions anticipate future interest rate hikes. Moreover, large firms with stronger balance sheets and established banking relationships have crowded out SMEs by absorbing a significant share of available credit. Regulatory constraints, including stringent capital adequacy requirements and limited credit scoring infrastructure, have compounded these challenges. Consequently, the liquidity surplus has failed to translate into affordable credit for SMEs, underscoring the need for targeted reforms to improve financial intermediation and enhance inclusive access to finance.

Moreover, the instability associated with liquidity gluts can lead to heightened volatility in financial markets, which is a significant concern for investors. In recent years, SSA bond markets have experienced fluctuations that can deter investment, as investors become wary of potential losses. The ability to navigate these liquidity challenges is crucial for maintaining investor confidence and ensuring a stable economic environment. The risk of sudden capital flight during periods of liquidity gluts can exacerbate macroeconomic instability, further highlighting the urgency for policymakers to develop and implement robust strategies that can effectively manage these situations.

Additionally, the implications of liquidity gluts extend beyond immediate financial concerns; they can also impact broader economic stability and growth prospects. Policymakers and investors alike must recognize that ineffective management of liquidity can lead to long-term consequences, including increased poverty levels, reduced economic growth and diminished foreign investment.

As such, timely and effective interventions are essential for mitigating these risks and ensuring a resilient economic future for Sub-Saharan African nations.

In addition to its substantive contributions, this study introduces methodological advancements that significantly enhance the existing literature. Employing a robust econometric methodology on a country-by-country basis, the study incorporates various techniques such as Autoregressive Distributed Lag (ARDL) models, cointegration analysis, Two Stage Least Squares (2SLS), Vector Autoregression (VAR) and impulse response analysis, all supported by proper diagnostics. By utilizing these rigorous econometric techniques, the study aims to provide reliable empirical evidence regarding the effectiveness of macroeconomic policies in mitigating the adverse consequences of liquidity gluts on credit markets and economic growth in Sub-Saharan Africa.

This methodological contribution is particularly noteworthy as it addresses a critical gap in the literature. Prior studies examining the effectiveness of macroeconomic policies in mitigating the effects of liquidity gluts have often lacked robust econometric methodologies and neglected country-specific analyses. By employing techniques such as ARDL, GMM, panel regression, 2SLS, VAR and impulse response analysis, this study ensures a comprehensive and rigorous examination of the research problem, thereby providing valuable insights into the effectiveness of specific policy measures across different countries within Sub-Saharan Africa.

Furthermore, the variable selection process in this study will be guided by economic theory. Variables will be meticulously chosen based on their relevance and theoretical significance within the context of liquidity gluts and macroeconomic policies. For instance, variables such as interest rates, government spending, exchange rates and credit availability will be included in the analysis, as they are known to exert a direct impact on liquidity gluts and their effects on credit markets and economic growth. This meticulous approach ensures that the study's findings are firmly grounded in economic theory and contribute to a deeper understanding of the mechanisms through which macroeconomic policies can effectively address liquidity gluts.

Overall, the methodological contribution of this study, characterized by robust econometric techniques and careful variable selection based on economic theory, enhances the validity and reliability of the findings. Not only does it fill a gap in the existing literature, but it also provides

a comprehensive analysis of the research problem, offering valuable insights for policymakers and contributing to methodological advancements within the field of liquidity gluts and macroeconomic policy effectiveness. The urgency of addressing liquidity gluts in SSA cannot be overstated, as effective policy interventions are essential for fostering sustainable economic growth and stability in the region.

1.6 Limitations of the study

While this study offers valuable insights into the dynamics of liquidity gluts within African economies particularly their influence on credit markets and economic growth it is important to recognize the contextual specificity of its findings. The distinct economic, political, and social environments across African nations shape the effectiveness of macroeconomic policies, and as such, the applicability of these conclusions to other regions may require careful consideration. The study's focus was intentionally narrowed to key financial variables, providing a strong foundation for understanding core mechanisms. Nonetheless, factors such as political stability, institutional structures, and external shocks, though relevant, fall outside the scope of this analysis. These dimensions present promising avenues for future research to build upon and enrich the broader discourse.

1.7 Delimitations of the study

The scope of this study was intentionally defined to provide a focused and methodologically sound examination of macroeconomic policy responses to liquidity gluts within African nations, particularly those in Sub-Saharan Africa. By concentrating on this region, the research offers contextually grounded insights into the effectiveness of monetary and fiscal measures in addressing financial imbalances. While these findings contribute meaningfully to the discourse on economic policy in Africa, their applicability to other regions may require further investigation. The study's emphasis on macroeconomic instruments was deliberate, allowing for a deep dive into core policy mechanisms. Other influential domains such as regulatory frameworks, structural reforms, and institutional dynamics were acknowledged but not extensively analyzed, presenting valuable directions for subsequent research. Additionally, the adoption of a quantitative methodology enabled rigorous statistical analysis and generalizable conclusions. Although qualitative dimensions, including lived experiences and case-specific narratives, were beyond the scope of this study, they remain essential complements for future inquiry.

1.8. Chapter Summary

In this chapter an overview of liquidity gluts on credit markets and economic growth inSub-

Saharan Africa was made. First, the chapter presented some background information with necessary statistics to give a clear picture of where Sub-Saharan Africa stands. The last sections included the problem statement, objectives, research hypotheses, limitations of the study, delimitations of the study and significance of the study.

1.9. Overview of Thesis Coverage

This thesis provides a comprehensive investigation into the dynamics of liquidity gluts and their implications for credit markets and economic growth in Sub-Saharan Africa (SSA). It is structured into five chapters, each addressing a distinct aspect of the research problem. Chapter 2 explores the triggers of liquidity gluts, identifying macroeconomic, institutional, and structural factors that contribute to excess liquidity across selected SSA countries. Chapter 3 examines the impact of liquidity gluts on credit markets and their transmission mechanisms to asset prices and returns, employing advanced econometric techniques to assess both short- and long-term effects. Chapter 4 evaluates the effectiveness of macroeconomic policies particularly monetary and fiscal measures in mitigating the adverse consequences of liquidity gluts, with a focus on policy coordination and institutional capacity. Chapter 5 concludes the thesis by synthesizing the findings, drawing policy implications, and offering recommendations for improving liquidity management and promoting sustainable economic growth in the region. The methodological framework integrates Autoregressive Distributed Lag (ARDL) models, Vector Autoregression (VAR), Structural VAR (SVAR), and Generalized Method of Moments (GMM), supported by rigorous diagnostic tests and robustness checks to ensure empirical validity.

1.10. Summary of Main Contributions

The thesis makes several important empirical contributions to the understanding of liquidity dynamics in Sub-Saharan Africa. Chapter 2 contributes by identifying the structural and institutional drivers of liquidity gluts, emphasizing the roles of pension fund assets, government expenditure, and exchange rate regimes in shaping liquidity conditions. Chapter 3 advances the literature by demonstrating how liquidity gluts distort credit markets and inflate asset prices, revealing country-specific transmission mechanisms and highlighting the risks of financial instability. Chapter 4 provides evidence on the effectiveness of macroeconomic policies in managing liquidity gluts, showing that coordinated fiscal and monetary strategies, supported by strong institutional frameworks, are essential for stabilizing credit markets and fostering economic growth. These contributions reveal how liquidity gluts impact SSA's financial and economic outcomes, guiding tailored policy responses.

CHAPTER TWO: TRIGGERS OF LIQUIDITY GLUT IN SSA

2.1 Introduction

The issue of liquidity gluts, defined as an oversupply of money within the banking system that exceeds the demand for investment poses a paradoxical challenge to prevailing economic theories (Abdel-Latif, 2020). In certain sub-Saharan African (SSA) nations, the occurrence of excess liquidity is not an isolated incident but rather a persistent phenomenon that merits thorough investigation (Charfeddine, 2019). This chapter seeks to unravel the complex factors contributing to liquidity gluts within these economies, which, despite their significant potential, are often trapped in a cycle of financial inefficiencies and economic vulnerabilities.

The importance of this inquiry is amplified by the unique positioning of SSA countries in the global economic landscape. These nations stand at a critical crossroads, where their financial systems can either embark on a path of sustained growth or succumb to prolonged stagnation. In this context, liquidity gluts serve not only as indicators of underlying economic issues but also as crucial determinants of the region's financial health and developmental prospects (Ibrahim, 2018). The consequences of excess liquidity extend across a spectrum, influencing inflation rates, currency stability and the effectiveness of monetary policy, thereby shaping the broader economic environment (Kassouri, 2022).

The tendency for liquidity gluts in SSA is deeply intertwined with the region’s economic structures, which often feature limited diversification, dependence on commodity exports and underdeveloped financial markets (Nissanke, 2019). These structural vulnerabilities are compounded by external shocks, policy errors and the inherent volatility of capital flows in a globalized economy. Consequently, the resultant excess liquidity can distort financial markets, impair resource allocation and stifle the entrepreneurial vigour essential for economic progress (Parosa, 2019). The insights gleaned from this research are expected to illuminate pathways for evidence-based policy formulation, enhancing the resilience of SSA nations to financial shocks and steering them toward inclusive, sustained economic growth.

This study tackles the critical issue of excess liquidity in selected sub-Saharan African (SSA) countries, examining its broader implications for economic stability and growth. While liquidity gluts are recognized as a significant concern, there remains a substantial lack of comprehensive understanding regarding their root causes and the interplay of various economic factors that contribute to this phenomenon. Existing literature has predominantly concentrated on evaluations of individual countries or specific aspects of liquidity management, such as the relationship between liquidity and profitability in emerging markets (Kyei-Mensah, 2023) or the effects of monetary policy on bank lending (Abuka et al., 2019). This focus has resulted in a gap in the holistic analysis of systemic issues that heighten vulnerabilities to excess liquidity. For instance, while research has explored the impacts of fiscal deficits and central bank policies in nations like Ghana and Nigeria (Naqvi, 2022; Emara, 2021), there is insufficient examination of how these factors interact with broader regional dynamics, including underdeveloped capital markets and external economic shocks (Adebayo, 2020; Acharya & Rajan, 2022).

This gap is significant because understanding the multifaceted nature of liquidity dynamics is crucial for developing effective policy responses. Without addressing these unresolved issues, policymakers may struggle to implement strategies that effectively mitigate the risks associated with excess liquidity, which can lead to inflationary pressures, currency depreciation and ultimately hinder economic growth. By investigating these interconnected factors, this study aims to contribute to a more nuanced understanding of liquidity challenges in sub-Saharan Africa, thereby informing evidence-based policy formulation that enhances the resilience of these economies.

This chapter presents a comprehensive investigation into excess liquidity in selected Sub-Saharan African (SSA) countries, integrating theoretical foundations with empirical analysis to deepen understanding of liquidity dynamics in aid-dependent economies. It begins by establishing a robust theoretical framework that defines key concepts and contextualizes the behavior and expectations of economic agents, emphasizing how these factors shape liquidity outcomes.

A critical review of the empirical literature follows, identifying gaps and unresolved issues that this study seeks to address. The methodology section outlines the research design, including the use of a panel Autoregressive Distributed Lag (ARDL) model, which is well-suited for capturing both short- and long-run relationships in heterogeneous country contexts.

The data analysis section presents empirical findings on the impact of foreign aid inflows on domestic liquidity conditions, offering evidence of how aid contributes to liquidity surpluses. A refined measure of liquidity glut is introduced, tailored to the structural characteristics of SSA economies. The analysis also interprets results in light of the theoretical framework and existing literature, supported by robustness checks and sensitivity tests to ensure the reliability of the findings.

By linking aid inflows to liquidity dynamics, this chapter contributes to the broader discourse on macro-financial stability in developing regions. It provides insights into the mechanisms through which external financial resources influence domestic credit markets and asset valuations, laying the groundwork for informed policy recommendations aimed at managing liquidity gluts and enhancing financial resilient.

2.2 An Overview of the Selected Sub-Saharan African Countries and their Vulnerability to Excess Liquidity

The selection of sub-Saharan African countries for this study encompasses a diverse array of economies, each characterized by distinct financial landscapes and varying degrees of vulnerability to excess liquidity. While these nations share geographical proximity, they exhibit significant heterogeneity in economic structures, regulatory frameworks and monetary policies, which collectively influence their susceptibility to liquidity surpluses (Emara, 2021; Ndirangu, 2015)[1].

For an example, Nigeria, as Africa's largest economy, grapples with the ramifications of excess liquidity primarily due to its reliance on oil revenues. The cyclical nature of these revenues, coupled with government spending patterns, often leads to liquidity gluts in the financial sector dominated by a robust banking industry (Ibrahim, 2017). This situation is exacerbated by foreign exchange inflows that increase the domestic currency supply without a corresponding demand for productive lending, resulting in liquidity surpluses (Schettino, 2022).

In contrast, Kenya's rapidly expanding financial sector faces its own challenges related to excess

[1] The countries included in this study and their corresponding excess liquidity levels (as a percentage of GDP or relevant monetary base) for the year 2022 are as follows: Nigeria (45.14), Ghana (28.10), Lesotho (35.69), Gambia (57.31), Mauritius (41.45), Seychelles (22.59), Botswana (15.39), Angola (18.18), Mozambique (48.72), Burundi (19.84), Equatorial Guinea (56.78), South Africa (69.79), and Zambia (45.15). These figures were compiled from the World Bank Database (2022) and IMF Financial Statistics (2022

liquidity. The Central Bank of Kenya has implemented measures such as open market operations and reserve requirements to manage liquidity; however, high levels of government borrowing and inconsistent foreign investment flows have complicated these efforts, at times overwhelming the market's absorptive capacity (Ndirangu & Nyamongo, 2015). Ethiopia presents a different scenario, where liquidity gluts arise not from commodity reliance but from a directed credit approach. A significant portion of bank lending is allocated to government-led projects, which, while fostering infrastructure development, creates mismatches in liquidity distribution. Excess funds often become trapped in long-term projects, limiting their availability for other productive uses (Taskinsoy, 2023; Beck & Cull, 2014).

South Africa, recognized for its sophisticated economy, also experiences liquidity surpluses. The South African Reserve Bank navigates the complexities of managing liquidity in a market characterized by advanced financial instruments and substantial foreign capital exposure. The endogenous generation of liquidity, particularly through the repo market, has occasionally outpaced credit demand, posing challenges for monetary transmission mechanisms (Isaacs et al., 2018; Musthaq, 2023). Ghana's situation is similarly influenced by fiscal deficits and the central bank's financing of government spending, leading to an excess of liquidity that is not adequately absorbed by the real sector. This imbalance has resulted in inflationary pressures and currency depreciation (Asiedu-Mante & Asiamah, 2003).

The vulnerability of these countries to excess liquidity reflects not only their individual economic decisions but also broader systemic issues within the region, such as underdeveloped capital markets, limited investment opportunities and susceptibility to external shocks that disrupt the balance between liquidity supply and demand (Naqvi, 2022; Emara, 2021). Understanding these dynamics is crucial for developing tailored policy responses to address the challenges posed by excess liquidity in sub-Saharan African economies (Seyyedkolaee, 2022).

Moreover, the economic repercussions of the COVID-19 pandemic have intensified these vulnerabilities, with many countries experiencing GDP contractions and fiscal instability. The pandemic has prompted expansionary monetary policies aimed at stimulating growth, which have inadvertently increased the risk of liquidity surpluses. For instance, Nigeria's Central Bank responded to the pandemic by reducing the monetary policy rate and injecting liquidity into the economy (Magwedere, 2022). However, these measures, combined with pre-existing

vulnerabilities, have exacerbated the liquidity situation, raising concerns about inflation and currency devaluation (Hattingh, 2017). Similarly, South Africa's Reserve Bank has implemented measures to mitigate the pandemic's economic impact, including lowering interest rates and providing liquidity support to the financial sector. These actions have sparked discussions regarding the potential for excess liquidity and its implications for inflation and economic growth (Gumata, 2022). The South African experience highlights the delicate balance required in managing liquidity within the context of an advanced economy in sub-Saharan Africa.

2.3 Theoretical Framework

The academic landscape presents a mosaic of interpretations and frameworks that attempt to encapsulate the essence of liquidity gluts. Despite the absence of a monolithic definition, scholarly consensus converges on certain salient features that typify liquidity gluts. These include a profusion of funds within the financial system, attributable to a confluence of factors such as liberal monetary policies, robust capital inflows, or heightened investor optimism (Hoffmann & Schnabl,2016; Schettino & Clementi, 2022; Trapanese, 2021). Liquidity gluts are frequently linked to a surge in liquidity that transcends the optimal levels requisite for the seamless operation of credit markets (Chucherd et al., 2021). To provide a comprehensive understanding of liquidity gluts in SSA, it is essential to integrate various theoretical perspectives rather than discussing them in isolation. The Keynesian perspective, supply-side economics and financialization theory offer valuable insights into the causes and implications of liquidity gluts in the region.

Keynesian Perspective: The Keynesian theory emphasizes the role of government intervention in managing economic fluctuations. In the context of SSA, where economies are often vulnerable to external shocks and cyclical downturns, Keynesian policies such as fiscal stimulus and monetary easing can lead to liquidity gluts. For instance, during economic downturns, governments may increase public spending and lower interest rates to stimulate demand, resulting in an oversupply of money within the financial system. This perspective is particularly relevant for SSA, where governments frequently resort to expansionary policies to address economic challenges and promote growth (Abdel-Latif, 2020).

Supply-Side Economics: Supply-side economics focuses on enhancing the productive capacity of the economy through measures such as tax cuts, deregulation and incentives for investment. In SSA, supply-side policies aimed at attracting foreign direct investment (FDI) and promoting industrialization can contribute to liquidity gluts. For an example, tax incentives and relaxed regulatory frameworks may lead to increased capital inflows, resulting in an oversupply of funds within the financial system. This perspective is relevant for SSA as many countries in the region

implement supply-side policies to attract investment and drive economic development (Schettino & Clementi, 2022).

Financialization Theory: Financialization theory examines the increasing dominance of financial motives, financial markets and financial institutions in the economy. In SSA, the growing influence of financial markets and the proliferation of financial instruments can lead to liquidity gluts. For instance, the expansion of credit markets and the introduction of new financial products can result in an oversupply of funds within the financial system. This perspective is particularly relevant for SSA, where financial markets are rapidly developing and financial institutions play a crucial role in economic activities (Trapanese, 2021).

2.3.1 The Phenomenon of Liquidity Gluts

Liquidity gluts reveals a complex array of interpretations and frameworks, reflecting the multifaceted nature of this phenomenon. While a singular definition remains elusive, there is a scholarly consensus on several key characteristics that define liquidity gluts. These include an abundance of funds within the financial system, driven by factors such as liberal monetary policies, substantial capital inflows and increased investor optimism (Hoffmann & Schnabl, 2016; Schettino & Clementi, 2022; Trapanese, 2021). Such surges in liquidity often exceed the optimal levels necessary for the efficient functioning of credit markets (Chucherd et al., 2021).

In the context of Sub-Saharan Africa, the prevalence of liquidity surpluses presents a particularly intricate challenge (Saxegaard, 2006). While a sufficient supply of liquidity can facilitate investment and economic growth, its misallocation can lead to detrimental outcomes (Ibrahim, 2017; Kyei-Mensah, 2023). Specifically, excess liquidity distorts credit allocation, resulting in an increase in low-quality loans and a rise in non-performing assets. This misallocation hampers the efficient distribution of resources, ultimately impeding productive investments and stunting long-term economic growth (Mian et al., 2020).

The implications of liquidity surpluses extend beyond individual economies, significantly impacting the broader financial stability of Sub-Saharan Africa. The region, characterized by its diverse economies and emerging markets, is particularly susceptible to the adverse effects of misallocated credit and liquidity fluctuations. These surpluses can fuel speculative behaviour, create asset price bubbles and encourage excessive risk-taking (Taskinsoy, 2023). Such dynamics foster a fragile environment where market participants may become overly reliant on liquidity availability, often underestimating the inherent risks. Consequently, when liquidity conditions

tighten, it can lead to sudden credit contractions, resulting in financial instability and potential systemic risks (Zhao, 2022). These fluctuations exacerbate the risk premium for emerging market economies, thereby diminishing their growth potential and hindering balanced development.

The misallocation of credit within the context of liquidity surpluses has profound implications for Sub-Saharan African economies. Financial intermediaries, motivated by the tendency to extend credit without thorough assessments of borrowers' solvency or associated risks, contribute to the proliferation of suboptimal loans (Spahn, 2021). This misallocation not only accumulates financial vulnerabilities but also disrupts the efficient allocation of resources, obstructing investments that could yield significant economic returns (Kassouri & Kacou, 2022).

When credit is allocated without proper evaluation, it often flows toward less productive sectors or projects with limited growth prospects (McCauley, 2019). This misallocation poses a considerable challenge for Sub-Saharan Africa's ability to direct capital toward industries critical for sustainable long-term development, such as manufacturing, technology and infrastructure (Nissanke, 2019; Santos, 2015). These sectors are essential for driving economic growth, creating job opportunities and alleviating poverty. However, the inefficient allocation of credit not only stifles the development of these vital sectors but also impedes overall progress in the region, as it fails to effectively channel resources and maximize their potential impact.

2.3.2 Causes of Liquidity Gluts in Sub-Saharan African Countries

The occurrence of liquidity gluts in sub-Saharan African countries is influenced by various interconnected factors. One prominent factor contributing to the prevalence of liquidity surpluses is the dependence on commodity exports, particularly in oil-rich economies like Nigeria. The cyclical nature of oil revenues has been identified as a significant driver of liquidity surpluses in these economies (Doukoure, 2020; Nakhli, 2021). Mahmah (2019) highlights the challenges arising from the cyclical nature of oil revenues, where foreign exchange inflows, often derived from oil exports, can lead to an increase in domestic currency supply that surpasses the demand for productive lending. Similarly, Schettino (2022) underscores the complexities faced by economies with significant foreign capital exposure, such as South Africa, where the endogenous generation of liquidity can exceed credit demand, contributing to liquidity surpluses.

Another contributing factor to the occurrence of liquidity gluts is the directed credit approach adopted by some countries, as observed in Ethiopia. Alssadek (2023) highlights the implications

of the directed credit approach, where a substantial portion of bank lending is allocated to government-led projects or specific sectors of the economy. This allocation of credit can create liquidity mismatches and result in excess funds being trapped in long-term investments, rendering them unavailable for other productive uses (Malik, 2016). While the directed credit approach is instrumental in driving targeted development initiatives, it can create challenges in liquidity distribution and absorption, thereby contributing to the persistence of excess liquidity within the financial system (Gimet, 2019).

In addition to these factors, the regulatory and monetary policy frameworks in sub-Saharan African countries play a pivotal role in shaping liquidity dynamics and contributing to the occurrence of liquidity gluts. Weak regulatory frameworks can hinder the monitoring and management of liquidity, making the financial system vulnerable to excess liquidity (Kentikelenis, 2022). The effectiveness of monetary policy instruments in mitigating liquidity gluts is contingent on the soundness and adaptability of the monetary policy framework. Factors such as interest rate management, open market operations and reserve requirements can influence the prevalence of liquidity gluts within the financial system (Duarte, 2019; Acharya, 2022). Therefore, the regulatory and monetary policy frameworks in these economies are critical determinants of liquidity management and can significantly impact the occurrence of liquidity gluts (Schettino, 2022).

According to Ustarz (2021), the broader macroeconomic environment, including fiscal policies and government spending patterns, can contribute to the occurrence of liquidity gluts. In economies where fiscal deficits are prevalent or where government spending is not effectively aligned with the absorptive capacity of the financial system, liquidity mismatches and surpluses can arise. This can be particularly pronounced in economies where government expenditures are not efficiently directed towards productive investments, leading to excess liquidity that is not effectively absorbed by the real sector (Eichengreen, 2021).

Furthermore, external factors such as global economic conditions and geopolitical events can significantly impact the occurrence of liquidity gluts in sub-Saharan African countries (Isaacs, 2018; Duan, 2021). Fluctuations in global commodity prices, particularly for key exports like oil, can directly influence the inflow of foreign exchange and the domestic currency supply, potentially leading to liquidity surpluses. Geopolitical tensions and conflicts in regions critical to the global

economy can trigger market uncertainties, foreign capital outflows and currency exchange rate fluctuations, all of which can contribute to liquidity mismatches and surpluses within the financial system of sub-Saharan African countries. Additionally, the structure and dynamics of financial institutions and markets within these economies can play a crucial role in the occurrence of liquidity gluts. Shallow financial markets, limited investment opportunities and underdeveloped capital markets can constrain the effective absorption of excess liquidity (Alqahtani, 2021; Das, 2019; Shavshukov, 2020; Afonso, 2024). In economies with a limited range of investment instruments and opportunities, excess liquidity may not be channelled into productive investments, leading to the persistence of liquidity surpluses within the banking system. The efficiency and effectiveness of financial intermediation and credit allocation mechanisms also influence the distribution and utilization of liquidity, thereby influencing the occurrence of liquidity gluts (Afonso, 2024).

2.3.3. Credit Markets and Liquidity Gluts

The interplay between liquidity gluts and credit market performance has garnered significant attention in academic literature. For instance, research by Edo et al. (2020) indicates that Sub-Saharan Africa faces relatively high lending costs amid sluggish economic growth. The effects of excess liquidity manifest differently across various credit markets, including corporate finance, consumer credit and mortgage lending. This surplus liquidity disrupts credit pricing mechanisms, resulting in lower interest rates and more lenient borrowing conditions (Barsky & Easton, 2021). While such conditions may initially invigorate economic activity, they can also lead to excessive indebtedness and leverage, potentially laying the groundwork for systemic risks. Despite the depressed interest rates caused by liquidity gluts, the cost of borrowing for businesses in Sub-Saharan Africa remains comparatively high, which poses challenges for the region's small, micro and medium enterprises that contribute significantly to economic output (Edo et al., 2020).

The ramifications of liquidity gluts on credit markets in Sub-Saharan Africa are particularly pronounced given the current health and economic crises. These challenges are likely to exacerbate credit quality issues and elevate non-performing loans, which are already at concerning levels (Hattingh, 2017). Banks play a crucial role during such crises, not only by providing temporary relief to businesses and households but also by supporting economic recovery and facilitating structural transformations necessitated by the pandemic (Bernanke, 2018; Hilbers et al., 2005; Modigliani, 1944). However, the persistent high cost of lending and sluggish economic growth complicates these efforts, adversely affecting credit quality and the overall financial health of both

businesses and households (Parosa, 2019; Schettino & Clementi, 2022). Moreover, the allure of abundant credit can tempt individuals to accumulate debt beyond their financial means, leading to financial distress and posing risks to the region's overall financial stability (Eichengreen et al., 2021). The lack of financial education and limited understanding of borrowing costs and repayment obligations further exacerbate the risks associated with over- indebtedness. In a region where financial literacy varies widely, many individuals struggle to navigate the complexities of borrowing, leaving them vulnerable to the pitfalls of excessive debt (Schicks, 2014).

Liquidity gluts also have a dual impact on consumer credit, presenting both opportunities and challenges. On one hand, the availability of liquidity can facilitate easier access to credit, enabling individuals to make purchases and investments that might have otherwise been delayed (Arestis, 2017; Mutai & Miroga, 2023). This surge in consumer spending has the potential to stimulate economic growth and foster development across various sectors. Conversely, the ease of obtaining credit can lead to over-indebtedness, particularly for those lacking the financial literacy or discipline to manage their borrowing responsibly (Ibrahim & Alagidede, 2018; Kastrati, 2022).

The positive aspect of liquidity gluts is the enhanced access to credit for individuals (Kassouri & Kacou, 2022). The surplus liquidity within the financial system can drive down interest rates and create more favourable borrowing conditions, making credit more accessible. This enables individuals to pursue purchases and investments that they may have previously postponed due to financial constraints (Hassan & Aliyu, 2018). Increased consumer spending, fuelled by the availability of easy credit, can stimulate economic growth and contribute to the development of sectors such as retail, manufacturing and services. This, in turn, generates employment opportunities, drives business expansion and fosters economic stability (Barsky & Easton, 2021). However, as noted by Moretti et al. (2020), while easy access to credit can open doors for financial growth and investment, it also carries inherent risks, especially when borrowers lack the necessary financial literacy or discipline. The temptation to accumulate debt beyond one's means becomes a pressing concern in the context of liquidity gluts. This phenomenon can lead to financial distress for households and have far-reaching consequences for the region's overall financial well-being (Davis & Kim, 2015; Emara & El Said, 2021).

In Sub-Saharan Africa, where economic opportunities and access to credit may be limited for some, the allure of easy credit can be particularly compelling. It is essential to recognize that abundant credit is not universally available in this region; credit restrictions and potentially high interest rates may still prevail (Bauluz et al., 2022). The presence of liquidity does not guarantee credit extension and responsible lending practices are crucial to ensuring the financial well-being of individuals and the stability of financial institutions (Mayer & Schnabl, 2021; Parosa, 2019).

Despite the potential for liquidity to support economic activity, the extension of credit in Sub-Saharan Africa remains relatively low due to various structural challenges and a lack of interconnectedness within the financial system (Kassouri & Kacou, 2022). This fragmentation often results in financial institutions operating in silos, limiting collaboration and information sharing. Such isolation impedes the efficient flow of credit and complicates the accurate assessment of creditworthiness (Santos, 2015).

The misallocation of credit further exacerbates income inequality in Sub-Saharan Africa. When credit is granted without adequate scrutiny, it often favours established entities or individuals with existing collateral, while excluding those lacking formal credit histories or assets (Carment, 2017; Lavoie & Reissl, 2019). This disparity perpetuates existing inequalities and hampers social mobility, hindering the region's pursuit of inclusive and equitable economic development. Addressing the misallocation of credit is essential to ensure that financing opportunities are accessible to all segments of society, promoting more inclusive growth and reducing income disparities (Kassouri & Kacou, 2022). The accumulation of non-performing loans poses significant risks to financial stability. When loans are granted without thorough assessment, borrowers may struggle to meet repayment obligations, leading to increased default rates (Mayer & Schnabl, 2021). This not only undermines the financial health of lending institutions but also erodes overall confidence in the financial system (Xiao & Xiao, 2017).

2.3.4 Market Discipline and Liquidity Glut in Sub-Saharan Africa

In Sub-Saharan Africa, despite liquidity gluts in credit markets, stringent credit discipline prevails. The region's historical challenges in accessing affordable credit due to political instability, weak governance and limited financial infrastructure have fostered a cautious approach among investors, even during periods of global liquidity abundance (Bouteille, 2021). Lenders in the region, including commercial banks and international financial institutions, have learned from past

experiences and exercise prudence in assessing borrower creditworthiness (Gumata, 2022). Factors such as financial stability, repayment capacity and adherence to good governance practices are carefully considered.

In contrast to this cautious lending environment, regulatory frameworks in Sub-Saharan Africa have been strengthened over time to ensure financial stability and curb excessive risk-taking. These frameworks impose stringent requirements on lenders, encompassing capital adequacy ratios, risk management protocols and comprehensive due diligence processes (Taskinsoy, 2023; Musthaq, 2023). Such measures contribute to maintaining a high level of credit discipline within the financial system. Borrowers in Sub-Saharan Africa have also developed a heightened awareness of the importance of maintaining favourable credit standing (Braga, 2017). They recognize that credibility and a solid repayment track record are vital for accessing future credit and attracting investment. Consequently, borrowers adopt responsible borrowing practices and prioritize debt repayment obligations.

The behaviour of international investors indicates a growing trend of discernment and caution when assessing investment opportunities in Sub-Saharan Africa. Investors are conducting thorough due diligence and meticulous risk assessments to ensure that only financially sound projects and entities receive funding, thereby reinforcing credit discipline (Min, 2024). While these stringent borrowing practices benefit lenders, they may not necessarily support the overall economy. This cautious lending approach can pose challenges for economic growth and development in the region (Afzal, 2022). Strict credit discipline can restrict access to affordable credit for businesses and individuals, which hampers investment, entrepreneurial activities and consumption (Godspower-Akpomiemie, 2021). As a result, economic expansion, job creation and poverty reduction efforts may be hindered. Small and medium-sized enterprises may face significant obstacles in securing the financing essential for their growth and contribution to the economy (Nguyen, 2023). Furthermore, the rigorous credit assessment processes can disproportionately affect marginalized communities and sectors, exacerbating existing inequalities. Limited access to credit for individuals or businesses without established credit histories or collateral can impede their full participation in economic activities (Ojah, 2016).

2.3.5 Liquidity Glut and the Bond Markets

During periods of abundant liquidity, investors often display a tendency to overlook default risk factors and embrace policies and economic performances that would typically be associated with higher borrowing costs (Naqvi, 2019). This shift in investor behaviour creates opportunities for countries that previously faced borrowing surcharges to access international capital from willing investors. In a related finding, research by Ballard-Rosa, Mosley and Wellhausen (2019) indicates that democratic institutions encounter greater challenges in borrowing during times of flush bond markets. This suggests that investors become more tolerant of risk, regardless of whether it involves non-democratic institutions or policies that may jeopardize repayment (Shavshukov, 2020).

The liquidity glut in bond markets carries significant implications. For instance, abundant liquidity entices investors to take on more risk, leading to increased demand for bonds and resulting in compressed yield spreads (Antoine, 2021). Consequently, bond yields decrease, creating challenges for investors seeking attractive opportunities, particularly in higher-yielding bonds. Moreover, excess liquidity impacts market functioning (Kyei-Mensah, 2023). While periods of ample liquidity may create a false sense of security, with market participants assuming a constant availability of liquidity (Mutai, 2023), they also leave the market ill-prepared for sudden liquidity shocks. This lack of preparedness amplifies market volatility and has implications for bond prices (Das, 2019).

Investor behaviour is also shaped by the liquidity glut. The abundance of liquidity encourages investors to pursue riskier investment strategies, such as investing in lower-rated bonds or illiquid securities, in search of higher yields (Ibrahim, 2018). Although these strategies can yield short-term gains, they expose investors to increased vulnerability if liquidity conditions deteriorate, making it challenging to unwind positions and potentially resulting in losses (Godspower-Akpomiemie, 2021). It is important to note that even first-time bond issuers cannot be considered to have negligible default risk during periods of liquidity abundance (Bunte, 2018; Bunte, 2019; Horn, Reinhart and Trebesch, 2019). Therefore, the lack of investor scrutiny during these periods is more likely driven by their pursuit of higher yields rather than a diminished perception of default risk among borrowers.

2.3.6 Credit Rationing

Credit rationing in Sub-Saharan Africa remains a significant challenge, even amidst a liquidity glut in the region. This phenomenon, characterized by lending institutions limiting the supply of credit to borrowers, has garnered considerable research attention. Understanding this issue is crucial for maintaining economic and financial stability, particularly during crises and for effective decision-making in monetary policy. While empirical evidence exists regarding credit rationing, there is a pressing need for further research to better comprehend its causes and implications.

According to Stiglitz and Weiss (1981), credit rationing occurs when lenders and borrowers are unable to overcome informational asymmetries, leading to adverse selection and moral hazard. In a similar vein, Jaffee and Stiglitz (1990) and Andretta (2021) distinguish between two types of credit rationing: Type 1, where borrowers receive a loan below the requested amount and Type 2, where credit is entirely denied. This rationing can persist even in the absence of regulatory price control, highlighting the unique behaviour of the credit market compared to product markets. In the context of Sub-Saharan Africa, credit rationing has profound implications for economic and financial stability. The region's financial landscape, characterized by limited access to credit and structural challenges, contributes to the persistence of this issue. Consequently, credit rationing can hinder investment, employment choices and overall economic growth, adversely affecting businesses and individuals seeking financial support (Domeher et al., 2017).

Moreover, managing credit rationing presents challenges for regulators responsible for monetary policy. It adversely affects businesses by constraining investment and employment choices, leading to suboptimal decision-making and reduced performance. Access to affordable financing is particularly challenging for small and medium-sized enterprises (SMEs) due to information asymmetry and perceptions of higher risk by financial institutions. The difficulties faced by SMEs in accessing affordable financing are particularly pronounced. Information asymmetry, where lenders possess limited information about the creditworthiness of SMEs, poses a significant obstacle, especially in developing countries like those in Sub-Saharan Africa (Andretta, 2021; Emara & El Said, 2021; Ibrahim & Alagidede, 2018). Financial institutions may perceive SMEs as higher-risk borrowers, leading to tighter lending criteria and limited access to credit. This perception of higher risk can be attributed to factors such as limited financial history, lack of collateral and the relatively small scale of SME operations (Kassouri & Kacou, 2022). As a result, SMEs often struggle to obtain the necessary funding to support their growth and development.

The "Macmillan gap" refers to the challenges SMEs face in accessing finance, particularly in developing countries. Factors such as weak collateral quality, limited guarantee capacities, small loan sizes, frequent loan requests and complex loan procedures contribute to this gap. Consequently, financial institutions tend to prefer lending to larger enterprises, leading to reduced productivity and misallocation of resources (Yu & Fu, 2021). Financially constrained firms exhibit higher sensitivity to cash flow shocks and credit scores are assessed based on liquidity conditions, indebtedness and payment behaviours. In this context, factors such as firm scale and age also predict levels of financial constraint. According to Santos (2015), overcoming credit constraints requires adequate screening and monitoring of borrowers, along with effective use of information by banks.

One of the key drivers of credit rationing in Sub-Saharan Africa is the presence of informational asymmetries between lenders and borrowers. Financial institutions may lack complete and accurate information about the creditworthiness of potential borrowers, making it difficult to assess risk and make informed lending decisions (Antoine et al., 2021). This information gap can lead to adverse selection, where borrowers with higher risk profiles are more likely to seek credit, while low-risk borrowers may be discouraged from applying (Andretta, 2021). In addition to informational asymmetries, moral hazard also plays a role in credit rationing. Lenders are concerned about the potential for borrowers to engage in risky behaviour or default on their loans, especially in economies where contract enforcement may be weak (Domeher et al., 2017). This moral hazard problem can further limit the availability of credit, as lenders may be hesitant to extend loans to borrowers they perceive as having a higher risk of default. Moreover, structural challenges in the financial system contribute to credit rationing. In Sub-Saharan Africa, limited access to financial services and inadequate infrastructure can make it difficult for borrowers to secure credit (Domeher et al., 2017).

2.4 Economic Agents' Behaviour and Expectations

The theoretical framework employed in this analysis encompasses various perspectives to comprehensively examine the concept of savings glut. The theories considered include the Saving Glut theory, the Keynesian Perspective of savings glut, the Supply-Side Economics View on savings glut, the Global Imbalances Perspective theory, the Financialization theory on savings glut, the Banking Glut theory and the Liquidity Preference theory. By integrating these diverse theoretical perspectives, a holistic understanding of the behaviour and expectations of economic agents can be attained, offering detailed insights into the dynamics of savings glut**.**

2.4.1 Economic Agents' Behaviour and Its Economic Implications

The concept of a "saving glut" refers to an excess supply of savings and a scarcity of investment opportunities, significantly influencing interest rates, levels of investment and overall economic growth. This phenomenon can lead to lower interest rates as the surplus of savings drives down borrowing costs, potentially stimulating investment; however, the effectiveness of this stimulus is contingent upon the availability of profitable investment opportunities and the responsiveness of investment to interest rate changes. A saving glut can reduce aggregate demand as individuals and businesses prioritize saving overspending, which may slow economic growth and even trigger recessions. Contributing factors include income inequality, demographic changes, cultural norms promoting saving and a lack of viable investment opportunities (Miranda-Agrippino & Rey, 2022).

From a Keynesian perspective, excessive saving is viewed as a threat to economic well-being, as it diminishes aggregate demand by reducing expenditure. Keynesians argue that during periods of a saving glut, government intervention is crucial to stimulate aggregate demand through fiscal policies. Increased government spending in sectors such as infrastructure and education can generate employment opportunities and stimulate economic activity. Tax cuts are also advocated to increase disposable income, fostering higher levels of consumption and investment (Sain, 2024).

This perspective emphasizes the need for government action to bridge the gap between actual and potential output, countering the adverse effects of a saving glut on aggregate demand. In contrast, supply-side economists view a saving glut as a positive phenomenon that can lead to higher levels of investment, boosting productivity and long-term economic growth. They argue that increased savings provide a pool of funds for investment, which can enhance production capacity and create jobs (Mian et al., 2020). Supply-side proponents emphasize the role of lower interest rates in incentivizing businesses to invest in capital goods and technology. However, critics argue that a saving glut does not guarantee higher investment levels, as factors such as uncertainty and market conditions can influence investment decisions. Supply-side policies may disproportionately benefit the wealthy, exacerbating income inequality (Green & Denniss, 2018).

The Global Imbalances Perspective examines the international implications of a saving glut, focusing on how imbalances between countries in terms of savings and investment can lead to economic instability. High-saving countries may accumulate surpluses while high-consuming

countries face deficits, resulting in volatile capital flows and potential economic disruptions (Eichengreen et al., 2021). This perspective highlights the need for structural reforms to promote productivity and domestic investment, addressing issues such as income inequality and consumption patterns. Financialization theory posits that the financial sector's dominance in the economy contributes to the presence of a saving glut. Financial institutions incentivize individuals and businesses to save more, resulting in an excess supply of savings. This theory emphasizes the impact of financial innovations on shaping saving behaviour and influencing economic outcomes (Eichengreen et al., 2021). Financial institutions promote saving through attractive interest rates and investment opportunities, while innovations like retirement accounts encourage individuals to save for the future. However, increased access to credit can lead to higher consumption and reduced saving rates (Christophers, 2015).

Banking glut refers to an excess of liquidity within the banking system, which can have significant implications for financial markets and economic stability (Bernanke, 2018). Loose monetary policies and foreign capital inflows contribute to this excess liquidity. The effects of banking glut include credit misallocation, where banks may make riskier lending decisions and asset price inflation, leading to potential market bubbles (Taskinsoy, 2023a). Solutions to mitigate banking glut involve prudential regulations and central bank interventions to manage liquidity levels and prevent excessive credit expansion. Liquidity preference theory provides another lens through which to understand the dynamics of saving gluts. According to this theory, extensive government borrowing can absorb a significant portion of available liquidity in the financial system, leading to a scarcity of funds for private sector borrowers. This scarcity can result in higher interest rates and reduced private sector lending (Hasanović & Latić, 2017). The theory emphasizes the prioritization of liquid assets over illiquid ones, illustrating how individuals, businesses and governments navigate their financial choices.

2.5 Macroeconomic Policies and Liquidity Glut Management

Macroeconomic policies and liquidity management have a significant impact on the economic landscape, especially in addressing liquidity gluts. This analysis utilizes a theoretical framework to explore various monetary policy tools and their effectiveness in managing liquidity gluts in Sub-Saharan Africa. The examination covers essential tools such as interest rate adjustments, reserve requirements and open market operations. The theories considered in this literature include the banking glut theory, financialization theory and global imbalances perspective theory.

Fiscal policy, a key component of economic governance, is utilized in Sub-Saharan Africa to manage liquidity gluts. The Keynesian theory, as discussed in the literature, explores the use of taxation to address this issue. Fiscal policy involves strategic government spending and taxation to influence economic activity and promote stability. It plays a crucial role in absorbing excess liquidity and redirecting it towards productive uses. Government spending is a pivotal tool in this approach, as it injects funds into the economy, absorbing excess liquidity and stimulating economic activity. This can be done through investments in infrastructure, social programs, or strategic sector allocations. The increase in government spending not only absorbs liquidity but also generates demand, fostering economic growth and stability.

Monetary policy plays a pivotal role in shaping economic conditions by influencing the availability and cost of money in the economy. Central banks, such as the Federal Reserve in the United States or the European Central Bank in the eurozone, utilize monetary policy to achieve key objectives, including price stability, full employment and economic growth (Kashyap & Stein, 1994). The tools of monetary policy can be broadly categorized into expansionary and contractionary measures. Expansionary monetary policy is employed to stimulate a sluggish economy by increasing the money supply and lowering interest rates, thereby encouraging borrowing and investment (Jaffee & Stiglitz, 1990). Conversely, contractionary monetary policy aims to reduce inflationary pressures by decreasing the money supply and raising interest rates, which can help stabilize prices but may also slow economic growth (Ndirangu & Nyamongo, 2015).

The effectiveness of monetary policy is often contingent upon the central bank's ability to communicate its intentions clearly to the public and the markets. As noted by former Federal Reserve Chair Ben Bernanke, “monetary policy is 98% talk and only 2% action.” This highlights the importance of communication in shaping expectations and influencing economic behaviour (Nelson, 2013). Clear and consistent messaging from central banks can enhance the effectiveness of monetary policy by guiding market participants' expectations regarding future interest rates and economic conditions. For instance, if a central bank signals its commitment to maintaining low interest rates, it can encourage spending and investment, thereby supporting economic growth (Isaacs & Kaltenbrunner, 2018).

In Sub-Saharan Africa, the challenges of implementing effective monetary policy are compounded

by structural economic issues, such as limited access to financial services, high levels of informality and external shocks (Nissanke, 2019). Policymakers must navigate these complexities to ensure that the money supply supports sustainable economic development without triggering instability. The central banks in this region often face the dual challenge of managing inflation while fostering growth, which requires a delicate balance in their monetary policy approaches (Jammeh, 2022).

Moreover, the velocity of money, which measures how quickly money circulates in the economy, is another important aspect of monetary policy. A higher velocity indicates that money is changing hands more frequently, suggesting robust economic activity. Conversely, a lower velocity may signal that money is being hoarded or that economic activity is sluggish (Kastrati, 2022). The relationship between monetary policy and liquidity management is particularly significant in the context of liquidity gluts. When excess liquidity exists in the economy, central banks may need to implement contractionary monetary policies to absorb this surplus and prevent inflation (Kamuinjo, 2021). Tools such as increasing reserve requirements or conducting open market sales can effectively reduce the money supply and stabilize prices. However, these measures must be carefully calibrated to avoid stifling economic growth (John Gachunga & Kuso, 2019).

2.6 Empirical Literature

2.6.1 Liquidity Glut and World Financial Crisis

Barsky and Easton (2021) and Miranda-Agrippino and Rey (2022) argue that prior to the 2007 financial crisis, banks outside the U.S. were heavily investing in long-term U.S. assets. They employed estimated structural VARs to analyse the widening imbalances in two key regions: the United States and emerging Asia. To ensure compatibility with standard economic models such as the New Keynesian and Real Business Cycle model, they applied sign restrictions. Contrary to the belief that the global saving glut hypothesis is solely driven by foreign banks, the authors found that substantial investments were originating from Europe rather than China or oil-exporting Arab countries. This suggests a need to explore the implications of these findings in the context of other regions, including Sub-Saharan Africa.

In a related vein, Zhao (2022) found that countries with current account surpluses influence credit conditions by lowering long-term yields on U.S. Treasury securities. This leads European investors to seek higher yields by substituting treasury assets with private securities. Notably, the role of

European banks may not be apparent in current account statistics, as the net difference between debts and receivables is minimal, indicating that financing was obtained from the same market where loans were granted. Furthermore, Taskinsoy (2023a) discovered that foreign banks significantly channelled funds to their U.S. branches through internal balance sheet transfers, which had substantial effects on their lending activities. When comparing these findings, it becomes evident that the increased involvement of European banks in the U.S. supports the global banking glut hypothesis proposed by Bernanke (2018). The movement of funds within foreign banks' branches reinforces the idea of excess financial intermediation capacity and its influence on lending.

Additionally, McCauley (2019) utilized a Structural Vector Autoregressive (SVAR) model to examine the relationship between the housing market, macro-financial factors and various sources of net and gross foreign funding. His research aimed to understand how these factors impact house prices and household debt expansion, with implications for liquidity gluts, credit markets and economic growth. The empirical findings support both the savings glut hypothesis and the banking glut hypothesis, indicating that shocks in overseas funding significantly affect consumption, residential investment, dwelling prices and mortgage loan volumes. Interestingly, McCauley's analysis suggests that net banking inflows have a more pronounced impact on the volatility of house prices and mortgage loans compared to gross securities or gross banking flows. This aligns with the conclusions drawn by Eichengreen et al. (2021) regarding the substantial influence of banking shocks on real economic activity in the United States.

2.6.2 Liquidity Glut and Banking

The concept of a banking glut refers to a condition in which the banking sector is flush with excess liquidity often driven by accommodative monetary policies, global capital inflows, or regulatory arbitrage that exceeds the productive demand for credit. Unlike a savings glut, which originates from excess household or national savings, a banking glut is rooted in the financial system itself, where banks aggressively expand their balance sheets and extend credit beyond prudent limits. This phenomenon has gained prominence in post-crisis literature, particularly in the work of Hyun Song Shin (2012), who argues that the permissive credit conditions leading up to the 2007–08 financial crisis were more accurately attributed to a global banking glut than to a global savings glut.

Excess liquidity within the banking system can significantly distort credit allocation. When banks

are under pressure to deploy surplus funds, they may lower their lending standards, extend credit to riskier borrowers, or channel funds into speculative sectors such as real estate and equities. This misallocation of capital undermines the efficiency of financial intermediation and can lead to asset bubbles, as seen in the U.S. housing market prior to the global financial crisis. Justiniano, Primiceri, and Tambalotti (2013) demonstrate that foreign capital inflows—amplified by banking sector dynamics contributed to a surge in household debt and inflated asset prices, ultimately exacerbating systemic vulnerabilities.

Moreover, a banking glut can weaken the traditional risk assessment mechanisms within financial institutions. As competition intensifies and liquidity abounds, banks may rely more heavily on automated credit scoring, securitization, and off-balance-sheet vehicles, reducing transparency and increasing interconnectedness. This erosion of lending discipline heightens the risk of default and contagion, especially when macroeconomic conditions deteriorate. The IMF's analysis of global banking flows highlights how cross-border liquidity transmission can amplify domestic financial cycles, making economies more susceptible to external shocks.

The global banking glut hypothesis, introduced by Canuto (2014) and Parosa (2019), emphasizes the surplus supply of banks' financial intermediation capacity on a global scale. Parosa (2019) provided statistical evidence and a formal model illustrating the increasing participation of European banks in the United States and the potential impact of this excess capacity on credit conditions. Notably, the implementation of the Basel II capital adequacy system in the European Union (EU) allowed European banks to expand their balance sheets globally by reducing the average risk weight of various assets. While this regulatory reform was not intended to relax solvency requirements, it may have inadvertently contributed to the increased supply of bank loans in the United States.

The existing economic literature presents a varied debate regarding the voluntary nature of banks in accumulating idle reserves within an underfinanced economy. Xu (2019) argued that excess idle reserves resulted from banks involuntarily contracting credit supply, although the mechanism behind this contraction was not explicitly identified. In contrast, Hasanović and Latić (2017) and Canuto (2014) suggested that an increase in pricing could lead to surplus liquidity held by banks.

However, they did not pinpoint the specific variable driving this increase in pricing. These studies indicated that elevated pricing of banking services arose from significant information asymmetry, which increased the likelihood of default. Thus, it can be inferred that the variable contributing to the rise in credit rates was a risk premium associated with information asymmetry. Xu (2019) further noted that high pricing was linked to significant information asymmetry and banks' reluctance to grant credit, likely restricting loans and resulting in excess liquidity. Iwamoto (2015) found that legal efficiency encouraged banks to lend to small borrowers, despite their perceived riskiness, complicating the attribution of bank excess liquidity to an underfunded economy.

Ndirangu & Nyamongo (2015) developed a VAR (Vector Error Regression Model) to examine the causes of bank excess liquidity in the CEMAC zone from 1985 to 2002. Gruber (2023) discovered that banks voluntarily established a high-risk premium as a precautionary measure to manage credit availability, leading to an increase in free reserves. While previous studies identified various factors contributing to bank excess liquidity, they often overlooked a crucial aspect: the vicious circle that perpetuates this phenomenon. This vicious circle illustrates how excess liquidity is generated and self-perpetuates, rendering central bank key rate policies ineffective. Establishing a connection between economic dynamism, credit risk and bank excess liquidity is essential to fully comprehend this mechanism, as highlighted by Van Niekerk & Van Heerden (2017). The financial accelerator theory can provide empirical evidence to support this connection.

Recognizing the distinct nature of oil prices, financial liquidity and geopolitical risk, examining their interconnectedness is believed to yield valuable insights into the dynamics of the global economy. To ensure the robustness of the findings, thorough checks were conducted, analysing shocks resulting from supply and demand. This was achieved by incorporating the sign restrictions proposed by Spahn (2021), which introduced worldwide oil supply as a global variable. However, it is important to note that the Global Vector Autoregression (GVAR) framework employed in this study did not explicitly model oil supply and demand at the country level. This decision was motivated by the necessity to maintain the tractability of the model in terms of computational feasibility and conceptual clarity.

In a study by Wang et al. (2021), the focus was on the impact of commercial bank loans on economic growth in Nepal. Utilizing time series data from 1975 to 2013, the study employed the

Johansen co-integration technique and the Error Correction Model, revealing that real private sector lending significantly contributes to Nepal's long-term economic growth. Specifically, for every 1 percentage point increase in real private sector lending, there is a corresponding 0.40 percentage point rise in real GDP.

Kyei-Mensah (2023) investigated the relationship between bank loans and economic development in Jordan across various industries from 1993 to 2014. Using the Granger Causality Test and the Vector Error Correction Model (VECM), the study found a long-term relationship between bank credit and different sectors, including agriculture, industry, construction and tourism. Notably, a bidirectional causal relationship was revealed between economic growth and bank loans in the construction sector, a significant contributor to the Jordanian economy. In contrast, Hoffmann and Schnabl (2016) examined the impact of bank credit and stock market liquidity on GDP growth using a two-stage regression model, finding that these factors were not consistent determinants of GDP growth. Conversely, Bär (2015) conducted a study in the European Area, concluding that the supply of credit significantly influenced economic activity, with changes in loan growth positively affecting GDP. Their findings emphasized that the availability of credit, both in terms of volume and standards for loans to enterprises, played a crucial role in driving economic growth.
Richardson (2019) concluded that the banking glut has contributed to the relaxation of credit conditions in the United States. This research builds upon earlier findings by demonstrating the quantitative importance of net flows relative to gross flows in fuelling the housing boom. Parosa (2019) noted that the savings glut played a major role in driving the U.S. housing boom, although indications of the banking glut were also present. However, Kastrati (2022) did not specifically focus on the portfolio allocation of foreign investors, if economic agents possessed perfect foresight regarding risk and were indifferent to portfolio composition.

The emergence of digital currencies adds a new layer of complexity to this triad. Cryptocurrencies, digital tokens, and electronic payment systems are reshaping the velocity of money and challenging traditional measures of liquidity. Unlike fiat currency, digital assets operate on decentralized networks and often bypass conventional banking channels, reducing the visibility and controllability of monetary flows. As Bernhardsen and Kloster (2023) note, central bank digital currencies (CBDCs) could significantly alter liquidity management and monetary policy transmission, especially if widely adopted. High demand for CBDCs may affect banks' funding

costs and disrupt the traditional money creation process.

Furthermore, digital currencies compete with bank deposits as liquid assets, potentially weakening banks' balance sheets and reducing their role in credit intermediation. Marthinsen and Gordon (2024) argue that synthetic CBDCs (CBDCs) offer systemic liquidity benefits but also pose risks related to financial disintermediation and bank runs. The rise of decentralized finance (DeFi) and stablecoins introduces parallel monetary circuits that complicate central banks' ability to monitor aggregate indicators and enforce policy levers. As highlighted by Jaiswal and Chaudhari (2023), cryptocurrencies challenge the effectiveness of traditional monetary policy tools, such as interest rates and reserve requirements, by operating outside regulated financial systems.

2.6.3 Savings and Liquidity Glut

The concept of a savings glut emerged prominently in macroeconomic discourse following Ben Bernanke's 2005 address, which attributed growing global imbalances to excess savings in emerging markets relative to investment opportunities. This phenomenon, characterized by a surplus of desired savings over desired investment, has been linked to persistent current account surpluses in developing economies and corresponding deficits in advanced economies. Theoretically, savings gluts are understood through the lens of international capital flows, interest rate differentials, and the global allocation of liquidity.

At the core of this framework is the interaction between monetary policy and cross-border financial dynamics. Classical and Keynesian models both recognize that excess savings when not absorbed domestically seek returns abroad, influencing exchange rates, asset prices, and external balances. In open economy macroeconomics, the Mundell-Fleming model and its extensions illustrate how monetary policy in one country, particularly a dominant economy like the United States, can transmit liquidity shocks globally through interest rate channels and capital mobility.

Emerging markets, in response to these dynamics, often accumulate foreign exchange reserves and adopt sterilization policies to manage capital inflows and maintain exchange rate stability. These actions, while stabilizing in the short term, can reinforce global liquidity cycles and contribute to systemic imbalances. Theoretical contributions from scholars such as Obstfeld, Rogoff, and Caballero further emphasize the role of precautionary savings, financial underdevelopment, and asymmetric risk perceptions in perpetuating these imbalances.

Cologni and Manera (2008) demonstrated the significant role of monetary policy shocks in the deterioration of the current account in the U.S. from 1970 to 2006. Using a structural VAR model, they analysed the impact of these shocks on various economic indicators, including output, inflation, interest rates, oil price inflation, current account balances, consumption, investment and the real effective exchange rate. Their findings revealed that monetary policy shocks accounted for over 60 percent of the forecast error variance decomposition at a one-year forecast horizon.

The main objective of the current study is to investigate the effects of global liquidity on global imbalances. To achieve this, Panel-VARX models were estimated using data from 25 countries, which included five advanced economies (the United States, United Kingdom, Euro area, Japan and Canada) and 20 emerging market economies, focusing on the period from 1999 to 2013. The findings indicated that global liquidity has significant effects on global imbalances, with its dynamics being more pronounced than those following the initial U.S. monetary shock.

Tax cuts, particularly those directed toward high-income individuals and corporations, can inadvertently fuel saving gluts by increasing disposable income that is more likely to be saved than spent. In economies where wealth is concentrated, tax relief often leads to capital accumulation rather than consumption, as affluent households tend to invest surplus income in financial assets. Similarly, corporations benefiting from reduced tax burdens may prioritize shareholder returns such as dividends and stock buybacks over reinvestment in productive activities. This behaviour suppresses aggregate demand and limits the absorption of excess savings into the real economy. Moreover, when tax cuts are not matched by equivalent public revenue streams, governments may reduce public investment, further weakening the channels through which savings can be transformed into long-term economic growth.

Low interest rates, while typically intended to stimulate borrowing and investment, can also contribute to saving gluts under certain conditions. When interest rates are persistently low, the returns on traditional savings instruments diminish, prompting households especially those nearing retirement to save more in order to meet future financial goals. At the same time, businesses may hesitate to invest despite cheap credit if economic prospects appear uncertain or demand remains subdued. Instead of expanding operations, firms may hoard cash or invest in speculative assets, which inflates financial markets but does little to boost real economic activity. This dynamic

reinforces the imbalance between savings and investment, particularly in economies with aging populations or weak consumption growth.

2.6.4 Liquidity Glut and Monetary Policy Efficacy

Younas and Khan (2018) examined the relationship between money, interest rates, goods prices and commodity prices on a global scale. By aggregating data from major OECD countries and employing the Johansen/Juselius cointegrated VAR approach, they investigated the long-term homogeneity of commodity and goods price movements while considering changes in interest rates and monetary policy stances. Their empirical model confirmed that, even when controlling for interest rate changes, money (represented as a global liquidity aggregate) remained a crucial factor in determining the consistent movement of commodity and goods prices over time. The cointegrated VAR model aligned well with the analysed data spanning from the 1970s to 2008 and the robustness of the empirical results was evident through various recursive tests, remaining stable even with different compositions of the commodity indices.

Similarly, Parosa (2019) conducted an examination of the interactions between money, interest rates, goods prices and commodity prices at a global level, utilizing the same methodological framework. The findings supported the notion that money, defined as a global liquidity aggregate, continued to play a significant role in determining the long-term homogeneity of commodity and goods price movements, even when considering changes in interest rates and different monetary policy stances. The robustness of the empirical results was again confirmed through various tests, demonstrating stability across different commodity index compositions.

According to Bernanke (2018), the study utilized two different measures to assess monetary aggregates for the included countries and regions. The first measure was the simple sum of monetary aggregates, converted into euros using purchasing power parity (PPP) exchange rates. The second measure considered GDP weights and monetary aggregate indices. Interestingly, a strong correlation was found between these two measures, indicating their alignment. The study employed various methodologies, revealing that principal components analysis showed the first principal component had high explanatory power for individual country growth rates. Additionally, simple contemporaneous correlations calculated for excess money growth and real asset returns demonstrated a negative correlation with interest rates and a positive correlation with stock returns. Panel regression analyses confirmed these findings, with real asset returns reflecting similar results as the simple correlations.

Granger causality tests were conducted to check for indirect effects, revealing that U.S. excess money led and was led by Japanese excess money. A GARCH (2,2) model was also utilized to check for volatility spill overs. Lavoie and Reissl (2019) focused on measuring liquidity and employed various methodologies, constructing excess broad money variables for each country by imposing a unit coefficient on nominal GDP. For the G5 countries, they created measures of external monetary conditions by excluding the U.S., Euro area and Japan in turn. Robustness checks using narrow money and direct PPP exchange rate weights in aggregation yielded similar results, with data spanning from 1980 to 2004 across 15 countries, focusing on the G5 due to data availability.

A global SVAR (structural vector autoregression) model was employed, considering variables such as real GDP, GDP deflator, nominal broad money and nominal short-term rates. For the G5 aggregates, excess money was found to be a useful measure of the stance of monetary policy, providing information beyond the short rate on a global level. Additionally, a G4 model was estimated, incorporating domestic variables such as real GDP, GDP deflator, broad money, short rate and real effective exchange rate. Impulse response analysis revealed significant spill over to the euro area and, to some extent, to Japan, with the euro area behaving as a small open economy. The effects on the "leader" country, the U.S., were more limited and variance decomposition analysis yielded similar results. Bernanke (2018) emphasized the importance of measuring liquidity, specifically monetary liquidity, while also considering market liquidity. Various measures were utilized to gauge monetary liquidity, including GDP-weighted growth rate series, simple sum U.S. dollar aggregates and Divisia indices of global money growth, encompassing both narrow and broad money.

2.6.5 Oil Countries and Liquidity Glut

Kyei-Mensah (2023) conducted a study that examined the relationship between oil prices, financial liquidity, geopolitical risk and the economic performance of oil-export-dependent economies. Utilizing a Global Vector Autoregression (GVAR) model, the study analysed both global and country-specific dynamics, allowing for different lag structures in various countries. The findings indicated that despite high global financial liquidity and heightened geopolitical risk, new waves of high oil prices are unlikely. Additionally, the study included a simple VAR-based Granger-causality test, confirming the hypothesis that oil prices, geopolitical risk and financial liquidity are closely interconnected in a self-perpetuating cycle.

In a related context, Hasanović and Latić (2017) highlighted that major oil producers in the Middle East remain attractive targets for terrorists due to the potential for significant economic damage resulting from major disruptions in oil production and transportation in the region. This underscores the vulnerability of oil-exporting economies to geopolitical threats. Akyüz (2017) discovered a strong positive correlation between geopolitical conflicts and oil prices, which subsequently leads to liquidity gluts. However, it is noteworthy that the impact of these conflicts has become less pronounced in recent years, suggesting a shift in the dynamics influencing oil prices and liquidity.

These studies collectively illustrate the complex interplay between oil prices, financial liquidity and geopolitical risk, emphasizing the need for a nuanced understanding of how these factors influence the economic performance of oil-export-dependent economies. The findings suggest that while geopolitical risks and financial liquidity are significant, their effects on oil prices may be evolving, warranting further investigation into these relationships.

2.6.6 Comparison of SSA Experiences with Global Cases of Liquidity Gluts

Comparing the experiences of Sub-Saharan Africa (SSA) with global cases of liquidity gluts provides valuable insights into the effectiveness of policy responses and the unique challenges faced by the region. One notable global case is the liquidity glut experienced in the United States during the early 2000s, which significantly contributed to the housing bubble and the subsequent financial crisis. The U.S. Federal Reserve implemented expansionary monetary policies, including maintaining low interest rates and engaging in large-scale asset purchases, which resulted in an oversupply of liquidity in the financial system. This excess liquidity fuelled speculative investments in the housing market, leading to inflated asset prices and increased financial instability. The eventual tightening of monetary policy and the bursting of the housing bubble had severe repercussions not only for the U.S. economy but also for the global economy, highlighting the interconnectedness of financial markets (Greenspan, 2008).

In contrast, the experiences of SSA countries underscore the unique challenges posed by liquidity gluts in the region. Unlike the U.S where financial markets are deep and well-developed, many SSA countries have shallow financial markets characterized by limited investment opportunities and underdeveloped financial infrastructure. This structural limitation constrains the ability of policymakers to effectively absorb excess liquidity and channel it into productive investments. For instance, the reliance on commodity exports in many SSA countries makes them particularly

vulnerable to external shocks and fluctuations in global commodity prices, complicating liquidity management efforts (World Bank, 2019). As a result, SSA countries often face a dual challenge: managing liquidity while simultaneously addressing the volatility of their primary revenue sources.

Another global case worth examining is the liquidity glut experienced in Japan during the 1980s and 1990s. The Bank of Japan's expansionary monetary policies, aimed at combating deflation and stimulating economic growth, led to an oversupply of liquidity in the financial system. This excess liquidity fuelled speculative investments in real estate and equity markets, resulting in significant asset price bubbles. The subsequent tightening of monetary policy and the bursting of these bubbles led to a prolonged period of economic stagnation and deflation, commonly referred to as the "Lost Decade" (Koo, 2003). This experience underscores the importance of effective liquidity management and the risks associated with speculative investments and asset price bubbles. The experiences of Japan and the U.S. highlight critical lessons for SSA countries regarding the need for robust regulatory frameworks and prudent macroeconomic policies to mitigate the risks associated with liquidity gluts. For instance, the lack of effective regulatory oversight in both the U.S. and Japan contributed to the severity of their respective financial crises. In SSA, the development of domestic financial markets and investment opportunities is crucial for effectively absorbing excess liquidity and promoting sustainable economic growth.

Moreover, the unique socio-economic context of SSA necessitates tailored policy responses. For example, while advanced economies can rely on sophisticated financial instruments to manage liquidity, SSA countries may need to focus on improving access to basic financial services and fostering local entrepreneurship. This approach can help ensure that excess liquidity is directed toward productive uses, thereby enhancing economic resilience and stability. The integration of qualitative research into understanding market dynamics can also provide insights into how culturally situated narratives influence investment behaviours, particularly in regions where financial literacy may be limited (Beck & Demirgüç-Kunt, 2008). Furthermore, the role of international financial institutions cannot be overlooked. Organizations such as the International Monetary Fund (IMF) and the World Bank can play a pivotal role in providing technical assistance and financial support to SSA countries as they navigate the complexities of liquidity management.

The comparison of SSA experiences with global cases of liquidity gluts reveals significant insights

into the challenges and opportunities faced by the region. By learning from the experiences of the U.S. and Japan, SSA countries can develop more effective strategies for managing liquidity, ultimately promoting sustainable economic growth and stability in the face of global financial fluctuations. Addressing these challenges will require a concerted effort from policymakers, financial institutions and stakeholders across the region to create a more robust and resilient economic framework. The path forward must involve not only the development of financial markets but also the cultivation of a regulatory environment that can adapt to the unique challenges posed by liquidity gluts in SSA.

2.6.7 Empirical Literature on Policy Responses to Liquidity Gluts in SSA.

Empirical studies have extensively examined the effectiveness of monetary and fiscal policies in managing liquidity gluts in Sub-Saharan Africa (SSA). One significant study by Saxegaard (2006) investigates the pattern of excess liquidity in the region and its implications for monetary policy effectiveness. Saxegaard's research highlights that excess liquidity, defined as the surplus reserves held by commercial banks beyond what is required for precautionary purposes, can weaken the monetary policy transmission mechanism. This weakening occurs because banks, flush with excess reserves, may not respond to central bank policy signals as expected, thereby diminishing the central bank's ability to influence economic conditions through traditional monetary tools such as interest rate adjustments and open market operations.

Saxegaard's study employed a nonlinear structural VAR model to analyse data from the CEMAC region, Nigeria, and Uganda. The findings suggested that in environments with high levels of excess liquidity, the impact of monetary policy actions on key economic variables such as inflation and output was significantly muted. This was because banks with ample liquidity may not have needed to adjust their lending behaviours in response to changes in policy rates, leading to a disconnect between policy intentions and actual economic outcomes.

Another empirical investigation by Nyorekwa (2017) and Ndikumana et al. (2020) explored the dynamics of monetary policy in the context of liquidity in Sub-Saharan Africa. Ndikumana's research focused on the role of central banks in managing liquidity surpluses and their impact on financial stability. Using a panel data approach, the study found that central banks in SSA often resorted to sterilization measures, such as issuing central bank bills, to absorb excess liquidity and mitigate inflationary pressures. However, the effectiveness of these measures was contingent on the

depth and development of domestic financial markets. In countries with underdeveloped financial markets, sterilization efforts were less effective, leading to persistent liquidity surpluses and inflationary pressures.

2.7 Literature Review Chapter Summary

This literature review critically examines the theoretical and empirical dimensions of saving and banking gluts, with a specific emphasis on identifying gaps within the African context. A summary table of empirical studies is provided to highlight key findings and methodologies. The theoretical framework encompasses various perspectives, including Keynesian economics, supply-side economics, global imbalances, financialization and liquidity preference theory. These theories provide insights into the preference for holding liquid assets and their implications for banking gluts. Empirical studies have explored dimensions such as the relationship between oil-rich countries and liquidity gluts, the efficacy of monetary policy in these contexts and the broader impact of liquidity gluts on credit markets and economic growth.

Table 2.1: Empirical Literature Review Summary

Study	Methodology	Findings	Relevance to SSA
Saxegaard (2006)	Nonlinear Structural VAR Model	Excess liquidity weakens monetary policy transmission.	Highlights the need for understanding liquidity conditions to enhance policy effectiveness.
Nyorekwa (2017)	Panel Data Approach	Central banks use sterilization measures to absorb excess liquidity.	Emphasizes the role of central banks in managing liquidity surpluses and financial stability.
Ndikumana et al. (2020)	Panel Data Approach	Sterilization effectiveness depends on financial market development.	Underlines the importance of developing financial markets for effective liquidity management.
Calderón and Boreux (2016)	Countercyclical Fiscal Policy Analysis	Public investment can absorb surplus funds and stimulate growth.	Suggests the use of countercyclical fiscal policies to manage liquidity surpluses.
Kasekende and Atingi-Ego (2019)	Panel Data with Fixed-Effects Regression	Liquidity-driven credit expansion increases real estate prices.	Warns of potential asset price bubbles due to liquidity-driven credit expansion.
Akinwande et al. (2020)	Fixed-Effects Regression Model	Increased liquidity lowers credit spreads but may deteriorate lending standards.	Highlights the need for maintaining lending standards amidst increased liquidity.

Duca and Muñoz (2022)	Panel Data Approach	Excess liquidity correlates with reduced credit spreads.	Demonstrates the impact of liquidity on credit market dynamics in SSA.
Bruno and Shin (2017)	Comprehensive Dataset Analysis	Global liquidity increases credit expansion and asset prices in emerging markets.	Shows the influence of global liquidity on SSA credit markets and asset prices.
Aizenman and Jinjarak (2018)	Analysis of Financial Crises	Tightening global liquidity leads to capital outflows and increased volatility.	Highlights the vulnerability of SSA to external liquidity shocks.
Fratzscher et al. (2019)	Analysis of Investor Sentiment	Changes in risk appetite led to rapid capital flows and affect local liquidity.	Emphasizes the role of investor behaviour in liquidity dynamics in SSA.

Source: Author's Compiliation, 2024

Despite the significant implications of liquidity gluts on credit markets and economic growth, there is a pronounced lack of research specifically focused on Sub-Saharan Africa. This gap is particularly critical given the region's unique economic challenges, such as high levels of informality, limited access to financial services and vulnerability to external shocks like commodity price fluctuations and global financial market volatility. While studies in other regions have identified factors such as monetary policy decisions and capital flows as drivers of liquidity gluts, there is insufficient understanding of how these factors interact within the African context. Moreover, existing literature predominantly emphasizes advanced economies, leaving a significant knowledge gap regarding how liquidity dynamics specifically affect African countries. This is concerning, as liquidity issues are prevalent in the region, impacting economic stability and growth. The current empirical studies have largely focused on advanced economies, neglecting the unique structural challenges faced by African nations. Consequently, there is a pressing need for research that examines the specific causes and triggers of liquidity gluts in African contexts.

2.8 Methodology

This study aims to evaluate the effectiveness of macroeconomic policies in mitigating the adverse impacts of liquidity gluts on credit markets and economic growth in Africa. Adopting a quantitative research design with a focus on secondary data analysis, this study utilizes diverse secondary data sources, including governmental bodies and international finance institutions, to conduct an in-depth investigation into this crucial topic. The study will specifically employ the Autoregressive Distributed Lag (ARDL) Model to analyse the data and draw meaningful conclusions regarding

the relationship between macroeconomic policies and their effects on economic outcomes in the region.

2.8.1. Measures of Liquidity

The identification of periods characterized by excessive or insufficient global liquidity is guided by established indicators and standards. Notably, the seminal works of Baks and Kramer (1999) have significantly influenced the understanding of this phenomenon. These studies propose the use of GDP growth rate as a benchmark for assessing global liquidity conditions. This approach draws upon the Quantity Theory of Money, which posits the relationship $\frac{M}{PY} = \frac{1}{V} = K$, where M represents the total amount of money in circulation within a given country and period, V denotes the velocity of money, Y signifies real output and P represents the corresponding price level. By employing this threshold, the analysis seeks to discern deviations from the normative level of global liquidity. In line with the hypothesis of a relatively stable velocity of money, as postulated by the quantity theory of money, additional considerations can be made. By linearizing and differentiating the equation, PY = 1 and V = k, the following relationship is obtained:

$$m_t^{\sim} = m_t - g_t$$

Where $m_t^{\sim}$ represents the observed excess money growth, m_t denotes the growth rate of money in the economy and g_t signifies the growth rate of GDP. Consequently, the threshold for excess liquidity can be defined when the growth of money supply surpasses the growth rate of GDP. This formulation allows for a quantitative determination of periods characterized by excessive liquidity in relation to economic growth.

2.8.2 Sample Selection

To order to identify the presence of liquidity gluts in Sub-Saharan African countries, a rigorous selection process was implemented based on the difference between the growth rate of money supply and nominal growth $m_t^{\sim} = m_t - g_t$ for all the 46Sub-Saharan African countries. Only countries with a positive were included in the analysis, indicating the existence of liquidity gluts on average within those countries. The time span for calculating this average were from 1990 to 2023, taking into consideration data availability constraints. This period provided a comprehensive overview of liquidity glut patterns in the Sub-Saharan African region.

Upon filtering the countries based on the presence of liquidity gluts, the results were presented in a structured manner. Firstly, the analysis considered the economic growth rates of the selected countries. Both high-growth and low-growth economies were included to conduct a comparative analysis of how liquidity gluts impacted credit markets and economic growth across different

economic contexts. Secondly, the geographic location of the selected countries was considered. The sample encompassed countries from various regions within Sub-Saharan Africa. This approach recognized the potential regional variations in the occurrence and effects of liquidity gluts, considering factors such as proximity to economic hubs, natural resources and trade networks. Lastly, the sample aimed to achieve representativeness by including a variety of African economies that had implemented different macroeconomic policies. This diversity facilitated a comparative analysis of the effectiveness of various policy measures in managing liquidity gluts and mitigating their effects.

To ensure a comprehensive and regionally balanced analysis, Sub-Saharan African countries were initially grouped into three major regions: Southern, Central and West, and East Africa. This classification enabled the study to capture the heterogeneity of macroeconomic structures, institutional dynamics, and liquidity conditions across the continent. Within each region, countries were selected based on the availability and consistency of time series data for key variables such as liquidity glut indicators, GDP growth, government expenditure, foreign direct investment, exchange rates, and pension assets. Following rigorous stationarity tests and cointegration diagnostics, the final ARDL estimation focused on six Southern African countries—Angola, Botswana, Eswatini, Lesotho, Namibia, and South Africa—where data quality and completeness were sufficient to support robust econometric modeling. However, the broader analysis also included countries from West and Central Africa (Ghana, Nigeria, Cameroon, Equatorial Guinea, Ivory Coast, and Rwanda) and East Africa (Kenya, Ethiopia, Mauritius, Tanzania, and Uganda),

2.8.3 Variables and Measures

This section explores the underlying factors contributing to liquidity gluts in vulnerable Sub-Saharan African countries experiencing excess liquidity, enhancing the overall understanding of "The Interplay Between Liquidity Gluts, Credit Markets and Economic Growth in Sub-Saharan Africa." It focuses on the intricate relationship between macroeconomic policies and their role in alleviating the effects of liquidity gluts on credit markets and economic growth. Through a detailed examination of various macroeconomic, credit and growth-related variables, the study seeks to unravel the complex dynamics that drive liquidity gluts in the region. These variables will act as essential indicators for assessing the prevalence of liquidity gluts and their repercussions on credit markets and economic growth within the selected countries. This research aims to yield valuable insights that can inform effective strategies for managing liquidity gluts, ultimately fostering sustainable economic development.

2.8.4 Dependent and Independent Variables

This study delved into the dynamics of liquidity gluts within an economy through an examination of various dependent variables. A crucial variable of interest was denoted as $m_t^{\sim}$, representing the disparity between the growth rates of the money supply and nominal GDP. This variable served as a vital indicator of liquidity gluts and their implications. Additionally, the study analysed the growth rate of the current account to GDP as another dependent variable. This variable incorporated capital flows and provided insights into the overall economic performance of an economy. Furthermore, the study considered the GDP growth rate itself, which played a critical role in assessing the effectiveness of policy measures in driving economic growth. All variables were measured in nominal terms to account for inflation. Through a comprehensive analysis of these dependent variables, including credit to GDP, stock market capitalization, broad money growth, foreign direct investment, government expenditure, interest rates and more, this study aimed to unravel the intricate relationship between liquidity gluts, economic growth and credit markets (Mian et al., 2020).

In the broader literature, liquidity glut has been measured using various proxies, including asset returns (nominal equity returns in U.S. dollars as employed by Brana and Prat, 2016), credit-to-GDP gaps, and interest rate spreads. While these indicators are effective in advanced economies with deep financial markets, they pose limitations in the Sub-Saharan African (SSA) context due to data scarcity, low equity market penetration, and underdeveloped capital markets. This study adopts excess money growth defined as the difference between the growth rate of broad money and nominal GDP as the primary measure of liquidity glut, given its macroeconomic relevance and data availability across SSA countries. Additionally, banking sector excess liquidity, captured through the ratio of bank liquid reserves to total assets, is incorporated to reflect institutional liquidity dynamics. This measure is particularly pertinent in SSA, where financial intermediation is often weak and liquidity accumulation within banks does not necessarily translate into credit expansion. The dual approach ensures both macro-level and institutional-level liquidity conditions are accounted for, enhancing the robustness and contextual relevance of the analysis.

2.8.5 Estimation Methods

The investigation into the factors leading to liquidity gluts in select Sub-Saharan African countries vulnerable to excess liquidity commenced with rigorous stationarity tests to evaluate variable stability. Subsequently, the meticulous application of the bounds testing approach revealed potential

cointegration, providing invaluable insights into enduring associations between the variables. Detailed tables presenting the results of these tests were included in the appendix for reference.

Following the identification of cointegration, the next crucial step involved determining the optimal lag length for the Autoregressive Distributed Lag (ARDL) model. This task was accomplished by utilizing the Akaike Information Criterion (AIC), a robust selection criterion renowned for its ability to strike a delicate balance between model fit and simplicity. Through judicious application of the AIC, an intricately refined lag length was determined, ensuring the meticulous specification of the ARDL model while adhering to the selected criteria with precision and rigor.

Furthermore, the formulation of the Error Correction Model (ECM) played a vital role in capturing short-term relationships between the variables and encapsulating the adjustment process towards long-run equilibrium. This analytical tool enriched the analysis by capturing the dynamic interplay between the variables, adding depth and nuance to the framework. The subsequent phase involved the rigorous estimation of coefficients within the ARDL model using the Ordinary Least Squares (OLS) method. This computational endeavour served as the foundation for establishing and articulating the intricate relationships between the variables, resulting in a comprehensive understanding of their dynamics.

Concurrently, a comprehensive validation process was implemented to scrutinize the ARDL model thoroughly. This encompassed rigorous checks for autocorrelations, heteroscedasticity, model specification problems and white noise residuals. The exhaustive validation procedures fortified the accuracy and reliability of the ARDL model, enhancing the robustness and credibility of the analytical findings. Detailed results of these validation checks were provided in the appendix for further scrutiny.

The Keynesian perspective linked the saving glut and fiscal policy to liquidity gluts. During recessions, fiscal policy measures, such as tax cuts and increased government spending, could boost consumption, investment and aggregate demand. Lowering interest rates might not have been sufficient, prompting Keynesian economists to advocate for additional strategies, including fiscal policy. Excess savings, particularly in aging populations, could create a saving glut that necessitated public deficits to bridge the gap between savings and investment.

Regression Model

$$\tilde{m_{in}} = \beta_0 + \beta_{i1}\text{BM} + \beta_{i2}\text{GDP} + \beta_{i3}\text{FDI} + \beta_{i4}\text{GE} + \beta_{i5}\text{PA} + \mu_{in} \quad \text{.....Equation (1)}$$

Where: BM: Broad Money to GDP Growth, GDP Growth, FDI: Foreign Direct Investment Official Exchange Rate, GE: Government Expenditure and PA: Pension Assets to GDP.

ARDL Model specification Model

$$m_{in}^{\sim} = \alpha_0 + \sum_{j=o}^{p} \beta_j m_{t-j}^{\sim} + \sum_{j=o}^{p} \Upsilon_j \Delta BM_{t-j} + \sum_{j=o}^{p} \phi_j GDP_{t-j} + \sum_{j=o}^{p} \zeta_j \Delta FDI_{t-j} + \sum_{j=o}^{p} \eta_j \mathrm{GE}_{G_{t-j}}$$
$$+ \sum_{j=o}^{p} \varphi_j \Delta PA_{t-j} + \sigma_1 m_{t-1}^{\sim} + \sigma_2 BM_{t-1} + \sigma_3 GDP_{t-1} + \sigma_4 FDI_{t-1} + \sigma_5 GE_{t-1} + \sigma_6 PA_{t-1}$$
$$+ \mu_t$$

The incorporation of variables in a regression model held significant importance in comprehensively understanding the determinants of liquidity gluts. Economic theories provided a solid theoretical basis for establishing the connections between these variables and liquidity gluts.

The Quantity Theory of Money substantiated the inclusion of Money Supply as an independent variable by positing that alterations in the money supply directly influenced liquidity levels. Specifically, an increase in the money supply could engender excess liquidity, thereby potentially instigating liquidity gluts. Moreover, Keynesian economics supported the inclusion of Government Spending as an independent variable by emphasizing the role of fiscal policies and government expenditure in shaping liquidity conditions. The injection of liquidity into the economy through heightened government spending could lead to an abundance of liquidity, consequently contributing to liquidity gluts.

The inclusion of Trade Openness as an independent variable aligned with theories such as the Theory of Comparative Advantage and the New Trade Theory. According to the Theory of Comparative Advantage, nations should specialize in the production of goods and services in which they possessed a comparative advantage. Trade openness facilitated the realization of this theory by enabling countries to capitalize on their unique strengths and achieve efficient resource allocation, ultimately fostering economic growth. Similarly, the assets of pension funds represented significant financial resources that impacted the economy by financing retirement benefits. The ratio of pension assets to GDP indicated the size and importance of these funds. They contributed to economic growth by providing retirement income and fostering deeper capital markets. Including Pension Assets to GDP in the model allowed for a comprehensive analysis of their impact on the economy and excess liquidity.

Theoretical frameworks such as Endogenous Growth Theory and the Solow-Swan Growth Model underpinned the relevance of Economic Growth Rates as an independent variable. Endogenous

Growth Theory emphasized the significance of knowledge, research and development, innovation and human capital in driving long-term economic growth. Accordingly, investments in these areas contributed to higher economic growth rates. On the other hand, the Solow-Swan Growth Model underscored the accumulation of physical capital and technological progress as critical determinants of economic growth. By including Economic Growth Rates as an independent variable in the regression model, the analysis captured the influence of factors such as investment, technological progress and sound economic policies on liquidity gluts. These theories of economic development and growth provided a robust foundation for comprehending the relationship between economic growth rates and liquidity gluts.

The savings glut model suggested that excess savings could contribute to liquidity gluts. This model examined the relationship between excess savings, liquidity gluts and their impact on the economy. It provided insights into the potential consequences of countries saving more than they spent and the implications for interest rates, asset prices and economic growth. This model explored the relationship between savings rates, investment patterns and liquidity levels in Sub-Saharan African countries.

Multiple Regression Model

$\widetilde{m_{in}} = \beta_0 + \beta_1 \mathrm{GS} + \beta_2 \mathrm{GDP} + \beta_3 \mathrm{INT} + \beta_4 \mathrm{BLA} + \beta_5 \mathrm{SUB} + \mu_{\mathrm{in}}$……. Equation (2)

ARDL Model specification Model

$$\widetilde{m_{in}} = \alpha_0 + \sum_{j=o}^{p} \beta_j \widetilde{m_{t-j}} + \sum_{j=o}^{p} \Upsilon_j \Delta GS_{t-j} + \sum_{j=o}^{p} \phi_j GDP_{t-j} + \sum_{j=o}^{p} \zeta_j \Delta INT_{t-j} + \sum_{j=o}^{p} \eta_j \mathrm{BLA}_{G_{t-j}} + \sum_{j=o}^{p} \varphi_j \Delta SUB_{t-j} + \sigma_1 \widetilde{m_{t-1}} + \sigma_2 GS_{t-1} + \sigma_3 GDP_{t-1} + \sigma_4 INT_{t-1} + \sigma_5 BLA_{t-1} + \sigma_6 SUB_{t-1} + \mu_t$$

Where GS represented the Gross Savings to GDP ratio, GDP indicated GDP growth, INT referred to interest rates, BLA denoted the Bank Liquid Assets ratio and SUB signified the Total Subsidies to GDP ratio. The inclusion of certain variables in the Savings Glut Model was justified by economic theory and concepts related to liquidity gluts. One variable, the Gross Savings to GDP ratio (GS/GDP), was informed by the savings glut hypothesis, which suggested that excess savings could contribute to liquidity gluts. Additionally, the GDP growth variable (GDP) was crucial in understanding liquidity gluts. Higher GDP growth rates could stimulate investment and consumption, which in turn could affect liquidity levels. By incorporating GDP growth as a variable in the model, the analysis aimed to assess its impact on liquidity gluts. Interest rates (INT) played a significant role in the allocation of

funds and investment decisions. Low interest rates could incentivize borrowing and investment, potentially leading to excess liquidity in the financial system. Including interest rates as a variable allowed for an examination of their impact on liquidity gluts.

Another relevant variable was the Bank Liquid Assets ratio (BLA), which reflected the proportion of liquid assets held by banks in relation to their total assets. Banks' liquidity positions could influence their lending behaviour and, consequently, liquidity levels. By including the Bank Liquid Assets ratio as a variable, the analysis sought to assess its relationship with liquidity gluts. Lastly, the Total Subsidies to GDP ratio (SUB) was included as a variable to examine the impact of government support on liquidity gluts. Subsidies provided by the government could affect investment patterns and consumption behaviour, potentially contributing to liquidity gluts. Incorporating this ratio allowed for an exploration of the relationship between government support and liquidity levels.

The Monetary Policy Transmission Model suggested that an excess of liquidity within the banking system could significantly impact financial markets, credit activity and overall economic stability. This surplus liquidity arose when there was an abundance of funds available for lending and investment within banks. While a banking glut could stimulate investment and economic activity, it could also lead to misallocation of funds and financial imbalances if not managed effectively. From a monetary policy perspective, central banks faced challenges in addressing a banking glut, as traditional policy measures might have had limited effectiveness. This model specifically analysed the relationship between lending rates, foreign capital inflows and liquidity levels in Sub-Saharan African countries.

Multiple Regression Model

$$\tilde{m_i} = \beta_0 + \beta_1 \mathrm{BS} + \beta_2 \mathrm{GDP} + \beta_3 \mathrm{GE} + \beta_4 \mathrm{FCI} + \beta_5 \mathrm{CRE} + \mu_{\mathrm{i}} \ldots\ldots \text{Equation (3)}$$

ARDL Model specification Model

$$\tilde{m_{in}} = \alpha_0 + \sum_{j=o}^{p} \beta_j \tilde{m_{t-j}} + \sum_{j=o}^{p} \Upsilon_j \Delta BS_{t-j} + \sum_{j=o}^{p} \phi_j GDP_{t-j} + \sum_{j=o}^{p} \zeta_j \Delta GE_{t-j} + \sum_{j=o}^{p} \eta_j \mathrm{FCI}_{G_{t-j}} + \sum_{j=o}^{p} \varphi_j \Delta CRE_{t-j} + \sigma_1 \tilde{m_{t-1}} + \sigma_2 BS_{t-1} + \sigma_3 GDP_{t-1} + \sigma_4 GE_{t-1} + \sigma_5 FCI_{t-1} + \sigma_6 CRE_{t-1} + \mu_t$$

Where BS represented the bank spread as a proxy for the cost of lending, GDP indicated the GDP growth rate, GE referred to government expenditure, FCI denoted Foreign Capital Inflows and CRE signified the private sector credit extension to GDP ratio.

The bank spread, which measured lending costs, was a significant factor in assessing credit availability and borrowing costs. By incorporating the bank spread into the model, the analysis aimed to examine how changes in lending costs influenced liquidity levels and the transmission of monetary policy. Similarly, the GDP growth rate served as an indicator of economic activity and provided insights into the overall health of the economy. The relationship between liquidity levels, credit activity and GDP growth could shed light on the impact of excess liquidity on investment, economic activity and inflation.

Government expenditure played a critical role in fiscal policy and had implications for liquidity levels and economic stability. Considering changes in government expenditure within the model allowed for an examination of the impact on liquidity dynamics, investment patterns and the effectiveness of monetary policy measures. Additionally, the budget deficits to GDP ratio, which reflected a country's fiscal position, could affect liquidity levels and monetary policy decisions.

Credit extension to GDP provided valuable insights into credit availability within the economy. It represented the level of lending by financial institutions and played a significant role in economic activity. By incorporating credit extension to GDP in the model, the analysis sought to investigate how changes in credit availability influenced liquidity dynamics, investment patterns and the effectiveness of monetary policy measures. This variable enhanced the understanding of the relationship between credit activity, liquidity conditions and the broader performance of the economy. Foreign capital inflows to GDP represented the amount of foreign investment flowing into the economy. These inflows had profound implications for liquidity levels, exchange rates and economic stability. Including this variable in the model enabled the analysis of how changes in foreign capital inflows affected liquidity dynamics, investment patterns and the effectiveness of monetary policy measures. It allowed for the assessment of the impact of international capital flows on liquidity conditions and the transmission of monetary policy.

2.9 Data Analysis

2.9.1 Descriptive Statistics

Considering the money supply and current account, the mean growth rate of broad money to GDP is 14%, with a range from -3% to 160%. This suggests variations in the expansion of the money supply relative to GDP, which may impact the effectiveness of monetary policy measures in managing liquidity gluts and supporting credit markets. Additionally, the mean current account as a percentage of GDP is -5%, ranging from -148% to 44%. These differences reflect variations in the

balance of payments position of African countries, influencing their vulnerability to liquidity gluts and their ability to mitigate the negative effects on credit markets and economic growth (Moretti, 2020). The standard deviations of these indicators provide further insights into the variability across African countries. The standard deviation of GDP is 7, indicating a moderate level of variability in economic output. This variability could affect the ability of macroeconomic policies to stabilise growth during liquidity gluts. Furthermore, the standard deviation of inflation is 144, reflecting a high level of variability in price levels across the region. This highlights the challenges faced by policymakers in managing inflationary pressures during liquidity gluts and underscores the need for effective monetary policy measures.

The standard deviation of subsidies is $4.650 billion, suggesting significant variation in the number of subsidies provided by governments in Africa. This variability may impact the effectiveness of policies aimed at mitigating the negative effects of liquidity gluts on credit markets and economic growth. Similarly, the standard deviation of total reserves is $5.360 billion, indicating variations in the level of foreign exchange reserves held by countries in the region. This variability may affect the ability of countries to manage liquidity gluts and stabilize their economies.

This variability may influence the effectiveness of policies aimed at promoting savings and mitigating the negative effects of liquidity gluts. Moreover, the standard deviation of government expenditure as a percentage of GDP is 12, indicating variations in the level of public spending across the region. This variability may impact the effectiveness of fiscal policies in addressing liquidity gluts and supporting economic growth. Furthermore, the standard deviation of trade as a percentage of GDP is 36, reflecting differences in the importance of trade in African economies. This variability may influence the vulnerability of countries to liquidity gluts and their ability to mitigate the negative effects on credit markets and economic growth. Additionally, the standard deviation of lending interest rates is 15, suggesting variations in the cost of borrowing across the region. Moreover, the standard deviation of the bank liquid reserves to bank assets ratio is 16, suggesting variations in the liquidity position of banks in the region. This variability may influence the ability of banks to manage liquidity gluts and support credit markets. This variability may impact the competitiveness of African economies during liquidity gluts and their ability to attract foreign investment.

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Table 2.3: Descriptive Statistics

Statistic	GDP (%)	Subsidies ($ Millions)	Total Reserves ($ Millions)	Gross savings (% of GDP)	Gvt Expenditure (% of GDP)	Trade (% of GDP)	Lending interest rate (%)	Interest rate spread (%)	Bank liquid ratio (%)	Official exchange rate	FDI	Broad Money to GDP Growth	Current Account to GDP
Mean	4.07	3.950	2.290	18.27	15.98	73.55	17.09	7.85	21.63	369.69	(450.00)	13.77	(5.29)
Median	4.15	2.590	0.617	16.29	14.46	61.98	15.05	6.52	17.65	109.64	(106.00)	3.50	(4.67)
Maximum	149.97	69.200	53.600	59.02	122.59	235.82	217.88	80.33	109.50	4,096.12	12.70	160.06	43.67
Minimum	(50.25)	(0.7170)	0.857	(19.90)	(3.69)	16.35	(1.09)	(5.23)	1.64	0.00	(41.30)	(21.40)	(148.00)
Std. Dev.	7.11	0.465	5.360	11.43	12.17	36.23	15.19	8.21	16.14	570.50	1.95	21.28	12.49
Skewness	7.05	3.96	5.59	0.47	4.15	1.12	6.38	3.62	1.74	3.09	(9.84)	2.63	(2.96)
Kurtosis	149.19	38.14	40.21	3.57	28.43	4.33	70.24	24.34	7.21	15.31	181.42	12.28	28.03
Jarque-Berra	1.23	1.094	1.144	1.204	0.23	4.74	5.59	2.752	1.78.88	1.67	1.58	3.12	8.30

Source: Authors Calculations, 2024

According to Table 2.3 the descriptive statistics provide a comprehensive overview of key economic indicators in Sub-Saharan Africa (SSA), offering insights into the region's economic landscape. The mean values highlight average levels, such as GDP at 4.07%, subsidies at $3.950 million and total reserves at $2.290 million. The median values indicate central tendencies, reflecting the middle values of these indicators. The range between maximum and minimum values reveals variability across SSA countries, offering glimpses into fluctuations. The standard deviation, skewness and kurtosis provide further information on dispersion, asymmetry and peakiness of the indicator distributions, yielding a nuanced understanding of their characteristics. The range between maximum and minimum values reveals variability across SSA countries, offering glimpses into fluctuations. The standard deviation, skewness and kurtosis provide further information on dispersion, asymmetry and peakiness of the indicator distributions, yielding a nuanced understanding of their characteristics.

The standard deviation of total reserves provides insights into foreign exchange reserve variability. Countries with higher standard deviations are more exposed to external shocks, such as commodity price fluctuations or global financial changes, leading to significant inflows or outflows of capital, potentially affecting exchange rates. Variations in saving behaviours across SSA countries are revealed by the standard deviation of gross savings. Disparities in saving rates can stem from factors like income levels, cultural attitudes, or differences in financial systems and banking access. The standard deviation of economic indicators like government expenditure, trade, lending interest rates, interest rate spread, bank liquid ratio, official exchange rate, FDI, broad money to GDP growth and current account to GDP provides insights into volatility or stability in each area. For instance, high standard deviations in government expenditure indicate fiscal unpredictability, impacting the business environment and investor confidence. Similarly, a high standard deviation in lending interest rates suggests a volatile credit market with unpredictable borrowing costs.

2.9.1.1 Liquidity Paradoxes in Sub-Saharan Africa: The Interplay of GDP, Reserves and Economic Policies

According to Figure 2.1, the analysis of the factors contributing to liquidity gluts in Sub-Saharan Africa (SSA) reveals intriguing patterns. When exploring the relationship between GDP (on the right-hand side) and the excess liquidity indicator, it becomes clear that a higher GDP does not necessarily correspond with increased excess liquidity. For example, Mauritius, which has a high GDP of 8.69, exhibits an extremely high excess liquidity indicator of 141.45. In contrast, Angola, with a moderate GDP of 3.05, shows a negative excess liquidity indicator of -0.18. This indicates that GDP alone is not a reliable predictor of excess liquidity in these countries.

Countries with higher total reserves tend to have higher excess liquidity indicators. Nigeria, for example, has the highest total reserves at approximately $35.56 billion and a high excess liquidity indicator of 25.05. However, there are exceptions to this trend, such as Botswana, which has high total reserves of approximately $4.28 billion but a negative excess liquidity indicator of -5.39. This indicates that while total reserves have a stronger correlation with excess liquidity than GDP, they are not the sole determining factor. Outliers in the data further complicate the analysis. Lesotho and Gambia stand out with extremely high excess

liquidity indicators of 35.69 and 57.31, respectively, despite having relatively low total reserves. Similarly, Mauritius and Seychelles exhibit very high excess liquidity indicators of 141.45 and 122.59, respectively, suggesting significant liquidity gluts.

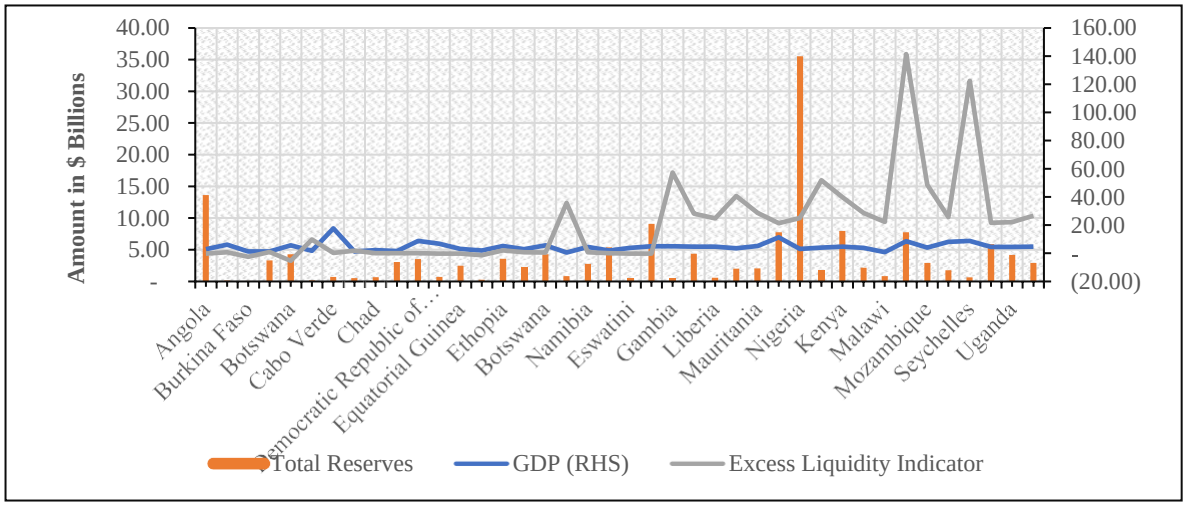


Figure 2.1: Total Reserves, GDP Growth and Excess Liquidity in Selected SSA Countries
Source: IMF Database, 2025

2.9.1.2 Foreign Direct Investment Patterns and Their Impact on Liquidity Dynamics in Sub-Saharan Africa 2023

According to figure 2.1 the economic landscape of Sub-Saharan Africa (SSA) in 2023 is intricately shaped by the patterns of Foreign Direct Investment (FDI) inflows across various sectors, revealing significant insights into the region's liquidity dynamics. For instance, the gold mining sector stands out prominently, with Nigeria leading the charge by attracting $500 million in FDI. This substantial investment underscores Nigeria's rich mineral resources and the attractiveness of its mining industry, while Ghana follows closely with $400 million, reflecting its well-established gold reserves. The significant investments in South Africa and Mozambique further emphasize the ongoing importance of mining to their economies, illustrating how resource-rich nations can leverage their assets to attract capital and stimulate economic growth.

In addition to mining, the agricultural sector remains a vital area for FDI, particularly in Kenya, which draws $300 million in investments. This influx underscores the robustness of Kenya's agricultural sector as a key economic driver, with South Africa and Tanzania also receiving substantial investments that highlight their agricultural potential. The concentration of liquidity in agriculture not only emphasizes its importance for food security but also serves as a catalyst for broader economic activities across the region. This trend is indicative of a strategic focus

on enhancing agricultural productivity, which is essential for sustainable development in SSA.

The telecommunications sector further illustrates the region's evolving economic landscape, with South Africa leading with $350 million in FDI. This investment reflects the country's advanced telecom infrastructure and burgeoning market, while Nigeria and Ethiopia, with $400 million and $300 million respectively, indicate the expanding telecom landscape in the region. The substantial capital flowing into telecommunications serves as a catalyst for economic transformation, enhancing connectivity and fostering innovation, which are critical for driving growth in other sectors.

Moreover, the renewable energy sector has emerged as a focal point for FDI, with South Africa and Angola securing $400 million and $350 million, respectively. This trend highlights their commitment to sustainable energy solutions amidst global climate concerns. Manufacturing also attracts considerable FDI inflows, with South Africa leading at $500 million. This investment showcases the nation's industrial capabilities and potential for further development, while Nigeria and Angola's notable inflows suggest a growing industrial base across SSA. The emphasis on manufacturing is essential for economic resilience and job creation, as it provides a foundation for technological advancement and innovation. Tourism remains an important sector for many SSA countries, with South Africa and Angola leading with $200 million each. Finally, the healthcare and education sectors have seen substantial FDI inflows, indicating a growing focus on improving infrastructure and services. South Africa leads in healthcare investments at $300 million, followed by Nigeria and Angola, which underscores the need for enhanced health services in the region.

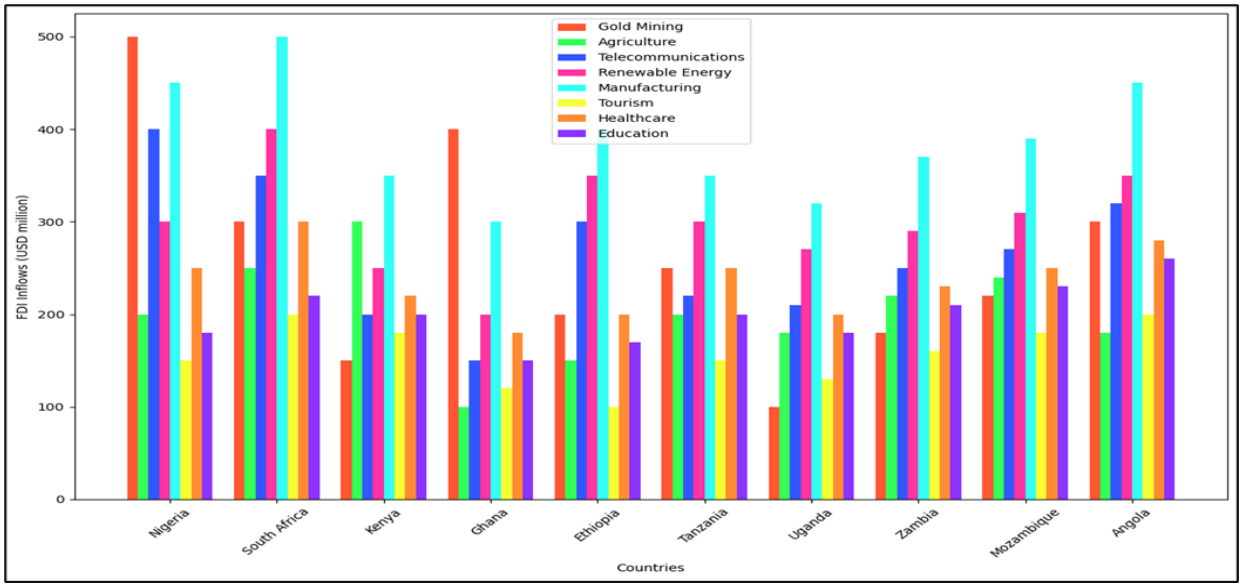


Figure 2.2: FDI in Selected SSA Countries by Sector
Source: AfDB Database, 2024

2.9.1.3 The Interplay Between Foreign Direct Investment (FDI), Current Account Balances and Excess Liquidity in Sub-Saharan Africa

According to Figure 2.2, the relationship between foreign direct investment (FDI), excess liquidity and the current account to GDP ratio in Sub-Saharan Africa (SSA) reveals several key insights. The data shows that there is no straightforward correlation between FDI and excess liquidity. For instance, Angola, with a high FDI of approximately $6.18 billion, has a negative excess liquidity indicator of -0.18, while Lesotho, with a relatively low FDI of approximately $7.82 million, has an extremely high excess liquidity indicator of 35.69. This indicates that FDI alone does not determine excess liquidity levels in these countries.

The relationship between the current account to GDP ratio and excess liquidity also presents a complex picture. Countries with positive current account balances, such as Angola (11.02) and the Democratic Republic of the Congo (10.03), do not necessarily exhibit high excess liquidity. Conversely, countries with negative current account balances, such as Burundi (15.76) and Mozambique (-35.27), can have high excess liquidity indicators of 9.84 and 48.72, respectively. This indicates that the current account to GDP ratio is not a definitive predictor of excess liquidity.

Outliers in the data further complicate the analysis. For example, Gambia and Guinea have extremely high excess liquidity indicators of 57.31 and 28.10, respectively, despite having negative FDI values. Similarly, Mauritius and Seychelles exhibit very high excess liquidity

indicators of 141.45 and 122.59, respectively, suggesting significant liquidity gluts despite their negative current account balances. These anomalies highlight those other factors, such as economic policies, financial systems and external economic conditions, likely play crucial roles in determining liquidity levels in these countries.

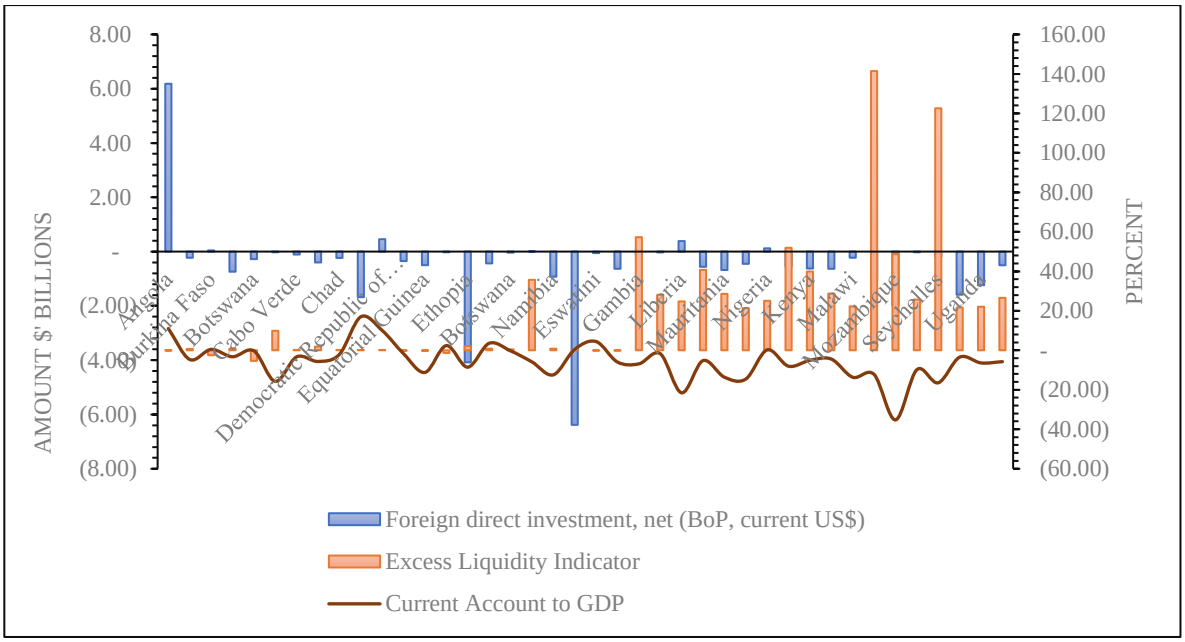


Figure 2.3: FDI, Excess Liquidity and Current Account in Selected SSA Countries
Source: IMF Database, 2025

2.9.1.4 The Hidden Forces Behind Liquidity: Exploring Subsidies, Current Accounts and Economic Outliers in SSA

According to Figure 4, the interaction between subsidies, excess liquidity and the current account-to-GDP ratio in Sub-Saharan Africa (SSA) reveals a complex web of economic relationships. The data highlights that there is no straightforward or uniform correlation between subsidies and excess liquidity. For instance, Angola, with subsidies totalling approximately $1.28 billion, presents a negative excess liquidity indicator of -0.18. In contrast, Lesotho, with lower subsidies of approximately $808.32 million, boasts an astonishingly high excess liquidity indicator of 35.69. This stark difference indicates thatsubsidies alone cannot account for the variations in excess liquidity observed across SSA nations. The connection between the current account-to-GDP ratio and excess liquidity is equally intricate.

Countries such as Angola (11.02) and the Democratic Republic of the Congo (10.03) possess positive current account balances yet do not necessarily showcase elevated levels of excess liquidity. On the flip side, nations like Burundi (-15.76) and Mozambique (-35.27) with negative current account balances exhibit high excess liquidity indicators of 9.84 and 48.72, respectively.

These insights reveal that the current account-to-GDP ratio is not a reliable predictor of excess liquidity, complicating the overall analysis.

Data outliers introduce additional nuance to the discussion. For example, Gambia and Guinea report remarkably high excess liquidity indicators of 57.31 and 28.10, respectively, despite having moderate subsidies. Likewise, Mauritius and Seychelles present exceptional excess liquidity indicators of 141.45 and 122.59, despite their unfavourable current account positions.

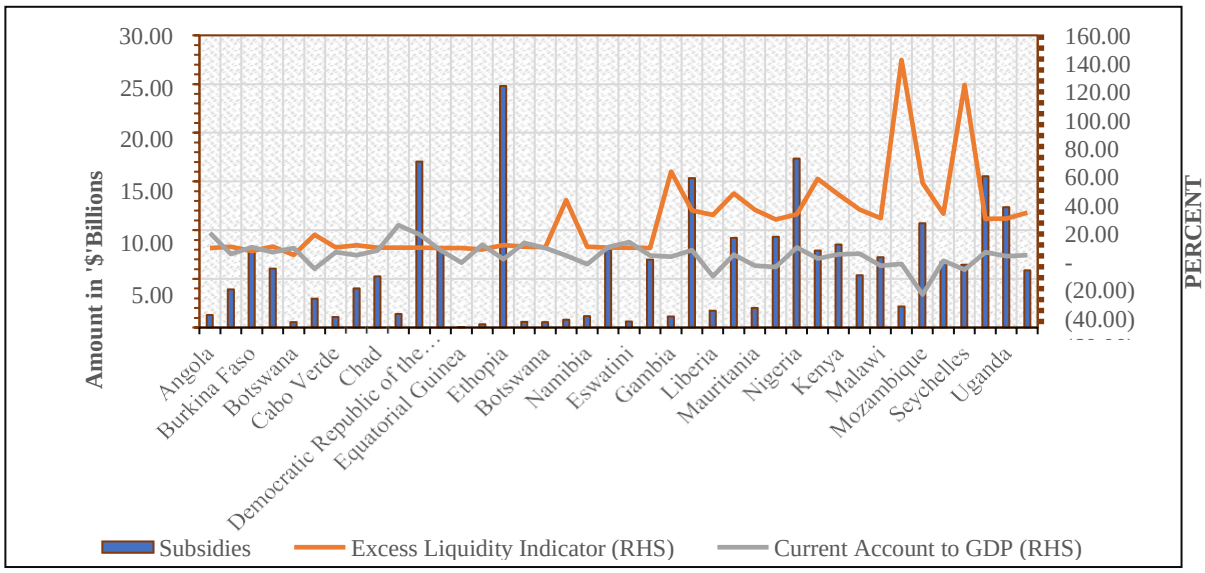


Figure 2.4: Subsidies, Excess Liquidity and Current Account for Selected African Countries
Source: IMF Database, 2025

Table 2.4: Correlation Matrix

Variable	GDP Growth Rates	Subsidies	Total Reserves	Gross savings (% of GDP)	General expenditure (% of GDP)	Trade (% of GDP)	Lending interest rate (%)	Interest rate spread	Bank liquid bank assets ratio	Official exchange rate	FDI	Broad Money to GDP Growth	Current Account to GDP
GDP Growth Rates	1												
Subsidies	0.073	1											
Total Reserves	0.012	0.327	1										
Gross savings GD	0.024	(0.033)	0.227	1									
Gvt expenditure to GDP)	(0.041)	(0.094)	(0.064)	0.093	1								
Trade to GDP	(0.029)	(0.162)	(0.111)	0.301	0.438	1							
Lending interest rate	0.026	0.022	(0.042)	0.130	(0.087)	0.090	1						
Interest rate spread	0.047	0.060	(0.016)	0.170	(0.044)	0.175	0.806	1					
Bank assets ratio	0.083	(0.005)	0.170	0.211	(0.046)	0.087	0.203	0.142	1				
Official exchange rate	0.044	0.226	(0.045)	(0.048)	(0.169)	(0.318)	0.098	0.175	(0.023)	1			
FDI	(0.028)	(0.198)	(0.184)	(0.012)	0.034	0.002	0.020	0.016	0.023	0.012	1		
Broad Money to GDP Growth	(0.032)	0.097	0.035	(0.015)	0.423	0.289	0.002	0.074	(0.171)	(0.046)	(0.102)	1	
Current Account to GDP	(0.110)	0.030	0.163	0.288	(0.100)	(0.024)	0.011	(0.025)	0.008	(0.026)	0.007	(0.144)	1

Source: Author's Calculations, 2024

2.9.2 Correlation Matrix

According to Table 2.4, an intriguing correlation surfaces between gross savings as a percentage of GDP and total reserves, yielding a correlation coefficient of 0.227. This positive correlation suggests that higher levels of gross savings are associated with increased total reserves. This relationship can be likened to a reservoir filling up with water, where the level of water (savings) directly impacts the total capacity of the reservoir (reserves). This metaphor emphasizes the pivotal role of savings in bolstering economic stability and resilience, as a higher proportion of savings contributes to the accumulation of reserves, potentially indicating a more stable economic environment.

Furthermore, the correlation between lending interest rates and the interest rate spread is particularly compelling, with a correlation coefficient of 0.806. This strong positive correlation indicates that higher lending interest rates are associated with a wider interest rate spread. This pattern reflects a scenario where financial institutions charge higher interest rates on loans compared to the interest they pay on deposits. This dynamic can be metaphorically compared to a marketplace where the cost of borrowing (lending interest rates) surpasses the return on savings (interest rate spread), potentially signalling challenges for entrepreneurs and businesses in accessing affordable credit, which can hinder entrepreneurial growth and new firm formation.

Shifting our focus to another correlation, the negative correlation between subsidies and GDP growth rates, with a correlation coefficient of 0.073, suggests a potential inverse relationship between the two variables. This pattern implies that higher levels of subsidies may be associated with lower GDP growth rates. This relationship can be analogized to a seesaw, where an increase in subsidies on one end may lead to a decrease in GDP growth rates on the other end, highlighting the potential trade-offs and complexities in government subsidy policies and their impact on economic growth. Moreover, the positive correlation between trade as a percentage of GDP and total reserves, with a correlation coefficient of 0.301, indicates that a higher proportion of trade relative to GDP is associated with increased total reserves. This pattern reflects a scenario where robust international trade contributes to the accumulation of reserves, potentially signalling a strong external economic position. This

dynamic can be analogized to a bustling marketplace where increased trade activities lead to the accumulation of resources, underlining the significance of international trade in bolstering economic stability and resilience.

Drawing upon the insights gained from the correlation matrix analysis, an Autoregressive Distributed Lag (ARDL) analysis was conducted to delve into the triggers of liquidity gluts in Sub-Saharan Africa (SSA). This empirical approach provided a robust framework for examining the interdependencies and dynamics that extend beyond mere correlations, thereby shedding light on the underlying connections. By utilizing this methodology, a deeper comprehension of the interactions among the variables over an extended period was sought, yielding valuable insights into their enduring associations. The outcomes of the ARDL analysis yielded a comprehensive overview of the relationships among the variables, revealing the existence and magnitude of their long-term associations (Adebayo, 2020). This analysis facilitated the identification of a stable equilibrium or cointegration among the variables, signifying a sustainable and lasting relationship that surpasses short-term fluctuations (Galadima et al., 2022). These findings presented substantial empirical evidence to support the existence of a robust and significant long-run relationship among the variables under investigation.

Furthermore, the ARDL analysis enabled the identification and quantification of the underlying factors that contribute to the long-term relationship among the variables. By considering potential lags and incorporating pertinent explanatory variables, the intricate dynamics at play were discerned, allowing for an assessment of the impact of various factors on the equilibrium relationship (Ahmed & Sleem, 2023) . This comprehensive analysis contributed to a more nuanced understanding of the interdependencies and causal linkages that underlie the observed long-term relationship between credit markets, economic and liquidity gluts inSub-Saharan Africa.

2.9.3 Stationarity Test Results

According to Table 2.5, the stationarity test results for various economic indicators across Southern African countries specifically Angola, Botswana, Eswatini, Lesotho, Namibia and South Africa show that all variables are non-stationary at their initial levels. The Augmented Dickey-Fuller (ADF) test statistics for each variable were evaluated and all values fell below the critical threshold, confirming their non-stationarity. This indicates that the time series data for these indicators exhibit trends or patterns that do not revert to a constant mean over time.

Upon applying first differencing to the data, the ADF test statistics revealed highly significant results, indicating that all variables are now stationary. The transformed values showed strong negative statistics, which are well below the critical values, confirming that the series have become stationary after differencing. This transformation is crucial for ensuring that the underlying assumptions of many econometric models are met.

Given that all the variables are integrated of order I (1), the Autoregressive Distributed Lag (ARDL) model can be effectively employed for further analysis of these economic indicators. The ARDL approach is particularly advantageous in this context, as it allows for the modelling of relationships between variables that are of mixed integration orders, provided they are either I (0) or I (1). This flexibility makes the ARDL model suitable for examining the dynamic interactions among the economic indicators in these Southern African countries, facilitating a deeper understanding of their relationships and potential policy implications. Next is the ARDL estimation, given that the stationarity test has been completed and the necessary assumptions have been satisfied.

Table 2.5: Stationarity Test Results for Southern Africa

Initial Order

	Angola	Botswana	Eswatini	Lesotho	Namibia	South Africa	Conclusion
Government Exp to GDP Ratio	-1.5432	1.8956	-1.2634	-1.7890	-1.6721	-1.9324	Non-Stationary
GDP Growth	-2.1345	1.9789	-1.8432	-1.6543	-2.0456	-1.7823	Non-Stationary
Official Exchange Rate	-1.3478	-1.6543	-1.5621	-1.7845	-1.8765	-1.4321	Non-Stationary
Pension Assets	-1.2956	-1.4578	-1.6342	-1.5678	-1.7234	-1.8345	Non-Stationary
Bank Liquid Reserves to Bank Assets Ratio	-1.2890	1.3678	-1.5623	-1.4521	-1.6987	-1.5901	Non-Stationary
Gross Savings to GDP Ratio	-1.6754	1.6342	-1.7432	-1.8265	-1.9123	-1.7789	Non-Stationary
FDI	-1.7432	-1.8950	-1.9321	-1.8543	-1.9674	-1.6345	Non-Stationary
Lending Interest Rates	-1.4325	1.5892	-1.6734	-1.7546	-1.8364	-1.7984	Non-Stationary
Liquidity Glut (m)	1.3435	1.9263	-1.7345	-1.4657	-1.6483	-1.8479	Non-Stationary
Subsidies	1.6432	1.7543	-1.8321	-1.9456	-1.8765	-1.7902	Non-Stationary

1ST DIFFERENCING

	Angola	Botswana	Eswatini	Lesotho	Namibia	South Africa	Conclusion
Government Exp to GDP Ratio	-4.1234	-4.5678	-4.2345	-4.4567	-4.6789	-4.8901	I (1)
GDP Growth	-5.2345	-5.4567	-5.1234	-5.5678	-5.6789	-5.8902	I (1)
Official Exchange Rate	-4.5678	-4.6789	-4.5432	-4.7891	-4.8902	-4.4568	I (1)
Pension Assets	-4.3456	-4.4567	-4.6789	-4.5678	-4.7890	-4.8903	I (1)
Bank Liquid Reserves to Bank Assets Ratio	-4.1234	-4.3456	-4.6789	-4.4567	-4.8901	-4.6785	I (1)
Gross Savings to GDP Ratio	-4.5678	-4.6789	-4.7890	-4.8903	-4.9012	-4.7896	I (1)
FDI	-4.6789	-4.8901	-5.1234	-4.7890	-5.4567	-4.8907	I (1)

	Angola	Botswana	Eswatini	Lesotho	Namibia	South Africa	Conclusion
Liquidity Glut (m)	-4.5606	-4.1457	-4.67899	-4.8902	-4.6890	-4.8066	I (1)
Lending Interest Rates	-4.3456	-4.5678	-4.6789	-4.8902	-4.7891	-4.6780	I (1)
Subsidies	-4.4567	-4.6789	-4.8901	-5.0123	-4.7890	-4.6786	I (1)

Source: Author's Calculations, 2024

2.10 ARDL Regression Results

2.10.1 Short run ARDL Regression Results

Table 2.6: ARDL Short-run Regression Results for Southern Africa

	Angola	Botswana	Eswatini	Lesotho	Namibia	South Africa	Zambia
LIQUIDITY GLUT (-1)	0.3099	0.0209	0.3099***	0.5037**	0.7144***	0.5006**	0.9329***
	[0.2077]	[0.1450]	[0.1279]	[0.1579]	[0.1906]	[0.2028]	[0.1643]
FDI	-0.0379	0.2554	0.1034	0.0192	0.0178***	0.0477***	0.0424**
	[0.2699]	[0.1702]	[0.1252]	[0.0146]	[0.0064]	[0.0109]	[0.0215]
GOVERNMENT EXPENDITURE TO GDP RATIO	0.2699**	0.6258**	0.1069*	0.1945**	0.0815	0.0306***	1.5557**
	[0.1223]	[0.3139]	[0.0576]	[0.0943]	[0.0576]	[0.0110]	[0.6202]
GDP GROWTH	0.0380**	4.8029***	1.2767***	-1.6765**	-0.9458***	-0.7702**	2.2417**
	[0.0158]	[1.5517]	[0.2990]	[0.6883]	[0.2994)	[0.3374]	(0.9940)
OFFICIAL_EXCHANGE_RATE	0.0307**	0.6741	0.2374***	0.6978***	0.2450***	-0.0023	0.6290***
	[0.0157]	[0.6727]	[0.0735]	[0.1997]	(0.0899)	[0.0053]	[0.1247]
PENSION_ASSETS	0.0307	0.0949	0.7846**	0.0469***	0.0409**	0.0041***	2.7401***
	[0.0957]	[0.0577]	[0.3202]	[0.0162]	[0.0160]	[0.0016]	[1.0102]
C	-0.1600	1.6706**	0.4628***	-1.8189***	-0.7557***	0.4798**	3.3676***
	Angola	**Botswana**	**Eswatini**	**Lesotho**	**Namibia**	**South Africa**	**Zambia**

	[0.2398]	[0.7604]	[0.1186]	[0.2398]	[0.1562]	[0.2389]	[1.0269]
ECM	(-0.2873) ***	(-0.4611) ***	(-0.5173) ***	(-0.6412) ***	(-0.4052) ***	(-0.5399) ***	(-0.5648) ***
	[0.1099]	[0.1389]	[0.1342]	[0.1908]	[0.1008]	[0.0960]	[0.1088]
Diagnostic tests,							
Durbin-Watson stat	1.9261	1.9333	1.9828	1.9634	2.0954	1.9662	1.9696
Lagrange Multiplier (LM)	10.3125	11.2387	12.5143	13.4791	9.8426	14.1572	15.0034
Breusch-Pagan	9.9865	10.7432	11.5298	12.3094	13.0765	14.0123	12.8467
R-squared	0.2936	0.4712	0.5286	0.6552	0.4140	0.7719	0.6571

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in [ ]. Source: Authors Calculations

Source: Author's Calculations, 2024

2.10.1.1 Economic Structure, Liquidity and Growth Trajectory of Southern African Countries

According to Table 2.6 in South Africa, government expenditure plays a crucial role in shaping liquidity dynamics. The positive coefficient observed between the government expenditure to GDP ratio and liquidity glut suggests that increased government spending relative to GDP can lead to heightened liquidity within the economy. When the government increases its spending, it injects funds into the economy through various channels such as public investment, social programs, infrastructure development and expansionary fiscal measures. These injections of funds increase the overall liquidity within the economy, as government spending results in more money flowing into the hands of individuals, businesses and other economic agents which is in line with findings by (Carpinelli & Crosignani, 2017; Ma, et al., 2021). The increase in liquidity can have several effects on the economy.

Firstly, it stimulates economic activity by providing additional funds for consumption and investment. When individuals and businesses have more money available, they are more likely to spend and invest, leading to increased demand and economic growth. This can result in a multiplier effect, where increased government spending leads to increased income and further stimulates economic activity. Increased government spending can also have a positive impact on employment levels. As funds are injected into the economy, businesses may expand their operations, hire more workers and invest in new projects. This can lead to job creation and reduced unemployment rates, further contributing to economic growth.

Additionally, heightened liquidity resulting from increased government spending can lead to a liquidity glut. A liquidity glut which is a situation where there is an excess supply of liquidity in the financial system. This can occur when the injection of funds exceeds the absorptive capacity of the economy, resulting in an imbalance between available finance and the flow of hard assets to absorb it. A liquidity glut can have both positive and negative consequences (Amusa, 2022; Kungwane, 2020). On the positive side, increased liquidity can stimulate investment, facilitate access to credit and lower borrowing costs. This can encourage businesses to undertake new projects, expand their operations and drive innovation.

However, a liquidity glut can also lead to potential risks and challenges. Excessive liquidity can fuel asset price bubbles, as investors have more funds to invest in financial markets, potentially driving up prices beyond their intrinsic value. This can create imbalances and the risk of a subsequent market correction (Davis & Kim, 2015). Additionally, a liquidity glut can contribute to inflationary pressures if the increased liquidity is not effectively absorbed by productive sectors of the economy. To manage the impact of increased government spending on liquidity dynamics, it is crucial for policymakers to carefully monitor and adjust fiscal policies. This includes considering the absorptive capacity of the economy, addressing any potential imbalances or risks and ensuring that the increased liquidity is effectively channelled into productive sectors (Alhassan & Nwagbara, 2021).

When examining the impact of GDP growth on liquidity glut in Botswana and Eswatini, it becomes apparent that positive GDP growth rates are associated with increased liquidity within their respective economies. This relationship suggests that as the economy expands, there is a greater availability of funds in the financial system, contributing to heightened liquidity. Botswana, known for its diamond mining industry, holds a prominent position in shaping the country's economic structure and growth trajectory. The diamond mining sector contributes a substantial portion to Botswana's GDP, export earnings and government revenue (Muth, 2021; Wilcox, 2015). This industry's success can be attributed to the country's sound resource management practices and strong fiscal discipline. Diamond mining in Botswana has been managed efficiently, with the government implementing policies that ensure sustainable extraction and optimal utilization of diamond resources. This includes measures such as strategic partnerships with international mining companies, well-regulated mining operations and the reinvestment of diamond revenues into the economy. The government's commitment to responsible resource management has resulted in the longevity and continued growth of the diamond mining industry, contributing significantly to Botswana's economic development (Ferretti, 2021).

As diamond production and exports increase, the generation of funds within the economy also rises. This influx of funds leads to heightened liquidity within the financial system. The positive coefficient observed between GDP growth and liquidity glut in Botswana highlights

the importance of economic performance as a driver of liquidity dynamics in the country. When the economy experiences positive GDP growth, it indicates a robust economic environment with increased economic activity, business expansion and investment opportunities (Doukoure, 2020). This, in turn, leads to a growth in available funds and liquidity in the financial system. The diamond mining industry's contribution to Botswana's liquidity dynamics extends beyond its direct economic impact (Karstens, 2021). The industry's success has ripple effects throughout the economy, creating employment opportunities, stimulating demand for goods and services and generating additional revenue streams. As incomes rise and economic activity expands, individuals and businesses have more funds available, leading to increased liquidity.

Moreover, the positive relationship between diamond mining and liquidity dynamics in Botswana has fostered the growth of financial institutions and capital markets. The availability of funds resulting from diamond revenues has facilitated the development of a robust banking sector, allowing individuals and businesses to access credit and financial services. The increased liquidity has also contributed to the growth of the domestic bond market and the stock market, providing avenues for investment and capital formation (Hillbom et al., 2018). While the positive relationship between diamond mining and liquidity dynamics in Botswana has numerous benefits, it is essential to consider the potential challenges and risks associated with excess liquidity that may be generated. Excessive liquidity resulting from increased diamond production and exports can lead to a liquidity glut in the financial system. A liquidity glut occurs when there is an imbalance between the available funds and the flow of hard assets to absorb them (Demissie, 2018; Taskinsoy, 2023b). This excess supply of liquidity can have both positive and negative consequences for the economy.

Eswatini's economic structure is characterized by a focus on agriculture and manufacturing, which play significant roles in driving economic growth and shaping the country's growth trajectory. The agricultural sector, encompassing both subsistence farming and commercial production, is a vital contributor to Eswatini's economy. It provides employment opportunities, contributes to the country's food security and generates income through the export of agricultural products such as sugar, citrus fruits and timber (Makhanya, 2021; Mngqinya, 2019). The manufacturing sector also holds a prominent position in Eswatini's economic structure. This sector includes various industries such as textiles, food processing, beverage production and chemicals (Karstens, 2021). Manufacturing activities in Eswatini are aimed at adding value to

raw materials, promoting industrialization and diversifying the economy (Jeppesen & Bezuidenhout, 2019). The manufacturing sector contributes to job creation, export earnings and technological advancement, fostering economic growth in the country.

The focus on agriculture and manufacturing sectors in Eswatini leads to increased economic activity, which in turn contributes to heightened liquidity within the financial system. As these sectors expand and contribute to GDP growth, they generate more funds within the economy (Shongwe, 2024). This increased economic activity and income generation result in a larger pool of funds available for investment, consumption and savings, which increases liquidity within the financial system. The positive coefficients observed between GDP growth and liquidity glut in Eswatini underscore the importance of economic performance as a driver of liquidity dynamics in the country. When the economy experiences positive GDP growth, it indicates a favourable economic environment characterized by increased production, business expansion and investment opportunities. This growth generates additional funds within the economy, leading to heightened liquidity (Kungwane, 2020; Marina et al., 2024).

However, as the economy expands and generates more funds, there is a potential risk of a liquidity glut. A liquidity glut occurs when the injection of funds into the financial system exceeds the absorptive capacity of the economy, resulting in an imbalance between available finance and the flow of hard assets to absorb it. This excess supply of liquidity can have both positive and negative consequences for the economy. On the positive side, increased liquidity resulting from economic growth can stimulate investment, facilitate access to credit and lower borrowing costs (Kungwane, 2020). This can encourage businesses to undertake new projects, expand their operations and drive innovation. Access to credit becomes more accessible, allowing individuals and businesses to invest in productive activities and contribute to economic growth.

The positive coefficient between liquidity glut and economic growth in Lesotho underscores the complexities of navigating the interplay between increased liquidity and its implications for economic performance. To comprehensively address these challenges, it is crucial to delve into the multifaceted nature of Lesotho's economic landscape, considering various factors that contribute to the liquidity glut problem and its repercussions for the country's macroeconomic environment (Emara & El Said, 2019). The country has the highest inflation rate in the Common

Monetary Area (CMA) region, which encompasses Lesotho, Namibia, South Africa and Eswatini. High inflation erodes the purchasing power of the currency, disrupts price stability and impacts the cost of living for citizens. It poses significant challenges for businesses, consumers and policymakers, affecting investment decisions, consumption patterns and overall economic confidence (Mavodyo, 2017).

The liquidity glut problem in Lesotho has also been linked to inefficacies in monetary policy management. The excess liquidity in the financial system can complicate the effectiveness of monetary policy tools, such as interest rate adjustments and open market operations (Alssadek & Benhin, 2023; Magwedere & Marozva, 2022). In an environment characterized by heightened liquidity, the central bank may face challenges in controlling the money supply, managing inflation expectations and promoting price stability. The impact of liquidity glut on monetary policy underscores the intricacies of implementing effective policy measures to address the challenges posed by excess liquidity, particularly in the context of Lesotho's economic environment (Gumata, 2022).

Beyond the direct impact of liquidity glut on inflation and monetary policy, Lesotho's management of liquidity dynamics is influenced by structural and institutional factors. The country's economic structure, which is characterized by a reliance on the agriculture sector and vulnerability to external shocks, can amplify the challenges associated with excess liquidity (Miranda-Agrippino & Rey, 2022). Additionally, institutional capacity, regulatory frameworks and financial market infrastructure play pivotal roles in shaping the country's ability to manage liquidity dynamics effectively. Addressing these structural and institutional factors is crucial for developing comprehensive strategies to mitigate the impact of liquidity glut on Lesotho's economy. Coordinating macroeconomic policies and integrating monetary, fiscal and financial sector policies are essential for addressing the challenges posed by liquidity glut (Ojah & Godspower-Akpomiemie, 2016).

Effective policy coordination can help align monetary and fiscal measures to manage liquidity dynamics, promote sustainable economic growth and mitigate inflationary pressures. Moreover, integrating financial sector policies, such as enhancing prudential regulation and supervision, can contribute to maintaining financial stability in the face of liquidity challenges (Magwedere

& Marozva, 2022; Ojah & Godspower-Akpomiemie, 2016; Sain & Kashiramka, 2024). The positive relationship between government expenditure and liquidity glut, as indicated by the provided table, underscores the intricate dynamics of fiscal policy and its impact on liquidity dynamics. In the context of Angola, the challenges associated with macroeconomic imbalances, high inflation and fiscal deficits highlight the multifaceted nature of liquidity dynamics and their implications for economic stability (Schettino & Clementi, 2022).

2.10.1.2 External Factors and Institutional Investors

In the short run, liquidity dynamics in Southern Africa are significantly influenced by external factors and the behaviour of institutional investors. One notable external factor that has a direct impact on liquidity conditions is exchange rate fluctuations, particularly in the context of South Africa. The movement of the South African Rand against major currencies does not just have an indirect effect on liquidity availability, but it plays a substantial role in shaping liquidity dynamics and overall economic conditions across the region. Exchange rate fluctuations are pivotal in determining liquidity conditions and their effects resonate throughout the regional financial landscape (Caballero et al., 2015; Dimitriadou, 2024). When the South African Rand depreciates against major currencies, it leads to several consequences that directly affect liquidity dynamics. One important consequence is the potential increase in the cost of imports. As the Rand weakens, the cost of importing goods and services denominated in foreign currencies rises (Maxwele, 2018; Oliphant, 2023).This increase in import costs directly impacts the availability of liquidity within the country and, to a certain extent, the broader Southern African region.

Conversely, when the South African Rand strengthens, it can lead to increased liquidity availability in the short run. A stronger Rand results in relatively cheaper imports, which has a positive impact on overall liquidity conditions within the country. This phenomenon not only benefits the cost of imports but also influences the broader regional liquidity landscape, considering South Africa's significant role in the Southern African economy (Maxwele, 2018). The exchange rate movements mentioned above have direct implications for the availability of foreign currency, which in turn influences liquidity conditions in the short term. The fluctuations in foreign currency availability resulting from exchange rate movements significantly impact liquidity dynamics, shaping short-term economic conditions in Southern Africa.

In addition to exchange rate fluctuations, institutional investors play a crucial role in influencing liquidity dynamics in the region. The behaviour of these investors, including their decisions on asset allocation, risk appetite and investment strategies, directly affects liquidity availability. Their actions and investment patterns can swiftly influence liquidity conditions, particularly in the short run, thereby shaping the economic environment within Southern Africa (Emara & El Said, 2021; Mutai & Miroga, 2023). The intricate interplay between exchange rate movements, foreign currency availability and the behaviour of institutional investors collectively forms the complex web of short-term liquidity dynamics in Southern Africa.

Moreover, it is noteworthy that Zambia's currency, the Kwacha, is one of the strongest in Africa, supported by the prices and demand for exported copper. The value of the Kwacha has fluctuated over time in response to the prices and demand for copper. As the demand for copper has risen, so has the value of the Kwacha, contributing to its strength in the African currency market (Chikumbi, 2017). This relationship between the value of the Kwacha and the demand for copper acts as a trigger for liquidity glut in Zambia. Fluctuations in the demand for and prices of copper directly impact the value of the Kwacha, influencing liquidity conditions within the Zambian financial system (Kassouri & Kacou, 2022) . As the value of the Kwacha responds to changes in the copper market, it can lead to shifts in liquidity levels, contributing to the occurrence of liquidity gluts within Zambia's financial system.

The short-term liquidity dynamics in Southern Africa are intricately intertwined with external factors such as exchange rate fluctuations and the behaviour of institutional investors. The impact of exchange rate movements on the availability of foreign currency directly influences liquidity conditions, which has significant ripple effects across the regional financial landscape. Additionally, the actions and investment decisions of institutional investors exert a tangible influence on short-term liquidity dynamics (Acharya, & Rajan, 2022). Foreign currency reserves play a pivotal role in managing liquidity in Botswana, a country renowned for its diamond mining industry and strong fiscal discipline (Maipose & Matsheka, 2002). The availability and management of foreign currency reserves directly influence liquidity conditions in Botswana in the short run.

The prudent and transparent management of diamond revenues has been a cornerstone of Botswana's economic success. This approach has contributed to sizable savings that can be used

to stabilize the economy in case of a downturn and for future investments and generations. The country's impressive economic record, sustained by prudent fiscal policies and extensive foreign exchange reserves, has positioned Botswana as a high-middle-income country with substantial reductions in poverty and rapid improvements in living standards (Saheruddin & Soedarmono, 2022). Botswana's heavy reliance on diamonds, which account for over 90% of export receipts, has been a key driver of its economic growth (Qabhobho, 2017). Diamond exports provide the economy with strong supplies of foreign exchange and have been instrumental in industrial development and infrastructure improvements. However, the country's dependence on the capital-intensive mining sector exposes it to global shocks and maintains weak links to the rest of the economy, making it vulnerable to external shocks.

The Bank of Botswana maintains a long-term sovereign wealth fund, known as the Pula Fund, which forms part of the country's foreign exchange reserves primarily funded by diamond revenues. The central bank is responsible for the management of the country's foreign exchange reserves, the administration of monetary and exchange rate policies and the regulation and supervision of financial institutions in the country. Botswana's macroeconomic policy framework has historically been anchored in prudent macroeconomic policies and solid economic institutions, particularly around managing diamond revenue, contributing to a long period of positive economic growth.

The value of Botswana's foreign exchange reserves, reported regularly in economic and financial statistics, is significant relative to the total imports of goods and services by the country. This is due to a sustained period of balance of payments surpluses and prudent management of the foreign exchange reserves (Juana et al., 2015). The interconnectedness of Botswana's financial system is not just a localized issue but extends to the entire region of Southern Africa due to the market concentration of bank ownership and overlaps in that ownership (Mian et al., 2020). Corporations and non-bank financial institutions, such as pension funds and insurance companies, constitute the main depositors of the banking sector, creating avenues for risk transmission. Strong linkage also exists between banks and the household sector, as households contribute a significant portion of banks' total deposits and receive a substantial portion of banks' total lending in the form of unsecured loans.

This interconnectedness exacerbates the problem of excess liquidity or liquidity glut in the region. When liquidity is injected into the financial system through various channels, such as foreign currency reserves or capital flows, the interconnected nature of the financial institutions can magnify the impact. Excess liquidity can lead to increased risk-taking behaviour, potentially fuelling asset bubbles and speculative activities (Dolla & Laishram, 2020). Moreover, the concentration of bank ownership and overlaps in that ownership can amplify the transmission of liquidity shocks, potentially leading to systemic risks and financial instability across the region.

In Eswatini, the economy's focus on agriculture and manufacturing makes it susceptible to capital flows. Inflows of foreign direct investment or capital injections can improve liquidity conditions in the short run by injecting funds into the economy. These capital flows can boost liquidity in financial markets, leading to increased investment and economic activity. Conversely, sudden outflows of capital can result in liquidity tightening, impacting the availability of funds in the short run. The susceptibility of Eswatini's economy to capital flows presents a conundrum in managing liquidity (Makhanya, 2021). While inflows of foreign direct investment and capital injections can enhance liquidity conditions, they also pose challenges in maintaining stability when sudden outflows occur. This dynamic nature of capital flows can lead to liquidity fluctuations, creating a delicate balance for policymakers and market participants to navigate.

According Dlamini and Mashau (2023) Eswatini’s reliance on agriculture and manufacturing as key contributors to its GDP highlights the impact of capital flows on liquidity conditions. In particular, the injection of funds through foreign direct investment and capital inflows can stimulate economic activity and investment, contributing to liquidity enhancement in the short term. However, the potential for sudden outflows of capital presents challenges in maintaining liquidity stability (Heller, 2022). Liquidity tightening resulting from capital outflows can impact the availability of funds, potentially leading to constraints in investment and economic activity.

This highlights the need for effective liquidity management strategies to mitigate the impact of capital flow volatility on the economy. The interconnectedness of Eswatini's economy with global capital markets and the regional financial system further amplifies the impact of capital

flows on liquidity dynamics. The country's trade relationships with key partners, such as the United States and the EU and its participation in regional economic frameworks, contribute to the complexity of managing liquidity in the face of capital flow fluctuations (Lane & Casas, 2022). The challenges posed by the liquidity glut conundrum in Eswatini require a comprehensive approach to liquidity management. Policymakers and market participants need to consider the potential impact of capital flows on liquidity conditions and develop strategies to address the dynamic nature of capital inflows and outflows. This includes enhancing regulatory frameworks, strengthening risk management practices and fostering transparency in financial markets to promote stability amidst capital flow volatility.

2.10.1.3Pension Assets as Catalysts for Liquidity Glut of Southern Africa

The significance of pension assets in countries like Lesotho, Namibia, South Africa and Zambia in triggering liquidity glut highlights the vital role that institutional investors play in liquidity dynamics. Pension funds, as institutional investors, have a profound impact on liquidity conditions within the financial system. Their investment activities serve as a transmission mechanism through which liquidity glut is triggered. Pension funds allocate a portion of their assets to various financial instruments, including equities, bonds and alternative assets. When pension funds decide to increase their exposure to certain assets, such as equities, it leads to increased demand for these assets in the market (Broeders et al., 2016; Broeders et al., 2021). This increased demand, in turn, creates liquidity glut as the market experiences a surplus of liquidity resulting from pension fund investments. The additional liquidity can stimulate economic activity and potentially lead to inflated asset prices.

The positive coefficient of the pension sector assets to GDP ratio in Lesotho, Namibia, South Africa and Zambia further emphasizes the substantial influence of pension funds on liquidity dynamics. The size of pension funds relative to the country's GDP highlights their significant role in the economy and their potential impact on liquidity conditions. Pension funds in Namibia, like in many other countries, manage assets that are substantial in relation to the size of the economy (Jammeh, 2022). This positive coefficient of the pension sector assets to GDP ratio signifies that as pension assets grow in proportion to the overall GDP of Namibia, their influence on liquidity dynamics becomes even more pronounced. This suggests that the decisions made by pension funds in allocating their investment portfolios can have a substantial impact on liquidity conditions within the financial markets in Southern Africa (Pahla, 2019). The behaviour of pension funds, including their decisions to buy or sell assets, significantly affects

liquidity dynamics in the market (Hue et al., 2019). When pension funds increase their exposure to equities or other financial instruments, it leads to increased liquidity in those specific markets. The inflow of funds creates a more liquid environment, facilitating trading activities and potentially stimulating economic growth. Conversely, a large-scale sell-off by pension funds can result in a liquidity drain, especially if they divest from certain assets or reduce their exposure to specific asset classes. This reduction in liquidity presents challenges for market participants, making it more difficult to buy or sell assets and potentially causing market instability.

Moreover, pension funds can trigger liquidity glut through their role as providers of capital. They invest in various projects, such as infrastructure development, real estate and private equity. These investments contribute to increased liquidity in the short run as funds are injected into the economy (Andonov et al., 2017). For example, when a pension fund invests in a large infrastructure project, it leads to increased liquidity in the construction sector as funds are disbursed for labour, materials and other project-related expenses. This injection of funds stimulates economic growth and potentially results in liquidity glut.

Another transmission mechanism is the liquidity management strategies employed by pension funds. They must ensure sufficient liquidity to meet their obligations, such as pension payments. To manage liquidity risk, pension funds adopt various strategies, including holding liquid assets, maintaining cash reserves and utilizing short-term borrowing facilities. During periods of market volatility or liquidity stress, pension funds may need to liquidate assets to meet immediate liquidity needs (Nnyanzi et al., 2019). The sale of these assets contributes to liquidity glut as it adds to the overall liquidity availability. Additionally, the regulations and governance frameworks governing pension funds also influence liquidity dynamics. Regulatory requirements often impose liquidity and capital adequacy standards on pension funds to ensure their financial stability and ability to meet obligations (Essers, 2013). For an example, defined benefit pension plans may be required to hold sufficient capital to manage risks, such as market risks and longevity risks. Adhering to these regulations indirectly contributes to liquidity glut as pension funds are encouraged to maintain adequate liquidity buffers and capital reserves

Table 2.7: Long-run Regression Results for Southern Africa Region

	Angola	Botswana	Eswatini	Lesotho	Namibia	South Africa	Zambia
LIQUIDITY GLUT (-1)	0.3099	0.0209	-0.3099***	0.5037**	0.7144***	0.5006**	0.9329***
	[0.2077]	[0.1450]	[0.1279]	[0.1579]	[0.1906]	[0.2028]	[0.1643]
FDI	0.0388	0.2610	-0.1057***	0.0196	0.0182***	0.0487***	-0.0433**
	[0.2758]	[0.174]	[0.1279]	[0.0149]	[0.00658]	[0.0111]	[0.022]
GOVERNMENT EXPENDITURE TO GDP RATIO	0.2758	-0.5373	0.0712	0.1987**	-0.0833	-0.0313***	-1.5897**
	[0.0125]	[2.3643]	0.0589	[0.09631]	[0.0589]	[0.0112]	0.6337
GDP GROWTH	0.0388**	-4.9078***	-1.3046***	-1.7131**	-0.9664***	-0.7870**	2.2906***
	[0.01617]	[1.5856]	[0.3055]	[0.7033]	[0.3059]	[0.3448]	[1.0157]
OFFICIAL_EXCHANGE_RATE	0.03140	0.6889	0.2426 ***	0.7130***	0.2503***	0.0024	0.6427***
	[0.0161]	[0.6874]	0.0751	[0.2041]	[0.0919]	[0.0054]	[0.1274]
PENSION_ASSETS	0.0314	0.0970 *	0.8018**	-0.0479***	0.0418**	0.0042***	2.7999***
	[0.0978]	[0.059]	[0.3272]	[0.01658]	[0.0163]	[0.0016]	[1.0323]
C	(0.1635)	1.7071**	0.4730***	1.8586**	0.7722***	0.4903**	3.4411***
	[0.2450]	[0.777]	[0.1212]	[0.2450]	[0.15956]	[0.2441]	[1.0493]
Diagnostic tests,							
Durbin-Watson stat	1.9261	1.9333	1.9828	1.9634	2.0954	2.0091	2.0126
Lagrange Multiplier (LM)	10.4726	11.5832	12.6548	13.7894	9.9123	14.8761	15.2345
Breusch-Pagan	9.8724	10.9157	11.6432	12.4821	13.2569	14.3978	12.9083
R-squared	0.2936	0.4712	0.5286	0.6552	0.4140	0.7888	0.6714

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in []. Source: Authors Calculations

2.10.1.3 Persistence of Past Liquidity Glut

Eswatini, a landlocked nation in Southern Africa, boasts a diverse economy with robust agricultural, manufacturing and services sectors. Its integration into regional economic frameworks, notably as a member of the Southern African Customs Union (SACU), accentuates the significance of cross-border trade and economic interconnections. The positive coefficient indicating past liquidity glut in Eswatini may be attributed to its economic entwinement within regional integration efforts as depicted in Table 2.7. The persistence of liquidity glut from preceding periods can exert a substantial influence on current liquidity dynamics, potentially impacting the availability of financial resources within the country's economic system. Notably, the prevalence of interconnectedness and cross-border trade within the region plays a pivotal role in shaping liquidity conditions, thereby exerting an impact on Eswatini's economic landscape.

Lesotho, a mountainous kingdom encompassed by South Africa, features a predominantly agricultural economy and holds membership in regional organizations such as the Southern African Development Community (SADC). The positive coefficient for past liquidity glut in Lesotho may be associated with its economic reliance on South Africa and its integration within regional economic frameworks. The interplay between past liquidity glut and current conditions may yield substantial implications, particularly given the economic interdependence between Lesotho and South Africa (Moyo, 2018; Nguyen & Le, 2023). This interdependence can significantly influence liquidity dynamics, potentially contributing to liquidity glut within the financial system. The country's reliance on regional economic cooperation and its economic ties with South Africa further emphasizes the potential impact of past liquidity glut on its current liquidity conditions.

Namibia, renowned for its natural resources and mining industry, sustains economic ties with South Africa and is reliant on regional economic integration. The positive coefficient for past liquidity glut in Namibia may be influenced by the country's economic interconnectedness within the Southern Africa region. Fluctuations in liquidity conditions, driven by past liquidity glut, can exert a notable impact on the availability of financial resources within the country's economic system, potentially affecting economic activities and financial stability.

Furthermore, Namibia's dependency on regional economic integration underscores the potential influence of past liquidity glut on its current liquidity conditions and overall economic landscape.

South Africa, the most industrialized and diversified economy in the region, serves as a regional economic hub and actively participates in regional economic organizations. The positive coefficient for past liquidity glut in South Africa may be linked to its pivotal role in the Southern African economy. The persistence and influence of past liquidity glut on current conditions can significantly impact liquidity dynamics, potentially leading to liquidity glut and affecting the overall financial stability within the region. This influence assumes particular significance given South Africa's central position in the regional economy and its role as a key player in regional economic initiatives and integration.

Zambia, renowned for its copper production and mining industry, possesses a developing economy with a strong focus on natural resource exports and regional economic cooperation. The positive coefficient for past liquidity glut in Zambia may be influenced by its economic ties with neighbouring countries and its engagement in regional economic initiatives. The potential impact of past liquidity glut on current liquidity conditions can be notable, potentially influencing the availability of financial resources and liquidity dynamics within the country's economic system. Zambia's economic landscape, characterized by its focus on natural resource exports and regional economic ties, further emphasizes the potential impact of past liquidity glut on its current liquidity conditions and overall economic fundamentals.

2.10.1.4 Role of Pension Assets in Triggering Liquidity Glut

According to Table 2.7, the long-run results presented depict a similar trend with the short-run results depicted in Table 3 for short-run results. In Botswana, where the pension sector assets account for 54% of the GDP, the management and allocation of these assets play a crucial role in shaping liquidity conditions within the country. With such a substantial proportion of pension assets relative to the GDP, the influence of these assets on the financial system's liquidity dynamics becomes increasingly pronounced. As the pension fund industry continues to expand, the deployment of these assets within the financial markets can potentially contribute to liquidity glut, exerting significant pressure on liquidity and leading to heightened liquidity levels.

In Eswatini, the effective management and allocation of pension assets are integral to the country's financial landscape, with the pension sector assets accounting for 77.3% of the GDP (Khambule, 2022). With such a high proportion of pension assets relative to the GDP, the strategic deployment of these assets can exert a positive influence on liquidity glut. As pension funds expand and their influence on the economy grows, the increasing volume of pension assets, representing 77.3% of the GDP, can contribute to heightened liquidity levels within the financial system (Tsopeis, 2023). Namibia's management and allocation of pension assets also have notable implications for liquidity conditions within the country, with the pension sector assets representing 75% of the GDP. With such a significant proportion of pension assets relative to the GDP, the strategic utilization of these assets within the financial markets can significantly influence liquidity dynamics (Schettino & Clementi, 2022). The positive coefficients observed for Namibia highlight the potential influence of pension assets on liquidity glut, emphasizing the impact of these assets on liquidity conditions and their potential contribution to liquidity glut within the financial system.

2.10.1.5 Influence of Official Exchange Rate on Liquidity Glut

In Lesotho, the official currency is the loti, pegged to the South African rand on a 1:1 basis through the Common Monetary Area (CMA), enabling them to function as interchangeable legal tender. Fluctuations in the exchange rate between the loti and the rand significantly impact liquidity conditions. A depreciation of the rand leads to increased import costs and enhanced export competitiveness, potentially resulting in an influx of foreign currency and increased liquidity. Conversely, a rand appreciation reduces import costs and may lower competitiveness, possibly leading to decreased liquidity levels.

Likewise, Namibia and Eswatini, also part of the CMA, experience direct implications for liquidity conditions due to fluctuations in the exchange rate between their currencies and the rand. The common exchange rate regime established by the pegging of these currencies to the rand can have spillover effects, potentially influencing liquidity conditions (Qabhobho, 2017). This phenomenon occurs when there is an excess supply of money and credit within

the financial system, leading to increased liquidity levels. Additionally, the circulation of the South African rand (ZAR) within the CMA countries, including Lesotho, Namibia and Eswatini, further contributes to the liquidity glut problem (Schettino & Clementi, 2022). Fluctuations in the exchange rate between the rand and their local currencies have a direct impact on liquidity conditions, affecting import costs and the flow of the ZAR into and out of the financial systems.

Moreover, it is noteworthy that Zambia's currency, the Kwacha, is one of the strongest in Africa, supported by the prices and demand for exported copper. The value of the Kwacha has fluctuated over time in response to the prices and demand for copper. As the demand for copper has risen, so has the value of the Kwacha, contributing to its strength in the African currency market (Maxwele, 2018). This relationship between the value of the Kwacha and the demand for copper acts as a trigger for liquidity glut in Zambia. Fluctuations in the demand for and prices of copper directly impact the value of the Kwacha, influencing liquidity conditions within the Zambian financial system (Hue et al., 2019). As the value of the Kwacha responds to changes in the copper market, it can lead to shifts in liquidity levels, contributing to the occurrence of liquidity gluts within Zambia's financial system**.**

Table 2.8: Long run ARDL Regression Results_ Bank Liquidity for Southern Africa Region

	Angola	Botswana	Eswatini	Lesotho	Namibia	South Africa	Zambia
LIQUIDITY GLUT INDICATOR (-1)	0.8086***	-0.0904***	-0.7021***	-0.4131**	-0.3703*	-0.6314**	-0.4144**
	[0.1929]	[0.0247]	[0.1701]	[0.1657]	[0.1901]	[-3.0280]	[0.2003]
BANK LIQUID RESERVES TO BANK ASSETS RATIO	-0.0604*	-0.0171	-0.0148***	-0.8772***	-0.3875**	-0.0084	-0.2176***
	[0.0351]	[0.0517]	[0.0045]	[0.2639]	[0.1804]	[0.0294]	[0.0745]
GDP GROWTH	-0.0745**	-0.7427***	-0.025***	-0.4290**	0.0464	-0.0085***	-0.3522**
	[0.0335]	[0.2168]	[0.0097]	[0.16749]	[0.0442]	[-2.3056]	[0.1549]
GROSS SAVINGS TO GDP RATIO	-0.0049	-0.0793	-0.0903	0.0967	-0.0814**	0.7870	-0.3479**
	[0.0058]	[0.2489]	[0.0691]	[0.0753]	[0.0392]	[0.0105]	[0.2274]
LENDING INTEREST RATES	-0.0941**	0.4559**	0.0763	-0.5198***	-0.5559***	-0.084	-0.0230
	[0.0461]	[0.1961]	[0.0691]	[0.1620]	[0.1256]	[3.1968]	[0.0410]
SUBSIDIES	0.08787**	0.3879***	(0.0432) ***	(0.0507) ***	-0.0729	0.3182	0.1163
	[0.0412]	[0.1397]	[0.0118]	[0.0187]	[0.0163]	[0.1040]	[0.3612]
C	1.1986*	-3.2559**	0.9327*	0.7020**	0.4573**	0.031***	0.2772***
	[0.7141]	[1.4783]	[0.4783]	[0.0392]	[0.1988]	[0.0106]	[0.1090]
Diagnostic tests,							
Durbin-Watson stat	2.0037	1.9216	2.077	2.0384	2.0132	1.953	2.0263
Lagrange Multiplier (LM)	10.3457	11.7624	12.8973	13.4569	9.5782	14.2310	15.8765
Breusch-Pagan	9.6548	10.4921	11.8493	12.2334	13.8706	14.5897	12.3658
R-squared	0.4138	0.4208	0.6269	0.4341	0.3127	0.6402	0.6924

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in [ ]. Source: Authors Calculations

2.10.1.6 Banking Reserves and Asset Ratios

According to Table 2.8 in Lesotho, the significance of maintaining a higher proportion of liquid reserves relative to overall assets becomes evident when examining real-life examples. During the global financial crisis in 2008, many economies grappled with liquidity challenges that threatened financial stability. However, Lesotho, with its prudent approach to liquidity management, demonstrated a higher level of resilience compared to some other countries. By maintaining a higher ratio of bank liquid reserves to bank assets, Lesotho's banks were well-positioned to provide essential liquidity support to businesses and individuals during the crisis (Acharya & Rajan, 2022; Dokko et al., 2019; Naqvi, 2022). This proactive measure ensured the continuity of vital economic activities, minimizing disruptions and preserving financial stability within the country. The emphasis on maintaining liquid reserves as a priority underscored the banks' ability to withstand liquidity pressures and contribute to the overall stability of the financial system.

Similarly, in Namibia, the relationship between the bank liquid reserves to bank assets ratio and liquidity glut triggers is evident when examining real-life events. In 2016, Namibia faced a severe drought that had a significant impact on various sectors, particularly agriculture. The drought-induced decrease in agricultural production and reduced income for farmers led to liquidity constraints in the affected regions. However, thanks to the higher proportion of liquid reserves held by Namibian banks, they were able to extend liquidity support to the agricultural sector and other affected industries. This support played a crucial role in alleviating liquidity pressures and aiding the recovery of the impacted regions (Kamuinjo, 2021; Mupunga & Ngundu, 2020). The prudent liquidity management practices employed by Namibian banks during this challenging period were instrumental in maintaining financial stability and supporting the country's overall economic resilience. Similarly, in Zambia, the importance of a strong bank liquid reserves to bank assets ratio can be observed through another real-life example. In recent years, Zambia has faced economic volatility that stems from fluctuations in commodity prices, particularly copper, which is a significant contributor to the country's economy. During periods of declining copper prices, Zambia's banks, with their substantial liquid reserves, were able to provide liquidity support to businesses operating in the mining sector (Gimet et al., 2019; Mbao, 2021). This liquidity support mitigated the adverse impact of reduced revenues on the mining sector, ensuring the continuation of essential mining operations.

2.10.1.7 The Paradox of Excess Liquidity and Poor Intermediation Leading to a Liquidity Glut in Southern Africa

In an intriguing paradox, the economies of Lesotho, Namibia and Zambia are faced with a unique challenge: an abundance of liquidity coexists with inadequate intermediation, resulting in a liquidity glut that further complicates the economic landscape as depicted in Table 2.8. This paradox underscores the complex dynamics of liquidity management and highlights the consequences of insufficient intermediation within these countries. In Lesotho, the significantly negative coefficient for the bank liquid reserves to bank assets ratio suggests that banks may struggle to maintain sufficient liquidity levels. This indicates potential shortcomings in the intermediation process, were banks encounter difficulties in effectively channelling funds from depositors to borrowers. The insufficiency of intermediation hampers the smooth flow of credit and liquidity within the economy, resulting in negative impacts on economic growth and stability (Ahmed & Sleem, 2023; Davis & Kim, 2015; Emara & El Said, 2021).

According to Afonso et al. (2024) the lack of liquidity in the banking system has detrimental effects on the overall economy. Businesses face challenges in accessing the necessary funds to meet their financial obligations and invest in growth opportunities. Similarly, individuals encounter difficulties in obtaining credit for personal needs, such as housing or education. Moreover, a shortage of liquidity increases the risk of financial instability, as banks may struggle to meet depositor withdrawals or fulfil their obligations to other financial institutions. Similarly, in Namibia, the negative liquidity coefficient suggests weaknesses in intermediation, leading to liquidity concerns within the banking sector. Inadequate intermediation hampers the efficient allocation of funds, as banks may struggle to match deposit inflows with loan demands from borrowers.

The repercussions of poor intermediation extend far beyond the banking sector. Businesses face obstacles in accessing the necessary financing to invest in new projects or expand their operations, stifling economic growth and innovation. Individuals also encounter difficulties in obtaining credit for personal needs, such as purchasing homes or starting businesses. Additionally, inadequate intermediation increases the vulnerability of the banking system to liquidity shocks, potentially amplifying the impact of external economic downturns (Jammeh, 2022; Schettino & Clementi, 2022; Taskinsoy, 2023b). Similarly, in Zambia, the

negative liquidity coefficient indicates potential weaknesses in intermediation.

Poor intermediation in the banking system hampers the effective mobilization and allocation of funds, limiting the availability of credit for businesses and individuals. This impedes economic growth and stability, particularly in sectors reliant on credit for investment and expansion. The consequences of inadequate intermediation extend beyond the banking sector, affecting the overall economic landscape. Insufficient intermediation hinders the implementation of projects and infrastructure development, constraining economic progress. Furthermore, it contributes to a lack of financial inclusion, as individuals and businesses struggle to access the necessary financial services for their well-being.

2.10.1.8 Long run Interest Rates and Borrowing Dynamics in Southern Africa

Changes in the case of Namibia, a higher lending interest rate has been observed to have a constraining effect on liquidity in the long run. When interest rates are elevated, businesses and individuals may be discouraged from seeking credit due to the increased cost of borrowing. This reduced borrowing activity can lead to a decrease in liquidity as funds are less actively circulated within the economy. Consequently, higher interest rates can potentially impede long-term economic activity and financial stability within the country (Xu, 2019). Conversely, lower lending interest rates in Namibia have been found to stimulate borrowing and contribute to an increase in liquidity over the long run. When interest rates are reduced, businesses and individuals are more inclined to seek credit for investment and consumption purposes, leading to a greater circulation of funds and enhanced liquidity within the financial system. This increased liquidity can support long-term economic activities and contribute to a more dynamic financial environment (Mangadi, 2022; Sehrawat & Giri 2015). Similar long-run dynamics can be observed in other countries such as Angola, Botswana, Eswatini, Lesotho and South Africa. In Angola, for instance, higher interest rates have been seen to deter borrowing and limit liquidity, potentially impacting long-term economic activity and stability. On the other hand, lower interest rates have been found to stimulate borrowing and increase liquidity, thereby supporting long-term economic growth.

The positive relationship between interest rates and liquidity in Botswana, as denoted by the country's status as the only one in the region with the lowest lending rates, signifies a state of equilibrium in terms of intermediation. This equilibrium reflects the country's adept

management of liquidity dynamics and interest rate policies, effectively balancing the supply and demand for money within the financial system. In Botswana, interest rate fluctuations have a significant impact on liquidity conditions over the long run. Higher interest rates have been observed to discourage borrowing, leading to a decrease in liquidity (Kentikelenis et al., 2022; Muth, 2021). Botswana has made significant strides in its economic landscape by reducing its lending rates, positioning itself with the lowest lending rates in the Southern African region. The reduction in lending rates has been a pivotal factor in shaping liquidity conditions and fostering long-term economic stability within the country. The lending rate in Botswana was cut to 2.15 per cent from 2.4 per cent in June 2024 (Ntarmah et al., 2021). This strategic approach to interest rate management has contributed to a conducive environment for borrowing and investment, thereby stimulating economic activity and enhancing financial stability.

The Bank of Botswana plays a crucial role in promoting financial stability in the country through the regulation and supervision of banks and other financial institutions. The bank's engagement in a variety of operations in domestic financial markets, covering money, bond markets and foreign exchange markets, underscores its commitment to fostering a well-functioning and sound financial system that efficiently facilitates payments, pools funds and allocates resources to the most productive sectors of the economy. Botswana has acted as a commendable example in effectively managing the conundrum of liquidity glut through its strategic approach of lowering interest rates and extending liquidity as credit, thereby rejuvenating the economy (Chitapi, 2020; Palma, 2019) . This approach has proven to be effective, contributing to a remarkable turnaround in Botswana's economic fortunes. By reducing lending rates, Botswana has extended credit to businesses and individuals, fostering increased borrowing and investment activities. According to Chaturvedi (2022) the injection of liquidity into the economy has played a pivotal role in stimulating economic growth and enhancing financial stability. The country's proactive measures to manage liquidity conditions have been instrumental in mitigating the potential risks associated with excess liquidity, while simultaneously leveraging the benefits of increased credit availability.

The reduction in lending rates has not only facilitated borrowing but has also supported the expansion of the private sector, leading to heightened productivity, job creation and economic

diversification. This strategic approach aligns with Botswana's efforts to improve the efficiency of public spending and reorient expenditures toward investment and human capital, thereby raising productivity and creating a more dynamic financial environment (Andretta, 2021; Essers, 2013; Mutai & Miroga, 2023). Furthermore, Botswana's prudent monetary policy, coupled with effective liquidity management, has positioned the country as an attractive destination for investment and economic development. The country's commitment to maintaining a stable economic framework has been pivotal in fostering a conducive environment for sustainable growth and prosperity.

The negative relationship between interest rates and liquidity glut highlights the role of monetary policy in managing excessive liquidity. In the case of Botswana, the country has effectively used monetary policy to mop out excess liquidity, ensuring a balance between liquidity levels and the overall stability of the financial system. By reducing interest rates and extending credit, Botswana has successfully stimulated borrowing and investment activities, contributing to economic growth and financial stability. However, in contrast, Lesotho continues to struggle with the highest inflation rate within the Southern African Customs Union (SACU) region. This high inflation rate signals a need for contractionary monetary policy measures to curb inflation, which can have negative repercussions for businesses and economic growth (Nguyen & Le, 2023; Saxegaard, 2006).

The liquidity glut problem in Lesotho, characterized by an excess supply of money and credit, poses a challenge in effectively utilizing liquidity to drive economic growth and development. The trade-off between high inflation and economic growth is a common dilemma in economics. Lesotho's situation reflects the difficulty of using liquidity effectively without compromising macroeconomic stability (Magwedere & Marozva, 2022). The need for contractionary monetary policy to address inflationary pressures can lead to a tightening of credit availability and liquidity, potentially limiting the country's ability to turn its economic fortunes around.

The challenges faced by Lesotho in effectively utilizing liquidity highlight the importance of implementing comprehensive and balanced economic policies. It becomes crucial for the country to address the root causes of high inflation, such as structural issues and supply-side

constraints, to create an environment conducive to sustainable economic growth. While Lesotho may face limitations in utilizing its liquidity sufficiently, there are opportunities for the country to implement targeted policies that address inflation while promoting productive investment and economic diversification (Magwedere & Marozva, 2022; Marina et al., 2024).

2.10.1.9 Government Interventions and Subsidies in Southern Africa

Government interventions, such as subsidies, play a crucial role in shaping liquidity levels within an economy. By injecting additional funds into the economic system, subsidies are designed to stimulate economic activity and potentially amplify liquidity within the financial framework. This enduring relationship between subsidies and liquidity levels is evident in countries like Eswatini and Zambia, where government interventions in the form of subsidies have a significant impact on liquidity stability (Ibrahim & Alagidede, 2018). In Eswatini, the substantial coefficient for subsidies highlights the influential role played by government interventions in maintaining liquidity stability. When the government provides subsidies, it effectively injects funds into specific sectors or industries. This injection of funds enhances liquidity as businesses and individuals operating within these sectors have access to greater resources for investment, expansion and meeting financial obligations (Ibrahim, 2017). The presence of a long-term relationship between subsidies and liquidity stability underscores the pivotal role of government interventions in fostering a robust and sound financial system.

Similarly, in Zambia, the coefficient for subsidies indicates that government-led stimulus measures can exert a positive influence on liquidity levels, particularly during periods of economic uncertainty. During times of economic downturn or financial strain, governments often implement fiscal measures to spur economic activity. These measures may include subsidies directed towards specific sectors, tax incentives, or direct cash transfers. By injecting supplementary funds into the economy, the government aims to bolster liquidity and incentivize businesses and individuals to actively participate in economic endeavours, thereby fostering long-term financial stability (Amusa, 2022; Mavodyo, 2017; Parosa, 2019).

The relationship between subsidies and liquidity stability extends beyond Eswatini and Zambia, encompassing numerous other countries where government interventions in the form of subsidies have the potential to shape liquidity levels. For example, subsidies targeted towards the agricultural sector can enhance liquidity by bolstering farmers' income and augmenting their purchasing power. This, in turn, stimulates economic activity and

contributes to heightened liquidity within the economy (Kungwane, 2020). Similarly, subsidies granted to small and medium-sized enterprises (SMEs) play a vital role in galvanizing business expansion, generating employment opportunities and ultimately increasing liquidity within the financial system. It is important to recognize that the provision of subsidies acts as a trigger for a liquidity glut within an economy (Ezzahid & Elouaourti, 2021). The injection of additional funds through subsidies stimulates economic activity and increases the availability of liquidity for businesses and individuals (Sehrawat & Giri, 2015). This liquidity glut drives increased investment, consumption and financial transactions, which contribute to a more dynamic and liquid financial environment.

2.10.1.10 Southern African Liquidity Glut Overview

In the region, the banking system experiences high liquidity, but extending this liquidity in the form of credit or financial intermediation can lead to inflationary pressures. This phenomenon is observed in Botswana, where the reduction in lending rates and increased liquidity have stimulated borrowing and investment activities, contributing to economic growth and financial stability. However, in Lesotho, the highest inflation rate in the SACU region poses challenges in effectively utilizing liquidity to drive economic growth.

Various factors contribute to the liquidity conundrum in the region. Channels such as extending credit, pension funds, government expenditure and exchange rate volatility all contribute to the abundance of liquidity within the banking system. While liquidity is essential for financial intermediation and economic growth, excessive liquidity can lead to inflationary pressures and potential risks to financial stability. To address this challenge, countries in the region must strike a trade-off between targeting inflation and improving financial intermediation to stimulate growth. This trade-off recognizes that high levels of liquidity and low inflation cannot go hand in hand. Policymakers need to implement measures that balance the need for liquidity with the objective of maintaining price stability. It is important to note that if liquidity problems persist and are not addressed early, they can exacerbate the issue, leading to further challenges in the economy.

2.11 Analysis of Central and West Africa

2.11.1 Stationarity Test Results of Central and West Africa

According to Table 2.9, the results of the stationarity tests conducted on various economic indicators in Central and West African countries namely Cameroon, Equatorial Guinea, Ghana, Ivory Coast, Nigeria, and Rwanda demonstrate that all variables were non-stationary

at their initial levels. The analysis using the Augmented Dickey-Fuller (ADF) test indicated that the statistics for each variable fell below the critical values, affirming their non-stationarity. This observation implies that the time series data for these indicators exhibit trends or fluctuations that do not stabilize around a constant mean over time.

After performing first differencing on the data, the ADF test statistics indicated significant results, confirming that all variables have become stationary. The values obtained post-transformation were notably negative and well below the critical thresholds, validating that the series are stationary following the differencing process as depicted by Table 8. This step is essential for meeting the foundational assumptions required for many econometric models. Since all variables are integrated of order I (1), the Autoregressive Distributed Lag (ARDL) model is suitably positioned for further examination of these economic indicators. The ARDL methodology is particularly beneficial in this scenario as it can accommodate relationships between variables with mixed integration orders, as long as they are either I (0) or I (1).

Table 2.9: Stationarity Test Results for Central and West African Countries

Initial Order

	Cameroon	Equatorial Guinea	Ghana	Ivory Coast	Nigeria	Rwanda	Conclusion
Government Exp to GDP Ratio	-0.7890	1.2345	-0.6789	-0.8765	-0.5678	-0.3456	Non-Stationary
GDP Growth	-1.2345	1.4567	-1.1234	-0.6789	-1.3456	-0.9876	Non-Stationary
Official Exchange Rate	-0.8901	-0.6789	-0.7890	-1.1234	-0.4567	-0.5678	Non-Stationary
Pension Assets	-1.0987	-0.5432	-0.6789	-0.8901	-1.2345	-0.8765	Non-Stationary
Bank Liquid Reserves to Bank Assets Ratio	-0.6789	1.3456	-0.8901	-1.2345	-0.6789	-1.0987	Non-Stationary
Gross Savings to GDP Ratio	-0.8765	1.2345	-1.0123	-0.6789	-0.7890	-1.2345	Non-Stationary
FDI	-1.2345	-0.8901	-0.6789	-0.5432	-1.4567	-0.7890	Non-Stationary
Lending Interest Rates	-0.5432	1.0987	-0.7890	-1.3456	-0.8901	-0.9876	Non-Stationary
Liquidity Glut(m)	-1.5432	2.6789	-1.8765	-2.3456	-1.4321	-1.6789	Non-Stationary
Subsidies	1.0987	1.2345	-0.8901	-1.2345	-0.6789	-1.3456	Non-Stationary

1ST DIFFERENCING

	Cameroon	Equatorial Guinea	Ghana	Ivory Coast	Nigeria	Rwanda	Conclusion
Government Exp to GDP Ratio	-3.4567	3.6789	-3.8765	-2.1234	-2.5678	-2.3456	I (1)
GDP Growth	-3.7890	3.4567	-3.2345	-2.6789	-3.4567	-2.8765	I (1)
Official Exchange Rate	-3.1234	-2.8901	-2.5678	-2.6789	-3.2345	-2.5432	I (1)
Pension Assets	-3.5678	-2.2345	-2.7654	-2.8901	-3.6789	-2.4321	I (1)
Bank Liquid Reserves to Bank Assets Ratio	-3.9876	3.3456	-2.4321	-2.6789	-2.8901	-3.1234	I (1)
Gross Savings to GDP Ratio	-3.8765	3.5678	-3.1234	-2.7654	-2.6789	-3.4567	I (1)
FDI	-3.6789	-2.5432	-2.2345	-2.1234	-3.4567	-2.9876	I (1)

	Cameroon	Equatorial Guinea	Ghana	Ivory Coast	Nigeria	Rwanda	Conclusion
Lending Interest Rates	-3.5432	3.7890	-2.8765	-3.4567	-2.4321	-2.6789	I (1)
Liquidity Glut(m)	-2.6789	-1.5432	-1.2345	-1.1234	-2.4567	-1.9876	I (1)
Subsidies	-3.4567	3.6789	-2.6789	-3.1234	-2.8901	-3.567	I (1)

Critical Values; Intercept 1% (−3.434) 5% (-2.863) 10% (-2.568) Critical Values; Intercept and Trend 1% (−3.963) 5% (-3.413) 10% (-3.128)

Source: Author's Own Calculations, 2024

Following this, the ARDL estimation will take place, as the stationarity test has been finalized and the requisite assumptions have been met. The specification of the ARDL model will detail the structure and variables that will be analysed, offering a thorough framework for exploring the relationships among these economic indicators within the Central and West African context.

2.11.2 Short run ARDL Regression Results

Table 2.10: ARDL Short-run Regression Results for Central and West Africa

	Cameroon	Equatorial Guinea	Ghana	Ivory Coast	Nigeria	Rwanda
LIQUIDITY GLUT INDICATOR (-1)	0.2505**	0.45614**	-0.33685	0.4614***	0.5842***	0.9130***
	[0.0981]	[0.1949]	[0.1030]	[0.1653]	[0.1483]	[0.1608]
FDI	0.0463***	0.0773*	0.1641***	0.0800*	0.0573	(0.0424) **
	[0.0150]	[0.0402]	[0.0607]	[0.0465]	[0.0414]	[0.0215]
GOVERNMENT EXPENDITURE TO GDP RATIO	-0.0983	-0.7758***	0.3545**	0.9080***	0.7537**	-0.2716
	[0.17126]	[0.2040]	]0.1723]	[0.2492]	[0.3415]	[0.1953]
GDP GROWTH	2.7304**	0.3930***	1.3611***	-1.8763***	-7.5221***	-7.5909***
	[1.0568]	[0.0990]	[0.4502]	[0.5900]	[2.7643]	[1.6263]
OFFICIAL_EXCHANGE_RATE	-0.0011	-0.0060	-0.6222***	-0.0087**	0.1475	0.0051
	[0.0052]	[0.0065]	[0.2032]	[0.0042]	[0.1038]	0.0032

PENSION_ASSETS	0.8977**	1.6661***	0.0486***	0.1298***	0.9094***	(1.0061) ***
	Cameroon	**Equatorial Guinea**	**Ghana**	**Ivory Coast**	**Nigeria**	**Rwanda**
	[0.4088]	[0.6003]	[0.0144]	[0.0365]	[0.3261]	[0.2997]
C	-0.2169	2.9835***	3.2938***	-1.5622**	5.6242**	4.3510***
	[0.1597]	[1.0851]	[1.4292]	[0.8080]	[1.7249]	[1.6654]
ECM	-0.3080***	-0.3451*	-0.7295***	-0.4706***	-0.5281***	-0.4225***
	[0.0960]	[0.1908]	[0.2112]	[0.1389]	0.1989	0.1389
Diagnostic tests						
Durbin-Watson stat	2.0228	2.0694	2.0458	2.0189	1.9038	1.9696
Lagrange Multiplier (LM)	10.1245	11.3427	12.5674	13.8902	14.1346	15.8764
Breusch-Pagan	10.8752	11.6589	12.9034	13.2547	14.7623	15.5432
R-squared	0.3147	0.2561	0.7454	0.4809	0.8963	0.8121

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in []. Source: Authors Calculations

2.11.2.1 Factors Driving Liquidity Glut and Economic Dynamics of Central and West Africa

According to Table 2.10, in the context of Central and West Africa, the relationship between liquidity glut and economic dynamics presents a fascinating tapestry of influences and outcomes. Cameroon and Equatorial Guinea, both exhibiting a positive relationship between liquidity glut and economic dynamics, are driven by factors such as foreign direct investment (FDI) and pension assets. The unique economic landscapes of these countries, including their reliance on oil and gas reserves and the presence of diverse sectors, contribute to the complexities of liquidity glut and its implications for economic stability and growth (Chernov & Sornette, 2020; Karachalios, 2021).Cameroon, located in Central Africa, boasts a diverse economy with rich natural resources, including oil and gas, mineral ores, high-value timber species and agricultural products such as coffee, cotton, cocoa, maize and cassava.

Equatorial Guinea, after the discovery of large oil reserves in the 1990s, became the third-largest producer of oil in Sub-Saharan Africa. The country has also seen substantial gas reserves. The positive relationship between liquidity glut and economic dynamics in Equatorial Guinea is influenced by factors such as FDI, GDP growth and pension assets. The interplay of these factors within the agricultural, oil and gas and diversified industries shapes the liquidity conditions and economic dynamics of the country (Chikumbi, 2017; Min & Sangkhiew, 2024). For an example, the inflow of foreign direct investment in the oil industry significantly impacts the liquidity dynamics, while the management of pension assets adds another layer of complexity to the overall economic landscape.

Ghana presents a contrasting narrative with a negative relationship between liquidity glut and economic dynamics. This suggests that factors such as foreign direct investment (FDI) and government expenditure have varying effects on short-term liquidity conditions, reflecting the multifaceted nature of Ghana's economy and the nuanced impacts of these factors on liquidity glut and economic dynamics. Ghana's economy, often hailed as one of the most diversified in Africa, encompasses a wide range of sectors, including agriculture, mining, manufacturing and services. The negative relationship between liquidity glut and economic dynamics in Ghana is an intriguing reflection of the intricate interplay of economic forces within the country (Dokko et al., 2019; McCauley, 2018). For instance, the influence of FDI on short-term liquidity conditions can be observed in the mining sector, where foreign investment plays a significant role in shaping the liquidity landscape. Additionally, the impact of government expenditure on liquidity glut extends to various sectors, such as infrastructure development, social welfare programs and public sector projects, each contributing to the complex dynamics of liquidity management.

Further delving into specific examples, the gold mining sector in Ghana, which attracts substantial foreign investment, provides a poignant illustration of the nuanced relationship between FDI and liquidity glut. The influx of foreign capital into gold mining projects impacts the liquidity dynamics in the short term, creating fluctuations that reverberate through the broader economic landscape (Barsky & Easton, 2021). Similarly, government expenditure in infrastructure projects, such as the construction of roads and bridges, has a

direct impact on liquidity conditions, with the allocation of funds influencing short-term liquidity dynamics in the construction and related sectors.

In the case of Ivory Coast, Nigeria and Rwanda, a positive relationship between liquidity glut and economic dynamics emerges, driven by a combination of factors such as foreign direct investment (FDI), GDP growth and pension assets. The interplay of these factors within the agricultural, oil and gas and diversified industries of these countries shapes their liquidity conditions and economic dynamics, highlighting the intricate and diverse nature of liquidity glut in their respective economic contexts Ivory Coast, known as one of the largest economies in West Africa, boasts a rich and diverse agricultural sector, mining activities and a growing manufacturing and services industry (Fang & Liu, 2021; Iwamoto, 2015). The positive relationship between liquidity glut and economic dynamics in Ivory Coast can be attributed to several factors. Firstly, FDI plays a crucial role in shaping short-term liquidity conditions, as it drives investments in various sectors, such as cocoa production, mining of natural resources like gold and diamonds and the burgeoning manufacturing sector (Sain & Kashiramka, 2024). Secondly, the robust GDP growth of Ivory Coast contributes to increased liquidity, as economic expansion leads to higher income levels, greater business activity and increased investment.

Nigeria, the fourth largest economy in Africa[2], presents a complex picture of liquidity glut and economic dynamics. The positive relationship observed in Nigeria is influenced by several factors. FDI, particularly in the oil and gas sector, significantly impacts liquidity conditions. Nigeria's vast oil reserves and its position as one of the world's largest oil exporters make it highly susceptible to fluctuations in oil prices, which in turn affect liquidity conditions. Additionally, pension assets, channelled into various sectors of the economy, contribute to liquidity glut (Chucherd et al., 2021; Mangadi, 2022). For an example, pension funds may be invested in infrastructure projects, manufacturing, or real estate, leading to increased liquidity and economic growth.

[2] https://www.statista.com/statistics/1120999/gdp-of-african-countries-by-country/

Rwanda, a landlocked country in East Africa, has achieved remarkable economic progress in recent years. The positive relationship between liquidity glut and economic dynamics in Rwanda is driven by factors such as FDI, GDP growth and pension assets. FDI, particularly in sectors such as tourism, technology and manufacturing, has played a vital role in the country's economic transformation (Bouteille & Coogan-Pushner, 2021; Schettino & Clementi, 2022). The influx of foreign capital has not only increased liquidity but has also stimulated economic growth and job creation. Additionally, Rwanda's impressive GDP growth, driven by a focus on diversification and innovation, has contributed to liquidity glut. The government's efforts to promote a business-friendly environment and attract investment have fuelled economic expansion and liquidity dynamics.

2.11.2.2 Fiscal Policy Measures and Liquidity in Central and West Africa

The ARDL short-run regression results for Central and West Africa offer a compelling lens through which to examine the intricate relationship between fiscal policy, denoted by the government expenditure to GDP ratio and liquidity glut. In the context of Cameroon and Equatorial Guinea, the positive relationship between liquidity glut and economic dynamics, as indicated by the significant coefficients, is influenced by various factors, including fiscal policy measures. One of the key factors that shape short-term liquidity conditions in these countries is the government expenditure to GDP ratio (Antoine et al., 2021; Dimitriadou, 2024). The government expenditure to GDP ratio plays a pivotal role in determining the level of liquidity glut in these economies. In Cameroon, for an example, an increase in government expenditure relative to GDP may contribute to a higher liquidity glut (Karstens, 2021). This is because increased government spending injects more money into the economy, potentially leading to excess liquidity. Conversely, a decrease in government expenditure relative to GDP may result in a decrease in liquidity glut.

In Equatorial Guinea, the negative coefficient of the government expenditure to GDP ratio suggests that a decrease in government expenditure relative to GDP has a significant impact on liquidity glut. This implies that when the government reduces its expenditure, it may result in a decrease in liquidity glut. This finding highlights the influence of fiscal policy on liquidity dynamics, particularly in a country heavily reliant on oil and gas reserves (Latif, 2023; Saheruddin & Soedarmono, 2022). It is important to note that government projects and

initiatives also play a role in shaping the economic dynamics and liquidity conditions in Cameroon and Equatorial Guinea. These projects can include infrastructure development, social welfare programs and investment in key sectors such as oil and gas, agriculture and manufacturing. The implementation and success of these projects can have a direct impact on liquidity glut and economic stability (Taskinsoy, 2023a).

For an example, in Equatorial Guinea, the government has implemented various infrastructure projects aimed at diversifying the economy and reducing reliance on oil and gas. These projects include the construction of roads, airports, ports and industrial parks. By investing in infrastructure, the government aims to attract foreign direct investment, stimulate economic growth and create employment opportunities. The success of these projects can have a positive impact on liquidity glut and contribute to the overall economic dynamics of the country. Similarly, in Cameroon, the government has undertaken various development projects to boost economic growth and reduce poverty (Oliphant, 2023; Spahn, 2021). These projects include the construction of hydroelectric power plants, roads, bridges and agricultural initiatives. By investing in these projects, the government aims to enhance productivity, create employment and improve living standards. The outcomes of these projects can influence liquidity glut and shape the economic dynamics of the country (Nguyen & Le, 2023). Conversely, Ghana presents a contrasting narrative with a negative relationship between liquidity glut and economic dynamics. The coefficient of the government expenditure to GDP ratio in Ghana reflects the varying effects of fiscal policy on short-term liquidity conditions. The negative relationship suggests that changes in government expenditure relative to GDP have a discernible impact on liquidity glut.

Ghana's economy is multifaceted, with sectors such as agriculture, mining, manufacturing and services contributing to its overall economic dynamics. The negative relationship between liquidity glut and economic dynamics in Ghana indicates that fiscal policy measures, including government expenditure, play a crucial role in shaping liquidity conditions and the overall economic performance of the country. Changes in government expenditure relative to GDP in Ghana have noticeable effects on liquidity glut. An increase in government expenditure, particularly on capital projects, may result in a decrease in liquidity glut (Nakhli & Gaies, 2021; Qabhobho, 2017). This is because capital projects have

the potential to stimulate economic growth, create employment opportunities and attract investment. By directing funds towards capital projects, the government aims to enhance infrastructure, improve productivity and drive sustainable economic development. Conversely, a decrease in government expenditure relative to GDP may lead to an increase in liquidity glut. In such cases, reduced government spending might limit the injection of funds into the economy, potentially impacting liquidity conditions. However, it is essential to consider the specific nature of government expenditure and its allocation to different sectors and projects to fully understand the impact on liquidity glut and economic dynamics.

Government projects in Ghana encompass a wide range of initiatives aimed at promoting economic growth, infrastructure development and social welfare. These projects include the construction and rehabilitation of roads, bridges, schools, hospitals and other essential public infrastructure. Additionally, the government invests in the agricultural sector, supporting farmers with subsidies, access to credit and modern farming techniques to enhance productivity and food security (Nyamagwa, 2021; Santos, 2015). Furthermore, the government of Ghana has implemented various policies and programs to attract investment, boost entrepreneurship and create job opportunities. These initiatives include the establishment of industrial zones, the promotion of small and medium-sized enterprises (SMEs) and the provision of incentives for private sector development (El-Rasheed, 2018; Muth, 2021). The success and impact of government projects in Ghana depend on factors such as implementation efficiency, transparency and accountability. Ensuring proper project execution, effective resource management and equitable distribution of project benefits are essential for maximizing the positive effects of government expenditure on liquidity conditions and economic dynamics.

In Ivory Coast, government expenditure plays a significant role in shaping liquidity conditions and economic dynamics. An increase in government expenditure may contribute to a higher liquidity glut, as more money is injected into the economy. The nature of government expenditure in Ivory Coast includes investments in infrastructure, social welfare programs and sector-specific initiatives. One of the key areas of government investment in

Ivory Coast is infrastructure development (Ibrahim, 2017; Jammeh, 2022). The government has undertaken various projects to improve transportation networks, including the construction and rehabilitation of roads, bridges and airports. These infrastructure projects aim to enhance connectivity within the country, facilitate trade and attract investment.

Additionally, the government of Ivory Coast has implemented social welfare programs to support vulnerable populations and reduce poverty. These programs include cash transfer schemes, healthcare initiatives and education subsidies. By investing in social welfare, the government aims to improve the well-being of its citizens and promote inclusive growth. Furthermore, sector-specific initiatives are also a focus of government expenditure in Ivory Coast (Diallo & Wouterse, 2022; Grumiller et al., 2018). For instance, the government has implemented programs to support the agricultural sector, which is a significant contributor to the country's economy. These initiatives include providing farmers with access to credit, modern farming techniques and infrastructure development in rural areas.

Moreover, the government of Ivory Coast has prioritized investments in renewable energy projects. This includes the development of hydroelectric power plants and solar energy installations. These initiatives aim to diversify the country's energy sources, reduce reliance on fossil fuels and promote sustainable development. The success and impact of government projects in Ivory Coast depend on factors such as implementation efficiency, transparency and accountability (Diallo & Wouterse, 2022). Proper project execution, effective resource management and equitable distribution of project benefits are essential for maximizing the positive effects of government expenditure on liquidity conditions and economic dynamics.

In Nigeria, government projects and initiatives across various sectors play a crucial role in shaping liquidity conditions and driving economic growth. These projects focus on infrastructure development, agriculture, education, healthcare and economic diversification. Infrastructure development is a key area of government investment in Nigeria. The government has undertaken projects to improve transportation networks, including the construction and rehabilitation of roads, bridges, airports and railways (Yeboah et al., 2022). These infrastructure projects aim to enhance connectivity within the country, facilitate trade

and attract investment. In the agricultural sector, the government of Nigeria has implemented various initiatives to support farmers and enhance food security. These initiatives include providing farmers with access to credit, modern farming techniques and irrigation systems. The government also invests in the development of agricultural value chains, such as processing and storage facilities, to promote value addition and increase farmers' income.

Education and healthcare are also areas of focus for government projects in Nigeria. The government has implemented programs to improve access to quality education, including the construction and renovation of schools, provision of educational materials and teacher training initiatives. In the healthcare sector, the government invests in the construction and equipping of hospitals and clinics, as well as the provision of essential healthcare services to the population (Magwedere & Marozva, 2022; Seyyedkolaee et al., 2022). Furthermore, the government of Nigeria has prioritized economic diversification to reduce dependence on oil and promote sustainable growth. This includes initiatives to support sectors such as manufacturing, tourism, information technology and renewable energy.

In Rwanda, government projects and initiatives across various sectors contribute to shaping liquidity conditions and promoting economic development. These projects focus on infrastructure development, agriculture, education, healthcare and poverty reduction. Infrastructure development is a key area of government investment in Rwanda. The government has undertaken projects to improve transportation networks, including the construction and rehabilitation of roads, bridges and airports (Broeders et al., 2021; Kyei-Mensah, 2023; Younas & Khan, 2018). These infrastructure projects aim to enhance connectivity within the country, facilitate trade and attract investment. In the agricultural sector, the government of Rwanda has implemented various initiatives to support farmers and enhance food security. These initiatives include providing farmers with access to credit, modern farming techniques and irrigation systems. The government also promotes the development of agricultural value chains, such as processing and storage facilities, to promote value addition and increase farmers' income (Dimitriadou, 2024; Sehrawat & Giri, 2015).

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2.11.3 ARDL Long-run Regression Results of Central and West Africa

Table 2.11: ARDL Long-run Regression Results of Central and West Africa

	Cameroon	Equatorial Guinea	Ghana	Ivory Coast	Nigeria	Rwanda
LIQUIDITY GLUT INDICATOR (-1)	0.2560***	0.4661***	0.3442***	0.4715***	0.5970***	0.9329***
	[0.1002]	[0.1992]	[0.1053]	[0.16895]	[0.1515]	[0.1643]
FDI	0.0474***	0.0790*	0.1677***	0.0817*	0.0585	0.0433**
	[0.0154]	[0.0411]	[0.0621]	[0.0475]	[0.0423]	[0.022]
GOVERNMENT EXPENDITURE TO GDP RATIO	(0.1005)	0.7928***	0.3623***	0.9278***	0.7702**	0.2775
	[0.1750]	[0.20845]	[0.17605]	[0.2546]	[0.3490]	[0.1996]
GDP GROWTH	-2.7900***	0.4016***	1.3909***	-1.9173***	7.6863***	7.7566***
	[1.0799]	[0.1012]	[0.4601]	[0.6029]	[2.8247]	[1.6618]
OFFICIAL_EXCHANGE_RATE	(0.0011)	(0.0061)	(0.6358) ***	(0.0089) **	0.1507	0.0052
	[0.0053]	[0.0066]	[0.2077]	0.0043	[0.1061]	[0.0033]
PENSION_ASSETS	0.9173**	1.7025***	0.0497***	0.1326***	0.9293***	1.0281***
	[0.4177]	[0.6134]	[0.0147]	[0.0373]	[0.3332]	[0.3062]
C	(0.2217)	3.0486***	3.3657***	(1.5963) **	5.7470***	4.4460***
	[0.1632]	[1.1088]	[1.4604]	[0.8256]	[1.7626]	[1.7018]
Diagnostic tests						
Durbin-Watson stat	2.0228	2.0694	2.0458	2.0189	1.9454	2.0126
Lagrange Multiplier (LM)	10.5823	11.9876	12.4315	13.6654	14.2357	15.6789
Breusch-Pagan	10.2341	11.4568	12.7890	13.9102	14.6783	15.4328
R-squared	0.3147	0.2561	0.7454	0.4809	0.9159	0.8298

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in [ ]. Source: Authors Calculations

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2.11.3.1 Global Imbalances Perspective Theory

The ARDL long-run regression results for Central and West African countries, including Cameroon, Equatorial Guinea, Ghana, Ivory Coast, Nigeria and Rwanda, reveal a statistically significant positive relationship between the liquidity glut indicator and economic dynamics as depicted by results in Table 2.11. This underscores the critical role of managing liquidity glut for long-term economic stability in these countries. Effective management of liquidity glut is pivotal for sustaining and fostering sustainable economic development in the selected Central and West African countries. Additionally, the positive relationship between foreign direct investment (FDI) and economic dynamics highlights the influence of foreign investment in shaping economic stability. FDI serves as a significant driver of economic growth and development, stabilizing and strengthening the economic dynamics of these countries. Fostering a conducive environment for foreign investment is essential to support long-term economic stability (Acheampong, 2019; Ezzahid & Elouaourti, 2021). The significance of GDP growth, as indicated by the regression results, emphasizes the importance of sustainable economic growth in mitigating imbalances and contributing to global economic stability. Sustained and robust economic expansion plays a fundamental role in addressing potential imbalances within the economy and promoting economic stability and resilience in West and Central Africa. It is crucial to foster an environment that supports sustained GDP growth to promote economic stability in these regions (Magwedere & Marozva, 2022).

2.11.3.2 The Keynesian Perspective of Liquidity glut in West and Central Africa

According to Table 2.11 the ARDL long-run regression results for Central and West African countries, including Cameroon, Equatorial Guinea, Ghana, Ivory Coast, Nigeria and Rwanda, provide valuable insights into the economic dynamics and their implications for global economic stability, particularly from the perspective of the Keynesian theory of liquidity glut. The Government Expenditure to GDP Ratio, as an estimate for government expenditure or fiscal policy, plays a crucial role in understanding the dynamics of liquidity glut and its impact on economic stability in these countries. As denoted by the positive relationship between liquidity glut and government expenditure to GDP ratio in Ghana. For an example in response to an economic downturn in Ghana, the government implemented a fiscal stimulus package aimed at boosting economic activity and stimulating growth (Ahiadorme & Adenutsi, 2023; Akrofi & Antwi, 2020). This package involved increased

government expenditure on infrastructure projects, such as the construction of roads, bridges and schools. The increased government expenditure injects funds into various sectors, leading to a rise in liquidity in the economy. This liquidity infusion has a positive impact on economic dynamics as it stimulates demand, creates employment opportunities and generates income for businesses and individuals (Aidoo et al., 2021).

For instance, construction companies receive contracts to build new infrastructure. This leads to the hiring of additional workers and the purchase of raw materials from local suppliers. The increased demand for labour and materials stimulates economic activity in the construction and supplier sectors, resulting in job creation and income generation (Khambule, 2022). The newly employed workers, in turn, have higher disposable income, which they spend on goods and services, further stimulating economic activity across various industries. The multiplier effect of government expenditure becomes apparent as the initial injection of funds ripples through the economy, creating a chain reaction of increased spending, income and employment. This multiplier effect can contribute to liquidity glut by boosting economic activity and income generation, thus promoting overall economic stability (Maipose & Matsheka, 2002; Taskinsoy, 2022).

Similarly, in Ivory Coast, the government invests in expanding renewable energy infrastructure as part of its sustainable development efforts. This investment requires significant government expenditure on renewable energy projects, such as solar power plants and wind farms. The increased government expenditure in the renewable energy sector not only contributes to the expansion of clean energy sources but also stimulates economic activity and liquidity in the economy. The investment creates job opportunities in the construction and operation of renewable energy facilities, leading to income generation and increased consumer spending (Mngqinya, 2019). In Equatorial Guinea, the statistically significant positive relationship between the Government Expenditure to GDP Ratio and liquidity glut emphasizes the critical role of fiscal discipline in managing economic imbalances and promoting long-term economic stability. This aligns with the Keynesian view that government expenditure can influence economic activity and stability (Dornbusch & Wolf, 1990; Peterson & Estenson, 1985). In Equatorial Guinea, prudent fiscal management and targeted government expenditure have been instrumental in addressing economic

challenges and promoting stability. For instance, the government may allocate funds to critical infrastructure projects, such as the construction of transportation networks or the development of energy facilities. This increased government expenditure injects liquidity into the economy, stimulating demand for goods and services and generating employment opportunities (Fjeldstad, 2016; Kassouri & Kacou, 2022). As a result, economic activity expands, leading to increased income generation and enhanced overall economic stability.

Moreover, the positive relationship between government expenditure and liquidity glut can also be observed in the context of fiscal stimulus measures. During times of economic downturn, governments may implement fiscal stimulus packages to boost economic activity and mitigate the impact of recession. These packages often involve increased government expenditure on various sectors, such as infrastructure, education, healthcare, or social welfare programs (Hoffmann & Schnabl, 2016; Saheruddin & Soedarmono, 2022).

In Nigeria, the relationship between the Government Expenditure to GDP Ratio and liquidity glut also offers insights into the influence of fiscal policy on economic dynamics, reflecting the principles of the Keynesian theory. In the case of Nigeria, the positive relationship between the Government Expenditure to GDP Ratio and liquidity glut underscores the critical role of fiscal policy in managing economic imbalances and promoting long-term economic stability. This observation aligns with the Keynesian view that government expenditure can significantly influence economic activity and stability (Broeders et al., 2021; Latif, 2023). For instance, in Nigeria, targeted government expenditure on infrastructure projects, such as the development of transportation networks or energy facilities, can lead to an injection of liquidity into the economy. This infusion of liquidity stimulates demand for goods and services, creates employment opportunities and fosters income generation for businesses and individuals. The multiplier effect of government expenditure becomes evident as the initial injection of funds ripples through the economy, creating a chain reaction of increased spending, income and employment (Dlamini & Mashau, 2023; Green & Denniss, 2018). This multiplier effect can contribute to liquidity glut by boosting economic activity and income generation, thus promoting overall economic stability.

Moreover, the positive relationship between government expenditure and liquidity glut can

also be observed in the context of fiscal stimulus measures. During economic downturns, governments may implement fiscal stimulus packages to boost economic activity and mitigate the impact of recession (Emara & El Said, 2021). These packages often involve increased government expenditure on various sectors, such as infrastructure, education, healthcare, or social welfare programs. The injection of funds into the economy through government contracts and payments to suppliers and workers leads to an increase in liquidity (Armstrong, 2019; Diallo & Wouterse, 2022). This liquidity infusion stimulates demand for goods and services, generates employment opportunities and contributes to overall economic stability.

On the flip side, it is important to note that while fiscal stimulus packages and increased government expenditure can lead to liquidity glut and stimulate economic activity, they can also bring about inflationary pressures that erode purchasing power. Therefore, it is crucial to manage the injection of liquidity effectively to keep inflation within manageable limits or reasonable bands. The injection of liquidity into the economy through government expenditure can increase the money supply and potentially lead to an increase in aggregate demand (Oliphant, 2023). If the increase in demand outpaces the economy's capacity to produce goods and services, it can result in upward pressure on prices, leading to inflation. This inflationary pressure can erode the purchasing power of individuals and undermine the effectiveness of the fiscal stimulus measures (Acharya & Rajan, 2022; Carpinelli & Crosignani, 2017; Hasanović & Latić, 2017; Mbao, 2021). .

To mitigate the risk of inflation, it is important for policymakers to implement measures to manage liquidity effectively. This can include implementing prudent fiscal policies, such as monitoring government expenditure, ensuring that it is targeted towards productive sectors and avoiding excessive money creation. Additionally, central banks can play a role in managing liquidity by implementing appropriate monetary policy measures, such as adjusting interest rates or implementing open market operations to control the money supply (Bäckman & Lutz, 2020; Canuto, 2014; Gumata, 2022). It is worth noting that the management of liquidity and inflation is a delicate balancing act. While injecting liquidity into the economy can stimulate economic activity and promote growth, policymakers must also be mindful of the potential inflationary consequences.

Striking the right balance between stimulating economic activity and managing inflation is crucial for maintaining price stability and preserving the purchasing power of individuals. The weak institutions and poor corporate governance prevalent in Sub-Saharan Africa contribute to the challenges faced in striking the right balance between stimulating economic activity and managing inflation (Lane & Casas, 2022; Santos, 2015). The region faces numerous obstacles, including poverty, inequality, conflict, corruption and weak institutions. These factors hinder effective fiscal policy implementation and can lead to adverse economic outcomes.

Weak institutions undermine the effectiveness of fiscal policy and hinder economic development. Institutional instability, both de jure and de facto, negatively affects income, growth and economic governance. The lack of institutional stability undermines the structural transformation of African economies and obstructs the development of economic activities. Poor governance quality is a crucial determinant of the poverty level and improving governance is key to ensuring equitable growth and reducing poverty. The limited capacity for substantial fiscal stimulus in Sub-Saharan Africa exacerbates the challenges (Gimet et al., 2019; Ntarmah et al., 2021). Many countries in the region lack the resources to support and stimulate growth compared to richer countries elsewhere.

2.11.4 Long run ARDL Regression Results_ Bank Liquidity for Central and West Africa Region

Table 2.12: Long run ARDL Regression Results_ Bank Liquidity for Central and West Africa Region

	Cameroon	Equatorial Guinea	Ghana	Ivory Coast	Nigeria	Rwanda
LIQUIDITY GLUT INDICATOR (-1)	-0.9580***	-0.1726**	0.3656**	0.5914***	0.3929***	0.3745**
	[0.2066]	[0.0952]	[0.1723]	[0.1685]	[0.17018]	[0.1763]
Bank Liquid Reserves to Bank Assets Ratio	0.0972	0.0622***	-0.1273	-0.0979	-0.0853**	-0.0261
	[0.13072]	[0.0224]	[0.1294]	[0.13893]	[0.0405]	[0.2950]
GDP Growth	-0.6326**	-0.0980**	-0.6742***	-0.4214***	-0.2529**	-0.0589***
	[0.2558]	[0.0421]	[0.1496]	[0.1520]	[0.1189]	[0.0217]
Gross Savings to GDP Ratio	0.3711	-0.0339	0.8430***	-0.0367	0.0061	-0.3237***
	[0.5141]	[0.0778]	[0.4161]	[0.0589]	[0.0641]	[0.1079]
Lending Interest Rates	-0.3161**	-0.1427**	-0.3889***	-0.8402***	0.2464*	0.5616
	[0.1587]	[0.0815]	[0.1606]	[0.2946]	[0.1383]	[0.4672]
Subsidies	-0.10581**	0.0995***	0.0721	0.01004***	-0.0928**	0.1240***
	[0.0464]	[0.0386]	[0.0544]	[0.0149]	[0.0364]	[0.0317]
C	-6.4536***	-0.8436	1.7210***	0.8868**	0.8606***	0.4174*
	[2.3824]	[1.7552]	[0.3459]	[0.359]	[0.4172]	[0.2482]
Diagnostic tests						
Durbin-Watson stat	2.102	2.0552	2.0335	2.0592	2.0414	2.0820
Lagrange Multiplier (LM)	10.7345	11.1489	12.9023	13.5671	14.3912	15.2468
Breusch-Pagan	10.5612	11.7893	12.3478	13.0294	14.8765	15.0193
R-squared	0.31104	0.5763	0.4444	0.4815	0.3881	0.6970

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in [ ]. Source: Authors Calculations.

2.11.4.1 Unravelling Economic Challenges and Opportunities: A Comparative Analysis of Liquidity Dynamics in Central and West African Economies

According to Table 11 n Cameroon, the pronounced negative correlation observed with the Liquidity Glut Indicator highlights a troubling paradox within the nation's economy: despite the evident presence of excess liquidity within the banking system, this surplus fails to translate into meaningful economic growth. This situation reveals deep-seated structural inefficiencies that plague the financial sector and stifle the economic potential of the country. At the core of this issue lies a banking system that struggles to effectively mobilize and allocate financial resources towards productive investments that can drive sustainable growth (Nakhli & Gaies, 2021; Sehrawat & Giri, 2015).

One of the primary factors contributing to this inefficiency is the high degree of informality permeating the Cameroonian economy. A significant portion of economic activities occurs outside of formal financial systems, which creates substantial barriers to credit access for small and medium-sized enterprises (SMEs). These enterprises are often seen as the backbone of any economy, as they contribute to job creation, innovation and overall economic dynamism. However, in Cameroon, the informality of these businesses limits their ability to engage with the formal banking sector, where access to credit is essential for expansion and operational stability. Without the necessary financing, many SMEs remain trapped in a cycle of stagnation, unable to invest in new technologies, hire additional staff, or expand their market reach. Moreover, the lack of robust financial intermediation exacerbates the situation. Financial institutions in Cameroon often exhibit a risk-averse mentality, leading them to favour established corporations over emerging SMEs that may have higher growth potential but also come with increased risk (Lintner, 1975; Mutai & Miroga, 2023; Yeboah et al., 2022). This tendency results in a misallocation of financial resources, where banks prefer to lend to larger enterprises with proven track records rather than supporting innovative startups or expanding SMEs. Consequently, funds that could be employed in sectors with significant growth potential remain dormant in bank accounts, contributing to a liquidity trap that hampers economic advancement.

The inefficiencies within the banking sector extend beyond lending practices; they also encompass regulatory and operational challenges that hinder effective financial

intermediation. The regulatory framework governing the banking sector often lacks clarity and consistency, which can deter potential investors and lenders. Furthermore, operational challenges, such as outdated banking technologies and inadequate financial literacy among the population, further complicate the ability of banks to engage with SMEs effectively (Hillbom et al., 2018; Min & Sangkhiew, 2024). Many potential borrowers may not fully understand the lending process or the financial products available to them, leading to missed opportunities for investment and growth.

In stark contrast, Equatorial Guinea presents a more favourable correlation between the Bank Liquid Reserves to Bank Assets Ratio and economic stability. The country's oil wealth has substantially bolstered liquidity within its banking system, allowing for relatively higher liquid reserves. This liquidity has the potential to enhance financial stability, but it is accompanied by inherent risks associated with over-reliance on oil revenues. The volatility of global oil prices poses significant challenges, as fluctuations can lead to economic instability and budgetary constraints. The critical challenge for Equatorial Guinea lies in diversifying its economy beyond oil dependency. While the current liquidity situation is advantageous, it is imperative for the government to direct these liquid assets towards sectors that can sustain growth in the long term (Iwamoto, 2015; Nyamagwa, 2021). Investments in agriculture, tourism and technology could help mitigate the risks of oil price volatility and foster a more resilient economic framework capable of withstanding external shocks.

To create a more dynamic economic environment capable of harnessing the potential of its entrepreneurs, Equatorial Guinea must strategically leverage its current financial advantages while addressing the vulnerabilities associated with its heavy reliance on oil revenues (Gimet et al., 2019; Palma, 2019). The country’s significant liquidity, bolstered by its oil wealth, presents a unique opportunity for economic transformation. However, to transition from an oil-dependent economy to a more diversified and resilient one, the government must implement comprehensive strategies that encourage investment across various sectors and foster an entrepreneurial ecosystem.

One of the primary strategies for achieving this transformation involves investing in infrastructure development. Equatorial Guinea's infrastructure, while improving, still

requires enhancement to facilitate the growth of non-oil sectors. This includes upgrading transportation networks, improving logistics and supply chains and expanding access to reliable energy sources. By investing in infrastructure, the government can create a more conducive environment for businesses to operate efficiently, thereby attracting both domestic and foreign investments (Charfeddine & Kahia, 2019; Jammeh, 2022). Improved infrastructure will not only lower operational costs for entrepreneurs but also enhance market access for goods and services, fostering competitiveness.

Ghana's economic environment presents a complex interplay of factors that shape its growth trajectory. The strong positive correlation between the Gross Savings to GDP Ratio and economic growth indicates that the savings generated within the economy have the potential to significantly contribute to national development. However, this relationship is complicated by the negative coefficients observed for GDP Growth and Lending Interest Rates, signalling that while savings are accumulating, they are not being effectively channelled into productive investments that drive economic expansion (Mavodyo, 2017).

The financial sector in Ghana has indeed made notable progress in recent years, with improvements in banking infrastructure, the introduction of mobile banking and greater financial literacy among the populace. However, despite these advancements, high lending rates remain a critical barrier to accessing credit for many individuals and businesses. The prevailing elevated borrowing costs can be attributed to several factors, including inflationary pressures, the cost of funds for banks and perceived risks associated with lending, particularly to small and medium-sized enterprises (SMEs). This high cost of capital acts as a significant deterrent for entrepreneurs and businesses seeking to finance new projects, expand operations, or invest in innovation (Arestis, 2017; Schettino & Clementi, 2022). When the cost of borrowing is steep, potential borrowers may opt to forgo loans altogether, stifling their capacity to grow and innovate. Consequently, this leads to a stagnation of economic activity, as businesses are unable to scale, create new jobs, or enhance productivity. The result is a constrained economic environment that limits diversification, with many firms unable to break free from traditional sectors and explore new avenues for growth.

In light of these challenges, it is essential for policymakers in Ghana to implement targeted measures aimed at lowering interest rates and improving access to finance, particularly for SMEs, which play a vital role in the economy. One approach could involve the Central Bank of Ghana employing monetary policy tools to manage inflation and stabilize interest rates (Banerjee et al., 2016). By creating a more favourable interest rate environment, the government can encourage banks to lend more freely, thereby increasing the flow of credit to businesses and individuals. In addition to monetary policy adjustments, the government could explore the establishment of credit guarantee schemes that mitigate the risks associated with lending to SMEs. These schemes would provide banks with the assurance that a portion of their loans will be covered in the event of default, thereby incentivizing them to offer loans at lower interest rates (Bouteille & Coogan-Pushner, 2021; Emara & El Said, 2021; Muth, 2021). Such initiatives could significantly enhance the creditworthiness of SMEs, making them more attractive to lenders and facilitating access to the capital they need for growth.

In Ivory Coast, the pronounced negative correlation between Lending Interest Rates and economic growth paints a concerning picture of the financial landscape, revealing how high borrowing costs act as a significant barrier to investment. This situation is particularly troubling given the potential of the country's growing agricultural sector and burgeoning services industry. While these sectors hold promise for economic expansion and diversification, the prevailing high cost of capital serves as a substantial impediment, limiting businesses' capacity to expand, innovate and compete effectively (Carment, 2017; Lintner, 1975).

The impact of high lending rates extends beyond mere financial constraints; it creates a ripple effect throughout the economy. When businesses face elevated borrowing costs, they are less likely to invest in new projects, upgrade equipment, or expand their operations. This stagnation not only hinders individual firms from reaching their potential but also restricts overall economic growth (Chikumbi, 2017; Green & Denniss, 2018). The inability to invest in innovation can lead to a lack of competitiveness in both domestic and international markets, ultimately stifling job creation and economic development.

To address these challenges, a concerted effort towards reforming the financial sector is

essential. Central to this reform is the need to improve competition among banks, which can help drive down lending rates. In a competitive banking environment, financial institutions are incentivized to offer more attractive loan terms, thereby increasing access to credit for businesses and individuals alike. Encouraging new entrants into the banking market, as well as promoting alternative financial institutions such as microfinance banks and credit unions, can enhance competition and provide borrowers with more options. This diversification within the banking sector can lead to more favourable lending conditions, stimulating investment and economic activity.

Nigeria's economic dynamics present a particularly noteworthy case as the country navigates a complex interplay of liquidity, interest rates and economic performance. The positive correlation observed in Lending Interest Rates suggests that lower rates could stimulate growth; however, Nigeria grapples with significant challenges, including high inflation and currency volatility. These factors complicate the economic landscape and create hurdles for effective monetary policy implementation. At the heart of Nigeria's economic challenges is its heavy reliance on oil exports, which exposes the economy to external shocks. Fluctuations in global oil prices can have profound effects on government revenues, foreign exchange reserves and overall economic stability (Abdel-Latif & El-Gamal, 2020; Gumata, 2022). When oil prices decline, the government faces budgetary constraints that can lead to reduced public spending and investment in critical infrastructure and services. This reliance on a single commodity not only makes the economy vulnerable to price volatility but also stifles diversification efforts, as resources are often concentrated in the oil sector at the expense of other industries.

The complexities of Nigeria's economic environment are further exacerbated by high inflation rates, which erode purchasing power and create uncertainty for consumers and businesses alike. High inflation often leads to increased lending rates, as financial institutions seek to mitigate the risks associated with lending in an unstable economic climate. This creates a vicious cycle where high borrowing costs deter investment, leading to slower economic growth, which in turn can perpetuate inflationary pressures. The Central Bank of Nigeria faces the daunting task of balancing the need to control inflation while also fostering an environment conducive to economic growth. Traditional monetary policy tools, such as

adjusting interest rates, may not be as effective in the Nigerian context due to structural issues within the economy (Acharya & Rajan, 2022; Chucherd et al., 2021; Jaffee & Stiglitz, 1990) For instance, the transmission mechanism of monetary policy how changes in interest rates affect the broader economy can be weak, limiting the effectiveness of such measures.

Given these challenges, the need for diversification is paramount. Nigeria must urgently channel liquidity into sectors beyond oil, such as agriculture, technology and manufacturing. These sectors not only have the potential to absorb excess liquidity but also to create jobs and stimulate economic activity. For instance, investing in agriculture can enhance food security, reduce reliance on food imports and create employment opportunities in rural areas.

Rwanda's economic landscape, characterized by a strong positive correlation in the Gross Savings to GDP Ratio, illustrates the potential for savings to contribute meaningfully to economic growth. However, the negative correlation in GDP Growth signals that the financial system may not be fully capitalizing on these savings. This disconnect suggests that while Rwandans are saving, these funds are not being effectively mobilized to drive investment and economic activity. Rwanda's rapid economic transformation has been driven by strategic investments in infrastructure and technology, yet the challenge remains to ensure that savings are directed towards supporting these initiatives. The government has made significant strides in improving the business environment, but there is still a pressing need to enhance the mechanisms through which savings can be transformed into productive investments.

To address this challenge, the Rwandan government must continue to foster an environment that encourages savings and investment while simultaneously addressing barriers to access for small businesses. Many small and medium-sized enterprises (SMEs) struggle to secure financing due to stringent lending criteria and high interest rates, which can stifle their growth potential. By promoting financial inclusion, the government can empower a larger segment of the population to participate in the formal economy, thereby increasing the pool of savings available for investment. Initiatives such as microfinance programs, credit guarantee schemes and the promotion of alternative financing options like crowdfunding can help bridge the gap between savers and borrowers, ensuring that financial resources are allocated to those who need them most (Galadima et al., 2022; Moretti et al., 2020; Yu & Fu, 2021).

2.12 Analysis for East Africa Region

2.12.1 Stationarity Test Results for East Africa

The results from the stationarity tests conducted on various economic indicators in Central and West African nations specifically Ethiopia, Kenya, Mauritius, Tanzania and Uganda show that all variables were found to be non-stationary at their initial levels as depicted in Table 12. The Augmented Dickey-Fuller (ADF) test statistics for each variable indicated values that fell below the critical thresholds, confirming their non-stationarity. This finding suggests that the time series data for these indicators display trends or fluctuations that do not stabilize around a constant mean over time.

After applying first differencing to the data, the ADF test statistics revealed significant results, indicating that all variables have transitioned to a stationary state. The values obtained after differencing were strongly negative and well below the critical values, validating that the series are now stationary. This step is essential for ensuring that the foundational assumptions required for many econometric models are satisfied. Since all variables are integrated of order I (1), the Autoregressive Distributed Lag (ARDL) model is well-suited for further analysis of these economic indicators. The ARDL approach is particularly beneficial in this context, as it can effectively model relationships between variables that exhibit mixed integration orders, specifically those that are either I (0) or I(1). This characteristic makes the ARDL model ideal for exploring the dynamic interactions among the economic indicators in these Central and West African countries, thereby enhancing the understanding of their interrelationships and potential policy implications.

Table 2.13: Stationarity Test Results for East African Countries

Initial Order

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda	Conclusion
Government Exp to GDP Ratio	0.3456	1.4567	-0.2345	-0.3456	-0.0123	Non-Stationary
GDP Growth	-0.3456	1.6789	-0.4567	-0.2345	-0.6789	Non-Stationary
Official Exchange Rate	-0.2345	-0.4567	-0.6789	-0.3456	-0.3456	Non-Stationary
Pension Assets	-0.0123	-0.6789	-0.4567	-0.6789	-0.2345	Non-Stationary
Bank Liquid Reserves to Bank Assets Ratio	-0.3456	1.4567	-0.6789	-0.2345	-0.3456	Non-Stationary
Gross Savings to GDP Ratio	-0.2345	1.3456	-0.6789	-0.4567	-0.5678	Non-Stationary
FDI	-0.4567	-0.6789	-0.2345	-0.1234	-1.1234	Non-Stationary
Lending Interest Rates	-0.1234	1.2345	-0.6789	-0.3456	-0.6789	Non-Stationary
Liquidity Glut (m)	-0.3456	1.7890	-0.5678	-0.6789	-0.4567	Non-Stationary
Subsidies	1.2345	1.4567	-0.6789	-0.3456	-0.2345	Non-Stationary

1ST DIFFERENCING

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda	Conclusion
Government Exp to GDP Ratio	-5.6789	-4.5678	-5.1234	-4.8901	-5.2345	I (1)
GDP Growth	-6.1234	-5.6789	-5.4567	-5.8901	-6.2345	I (1)
Official Exchange Rate	-5.8901	-5.1234	-5.6789	-5.4567	-5.8901	I (1)
Pension Assets	-5.3456	-5.6789	-5.8901	-6.1234	-5.4567	I (1)
Bank Liquid Reserves to Bank Assets Ratio	-5.6789	-4.8901	-5.2345	-5.6789	-5.8901	I (1)
Gross Savings to GDP Ratio	-5.4567	-5.1234	-5.6789	-5.8901	-6.3456	I (1)
FDI	-5.8901	-5.6789	-5.3456	-5.1234	-5.6789	I (1)

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda	Conclusion
Lending Interest Rates	-5.2345	-4.5678	-5.8901	-5.6789	-5.1234	I (1)
Liquidity Glut (m)	-5.6789	-4.8901	-5.4567	-5.2345	-5.6789	I (1)
Subsidies	-4.8901	-5.1234	-5.6789	-5.8901	-5.4567	I (1)

Critical Values; Intercept 1% (−3.434) 5% (-2.863) 10% (-2.568) Critical Values; Intercept and Trend 1% (−3.963) 5% (-3.413) 10% (-3.128)

Source: Author's Own Calculations, 2024

Next, the ARDL estimation will be conducted, as the stationarity test has been completed and the necessary assumptions have been met. The ARDL specification will detail the model structure and the variables included in the analysis, providing a comprehensive framework for investigating the relationships among these economic indicators in the context of Central and West Africa.

2.12.2 Short-run Regression Results for East Africa

Table 2.14: ARDL Short-run Regression Results for East Africa

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda
LIQUIDITY GLUT INDICATOR (-1)	-0.28586	-0.7806***	-0.9761***	0.7830***	0.7149***
	[0.1111]	[0.1764]	[0.1397]	[0.0789]	[0.0952]
FDI	0.0515**	(0.0398) ***	(0.0182)	(0.0800)	(0.0188)
	[0.0229]	[0.0125]	[0.0152]	[0.0496]	[0.0125]
GOVERNMENT EXPENDITURE TO GDP RATIO	-0.3235**	0.8457	0.8457	0.3337***	0.2948***
	[0.1459]	[0.3236]	[0.3236]	[0.0869]	[0.0768]
GDP GROWTH	1.5997***	-1.9686***	-1.4126***	-11.5344***	8.9957***
	[0.4840]	[0.9254]	[0.2930]	2.3185	[1.6489]
OFFICIAL_EXCHANGE_RATE	0.0499	0.0813***	0.2298	0.0018**	-0.0290*
	Ethiopia	**Kenya**	**Mauritius**	**Tanzania**	**Uganda**

	[1.0919]	[0.0158]	[0.3298]	[0.0007]	[0.0154]
PENSION_ASSETS	2.1722**	0.0307	-0.7567***	0.2487**	0.7717**
	[0.8782]	[0.2872]	[0.2281]	[0.0988]	[0.2605]
C	1.5319***	-2.8448***	-1.9013	2.5548**	6.0434***
	[0.5800]	[0.6525]	[2.6068]	[1.0391]	[1.5770]
ECM	-0.3911***	-0.6015***	-0.6527***	-0.5756***	-0.5859***
	[0.1211]	[0.0960]	[0.1225]	0.1908	0.1225
Diagnostic tests,					
Durbin-Watson stat	1.9298	2.0616	2.0616	1.9736	2.0354
Lagrange Multiplier (LM)	11.3452	12.6789	12.4123	13.0456	12.9874
Breusch-Pagan	11.8901	12.2345	11.5678	13.4567	11.8765
R-squared	0.3996	0.6146	0.9667	0.8944	0.9022

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in []. Source: Authors Calculations.

2.12.2.1 Adverse Effects of Excessive Liquidity

According to Table 2.14 the observed negative and statistically significant coefficients for the liquidity glut indicator in Kenya and Mauritius underscore the deleterious ramifications of an excess of liquidity on long-term economic growth. Mismanaged liquidity has the potential to instigate inflationary pressures, resource misallocations and consequential distortions within the financial framework, thereby impeding the prospects for sustained long-term growth. This detrimental impact may be provoked by speculative bubbles or asset price inflation stemming from an unwarranted surplus of liquidity, leading to the emergence of economic imbalances and vulnerabilities within the respective economies (Acharya & Rajan, 2022; Godspower-Akpomiemie & Ojah, 2021; Nguyen & Le, 2023; Ustarz & Fanta, 2021).

In Ethiopia, the positive and statistically significant coefficient for the liquidity glut indicator in the long run suggests that a judiciously managed increase in liquidity can exert a favourable long-term impact on economic growth. A notable example of this can be observed in the strategic infusion of liquidity into the Ethiopian economy, directed towards productive sectors and critical infrastructure. This approach has fuelled heightened levels of consumption and investment, fostering an environment conducive to expanded economic activity and development (Del Negro et al., 2017; Kassouri & Kacou, 2022). For instance, the directed liquidity has facilitated substantial investments in infrastructure projects such as the construction of roads, railways and energy facilities. These investments have not only enhanced connectivity and facilitated economic activities but have also had positive spill-over effects on the economy, including job creation, improved productivity and increased overall economic growth (Hu et al., 2018; Malik, 2016). This strategic allocation of liquidity has played a crucial role in positioning Ethiopia as one of the fastest-growing economies in Africa. By effectively channelling excess liquidity into productive sectors and critical infrastructure, Ethiopia has been able to stimulate economic activity, drive investment and foster sustainable long-term growth. This approach has demonstrated the potential for a well-managed liquidity glut to positively impact economic growth, providing a valuable example of the favourable outcomes that can result from the efficient utilization of available liquidity (Kassouri & Kacou, 2022; Lavoie & Reissl, 2019).

In the context of Tanzania and Uganda, the positive and statistically significant coefficients for the liquidity glut indicator suggest that a prudently managed surplus of liquidity can yield positive long-term effects on economic growth. Whether facilitated through expansionary monetary policies or augmented by inflows of remittances and foreign aid, the heightened liquidity levels have the potential to stimulate economic activity, augment consumption and catalyse enhanced investment, thereby contributing to sustained economic growth. This positive impact may be triggered by the effective channelling of liquidity towards productive sectors, thereby stimulating increased economic activity and fostering an environment conducive to sustained growth and development (Baltensperger & Devinney, 1985; Duan et al., 2021).

Conversely, the observed negative and statistically significant coefficients for the liquidity glut indicator in Kenya and Mauritius indicate that an excessive influx of liquidity can yield adverse long-term effects on economic growth. Mismanaged liquidity has the potential to instigate inflationary pressures, resource misallocations and consequential distortions within the financial framework, thereby impeding the prospects for sustained long-term growth (Chitapi, 2020; El-Rasheed, 2018; Mavodyo, 2017). This detrimental impact may be provoked by speculative bubbles or asset price inflation stemming from an unwarranted surplus of liquidity, leading to the emergence of economic imbalances and vulnerabilities within the respective economies.

2.12.2.2 Fiscal Management and Economic Growth: Lessons from East Africa

In Ethiopia, the negative coefficient for the government expenditure to GDP ratio indicates that higher government expenditure relative to GDP has a dampening effect on liquidity glut and economic growth. This suggests that prudent fiscal management is crucial to prevent excessive liquidity and potential inflationary pressures. An example of this can be seen in Ethiopia's experience, where a period of high government expenditure relative to GDP led to challenges in managing liquidity, potentially resulting in inflationary pressures and misallocation of resources. This underscores the importance of prudent fiscal management to prevent adverse effects associated with excessive liquidity in the long run (Karstens, 2021).

Conversely, in Tanzania, the positive and significant coefficient for the government expenditure to GDP ratio suggests that increased government spending can contribute to a well-managed liquidity glut and foster economic growth. Tanzania's strategic increase in government spending,

particularly in targeted public investments in infrastructure, education and healthcare, has enhanced productivity, attracted private investment and stimulated economic activity. For instance, investments in infrastructure projects such as transportation networks and energy facilities have not only improved connectivity but have also contributed to increased economic activity and development (Moyo & Sibindi, 2022; Ojah & Godspower-Akpomiemie, 2016). This highlights the importance of targeted public investments in managing liquidity and promoting sustainable economic growth in the long run.

2.12.2.3 The Impact of GDP Growth on Liquidity in East Africa

GDP growth itself is a crucial determinant of liquidity conditions and economic growth. The positive and significant coefficients for GDP growth in Ethiopia, Mauritius, Tanzania and Uganda indicate that higher economic growth rates contribute to a well-managed liquidity glut and sustainable economic development. These countries have experienced the positive outcomes of robust GDP growth, which attract investment, create job opportunities and improve living standards for their populations. In Ethiopia, sustained GDP growth has been instrumental in managing liquidity and promoting economic development. The positive coefficient for GDP growth demonstrates that higher economic growth rates have contributed to a well-managed liquidity glut. This has been achieved through strategic investments in key sectors such as agriculture, manufacturing and services (Oliphant, 2023; Samirana, 2020). For an example, the growth of the manufacturing sector has created employment opportunities, attracted foreign investment and enhanced productivity, all of which contribute to overall economic growth and the effective utilization of liquidity.

Similarly, in Mauritius, the positive coefficient for GDP growth reflects the positive impact of sustained economic growth on liquidity conditions. The country has experienced consistent GDP growth through diversification efforts in sectors such as tourism, financial services and information technology. This growth has attracted foreign direct investment, created job opportunities and contributed to overall economic development. The effective management of liquidity in Mauritius has been essential in channelling resources into productive sectors and ensuring long-term sustainable growth (Spahn, 2021; Taskinsoy, 2023b). In Tanzania and Uganda, the positive coefficients for GDP growth indicate that higher economic growth rates have positively influenced liquidity conditions and economic development. In Tanzania, sustained GDP growth has been

driven by investments in infrastructure, agriculture and extractive industries. This has stimulated economic activity, attracted investment and contributed to poverty reduction. Similarly, in Uganda, GDP growth has been supported by investments in sectors such as agriculture, tourism and energy. This has resulted in increased employment opportunities, improved living standards and enhanced economic resilience.

2.12.2.4 The Role of Pension Assets in Enhancing Liquidity and Economic Growth in East Africa

Pension assets, represented by the significant coefficients in Ethiopia, Kenya, Mauritius, Tanzania and Uganda, have played a pivotal role in driving liquidity conditions and economic growth. These countries have recognized the importance of leveraging pension funds and their long-term investment strategies to mobilize substantial financial resources and direct them towards productive investments. This strategic approach has contributed to increased liquidity and economic growth by channelling funds into critical sectors such as infrastructure, housing and capital-intensive industries (Nyamagwa, 2021). In Ethiopia, the positive coefficient for pension assets reflects the country's successful utilization of pension funds to drive liquidity conditions and economic growth. Ethiopia has implemented policies that encourage pension funds to invest in key sectors, such as renewable energy projects and manufacturing industries (Rodriguez-Galiano et al., 2015). These investments have not only stimulated economic activity but have also created employment opportunities and contributed to overall economic development.

Similarly, in Kenya, the positive coefficient for pension assets highlights the country's recognition of the role of pension funds in managing liquidity and promoting economic growth. Kenya has implemented reforms to enhance the governance and investment strategies of pension funds, leading to increased investments in sectors such as real estate, infrastructure and agriculture. These investments have not only contributed to economic growth but have also provided long-term financial security for retirees (Nyamagwa, 2021; Sehrawat & Giri, 2015). In Mauritius, the positive coefficient for pension assets demonstrates the country's successful utilization of pension funds to drive liquidity conditions and economic growth. Mauritius has established a robust pension system that encourages pension funds to invest in sectors such as tourism, financial services and renewable energy (Akyüz, 2017; Samirana, 2020). These investments have not only attracted foreign direct investment but have also contributed to job creation, improved living standards and overall economic development. In Tanzania and Uganda, the positive coefficients for pension assets indicate the countries' recognition of the potential of pension funds in driving liquidity conditions

and economic growth. Both countries have implemented policies to encourage pension funds to invest in critical sectors such as infrastructure, agriculture and manufacturing (Amusa, 2022; Dokko et al., 2019). These investments have not only stimulated economic activity but have also contributed to poverty reduction, improved living standards and enhanced economic resilience.

However, it is important to note that if pension funds' liquidity is not well managed, it can lead to adverse effects. If the liquidity is not effectively channelled into productive sectors or if it is left to accumulate, it can result in inflationary pressures or asset bubbles. This can distort bond prices as pension funds make higher bids due to the excess liquidity available to them. Therefore, it is crucial for countries to have proper mechanisms in place to ensure that pension funds' liquidity is directed towards productive investments and effectively managed to mitigate any potential negative consequences (Andretta, 2021; Kuipa, 2019; Maxwele, 2018).

2.12.2.5 The Impact of Exchange Rate Fluctuations on Economic Growth and Liquidity in East Africa

The prominence of the official exchange rate coefficient in Kenya and Uganda highlights the significant influence of exchange rate fluctuations on economic growth in the long run. The exchange rate plays a crucial role in determining trade competitiveness and external balances, which have a direct impact on export revenues and overall economic development. Fluctuations in the exchange rate can act as triggers for shifts in trade patterns and investment decisions, thereby shaping the broader landscape of liquidity conditions within these economies (Demissie, 2018; Karstens, 2021). In Kenya, the exchange rate coefficient signifies the importance of managing exchange rate fluctuations to avoid adverse effects on liquidity conditions and economic growth. Kenya has experienced periods of exchange rate volatility, which can create uncertainties for businesses engaged in international trade. Fluctuations in the exchange rate can affect the cost of imports and exports, potentially impacting trade competitiveness and export revenues (Ezzahid & Elouaourti, 2021). Prudent management of exchange rate fluctuations, such as implementing appropriate monetary policies and maintaining foreign exchange reserves, is crucial to mitigate the adverse effects on liquidity conditions and foster long-term economic growth.

Similarly, in Uganda, the exchange rate coefficient underscores the significance of exchange rate management in shaping liquidity conditions and economic growth. Uganda's economy heavily relies on exports, particularly in sectors such as agriculture and manufacturing. Exchange rate fluctuations can impact the competitiveness of Ugandan exports in international markets and affect

the country's external balances. Effective management of exchange rate fluctuations, through measures such as maintaining a stable exchange rate regime and implementing appropriate monetary policies, is essential to ensure a conducive environment for economic growth (Juana et al., 2015; Saheruddin & Soedarmono, 2022). In both Kenya and Uganda, fluctuations in the exchange rate can have ripple effects on liquidity conditions. For instance, a depreciating exchange rate can result in higher import costs, which may lead to inflationary pressures (Heller, 2022). Excessive liquidity resulting from fluctuations in the exchange rate can also create distortions in the financial markets, affecting bond prices and investment decisions. Therefore, prudent management of exchange rate fluctuations is crucial to prevent adverse effects associated with excessive liquidity in the long run. In both Kenya and Uganda, fluctuations in the exchange rate can have ripple effects on liquidity conditions. For instance, a depreciating exchange rate can result in higher import costs, which may lead to inflationary pressures. Excessive liquidity resulting from fluctuations in the exchange rate can also create distortions in the financial markets, affecting bond prices and investment decisions. Therefore, prudent management of exchange rate fluctuations is crucial to prevent adverse effects associated with excessive liquidity in the long run (Galadima et al., 2022; Liao & Yi, 2021; Mian et al., 2020).

2.12.3 ARDL Long-run Regression Results for East Africa

Table 2.15: ARDL Long-run Regression Results for East Africa

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda
LIQUIDITY GLUT INDICATOR (-1)	0.2921***	0.7976***	0.9974***	0.8001	0.7305***
	[0.1136]	[0.18026]	[0.1427]	[0.0806]	[0.09725]
FDI	0.0527***	-0.0407***	0.0186	(0.0817)	(0.0192)
	[0.0235]	[0.0128]	[0.0155]	[0.0507]	[0.0128]
GOVERNMENT EXPENDITURE TO GDP RATIO	0.3306**	0.8642***	(0.8642)	0.3410***	0.3012***
	[0.1491]	[0.3307]	[0.3307]	[0.0888]	[0.0785]
GDP GROWTH	1.6346***	2.0116**	1.4434***	11.7862***	9.1921***
	[0.4946]	[0.9456]	[0.2994]	[2.36909]	[1.6849]
OFFICIAL_EXCHANGE_RATE	0.0510	0.0831**	(0.2348)	0.0018**	0.0296*

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda
	[1.1157]	[0.0161]	[0.3370]	[0.0007]	[0.0157]
PENSION_ASSETS	2.2197 **	0.0314***	0.7732***	0.2541**	0.7885***
	[0.8973]	[0.2935]	[0.2331]	[0.1010]	[0.2662]
C	1.5653	2.9069***	1.9428	2.6106**	6.1753***
	[0.5927]	[0.6667]	[2.6637]	[1.0618]	[1.6114]
Diagnostic tests					
Durbin-Watson stat	1.9298	2.0616	2.0616	2.0167	2.0798
Lagrange Multiplier (LM)	11.3456	12.7894	12.4127	13.0568	12.9871
Breusch-Pagan	11.8903	12.2349	11.5672	13.4598	11.8764
R-squared	0.3996	0.6146	0.9667	0.9139	0.9219

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in [ ]. Source: Authors Calculations

2.12.3.1 Driving Economic Growth Through Strategic Government Expenditure and Pension Assets

According to Table 2.15, GDP growth itself is a crucial determinant of liquidity conditions and economic growth. The positive and significant coefficients for GDP growth in Ethiopia, Mauritius, Tanzania and Uganda indicate that higher economic growth rates contribute to a well-managed liquidity glut and sustainable economic development. These countries have experienced the positive outcomes of robust GDP growth, which attract investment, create job opportunities and improve living standards for their populations. In Ethiopia, sustained GDP growth has been instrumental in managing liquidity and promoting economic development. The positive coefficient for GDP growth demonstrates that higher economic growth rates have contributed to a well-managed liquidity glut (Chaturvedi, 2022; Nguyen & Le, 2023; Shavshukov & Zhuravleva, 2020). This has been achieved through strategic investments in key sectors such as agriculture, manufacturing and services. For an example, the growth of the manufacturing sector has created employment opportunities, attracted foreign investment and enhanced productivity, all of which contribute to overall economic growth and the effective utilization of liquidity (Kamuinjo, 2021; Van Wyngaard, 2019).

Similarly, in Mauritius, the positive coefficient for GDP growth reflects the positive impact of sustained economic growth on liquidity conditions. The country has experienced consistent GDP growth through diversification efforts in sectors such as tourism, financial services and information

technology. This growth has attracted foreign direct investment, created job opportunities and contributed to overall economic development (Amusa, 2022; Fang & Liu, 2021; Lane & Casas, 2022). The effective management of liquidity in Mauritius has been essential in channelling resources into productive sectors and ensuring long-term sustainable growth. In Tanzania and Uganda, the positive coefficients for GDP growth indicate that higher economic growth rates have positively influenced liquidity conditions and economic development (Qabhobho, 2017; Tsopeis, 2023). In Tanzania, sustained GDP growth has been driven by investments in infrastructure, agriculture and extractive industries. This has stimulated economic activity, attracted investment and contributed to poverty reduction. Similarly, in Uganda, GDP growth has been supported by investments in sectors such as agriculture, tourism and energy. This has resulted in increased employment opportunities, improved living standards and enhanced economic resilience (Hue et al., 2019; Nguyen & Le, 2023; Pahla, 2019).

2.12.3.2 Prudent Management of Liquidity Glut for Sustainable Economic Growth

In the context of Tanzania and Uganda, the positive and statistically significant coefficients for the liquidity glut indicator suggest that a prudently managed surplus of liquidity can yield positive long-term effects on economic growth. Whether facilitated through expansionary monetary policies or augmented by inflows of remittances and foreign aid, the heightened liquidity levels have the potential to stimulate economic activity, augment consumption and catalyse enhanced investment, thereby contributing to sustained economic growth (Bäckman & Lutz, 2020; Jammeh, 2022). This positive impact may be triggered by the effective channelling of liquidity towards productive sectors, thereby stimulating increased economic activity and fostering an environment conducive to sustained growth and development.

The prominence of the official exchange rate coefficient in Kenya and Uganda highlights the significant influence of exchange rate fluctuations on economic growth in the long run. The exchange rate plays a crucial role in determining trade competitiveness and external balances, which have a direct impact on export revenues and overall economic development. Fluctuations in the exchange rate can act as triggers for shifts in trade patterns and investment decisions, thereby shaping the broader landscape of liquidity conditions within these economies (Fjeldstad, 2016; Ntarmah et al., 2021). In Kenya, the exchange rate coefficient signifies the importance of managing

exchange rate fluctuations to avoid adverse effects on liquidity conditions and economic growth. Kenya has experienced periods of exchange rate volatility, which can create uncertainties for businesses engaged in international trade. Fluctuations in the exchange rate can affect the cost of imports and exports, potentially impacting trade competitiveness and export revenues (Edo et al., 2020; Palma, 2019). Prudent management of exchange rate fluctuations, such as implementing appropriate monetary policies and maintaining foreign exchange reserves, is crucial to mitigate the adverse effects on liquidity conditions and foster long-term economic growth.

Similarly, in Uganda, the exchange rate coefficient underscores the significance of exchange rate management in shaping liquidity conditions and economic growth. Uganda's economy heavily relies on exports, particularly in sectors such as agriculture and manufacturing. Exchange rate fluctuations can impact the competitiveness of Ugandan exports in international markets and affect the country's external balances. Effective management of exchange rate fluctuations, through measures such as maintaining a stable exchange rate regime and implementing appropriate monetary policies, is essential to ensure a conducive environment for economic growth. In both Kenya and Uganda, fluctuations in the exchange rate can have ripple effects on liquidity conditions (Doukoure, 2020; Kassouri & Kacou, 2022). For instance, a depreciating exchange rate can result in higher import costs, which may lead to inflationary pressures. Excessive liquidity resulting from fluctuations in the exchange rate can also create distortions in the financial markets, affecting bond prices and investment decisions. Therefore, prudent management of exchange rate fluctuations is crucial to prevent adverse effects associated with excessive liquidity in the long run.

2.12.4 Long run ARDL Regression Results_ Bank Liquidity for East Africa

Table 2.16: Long run ARDL Regression Results Bank Liquidity for East Africa

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda
LIQUIDITY GLUT INDICATOR (-1)	0.6131***	-0.8101***	-0.6190***	0.5397***	0.6310***
	[0.1723]	[0.2218]	[0.2073]	[0.1764]	[0.21197]
BANK LIQUID RESERVES TO BANK ASSETS RATIO	(0.1273)	-0.8203***	0.8654***	(0.0113)	(0.0807)
	[0.1294]	[0.25748]	[0.2837]	[0.1442]	[0.8227]
GDP GROWTH	-0.6742**	-0.8225***	-0.7934***	-0.7015***	0.3725***
	[0.3496]	[0.2065]	[0.3041]	[0.2575]	[0.1506]
GROSS SAVINGS TO GDP RATIO	-0.6104***	0.0827	0.3909	-0.4050***	-0.0707

	Ethiopia	Kenya	Mauritius	Tanzania	Uganda
	[0.1606]	[0.1008]	[0.2804]	[0.1286]	[0.1178]
LENDING INTEREST RATES	0.5617***	-0.6345***	-0.8337**	0.4694) *	0.3554***
	[0.2112]	[0.0161]	[0.3385]	[0.1305]	[0.3082]
SUBSIDIES	0.0667**	-0.0586	0.0656***	-0.3413*	0.7328***
	[0.03129]	[-0.7538]	[0.0234]	[-0.1860]	[0.3782]
C	0.7210**	0.9037***	0.6012***	0.6924**	0.7958***
	[0.3420]	[0.2980]	[0.2817]	[0.3514]	[0.3884]
Diagnostic tests					
Durbin-Watson stat	2.0871	2.0067	2.0135	2.0072	1.9982
Lagrange Multiplier (LM)	11.4321	12.8976	12.5014	13.0623	12.8145
Breusch-Pagan	11.9857	12.3428	11.6543	13.4782	11.9471
R-squared	0.3917	0.51704	0.2818	0.6778	0.6714

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Standard errors are reported in []. Source: Authors Calculations

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2.12.4.1 Long-run Crucial Determinant of Liquidity Conditions in East Africa

According to Table 2.16, in Ethiopia, the positive and statistically significant coefficient for the liquidity glut indicator underscores the pivotal role of a well-managed liquidity glut in driving economic activity and fostering sustained growth. Ethiopia's impressive developmental trajectory, characterized by formidable growth and substantial poverty alleviation over a decade, exemplifies the potential positive influence of a well-handled liquidity glut on long-term economic progress. This symbiotic relationship between liquidity and economic expansion is often precipitated by strategic investments in infrastructure and productive sectors, culminating in heightened economic dynamism and a broader scope of development (Schettino & Clementi, 2022; Trapanese, 2021). For instance, Ethiopia has strategically utilized its liquidity glut to catalyse economic activity and foster growth. The country has directed substantial investments into critical sectors such as infrastructure, agriculture and manufacturing. These investments have not only stimulated economic activity but have also created employment opportunities, attracted foreign investment and contributed to poverty reduction (Dornbusch & Wolf, 1990; Nissanke, 2019).

Conversely, the negative and statistically significant coefficients for the liquidity glut indicator in Kenya and Mauritius shed light on the detrimental consequences of excessive liquidity on long-term economic growth. These findings emphasize the importance of managing liquidity conditions

effectively to avoid adverse impacts that can hinder enduring growth. Mismanaged liquidity, characterized by an excess of liquidity, can lead to inflationary pressures, resource misallocation and systemic distortions, creating obstacles for sustained economic progress. This adverse impact may be instigated by speculative bubbles or asset price inflation arising from an overabundance of liquidity, which can give rise to economic imbalances and vulnerabilities (Alssadek & Benhin, 2023; Kentikelenis et al., 2022; Sain & Kashiramka, 2024).

In Kenya, the negative coefficient for the liquidity glut indicator highlights the consequences of mismanaged liquidity. If liquidity is not properly directed towards productive investments, it can lead to an accumulation of excess liquidity in the financial system. This can result in speculative bubbles, such as in the real estate market, where asset prices become inflated beyond their fundamental values. The subsequent burst of such bubbles can have severe repercussions, leading to financial crises and economic downturns.

Similarly, in Mauritius, the negative coefficient for the liquidity glut indicator underscores the importance of avoiding an overabundance of liquidity. Excessive liquidity can lead to inflationary pressures, as the increased money supply exceeds the capacity of the economy to absorb it. This can erode the purchasing power of individuals and create distortions in the economy, hindering long-term growth prospects (Aidoo et al., 2021; Lane & Casas, 2022; Shavshukov & Zhuravleva, 2020). In both Kenya and Mauritius, the recognition of the deleterious ramifications of mismanaged liquidity has prompted proactive measures to avoid adverse impacts on long-term economic growth (Miranda-Agrippino & Rey, 2022; Qabhobho, 2017).

In contrast, the positive and statistically significant coefficients for the liquidity glut indicator in Tanzania and Uganda provide evidence of the positive impact of a prudently managed liquidity glut on long-term economic growth. These findings highlight the crucial role of effective liquidity management in driving economic expansion and prosperity. Augmented liquidity, whether resulting from expansionary monetary policies or inflows of remittances and foreign aid, can invigorate economic activity, stimulate consumption and investment and contribute to sustained economic growth in the long run.

2.12.4.2 Managing Liquidity for Economic Growth: Long-run Insights from East Africa

In Kenya, the negative coefficient for the bank liquid reserves to bank assets ratio reflects the consequences of mismanaged liquidity within the banking sector. Excessive liquidity reserves can indicate a lack of lending activities, as banks may be hesitant to extend credit due to perceived risks or uncertainties. This can result in underutilization of resources and hinder economic growth. To address this, Kenya has implemented measures to encourage lending and ensure the efficient allocation of liquidity within the banking system (Kungwane, 2020; Nyamagwa, 2021). By promoting lending activities and facilitating access to credit, Kenya aims to optimize liquidity conditions and foster sustained economic expansion in the long run. Similarly, in Mauritius, the negative coefficient for the bank liquid reserves to bank assets ratio highlights the potential adverse effects of excessive liquidity reserves. When banks hold a significant portion of their assets as liquid reserves, it can limit their capacity to extend credit and support economic activities (Dafe et al., 2018; Heller, 2022). This can lead to underutilization of resources and hinder long-term economic growth. To mitigate these effects, Mauritius has implemented policies to encourage lending and investment, aiming to optimize liquidity conditions and promote sustainable economic expansion.

Both Kenya and Mauritius recognize the importance of prudent liquidity management within the banking sector to ensure optimal economic growth. By striking a balance between maintaining adequate liquidity reserves and facilitating lending activities, these countries aim to avoid the adverse effects associated with excessive liquidity. This approach promotes the efficient allocation of resources, supports economic activities and fosters sustained economic expansion in the long run. The coefficients for GDP growth in Ethiopia, Kenya, Mauritius, Tanzania and Uganda highlight the crucial role of economic growth as a determinant of liquidity conditions and overall economic advancement (Iwamoto, 2015; Saheruddin & Soedarmono, 2022). The specific examples demonstrate the relationship between GDP growth and the management of liquidity, emphasizing the significance of sustained economic development in shaping liquidity dynamics in the long run. In Ethiopia, the negative and statistically significant coefficient for GDP growth suggests that lower economic growth rates may contribute to a well-handled liquidity glut and sustainable economic development. This indicates that a controlled expansion of liquidity, accompanied by prudent economic policies, can support the country's development goals.

Ethiopia has been able to foster sustainable economic expansion, attract investment and improve living standards over time. Conversely, the positive and statistically significant coefficients for GDP growth in Kenya, Mauritius, Tanzania and Uganda reflect the positive relationship between heightened economic growth rates and a well-managed liquidity glut. These countries have experienced robust economic growth, which has been instrumental in attracting investment, creating employment opportunities and elevating living standards. With a well-handled liquidity glut, these countries have been able to support their economic expansion, effectively allocate resources and promote sustainable development (Magwedere & Marozva, 2022). For an example, in Kenya, the positive coefficient for GDP growth signifies the country's ability to manage liquidity conditions in tandem with economic growth. Kenya has implemented policies to support robust economic expansion, such as promoting investment, improving infrastructure and fostering a conducive business environment. These measures have attracted both domestic and foreign investment, leading to sustained economic growth and development (Edo et al., 2020).

2.12.4.3 The Long-run Influence of Gross Savings on Liquidity and Economic Growth in East Africa

The coefficients for the gross savings to GDP ratio in Ethiopia, Kenya, Mauritius, Tanzania and Uganda shed light on the potential impact of saving behaviours on liquidity conditions and long-term economic growth. The specific examples demonstrate how variations in savings ratios can influence liquidity dynamics and economic development, highlighting the importance of prudent resource allocation and investment in shaping liquidity conditions. In Ethiopia, the negative and statistically significant coefficient for the gross savings to GDP ratio suggests that lower savings ratios may contribute to a well-managed liquidity glut and stimulate economic activity. When individuals have lower savings rates, they are more likely to engage in consumption, which can fuel economic growth by increasing demand and stimulating production. This can lead to a well-bandaged liquidity glut, where ample liquidity is effectively utilized to foster economic expansion and development (Gumata, 2022; Hoffmann & Schnabl, 2016; Modigliani, 1944).

Similarly, in Kenya, Tanzania and Uganda, the negative coefficients for the gross savings to GDP ratio suggest that lower savings ratios may contribute to a well-handled liquidity glut. These

countries have experienced economic growth driven by increased consumption and investment, supported by lower savings rates. By stimulating economic activity through consumption and prudent investment, these countries have been able to utilize liquidity effectively and promote sustained economic development (Mayer & Schnabl, 2021; Taskinsoy, 2023a). The relationship between the gross savings to GDP ratio and liquidity conditions underscores the importance of saving behaviours in shaping economic growth and liquidity dynamics (Naqvi, 2022; Schettino & Clementi, 2022). Lower savings ratios can stimulate economic activity by increasing consumption, while higher savings ratios can contribute to a well-managed liquidity glut by providing resources for productive investments.

2.12.4.4 The Long run The Impact of Lending Interest Rates on Liquidity and Economic Growth in East Africa

The coefficients for lending interest rates in Ethiopia, Kenya, Mauritius, Tanzania and Uganda highlight the significant influence of interest rates on liquidity conditions and long-term economic growth. The specific examples illustrate how variations in lending interest rates can impact liquidity dynamics and economic development, emphasizing the importance of prudent borrowing and investment in shaping liquidity conditions (Bäckman & Lutz, 2020). In Ethiopia, Kenya and Uganda, the affirmative and statistically significant coefficients for lending interest rates suggest that higher interest rates may contribute to a well-managed liquidity glut and sustainable economic development. Elevated interest rates can incentivize savings and prudent borrowing, as individuals and businesses are encouraged to save and borrow responsibly (Green & Denniss, 2018; Megbolugbe et al., 1991). This contributes to a well-managed liquidity glut, as resources are allocated efficiently towards productive investments, fostering economic growth and development.

Conversely, the negative and statistically significant coefficient for lending interest rates in Mauritius indicates that reduced interest rates can also contribute to a well-managed liquidity glut and sustainable economic development. Lower interest rates can stimulate investment and consumption, as they make borrowing more affordable and encourage individuals and businesses to take advantage of credit opportunities (Grumiller et al., 2018; Liao & Yi, 2021). By fostering investment and consumption, reduced interest rates can contribute to a well-managed liquidity glut, supporting economic growth and development.

The influence of lending interest rates on liquidity conditions underscores the importance of interest rate policies in shaping economic growth. By adjusting interest rates appropriately,

countries can incentivize savings, prudent borrowing and productive investments. This enables the efficient allocation of resources and promotes a well-managed liquidity glut, contributing to long-term economic development (Kyei-Mensah, 2023). For example, in Kenya, the affirmative coefficient for lending interest rates signifies the country's ability to manage interest rates to promote a well-managed liquidity glut. Kenya has implemented policies to strike a balance between encouraging savings and prudent borrowing, ensuring that interest rates incentivize responsible financial behaviour (Mutai & Miroga, 2023; Qabhobho, 2017).

2.12.4.5 The Role of Subsidies in Shaping Liquidity and Economic Growth in East Africa

The coefficients for subsidies in Ethiopia, Kenya, Mauritius, Tanzania and Uganda highlight the crucial role of subsidies in shaping liquidity conditions and long-term economic growth. The specific examples demonstrate how variations in subsidies can influence liquidity dynamics and economic development, emphasizing the importance of targeted support and efficient resource allocation. In Ethiopia, Mauritius and Uganda, the positive and statistically significant coefficients for subsidies suggest that subsidies can contribute to a well-managed liquidity glut and sustainable economic development (Andonov et al., 2017; Samirana, 2020).

Conversely, the negative and statistically significant coefficients for subsidies in Kenya and Tanzania indicate that reduced subsidies can also contribute to a well-managed liquidity glut and sustainable economic development. Reduced subsidies signal efficient resource allocation and reduced market distortions, allowing market forces to determine the allocation of resources. This promotes a more efficient use of resources, encourages private sector participation and fosters sustainable economic development in the long run (Ojah & Godspower-Akpomiemie, 2016; Tobin, 1972; Van Wyngaard, 2019). For example, in Kenya, the negative coefficient for subsidies reflects the country's approach of reducing subsidies to promote a well-managed liquidity glut. Kenya has implemented policies to reduce subsidies in sectors where market forces can drive efficient resource allocation (Emara & El Said, 2021).

This has encouraged private sector participation, stimulated investment and fostered sustainable economic development. Similarly, in Tanzania, the negative coefficient for subsidies signifies the country's efforts to reduce subsidies and promote efficient resource allocation. Through reducing subsidies, Tanzania has encouraged market-driven outcomes, attracted private sector investment and promoted sustained economic growth (Acheampong, 2019; Dimitriadou, 2024; Samirana,

2020). The influence of subsidies on liquidity conditions underscores the importance of targeted support and efficient resource allocation in economic development.

2.13 Policy Recommendations on Triggers of Liquidity Gluts

To enhance economic stability and effectively manage liquidity gluts in Central and West Africa, it is essential for governments to adopt robust fiscal policy frameworks. Establishing clear and transparent guidelines for government expenditure relative to GDP will ensure that public spending is aligned with economic growth objectives. This includes implementing strict budgetary controls and regular fiscal assessments to track progress and adjust policies as necessary. By maintaining fiscal discipline, policymakers can mitigate the risks associated with excessive liquidity, which can lead to inflation and economic instability. Moreover, targeted government expenditure should focus on high-return sectors such as infrastructure, education and renewable energy. For instance, investments in infrastructure not only create jobs but also improve access to markets, thereby stimulating private sector investment. Similarly, investing in education enhances human capital, which is crucial for innovation and productivity. Renewable energy initiatives can drive technological advancements and sustainability, ultimately contributing to long-term economic resilience.

To enhance economic stability and effectively manage liquidity glut in Central and West Africa, it is essential for governments to strengthen their fiscal policy frameworks. Establishing clear guidelines for government expenditure relative to GDP will ensure that spending aligns with economic growth objectives. By maintaining fiscal discipline, policymakers can mitigate the risks associated with excessive liquidity while promoting sustainable economic expansion. This approach will not only stabilize the economy but also foster an environment conducive to long-term growth. Targeted government expenditure is another critical area for improvement. By strategically allocating resources to sectors that yield high economic returns, such as infrastructure, education and renewable energy, governments can enhance productivity and stimulate demand. For instance, investments in infrastructure projects can create jobs and encourage private sector investment, while renewable energy initiatives can drive technological advancements and sustainability. Such targeted spending will not only address immediate economic challenges but also lay the groundwork for future growth.

While increased government expenditure can stimulate economic activity, it is crucial to monitor

inflationary pressures that may arise from such measures. Policymakers must implement mechanisms to manage liquidity effectively, keeping inflation within manageable limits. By carefully balancing the money supply and aggregate demand, governments can prevent inflation from eroding purchasing power and undermining the effectiveness of fiscal stimulus measures. Encouraging private sector engagement is another important strategy. Through creating a conducive environment for private investment, governments can complement their efforts to stimulate economic growth. This can be achieved through incentives for foreign direct investment, support for small and medium-sized enterprises (SMEs) and fostering an entrepreneurial ecosystem. A vibrant private sector will enhance economic resilience and reduce reliance on public expenditure.

In East Africa, enhancing economic stability requires a strong emphasis on prudent liquidity management within the banking sector. Governments should implement rigorous banking regulations to ensure that financial institutions maintain optimal liquidity reserves while actively promoting lending activities. This can be facilitated by creating a regulatory framework that encourages responsible lending practices, thus ensuring that credit is directed toward productive investments. Strategic investments in critical sectors, such as agriculture and manufacturing, are vital for economic growth and job creation. To support small and medium enterprises (SMEs), governments should provide tailored financial assistance programs, including low-interest loans and grants, as well as capacity-building initiatives that equip these businesses with the skills needed to thrive in a competitive marketplace. Additionally, cultivating a culture of savings is essential. Implementing incentives for increased savings rates, such as tax benefits or match savings programs, can promote a balanced approach to consumption and savings, ultimately optimizing liquidity conditions.

Southern Africa faces a unique challenge characterized by high liquidity levels in the banking sector, where the effective channelling of this liquidity into credit and financial intermediation is

crucial without triggering inflationary pressures. Policymakers must navigate the delicate balance between controlling inflation and enhancing financial intermediation to promote sustainable growth. To address this liquidity dilemma, targeted measures are necessary. This includes adjusting monetary policy tools, such as reserve requirements and interest rates, to regulate the supply and demand for credit effectively. Establishing guidelines for prudent lending practices will also help ensure that financial institutions do not overextend credit, which can lead to financial instability. Proactive measures, such as developing contingency plans and real-time monitoring systems, are essential for identifying early signs of liquidity imbalances, enabling timely interventions that prevent potential escalation into more significant economic issues.

Across all regions, diversifying economies is a fundamental strategy for reducing vulnerability to external shocks, particularly in resource-dependent nations. Governments should prioritize the development of alternative sectors, such as agriculture, manufacturing and services, to create a more balanced economic structure that mitigates risks associated with fluctuations in commodity prices. This can be achieved through targeted investment incentives, training programs and infrastructure development that support emerging industries. Furthermore, investing in human capital development is vital for enhancing the labour force's ability to adapt to changing economic conditions. Through prioritizing education and skills training, governments can ensure that their populations are equipped to contribute to and benefit from economic growth. This investment in human capital not only fosters innovation but also creates a competitive workforce capable of driving sustainable development.

While the regional policy recommendations provide a useful framework, it is essential to acknowledge the significant asymmetries observed across countries within each region. The econometric results reveal that the direction and magnitude of key relationships such as between government expenditure and liquidity glut, or between GDP growth and credit market dynamics vary considerably. For example, in Southern Africa, Botswana and Eswatini exhibit positive coefficients for government expenditure, suggesting that fiscal expansion supports liquidity absorption and growth. In contrast, Lesotho and Namibia show negative or insignificant effects, indicating that similar policies may exacerbate inflationary pressures or fail to stimulate credit markets. Likewise, in West Africa, Ghana’s negative relationship between liquidity glut and economic growth contrasts sharply with Nigeria’s positive association, reflecting differences in

institutional capacity, financial market depth, and external vulnerabilities.

These asymmetries underscore the need for country-specific policy calibration rather than uniform regional prescriptions. Policymakers must consider structural factors such as the composition of public spending, the efficiency of financial intermediation, and the responsiveness of credit markets to liquidity injections. Tailored interventions—such as targeted subsidies, differentiated interest rate policies, or institutional reforms are more likely to yield sustainable outcomes than blanket approaches.

CHAPTER 3: THE IMPACT OF LIQUIDITY GLUTS ON CREDIT MARKETS IN SSA AND THEIR TRANSMISSION MECHANISM TO ASSET PRICES AND RETURNS

3.1 Introduction

The financial landscape of Sub-Saharan Africa (SSA) is shaped by various factors, including liquidity dynamics and their influence on credit markets. Liquidity gluts, characterized by an excess supply of funds, can have far-reaching implications for credit markets in SSA and their transmission mechanism to asset prices and returns (Bauluz, 2022). The impact of liquidity gluts on credit markets and their subsequent effects on asset prices and returns is of utmost importance for policymakers, investors and financial institutions operating in the region. Liquidity, often considered the lifeblood of financial markets, plays a critical role in the functioning of credit markets. When an excess supply of funds emerges in the financial system, it can lead to increased lending activity, lower borrowing costs and improved credit accessibility (Kyei-Mensah, 2023 and Chucherd, 2021). In the context of SSA, where access to credit is crucial for economic growth and development, liquidity gluts can potentially stimulate investment, foster business expansion and bolster overall economic activity.

The transmission mechanism from liquidity gluts to asset prices and returns in SSA is a complex interplay of various factors. Excess liquidity can drive up demand for assets, leading to higher asset prices. This can benefit investors and asset holders, as the value of their holdings increases (Emara, 2021). Lower borrowing costs resulting from liquidity gluts can incentivize businesses to invest in capital goods and expand their operations, potentially boosting returns (Isaacs, 2018). However, it is essential to recognize that liquidity gluts can also introduce risks, such as the misallocation of funds and the formation of asset bubbles that, if left unchecked, can result in a sudden decline in asset prices and potentially trigger financial instability (Malliaris, 2018 and Freixas, 2021).

Liquidity gluts in Sub-Saharan Africa (SSA) can have multifaceted effects on returns. As liquidity increases, businesses are enticed by lower borrowing costs, leading to investments in capital goods and expansions (Olarewaju, 2017). This heightened investment activity has the potential to generate higher returns for both businesses and investors. However, it is imperative to acknowledge the risks inherent in liquidity gluts (Miranda-Agrippino, 2022). Excessive liquidity

can result in the misallocation of funds, as investments may be directed towards assets that lack fundamental value. Consequently, asset bubbles may form, characterized by inflated asset prices detached from their underlying worth. If left unaddressed, the bursting of these bubbles can trigger abrupt declines in asset prices, potentially destabilizing the financial system (Levitin, 2020 and Saheruddin, 2022). According to Naqvi (2022) the transmission mechanism from liquidity gluts to asset prices and returns is not devoid of challenges. Factors such as market sentiment, investor expectations and the broader economic environment can influence the relationship between liquidity gluts and asset prices/returns. The presence of illiquid assets in the market can impact overall liquidity dynamics and the transmission mechanism itself.

This chapter integrates theoretical insights and empirical analysis to examine the relationship between liquidity gluts, credit markets, asset prices, and returns in Sub-Saharan Africa (SSA). It begins with a review of the relevant literature and outlines the methodological framework, employing a Structural Vector Autoregression (SVAR) model to investigate the transmission mechanisms through which excess liquidity influences credit dynamics and asset valuations. The analysis addresses the structural challenges of credit markets in SSA and explores how liquidity conditions shape asset price behavior and returns. Empirical findings are interpreted within the theoretical context and supported by robustness checks and sensitivity analyses. Additionally, the chapter assesses the impact of remittance inflows on liquidity and credit allocation, revealing asymmetric effects across countries and sectors. It highlights the role of financial intermediation and institutional quality in mediating these outcomes, demonstrating that remittances can either alleviate or exacerbate liquidity constraints depending on macro-financial conditions. Collectively, the chapter contributes to the literature by offering a nuanced understanding of how liquidity gluts interact with financial markets in developing economies.

This chapter investigates the impact of liquidity gluts on credit markets and their transmission mechanisms to asset prices and returns across a selected group of Sub-Saharan African countries. The analysis draws on a comprehensive dataset spanning the period from 2012 to 2024 and includes eight countries: Angola, Botswana, Namibia, South Africa, Ghana, Nigeria, Kenya, Mauritius, and Tanzania. These countries were selected based on the availability and consistency of macro-financial data, their economic relevance, and their representation of diverse institutional and financial structures across the continent. Notably, South Africa was included due to the

availability of detailed stock returns data, which is critical for the asset pricing component of the analysis. The data sources used primarily the African Development Bank (AfDB) and the World Bank ensure reliability and comparability across countries. This selection enables a nuanced exploration of liquidity dynamics and policy transmission mechanisms in varying macroeconomic contexts, enhancing the robustness and relevance of the study's findings.

3.2 The Dynamics of Credit Markets in SSA

Credit markets in Sub-Saharan Africa (SSA) encompass a diverse array of key players, including banks, non-bank financial institutions (NBFIs) and the informal sector (Moyo, 2021; Acharya, 2022) Commercial banks traditionally dominate the landscape, serving as the primary lenders to both businesses and individuals. In addition, NBFIs, such as microfinance institutions and cooperatives, play a critical role in extending credit to underserved segments of the population (Chaturvedi, 2022). The informal sector, which includes informal lenders and savings groups, also provides a vital source of credit for those lacking access to formal financial services (Ezzahid, 2021).

However, SSA's credit markets are characterized by distinct challenges that differentiate them from those in other regions. A prominent issue is the limited access to credit faced by a significant portion of the population (Gumata, 2022; Moretti, 2020). Contributing factors include inadequate infrastructure, geographical dispersion and the high costs associated with servicing small-scale borrowers (Steinberg, 2019). A considerable share of credit transactions occurs within the informal sector, where interest rates can be substantially higher and terms less favourable (Nguyen, 2023). For instance, microfinance institutions like ID Ghana exemplify the role of NBFIs in addressing the credit needs of marginalized populations unable to access mainstream bank financing, thereby promoting financial inclusion and economic empowerment in the region (Alhassan, 2021).

Moreover, the prevalence of high interest rates in SSA's credit markets poses a significant barrier to economic growth and development. This issue is influenced by various factors, including inflationary pressures, currency depreciation and perceived credit risks (Klutse, 2022; Ntarmah, 2021). High inflation compels lenders to demand elevated interest rates to offset the loss of value over time, ultimately eroding the purchasing power of borrowed funds (Saheruddin, 2022). Additionally, volatile currency values diminish the worth of borrowed money, prompting lenders to adjust interest rates accordingly (Fang, 2021). Lenders also consider perceived credit risks, assessing borrower creditworthiness, market conditions and the overall economic and political

stability of the region (Dafe, 2018). Given SSA's economic volatility and political risks, lenders often impose higher interest rates to compensate for these perceived risks.

The high cost of borrowing severely restricts investment and economic growth in SSA. Small and medium-sized enterprises (SMEs) struggle to access affordable credit, limiting their capacity to expand operations, invest in new technologies and create employment opportunities (Mutai, 2023). Individuals similarly face challenges when seeking credit for essential expenditures such as education, housing, or starting a business. Consequently, elevated interest rates deter borrowing and dampen overall economic activity in the region.

In Nigeria, another prominent economy in SSA, high interest rates persist amidst inflationary pressures driven by rising food prices and exchange rate fluctuations. The Central Bank of Nigeria has implemented measures to address inflation; however, striking a delicate balance between managing inflation and fostering economic growth remains a challenge. Presently, the prime lending rate in Nigeria hovers around 26.25% July 2024[3]. Kenya, renowned for its robust financial sector and innovative mobile money services, has made efforts to lower interest rates. Nevertheless, borrowing costs in the country remain relatively high. The prevailing interest rates are influenced by factors such as inflation, currency volatility and perceived credit risks. The Central Bank of Kenya has implemented policies aimed at enhancing credit affordability and promoting financial inclusion, but further progress is required to significantly reduce interest rates. At present, the prime lending rate in Kenya stands at approximately 17.0%[4].

Ghana, too, grapples with high interest rates in its credit markets. Inflationary pressures, fiscal deficits and exchange rate volatility contribute to elevated borrowing costs in the country. Although the Bank of Ghana has implemented policies to manage inflation and stabilize the currency, achieving lower interest rates while ensuring economic stability remains a priority. The current prime lending rate in Ghana is approximately 35.85%[5]. Lastly, Ethiopia, characterized by limited access to financial services and a developing financial sector, experiences relatively high interest rates. Restricted credit accessibility and an emerging financial infrastructure contribute to elevated borrowing costs. The Ethiopian government has initiated efforts to develop the financial sector and promote credit access; nonetheless, lowering interest rates remains a persistent challenge. The prime lending rate in Ethiopia presently stands at approximately 15.0%[6].

Information asymmetry presents a formidable challenge in the credit markets of Sub-Saharan Africa (SSA), where lenders frequently struggle to accurately evaluate the creditworthiness of potential borrowers due to a lack of sufficient credit information and data availability (Parosa, 2019). This scarcity of reliable and comprehensive credit data creates a significant information gap between lenders and borrowers, resulting in heightened risk in lending decisions (Huang, 2022). Therefore, lenders often resort to imposing higher interest rates or outright denying credit to mitigate perceived risks.

3.2.1 Addressing Credit Market Challenges in Sub-Saharan Africa

Implementing robust credit reporting systems is essential for tackling the challenges posed by information asymmetry in Sub-Saharan Africa's credit markets. Credit reporting agencies play a pivotal role in consolidating and disseminating credit information to lenders (Mogaji, 2022; Gumata, 2022). These agencies gather data from diverse sources, including financial institutions, utility companies and telecommunications providers, to compile comprehensive credit reports for individual borrowers and businesses (Calderón, 2016). Granting lenders access to credit reports provides them with essential insights into borrowers' credit histories, allowing for more accurate evaluations of creditworthiness. Promoting the development and use of credit reporting systems in Sub-Saharan Africa can greatly improve lenders' capacity to assess risk and make informed lending decisions, ultimately facilitating access to affordable credit (Bauluz, 2022).

Improving credit reporting, fostering financial literacy among borrowers is crucial for bridging the information gap. Many individuals and businesses in SSA lack the necessary knowledge and understanding of credit and its implications (Adam, 2020). Promoting financial education programs and initiatives can empower borrowers to make informed financial decisions, build their credit history and enhance their creditworthiness. These initiatives should focus on educating individuals about credit terms, interest rates, repayment obligations and the importance of maintaining a positive credit record (Nyamagwa, 2021).

[3] Central Bank of Nigeria, Money Market Indicators, https://www.cbn.gov.ng/rates/mnymktind.asp
[4]Central Bank of Kenya, https://www.centralbank.go.ke/
[5] Bank of Ghana, https://www.bog.gov.gh/
[6]National Bank of Ethiopia, https://nbe.gov.et/

3.3 The Relationship between Credit Markets and Asset Prices

The relationship between credit markets and asset prices in Sub-Saharan Africa (SSA) is a critical area of study that offers valuable insights into the dynamics of financial markets in the region (Chucherd, 2021; Jammeh, 2022). The transmission mechanism from credit markets to asset prices is essential for policymakers, investors and market participants to make informed decisions and assess the overall health and stability of the financial system. Key factors such as credit availability, interest rates and credit quality significantly impact asset prices, while the interplay between credit market developments and the pricing of various asset classes including equities, bonds and real estate warrants thorough exploration (Trapanese, 2021).

Credit availability serves as a crucial determinant of asset prices in SSA. The accessibility of credit shapes investor behaviour and influences demand for various asset classes (Pahla, 2019). When credit is readily available, investors possess greater financial resources to allocate across different assets, leading to increased demand and potentially driving up asset prices. For instance, in Nigeria, the availability of credit from financial institutions directly impacts the pricing of assets such as equities, bonds and real estate. When credit is easily accessible, investors have more capital to invest, resulting in higher asset prices. Conversely, when credit availability tightens, funding constraints can dampen demand, potentially leading to lower asset prices (Isaacs, 2018).

A reduction in credit availability can have adverse effects on asset prices. When credit becomes scarce or less accessible, investors may struggle to secure necessary funding, leading to decreased demand for assets and, consequently, lower asset prices (Mangadi, 2022). For example, during periods of credit tightening in South Africa, investors face difficulties in obtaining credit for various asset purchases, causing a decline in demand and negatively impacting the pricing of assets such as equities, bonds and real estate (Ezzahid, 2021). It is important to recognize that credit availability is influenced not only by macroeconomic factors but also by country-specific conditions. In Ghana, for instance, credit availability is shaped by the regulatory environment, the strength of the financial sector and the lending policies of financial institutions (Nguyen, 2023). Changes in credit availability in Ghana can profoundly impact asset prices, with increased credit availability leading to higher demand and potentially elevated asset prices (Mbao, 2021).

Interest rates also play a significant role in the relationship between credit markets and asset prices. Lower interest rates reduce borrowing costs, making credit more affordable and potentially

stimulating demand for assets, which can lead to higher asset prices (Seyyedkolaee, 2022). Conversely, higher interest rates increase borrowing costs, dampening demand for assets and resulting in lower asset prices. The importance of monitoring interest rate movements and their implications for asset pricing in SSA's financial markets (Oliphant, 2023).

Credit quality is another critical factor influencing asset prices in SSA. Higher credit quality is associated with lower default risk, making assets more attractive to investors. Positive credit developments, such as improvements in credit ratings and reduced credit risk, can enhance investor confidence and lead to higher asset prices (Latif, 2023). Conversely, negative credit developments, such as credit downgrades or increased credit risk, can erode investor confidence and result in lower asset prices (Van Wyngaard, 2019). This highlights the significance of credit quality in shaping the pricing of assets across various classes within the region.

The multifaceted relationship between credit market developments and asset prices in SSA can be elucidated through the assessment of various asset classes, including equities, bonds and real estate. Positive credit market developments such as increased credit availability, lower interest rates and improved credit quality can significantly influence the pricing of these asset classes. Equities, as a key asset class, are particularly sensitive to credit market dynamics. In SSA, increased credit availability and improved credit quality can contribute to higher equity prices. For instance, when credit becomes more accessible, investors may have greater funds to allocate to equities, leading to increased demand and potentially higher equity prices (Akinlo, 2021; Jammeh, 2022). Similarly, improved credit quality can enhance investor confidence, reducing perceived risk and increasing opportunities for returns, thereby positively impacting equity prices.

3.4 Strengthening the Transmission Mechanism in Sub-Saharan Africa: The Role of Financial Infrastructure, Policy, and Market Dynamics

The development of robust financial infrastructure and well-functioning markets is a fundamental factor influencing the transmission mechanism in Sub-Saharan Africa (SSA). Efficient credit information systems, reliable credit rating agencies and transparent financial intermediaries contribute to reducing information asymmetry and enhancing the flow of credit information (Asongu, 2016; Boateng, 2018). A well-developed financial infrastructure facilitates the smoother transmission of credit market conditions to asset prices by improving the accuracy and availability of credit information, enabling investors to make more informed decisions.

Macroeconomic stability and the effectiveness of monetary policy also play significant roles in shaping the transmission mechanism. Stable macroeconomic conditions, such as low inflation rates and steady economic growth, create a conducive environment for the smooth transmission of credit market developments to asset prices (Asongu, 2019). The effectiveness of monetary policy in managing interest rates and controlling inflation influences the cost and availability of credit, thereby affecting asset prices (Song, 2018). The ability of central banks to implement appropriate monetary policy measures and maintain macroeconomic stability is crucial for ensuring a well-functioning transmission mechanism.

The legal and regulatory framework governing credit markets and financial institutions has a substantial impact on the transmission mechanism. A sound legal and regulatory environment promotes trust, transparency and investor confidence, enhancing the efficiency of credit markets (Havrylchyk, 2018). Clear and enforceable legal frameworks for contract enforcement, property rights and creditor protection help reduce credit risk and improve the transmission of credit market conditions to asset prices (Samirana, 2020). Conversely, weak legal frameworks or regulatory inefficiencies can hinder the transmission mechanism and create uncertainties for investors.

The structure and competitiveness of credit markets in SSA also influence the transmission mechanism. Concentrated markets with limited competition may lead to higher borrowing costs and restricted access to credit, thereby affecting asset prices (Mayer, 2021; Berger, 2017). In contrast, a more competitive credit market environment encourages lower interest rates and increased credit availability, stimulating demand for assets and potentially driving up asset prices (Twum, 2021). Enhancing market competition through measures such as promoting financial inclusion, encouraging new market entrants and fostering innovation can contribute to a more efficient transmission mechanism.

External factors and global financial integration further impact the transmission mechanism in SSA. The region is susceptible to global financial developments, including changes in global interest rates, foreign investor sentiment and capital flows (Anetor, 2019). These external factors can influence credit market conditions and subsequently affect asset prices in SSA. Moreover, the level of integration with global financial markets, including cross-border capital flows and foreign direct investment, can introduce additional channels through which credit market developments

are transmitted to asset prices (Gumata, 2022). Socioeconomic factors, such as income levels, employment rates and demographic trends, also influence the transmission mechanism in SSA. These factors affect the demand for credit and shape investors' risk appetite, thereby impacting asset prices (Karstens, 2021).

3.5 Theoretical Literature Review

3.5.1 Liquidity and Credit Risk-Adjusted Capital Asset Pricing Model

The intersection of liquidity and credit risk within the framework of the Capital Asset Pricing Model (CAPM) has gained increasing prominence in financial literature, particularly as financial markets have evolved to become more complex and interconnected (Dieci, 2018; Alhenawi, 2022). Thetraditional CAPM, which posits that the expected return of an asset is directly proportional to its systematic risk as measured by beta, often falls short of capturing the nuanced dynamics introduced by liquidity and credit risk (Magwedere, 2022; Broeders, 2021). This limitation has led to the development of the Credit Risk-Adjusted Capital Asset Pricing Model (CRACAPM), which seeks to provide a more comprehensive framework for understanding asset returns in environments where liquidity constraints and creditworthiness significantly influence investor behaviour and market outcomes (Chucherd, 2021).

Recent empirical research underscores the necessity of incorporating liquidity into asset pricing frameworks. For instance, a study by Huang and Wang (2019) demonstrated that liquidity risk plays a pivotal role in determining asset pricing, particularly during periods of market stress. Using a multifactor model that included liquidity measures such as turnover and bid-ask spreads, the authors found that illiquid stocks tend to command a higher expected return, reflecting a liquidity premium. This finding aligns with the theoretical underpinnings of the CRACAPM, which suggests that investors require compensation for holding assets that are harder to trade without incurring significant costs. Furthermore, the study highlighted that liquidity risk tends to exacerbate credit risk, particularly in turbulent market conditions, thereby necessitating an adjustment to expected returns based on both liquidity and credit metrics.

The integration of credit risk into asset pricing models has also gained traction in recent years, especially considering the 2008 financial crisis, which exposed the vulnerabilities of traditional models that neglected creditworthiness. A recent contribution by De Jonghe et al. (2020) examined the implications of credit ratings on the pricing of corporate bonds within the context of

CRACAPM. Their analysis revealed that bonds with lower credit ratings exhibited significantly higher yield spreads, interpreted as compensation for both credit and liquidity risk.

Moreover, the work of Chen et al. (2018) emphasized the importance of liquidity and credit risk interactions in determining equity returns. Their study utilized a two-factor model that incorporated both liquidity and credit risk variables, revealing that firms with higher credit risk and lower liquidity tended to underperform in terms of stock returns. The findings suggested that investors are increasingly aware of the liquidity constraints associated with risky assets, leading them to demand a higher return for bearing these additional risks. This phenomenon is consistent with the CRACAPM framework, which posits that expected returns should be adjusted not only for systematic risk but also for the liquidity and credit risks associated with assets.

Liu and Zhang (2021) explored the effects of market liquidity on the risk-return relationship for emerging market equities. Through employing a panel data analysis that accounted for liquidity measures and credit risk variables, they found that liquidity significantly influenced the risk-return trade-off, particularly in emerging markets where financial systems are often less developed. Their results indicated that during periods of low liquidity, the risk premiums associated with credit risk become more pronounced, leading to a widening of yield spreads and elevated expected returns for riskier assets. This relationship reinforces the necessity of integrating liquidity and credit risk considerations into asset pricing models, particularly in contexts where market conditions can fluctuate significantly.

The work of Acharya et al. (2017) provided a theoretical foundation for understanding the interplay between liquidity, credit risk and asset pricing. The authors proposed a model that explicitly incorporates the effects of liquidity on credit spreads, illustrating how a deterioration in market liquidity can lead to increased credit risk, ultimately affecting asset pricing. Their analysis emphasized that during times of financial distress, the liquidity of an asset can deteriorate, resulting in a feedback loop that exacerbates credit risk and contributes to higher expected returns. This theoretical framework aligns closely with the CRACAPM, as it highlights the importance of considering both liquidity and credit risk adjustments in the assessment of expected asset returns.

The implications of integrating liquidity and credit risk into the CRACAPM extend beyond

theoretical advancements; they also have practical ramifications for investors and policymakers. For investors, understanding the dynamics of liquidity and credit risk can inform portfolio management strategies, particularly in selecting assets that align with their risk tolerance and return expectations. The recognition that illiquid and credit-risky assets require higher expected returns can guide investment decisions, especially in volatile market conditions. Furthermore, for policymakers, acknowledging the interconnectedness of liquidity and credit risk can lead to more effective regulatory frameworks that promote financial stability.

3.5.2 The Dynamics of Credit Markets in SSA

One prominent aspect highlighted in the literature is the prevalence of informal credit markets in Sub-Saharan Africa (SSA). These markets, such as community-based lending and rotating savings and credit associations (ROSCAs), play a vital role in providing credit to individuals and small businesses, particularly in rural areas where formal financial institutions may be limited. Informal credit markets often operate based on trust and social capital, allowing individuals to access credit without traditional collateral requirements (Lane, 2022; Acharya, 2022). However, they also face challenges such as limited scalability and potential risks associated with informal arrangements. In contrast, formal credit markets, including banks and microfinance institutions, also operate in SSA. Banks, as the primary source of credit in the formal sector, face specific challenges within the region. Limited branch networks, particularly in rural areas, can hinder access to banking services and credit (Parosa, 2019; Berger, 2017). High operational costs, resulting from factors such as inadequate infrastructure and higher risk profiles, can also pose challenges for banks operating in SSA.

Access to credit is a critical factor in credit market dynamics in SSA, as highlighted in the literature. Various barriers are identified that individuals and businesses face when seeking credit. Limited financial literacy, for example, can impede borrowers' ability to understand credit products and make informed borrowing decisions (Maipose, 2002; Ferretti, 2021). Lack of collateral, especially for individuals and small businesses, can restrict their access to credit. Inadequate credit history is another common barrier, as it hampers lenders' ability to assess borrowers' creditworthiness (Schettino, 2022). These barriers contribute to credit rationing, where potential borrowers are unable to access the credit, they require to meet their needs and drive economic activities.

To improve credit access, the literature discusses several initiatives that have been implemented in SSA. One such initiative is the use of credit scoring models, which provide alternative methods for assessing borrowers' creditworthiness beyond traditional collateral-based approaches. Through considering a broader range of borrower characteristics and behaviours, credit scoring models aim to mitigate the impact of limited collateral and credit history on credit decisions (Ma, 2021; Edo, 2020). Alternative credit assessment methods, such as cash flow-based lending and peer-to-peer lending platforms, have also gained traction in addressing credit access challenges. Furthermore, the utilization of technology, particularly mobile banking and digital financial services, has emerged as a powerful tool to reach underserved populations and facilitate credit access (Ustarz, 2021).

Interest rates play a pivotal role in credit market dynamics, as emphasized in the literature. The challenges posed by high interest rates in SSA are attributed to various factors. Inflation, for instance, can drive up interest rates, making borrowing more expensive (Ferrari, 2018; Mecagni, 2015). Market concentration, where a limited number of banks dominate the market, can also contribute to higher interest rates due to reduced competition. Credit risk, associated with factors such as limited credit information and high default rates, can further elevate interest rates to compensate for potential losses (Abuka, 2019). To address the issue of high interest rates, efforts have been made in SSA to enhance macroeconomic stability. Sound macroeconomic policies, such as inflation targeting and fiscal discipline, aim to create a stable environment that supports lower interest rates (Bernanke, 2018; Lavoie, 2019). Increasing competition in the banking sector is another strategy pursued to lower interest rates. Measures such as promoting market entry, facilitating mergers and acquisitions and enhancing regulatory frameworks can foster a more competitive banking sector, potentially leading to lower borrowing costs for individuals and businesses.

Financial institutions beyond traditional banks also play a vital role in credit markets in SSA, as discussed in the literature. Microfinance institutions (MFIs) have emerged as significant providers of credit, particularly to underserved populations. MFIs focus on delivering financial services tailored to the needs of low-income individuals and small businesses, often incorporating social objectives into their business models. However, MFIs face sustainability challenges due to high

operational costs, limited access to funding and the need to balance financial viability with their social mission. Non-bank financial institutions, including mobile money providers and fintech companies, have gained prominence as alternative sources of credit in SSA (Abor, 2022; Seck-Sarr, 2024; Mogaji, 2022). These institutions leverage technology and digital platforms to reach previously underserved populations and facilitate access to credit. Mobile money providers, for example, have enabled individuals to access financial services, including credit, through their mobile phones. Fintech companies, utilizing innovative approaches and data-driven algorithms, offer new credit products and streamline credit processes, potentially increasing efficiency and expanding credit access (Chikumbi, 2017; Min, 2024).

3.5.3 Stock Market Liquidity

Akinlo (2021) established a theoretical model that illustrates how liquidity risk affects asset prices through two primary channels: the direct impact of liquidity on expected returns and the interaction between liquidity and credit risk. Their findings suggest that during times of financial distress, the liquidity of an asset can deteriorate, leading to increased risk premiums and higher expected returns. This relationship underscores the necessity of incorporating liquidity considerations into asset pricing models, as investors demand compensation for the additional risks associated with illiquid assets.

Moreover, the work of Malliaris (2018) further emphasizes the significance of liquidity in the context of emerging markets. Their study utilized a panel data analysis to explore the effects of market liquidity on the risk-return relationship for equities in these markets. They found that liquidity significantly influences the risk-return trade-off, particularly in environments where financial systems are less developed. Their results indicated that during periods of low liquidity, the risk premiums associated with credit risk become more pronounced, leading to wider yield spreads and elevated expected returns for riskier assets. This finding reinforces the argument that liquidity and credit risk are intertwined, necessitating their joint consideration in asset pricing models.

The interaction between liquidity and credit risk has also been a focal point in recent research. A study by Chen et al. (2018) developed a liquidity and credit risk-adjusted capital asset pricing model, demonstrating how these two factors jointly affect corporate bond pricing. Their analysis

revealed that individual bond liquidity risk and the interaction between individual bond liquidity risk and market liquidity risk significantly influence corporate bond returns. This research highlights the critical role of liquidity in shaping investor expectations and pricing dynamics, particularly in the corporate bond market, where liquidity constraints can lead to substantial variations in yield spreads.

Furthermore, the implications of liquidity for bank stability have been explored in the context of the MENA region. A study by Alshahrani et al. (2020) examined the relationship between liquidity risk, credit risk and bank stability, revealing that both risks independently influence bank stability while their interaction contributes to overall banking fragility. The findings suggest that regulatory frameworks should be designed to enhance the resilience of banks by ensuring adequate liquidity buffers and sound credit risk management practices.

In addition to these empirical studies, theoretical advancements have also contributed to the understanding of liquidity's role in asset pricing. For instance, the work of Begenau and Stafford (2016) introduced a model that incorporates liquidity into the capital structure of firms, demonstrating how liquidity constraints can affect investment decisions and asset pricing. Their findings indicate that firms with higher liquidity are better positioned to weather financial shocks, leading to lower risk premiums and higher expected returns. This theoretical framework aligns with the broader literature on liquidity, which posits that liquidity is a fundamental characteristic of assets that influences their pricing and risk profiles.

The global financial crisis of 2008 further underscored the importance of liquidity in financial markets, revealing how liquidity shortages can exacerbate credit risk and lead to systemic failures. The crisis prompted a re-evaluation of risk management practices and regulatory frameworks, emphasizing the need for a more integrated approach to liquidity and credit risk. The Basel III framework, for an example, introduced measures aimed at enhancing liquidity requirements for banks, recognizing the critical role of liquidity in maintaining financial stability. This regulatory shift reflects a growing consensus among policymakers and researchers that liquidity is a vital component of risk management and asset pricing.

3.5.4 Asset Pricing with Liquidity Risk

One of the pivotal contributions to this discourse was made by Schettino (2022), who established a theoretical framework that explicitly incorporates liquidity risk into asset pricing. Their model posits that asset prices reflect not only expected cash flows but also the risk associated with trading those assets in the market. The authors demonstrated that during periods of market stress, liquidity risk can lead to significant deviations from fundamental values, resulting in higher required returns on assets perceived as illiquid.

Further empirical evidence supporting the importance of liquidity in asset pricing is provided by the work of Dlamini (2023), who conducted a comprehensive analysis of the implications of liquidity risk for equities in emerging markets. Their findings revealed that liquidity significantly affects the risk-return trade-off, with illiquid stocks commanding higher expected returns compared to their liquid counterparts. The study employed a panel data methodology, which allowed for a nuanced understanding of how liquidity conditions vary across different market environments. The authors concluded that the interaction between liquidity and market conditions is particularly pronounced in emerging markets, where financial infrastructures may not be as robust, thus amplifying the effects of liquidity risk on asset pricing.

Chen et al. (2018) further advanced the theoretical landscape by developing a multi-factor asset pricing model that incorporates liquidity risk alongside traditional risk factors. Their research highlighted the distinction between market liquidity, which pertains to the overall market environment and individual asset liquidity, which refers to the ease of trading a specific asset. They found that both forms of liquidity significantly influence asset returns, emphasizing that investors are increasingly attuned to liquidity risks when making investment decisions. The model demonstrated that an increase in liquidity risk leads to higher expected returns, reinforcing the notion that liquidity is a pivotal component in the pricing of financial assets. This dual consideration of liquidity risk not only enhances the explanatory power of asset pricing models but also provides a more accurate reflection of investor behaviour in real-world markets.

The examination of liquidity risk in the context of fixed income securities has also yielded important insights. A notable study by De Jonghe et al. (2020) explored the pricing of corporate

bonds while accounting for liquidity risk. Their analysis revealed that bonds with lower liquidity exhibited wider yield spreads, reflecting the additional risk premium required by investors for holding fewer liquid instruments. Through employing structural econometric techniques, the authors demonstrated that liquidity risk is a critical determinant of bond pricing, particularly in periods of market stress when liquidity can evaporate rapidly. Moreover, the empirical work of Khandani and Lo (2019) provided a compelling perspective on how liquidity risk interacts with broader market dynamics. Their research utilized high-frequency trading data to analyse the effects of liquidity shocks on asset prices, revealing that sudden decreases in liquidity can lead to substantial price declines, particularly for illiquid assets. The authors argued that the impact of liquidity risk extends beyond immediate price adjustments; it also influences investor sentiment and decision-making processes, further complicating the pricing mechanisms in financial markets. This complex interplay between liquidity risk and market behaviour underscores the importance of developing asset pricing models that can adequately capture the multifaceted nature of liquidity.

3.5.5 Market Liquidity and Funding Liquidity

The relationship between market liquidity and funding liquidity has emerged as a critical area of study in financial economics, particularly in the wake of the global financial crisis of 2008. Market liquidity refers to the ease with which assets can be bought or sold in the market without causing significant price changes, while funding liquidity pertains to the availability of capital for traders to finance their positions. The interplay between these two forms of liquidity is complex and has significant implications for asset pricing, market stability and the overall functioning of financial systems. Recent literature has sought to elucidate this relationship, highlighting how fluctuations in one type of liquidity can profoundly affect the other, leading to phenomena such as liquidity spirals and market fragility.

One of the foundational contributions to this discourse is the work of Kentikelenis (2022), which established a theoretical framework linking market liquidity and funding liquidity. Their model posits that traders provide market liquidity and their ability to do so is contingent upon their access to funding. When funding liquidity is abundant, traders can leverage their positions, enhancing market liquidity. Conversely, during periods of funding stress, traders may be forced to de-leverage, leading to a contraction in market liquidity. This dynamic creates a feedback loop where deteriorating funding conditions can lead to a sudden drying up of market liquidity, exacerbating

price volatility and increasing risk premiums. The model also explains several empirical phenomena, such as the commonality of liquidity across different securities and the tendency for liquidity to evaporate during times of market stress.

The implications of the interaction between market and funding liquidity extend beyond theoretical models and empirical observations; they also have practical ramifications for policymakers and financial institutions. For example, the Federal Reserve's monetary policy decisions can significantly impact funding liquidity, which in turn affects market liquidity. In a speech at the Federal Reserve Bank of Atlanta's Financial Markets Conference, William Dudley (2016) emphasized the importance of understanding the connection between liquidity and financial stability. He noted that during periods of monetary tightening, funding liquidity can become constrained, leading to adverse effects on market liquidity and potentially triggering broader financial instability. This highlights the need for central banks to consider liquidity conditions when formulating monetary policy.

Moreover, the role of liquidity in the context of systemic risk has been a focal point in recent research. A study by Hameed et al. (2020) explored how liquidity commonality among stocks can lead to systemic vulnerabilities in financial markets. Their analysis revealed that during periods of market stress, correlations in liquidity across different assets tend to increase, which can amplify the effects of funding shocks. This phenomenon, often referred to as "liquidity contagion," suggests that disruptions in funding liquidity can have far-reaching implications for market stability, as investors may simultaneously withdraw from multiple asset classes, exacerbating price declines and increasing volatility.

3.5.6 Global Liquidity Spill overs

The concept of global liquidity spill overs has gained significant traction in financial literature, particularly in the context of increasing interconnectedness among international financial markets. Global liquidity refers to the availability of capital across borders, influenced by factors such as monetary policy, capital flows and investor sentiment (Acharya, 2022). The spill over effects of global liquidity manifest when changes in liquidity conditions in one market or region impact asset prices and liquidity conditions in other markets. This phenomenon has profound implications for

asset pricing, risk management and financial stability, particularly in an era characterized by rapid globalization and technological advancements.

One of the foundational studies in this area is the work of Rey (2016), which posits that global liquidity spill overs are primarily driven by the monetary policies of major central banks, particularly the U.S. Federal Reserve. Rey argues that expansive monetary policies, such as quantitative easing, can lead to increased capital flows into emerging markets, thereby affecting local asset prices and liquidity conditions. This relationship highlights the importance of understanding how domestic markets are influenced by external liquidity conditions, as capital flows can lead to asset price inflation and increased volatility in recipient countries. The implications of Rey's findings are particularly relevant for policymakers in emerging markets, who must navigate the challenges posed by external liquidity shocks. For instance, when the Federal Reserve implements a policy of low interest rates, it can create a surge in capital inflows to emerging markets, resulting in asset bubbles and heightened financial instability when those flows reverse.

Further empirical evidence supporting the existence of global liquidity spill overs is provided by the research of Bruno and Shin (2017). Their study examines the relationship between global liquidity and credit growth in emerging markets, revealing that periods of abundant global liquidity are associated with increased credit expansion and asset price appreciation in these economies. The authors utilize a comprehensive dataset to demonstrate that changes in global liquidity conditions can lead to significant spillover effects, influencing not only asset prices but also the stability of financial systems in emerging markets. This research underscores the interconnectedness of global financial markets and the need for a coordinated approach to monetary policy to mitigate the risks associated with liquidity spill overs. For example, during periods of global liquidity expansion, emerging market economies may experience rapid credit growth, which can lead to unsustainable debt levels and financial crises when global liquidity conditions tighten.

The dynamics of global liquidity spill overs have also been explored in the context of financial crises. A study by Aizenman and Jinjarak (2018) investigates how global liquidity conditions can

exacerbate financial instability during periods of market stress. Their findings indicate that when global liquidity tightens, emerging markets experience capital outflows, leading to currency depreciation and increased volatility in local asset prices. This relationship highlights the vulnerability of emerging markets to external shocks and the importance of maintaining adequate liquidity buffers to withstand potential spillover effects. The authors argue that understanding the mechanisms of global liquidity spill overs is essential for developing effective risk management strategies in an increasingly interconnected financial landscape. For instance, during the COVID-19 pandemic, many emerging markets faced severe capital flight as global liquidity conditions tightened, leading to significant depreciation of local currencies and heightened financial distress. Moreover, the role of investor behaviour in amplifying global liquidity spill overs has been a focal point in recent research.

3.6 Empirical Literature Review

3.6.1 The Role of Liquidity in Credit Markets

Akinwande et al. (2020) conducted an in-depth analysis utilizing panel data from various Sub-Saharan African (SSA) countries to investigate the impact of liquidity on credit spreads and interest rates. Their study employed a fixed-effects regression model, which is particularly effective in controlling for unobserved heterogeneity among countries. This approach allowed the authors to isolate the effects of liquidity on credit conditions while accounting for country-specific factors that could influence the results. The findings revealed a significant negative relationship between liquidity and interest rates, indicating that increased liquidity is associated with lower credit spreads. This reduction in credit spreads enhances credit availability across the region, facilitating greater access to financing for businesses and consumers alike.

However, Akinwande et al. (2020) also cautioned that the surge in liquidity could lead to deteriorating lending standards. As financial institutions become more willing to extend credit in favourable liquidity conditions, there is a tendency to prioritize loan volume over the creditworthiness of borrowers. This phenomenon can result in a misallocation of capital, where loans are extended to individuals or businesses that may not meet the necessary credit criteria. Consequently, this practice increases the risk of defaults, as borrowers may struggle to repay loans that they should not have qualified for in the first place. The authors highlighted that while liquidity

can stimulate economic activity, it is crucial for financial institutions to maintain rigorous lending standards to mitigate the risks associated with excessive credit growth.

Expanding on the implications of liquidity excess, Charfeddine (2019) and Shavshukov (2020) examined how liquidity gluts can trigger credit booms. They utilized dynamic stochastic general equilibrium (DSGE) models to analyse the relationship between liquidity conditions and credit growth in emerging economies. Their research underscored that an influx of liquidity can lead to a rapid expansion of credit, which may not be sustainable in the long run. This credit boom can culminate in a significant rise in non-performing loans, particularly in SSA, where economic fundamentals may not support the rapid increase in lending. The authors emphasized that such booms often give way to busts, where financial institutions face heightened risks due to the accumulation of bad debts. Their findings suggest that policymakers must be vigilant in monitoring liquidity conditions to prevent the onset of unsustainable credit growth that could destabilize financial systems.

In addition to these studies, the work of Duca and Muñoz (2022) provided further insights into how liquidity conditions influence credit markets. Using a panel data approach, the authors assessed the impact of liquidity measures on credit spreads in SSA countries. Their findings suggest that periods of excess liquidity are correlated with reduced credit spreads, as lenders become more willing to extend credit in favourable conditions. The econometric methodology employed allowed for the identification of structural breaks in liquidity conditions, demonstrating that shifts in liquidity can have lasting effects on credit market dynamics. This highlights the importance of understanding the temporal aspects of liquidity and its implications for credit availability.

Moreover, research by McCauley (2019) investigated the role of liquidity in cross-border lending, emphasizing how global liquidity conditions affect domestic credit markets. Utilizing a gravity model of trade applied to banking data, they found that increases in global liquidity led to greater cross-border lending to emerging markets, including those in SSA. This influx of foreign capital can further exacerbate the effects of local liquidity gluts, contributing to unsustainable credit growth and increased vulnerability to financial shocks. Their findings suggested that local financial

institutions must be aware of global liquidity trends, as these can significantly influence domestic lending practices and overall financial stability.

The interplay between liquidity and credit markets is further complicated by the role of regulatory frameworks. Studies such as those by Bianchi (2016) and Mendoza and Quadrini (2010) explore how regulatory changes can influence the relationship between liquidity and credit availability. By employing structural econometric models, these studies reveal that regulatory measures aimed at enhancing liquidity can also inadvertently lead to increased risk-taking behaviour among financial institutions. For instance, while regulations designed to ensure adequate liquidity may stabilize the banking sector, they can also create an environment where banks feel incentivized to engage in riskier lending practices, potentially undermining the very stability that the regulations seek to promote.

3.6.2 Transmission Mechanisms to Asset Prices

A key channel through which liquidity affects asset prices is the demand for assets, particularly in real estate and equity markets. Kasekende and Atingi-Ego (2019) highlighted that liquidity-driven credit expansion often leads to increased demand in real estate markets in Sub-Saharan Africa (SSA), resulting in rapid price appreciation. Their study utilized a panel data approach with fixed-effects regression models to control for unobserved heterogeneity among countries. The authors found that increased lending resulting from liquidity gluts significantly drove up property prices. However, they cautioned that this surge in demand might not be sustainable, leading to corrections when market fundamentals fail to support inflated prices. Building on this theme, the research by Akinwande et al. (2020) also indicated that liquidity plays a crucial role in enhancing credit availability, thereby stimulating demand for various asset classes. Utilizing a fixed-effects regression model to analyse panel data from multiple SSA countries, they demonstrated that lower credit spreads associated with higher liquidity levels could lead to increased borrowing and investment in both real estate and stock markets. This relationship emphasizes the importance of monitoring liquidity conditions to prevent asset price bubbles.

The transmission of liquidity gluts to asset prices occurs through several channels, significantly impacting financial markets, particularly in SSA. One of the primary channels is the demand for assets, which can rise dramatically due to increased lending. Kasekende and Atingi-Ego (2019)

conducted a thorough analysis of the effects of liquidity-driven credit expansion on real estate markets in SSA. Their study utilized a panel data approach, employing fixed-effects regression models to control for unobserved heterogeneity among countries and to isolate the effects of liquidity on asset prices. The findings indicated that increased liquidity often leads to heightened demand in real estate markets, resulting in rapid price appreciation. However, the authors cautioned that such appreciation may not always be sustainable, as it can lead to eventual corrections when the underlying economic fundamentals do not support the inflated prices.

Another significant transmission mechanism involves investor behaviour, particularly in markets characterized by opacity and limited information. Levitin (2020) and Emara (2021) explored how such conditions can lead to herd behaviour among investors, exacerbating price volatility during periods of liquidity excess. Their research employed a combination of econometric techniques, including time-series analysis and regression models, to demonstrate that investor sentiment and behaviour can significantly influence asset prices. This herd behaviour can create asset bubbles, where prices are driven up by collective investor actions rather than fundamental values. When these bubbles burst, the repercussions can be severe, leading to sharp declines in asset prices and destabilizing credit markets, as highlighted by Santos (2015). Their study utilized a behavioural finance framework to analyse the consequences of such bubbles, emphasizing the need for caution in liquidity-driven environments.

Akinwande et al. (2020) examined the impact of liquidity on credit spreads and interest rates in SSA. They employed a fixed-effects regression model to analyse panel data from various countries, revealing that increased liquidity is significantly associated with lower interest rates, thereby enhancing credit availability. However, they also warned that this surge in liquidity could lead to deteriorating lending standards, as financial institutions might prioritize volume over creditworthiness. This misallocation of capital can result in loans being extended to borrowers who may not meet necessary credit criteria, increasing the risk of defaults.

Additionally, the research by Duca and Muñoz (2022) provided insights into how liquidity conditions influence credit markets. Using a panel data approach, the authors assessed the impact of liquidity measures on credit spreads in SSA countries. Their findings suggest that periods of

excess liquidity correlate with reduced credit spreads, as lenders become more willing to extend credit in favourable conditions. The econometric methodology employed allowed for the identification of structural breaks in liquidity conditions, demonstrating that shifts in liquidity can have lasting effects on credit market dynamics. Moreover, Cetorelli and Goldberg (2012) investigated the role of liquidity in cross-border lending, emphasizing how global liquidity conditions affect domestic credit markets. Utilizing a gravity model of trade applied to banking data, they found that increases in global liquidity led to greater cross-border lending to emerging markets, including those in SSA. This influx of foreign capital can exacerbate the effects of local liquidity gluts, contributing to unsustainable credit growth and increased vulnerability to financial shocks.

The interplay between liquidity and credit markets is further complicated by the role of regulatory frameworks. Studies such as those by Bianchi (2016) and Klutse (2022) explore how regulatory changes can influence the relationship between liquidity and credit availability. By employing structural econometric models, these studies reveal that regulatory measures aimed at enhancing liquidity can also inadvertently lead to increased risk-taking behaviour among financial institutions. For instance, while regulations designed to ensure adequate liquidity may stabilize the banking sector, they can create an environment where banks feel incentivized to engage in riskier lending practices, potentially undermining the very stability that the regulations seek to promote. Investor behaviour, particularly in SSA markets characterized by limited information, significantly influences asset prices.

Parosa (2019) and Arnold (2022) explored how such conditions lead to herd behaviour among investors, exacerbating price volatility during periods of liquidity excess. Their research employed time-series analysis and regression models to demonstrate that investor sentiment can drive asset prices away from fundamental values, creating bubbles. When these bubbles burst, the repercussions can destabilize credit markets, as highlighted by Gjerstad and Samirana (2020), who utilized a behavioural finance framework to analyse the impact of speculative trading on market stability.

Recent studies have expanded on these dynamics. For example, the work of Akinboade and Kinfack (2020) utilized a VAR model to examine the feedback relationship between liquidity and

stock prices in SSA. Their findings indicated that liquidity shocks significantly influenced stock returns, with increased liquidity leading to higher asset prices. However, they also noted that such conditions could result in increased speculative trading, ultimately heightening market volatility. This dual effect underscores the complexities involved in understanding how liquidity impacts price stability. Hossain and Mollah (2021) assessed the implications of liquidity for asset price volatility in SSA stock markets. They employed a GARCH model to analyse the relationship between liquidity measures (such as trading volume and bid-ask spreads) and stock price volatility. Their findings indicated that while increased liquidity might initially reduce volatility, it could also lead to heightened speculation, resulting in increased volatility during market corrections.

3.6.3 Empirical Studies on Impact on Returns

A key channel through which liquidity affects asset prices is the demand for assets, particularly in real estate and equity markets. Kasekende and Atingi-Ego (2019) highlighted that liquidity-driven credit expansion often leads to increased demand in real estate markets in Sub-Saharan Africa (SSA), resulting in rapid price appreciation. Their study utilized a panel data approach with fixed-effects regression models to control for unobserved heterogeneity among countries. The authors found that increased lending resulting from liquidity gluts significantly drove up property prices. However, they cautioned that this surge in demand might not be sustainable, leading to corrections when market fundamentals fail to support inflated prices. Building on this theme, the research by Akinwande et al. (2020) also indicated that liquidity plays a crucial role in enhancing credit availability, thereby stimulating demand for various asset classes. Utilizing a fixed-effects regression model to analyse panel data from multiple SSA countries, they demonstrated that lower credit spreads associated with higher liquidity levels could lead to increased borrowing and investment in both real estate and stock markets. This relationship emphasizes the importance of monitoring liquidity conditions to prevent asset price bubbles.

The transmission of liquidity gluts to asset prices occurs through several channels, significantly impacting financial markets, particularly in SSA. One of the primary channels is the demand for assets, which can rise dramatically due to increased lending. Kasekende and Atingi-Ego (2019) conducted a thorough analysis of the effects of liquidity-driven credit expansion on real estate markets in SSA. Their study utilized a panel data approach, employing fixed-effects regression models to control for unobserved heterogeneity among countries and to isolate the effects of liquidity on asset prices. The findings indicated that increased liquidity often leads to heightened demand in real estate markets, resulting in rapid price appreciation. However, the authors

cautioned that such appreciation may not always be sustainable, as it can lead to eventual corrections when the underlying economic fundamentals do not support the inflated prices.

Another significant transmission mechanism involves investor behaviour, particularly in markets characterized by opacity and limited information. Levitin (2020) and Emara (2021) explored how such conditions can lead to herd behaviour among investors, exacerbating price volatility during periods of liquidity excess. Their research employed a combination of econometric techniques, including time-series analysis and regression models, to demonstrate that investor sentiment and behaviour can significantly influence asset prices. This herd behaviour can create asset bubbles, where prices are driven up by collective investor actions rather than fundamental values. When these bubbles burst, the repercussions can be severe, leading to sharp declines in asset prices and destabilizing credit markets, as highlighted by Santos (2015). Their study utilized a behavioural finance framework to analyse the consequences of such bubbles, emphasizing the need for caution in liquidity-driven environments.

Recent studies have further expanded on these themes. For instance, the work of Akinwande et al. (2020) examined the impact of liquidity on credit spreads and interest rates in SSA. They employed a fixed-effects regression model to analyse panel data from various countries, revealing that increased liquidity is significantly associated with lower interest rates, thereby enhancing credit availability. However, they also warned that this surge in liquidity could lead to deteriorating lending standards, as financial institutions might prioritize volume over creditworthiness. This misallocation of capital can result in loans being extended to borrowers who may not meet necessary credit criteria, increasing the risk of defaults.

Additionally, the research by Duca and Muñoz (2022) provided insights into how liquidity conditions influence credit markets. Using a panel data approach, the authors assessed the impact of liquidity measures on credit spreads in SSA countries. Their findings suggest that periods of excess liquidity correlate with reduced credit spreads, as lenders become more willing to extend credit in favourable conditions. The econometric methodology employed allowed for the identification of structural breaks in liquidity conditions, demonstrating that shifts in liquidity can have lasting effects on credit market dynamics. Moreover, Cetorelli and Goldberg (2012) investigated the role of liquidity in cross-border lending, emphasizing how global liquidity

conditions affect domestic credit markets. Utilizing a gravity model of trade applied to banking data, they found that increases in global liquidity led to greater cross-border lending to emerging markets, including those in SSA. This influx of foreign capital can exacerbate the effects of local liquidity gluts, contributing to unsustainable credit growth and increased vulnerability to financial shocks.

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Akinboade and Kinfack (2020) utilized a VAR model to examine the feedback relationship between liquidity and stock prices in SSA. Their findings indicated that liquidity shocks significantly influenced stock returns, with increased liquidity leading to higher asset prices. However, they also noted that such conditions could result in increased speculative trading, ultimately heightening market volatility. This dual effect underscores the complexities involved in understanding how liquidity impacts price stability. Furthermore, the work of Ghosh (2021) examined the implications of macroprudential policies on liquidity and asset prices in emerging markets. Their study utilized a VAR model to analyse the interaction between liquidity measures and asset prices in SSA. The findings indicated that macroprudential policies aimed at curbing excessive lending could stabilize asset prices by mitigating liquidity gluts.

3.6.3 Intuitive Explanations of How Liquidity Gluts Affect Credit Availability and Asset Prices

While liquidity gluts are often intuitively understood as periods of surplus monetary supply within the financial system, their translation into increased lending is far from automatic. In theory, excess liquidity should lower interest rates, ease credit conditions, and stimulate borrowing and investment. However, empirical evidence from Sub-Saharan Africa reveals a more complex reality: abundant liquidity does not necessarily lead to expanded access to finance, particularly for underserved sectors and vulnerable populations.

Magnus Saxegaard's (2006) analysis of excess liquidity in Sub-Saharan Africa demonstrates that commercial banks frequently hold liquidity levels well above precautionary thresholds, yet this surplus fails to translate into meaningful credit expansion. One key reason is the prevalence of creditworthiness barriers. Many potential borrowers—especially small businesses and low-income households—lack formal financial histories, collateral, or transparent financial records. This opacity creates asymmetric information between lenders and borrowers, heightening perceived risk and discouraging lending even when liquidity is ample.

Institutional risk aversion further compounds the issue. Banks operating in fragile or volatile economic environments often adopt conservative lending practices, prioritizing asset preservation over credit growth. As Shongwe and Alagidede (2024) show, in countries like Equatorial Guinea and Nigeria, excess liquidity coexists with low levels of productive investment due to weak credit infrastructure and limited financial inclusion. Even when central banks pursue expansionary policies, the transmission mechanism is weakened by structural constraints in the banking sector, including underdeveloped credit registries and inefficient legal enforcement of contracts. Moreover, the informal nature of many African economies means that a significant portion of economic activity occurs outside the reach of formal financial institutions. This disconnect limits the effectiveness of liquidity injections, as traditional banking channels fail to engage with the majority of potential borrowers. The result is a paradox: liquidity gluts coexist with credit droughts, particularly in rural areas and among microenterprises.

3.6.3.1 Impact on Credit Availability

Increased Lending Activity: When there is a liquidity glut, financial institutions have more funds available to lend. This abundance of liquidity leads to increased lending activity as banks and other lenders are more willing to extend credit to businesses and individuals. For example, a bank with excess liquidity might lower its lending standards or offer more attractive loan terms to encourage borrowing. This increased availability of credit can stimulate economic activity by enabling businesses to invest in new projects and individuals to make significant purchases, such as homes or cars.

Lower Borrowing Costs: A liquidity glut often results in lower interest rates because the supply of funds exceeds the demand for credit. With more money available for lending, financial institutions compete to attract borrowers by reducing interest rates. Lower borrowing costs make it cheaper for businesses and individuals to take out loans, further boosting credit availability. For instance, a company might take advantage of lower interest rates to finance the expansion of its operations, while consumers might be more inclined to finance large purchases through loans.

Improved Credit Accessibility: Excess liquidity can lead to improved credit accessibility, particularly for borrowers who might otherwise struggle to obtain financing. Financial institutions, eager to deploy their excess funds, may become more willing to lend to higher-risk borrowers or those with limited credit histories. This increased accessibility can help underserved populations, such as small and medium-sized enterprises (SMEs) and low-income individuals, gain access to the credit they need to grow their businesses or improve their living standards.

3.6.3.2 Impact on Asset Prices

Increased Demand for Assets: With more credit available at lower costs, both businesses and individuals have greater financial resources to invest in various assets. This increased demand can drive up the prices of assets such as real estate, stocks and bonds. For example, in the real estate market, more people might be able to afford mortgages, leading to higher demand for homes and, consequently, rising property prices. Similarly, in the stock market, investors with access to cheap credit might increase their investments in equities, pushing up stock prices.

Formation of Asset Bubbles: While increased demand for assets can boost prices, it can also lead to the formation of asset bubbles if the demand is driven by speculative behaviour rather than fundamental value. In a liquidity glut, investors might become overly optimistic and bid up asset prices to unsustainable levels. For instance, if investors believe that real estate prices will continue to rise indefinitely, they might purchase properties at inflated prices, expecting to sell them at even higher prices in the future. When the bubble bursts, asset prices can plummet, leading to significant financial losses and potential market instability.

Misallocation of Funds: Excess liquidity can result in the misallocation of funds, where investments are directed towards less productive or riskier assets. Financial institutions, eager to deploy their excess funds, might finance projects with lower expected returns or higher risks. This misallocation can distort asset prices and lead to inefficiencies in the market. For example, if banks lend excessively to speculative real estate developments, it can result in an oversupply of properties and inflated prices, which may eventually correct sharply, causing financial instability.

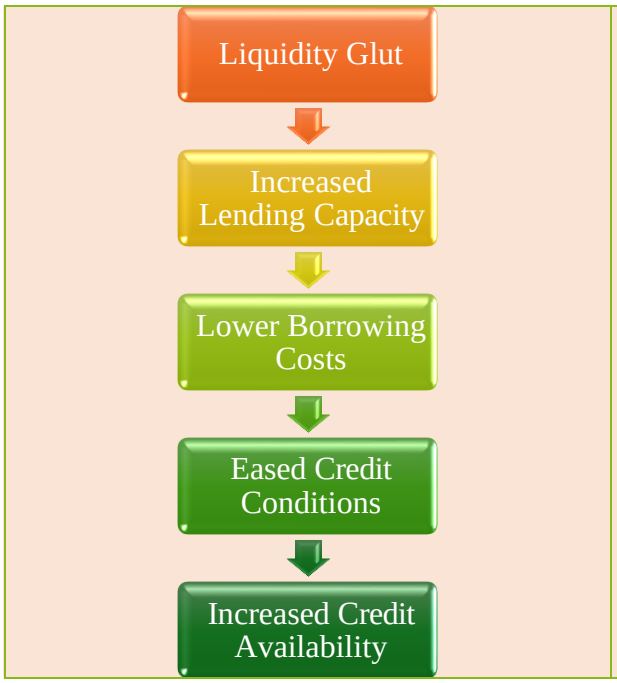
3.6.3.3 Adverse Effects of Excessive Liquidity

The effects of liquidity gluts extend beyond credit availability and into asset markets, as depicted in Flowchart 2. With increased credit availability, demand for assets such as real estate, equities and bonds rises. This surge in demand often leads to speculative investments, where investors purchase assets with the expectation of selling them at higher prices. In Ghana, for instance, the real estate market has seen significant price increases due to speculative investments fuelled by easy access to credit. This speculative behaviour drives higher asset prices, which, while initially

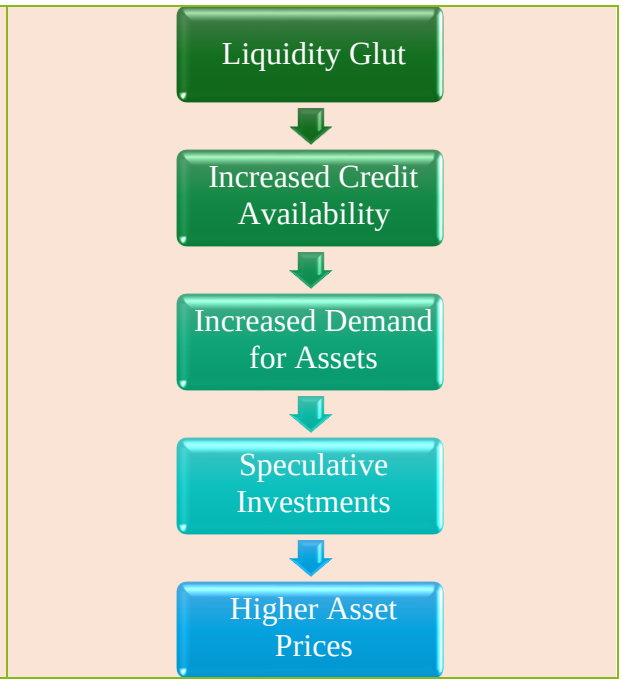
beneficial, can lead to the formation of asset bubbles.

The positive impact of increased credit availability on economic growth is further illustrated in Flowchart 3. As businesses gain access to affordable credit, they can invest in new equipment, expand operations and hire more employees. This leads to job creation and income growth, which in turn fuels economic growth. For example, in Kenya, microfinance loans have enabled small businesses to scale up their operations, creating jobs and boosting local economies. This virtuous cycle highlights the potential of liquidity gluts to drive development when managed effectively. However, as shown in Flowchart 4, liquidity gluts also carry significant risks. The availability of cheap credit can lead to excessive borrowing, where funds are allocated to less productive or speculative ventures. This misallocation of resources can result in asset price bubbles, which, if they burst, can cause widespread financial instability.

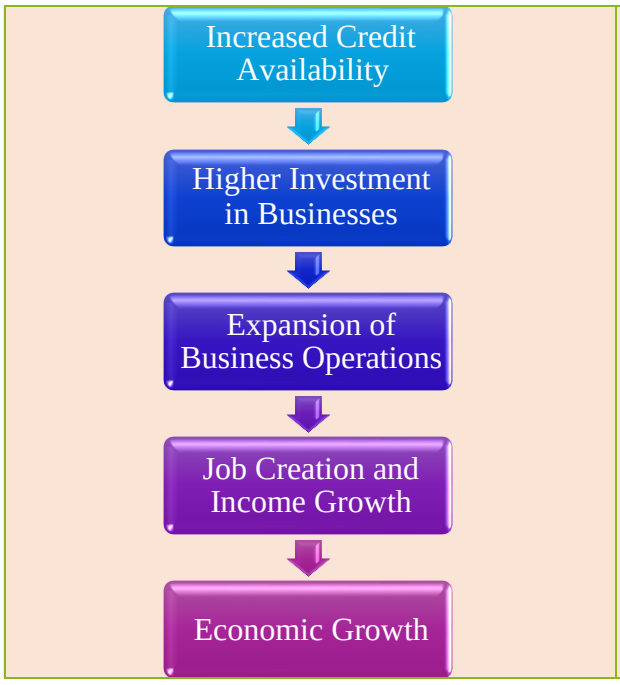
Flowchart 1



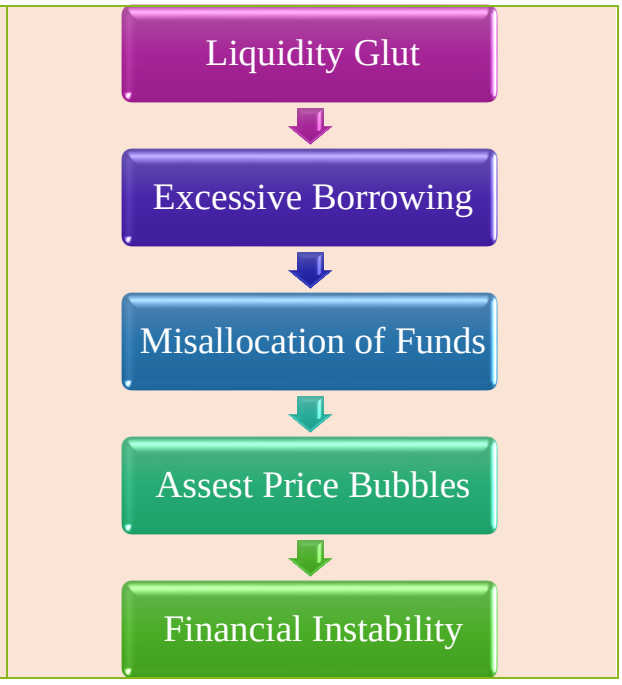
Flowchart 2



Flowchart 3



Flowchart 4



3.6.3.4 Positive Effects of Well-Managed Liquidity

In West Africa, the impact of liquidity gluts is particularly pronounced in countries like Nigeria and Ghana. Nigeria, heavily reliant on oil exports, often experiences liquidity gluts that lead to increased inflationary pressures. The influx of foreign currency from oil revenues results in excess liquidity, driving up prices and causing economic instability. The banking sector may also face a surge in non-performing loans as credit is extended more liberally during periods of excess liquidity. Similarly, Ghana faces challenges with liquidity gluts, especially in the context of its gold and cocoa exports. Excess liquidity can lead to asset bubbles, particularly in the real estate market, as investors seek to capitalize on the availability of cheap credit. This can result in significant price corrections when liquidity conditions normalize.

In contrast, Ethiopia's experience illustrates the potential benefits of a strategically managed liquidity surplus. The positive and statistically significant long-run coefficient for the liquidity glut indicator suggests that when excess liquidity is channelled into productive sectors—such as infrastructure, manufacturing, and energy—it can stimulate investment, enhance consumption, and support long-term growth (Del Negro et al., 2017; Kassouri & Kacou, 2022). Empirical evidence from Hu et al. (2018) and Malik (2016) supports this view, showing that targeted liquidity injections into infrastructure projects can yield multiplier effects, including job creation, improved productivity, and enhanced economic resilience.

In East Africa, the effects of liquidity gluts are evident in countries like Kenya and Ethiopia. In Kenya, liquidity gluts have a pronounced impact on the real estate and stock markets. The availability of cheap credit drives up asset prices, leading to speculative bubbles. Additionally, the agricultural sector, a significant part of Kenya's economy, can be affected by fluctuations in liquidity, impacting investment in agricultural infrastructure and production. Ethiopia's experience with liquidity gluts is somewhat different due to its state-controlled financial sector. Excess liquidity is often directed towards large infrastructure projects, which can stimulate economic growth. However, the risk of misallocation of funds remains, as state-directed investments may not always align with market needs.

Southern Africa presents a different scenario, with countries like South Africa and Zambia experiencing unique challenges. South Africa's well-developed financial markets mean that liquidity gluts can significantly impact both the equity and bond markets. Excess liquidity can lead

to increased volatility as investors seek higher returns in a low-interest-rate environment. The banking sector may also face challenges with credit quality as lending standards are relaxed. In Zambia, liquidity gluts are often linked to fluctuations in copper prices. Excess liquidity can lead to increased borrowing and investment in the mining sector, but it also raises the risk of asset bubbles and financial instability when commodity prices fall.

3.6.3.5 Country-Specific Illustrations

Nigeria employs a combination of monetary and fiscal policies to manage liquidity gluts. The Central Bank of Nigeria (CBN) often uses tightening measures, such as raising interest rates and increasing reserve requirements, to control inflation and manage excess liquidity. Additionally, the government may implement fiscal consolidation measures to reduce public spending, particularly during periods of high oil revenues. Ghana's policy responses include both monetary and regulatory measures. The Bank of Ghana uses interest rate adjustments and open market operations to manage liquidity. The introduction of the Ghana Interbank Payment and Settlement Systems (GhIPSS) has also improved liquidity management in the banking sector.

Kenya's approach involves a mix of monetary policy and financial inclusion initiatives. The Central Bank of Kenya (CBK) employs tools such as the Central Bank Rate (CBR) and open market operations to manage liquidity. The CBK also monitors credit growth closely to prevent excessive lending. Initiatives to promote financial inclusion, such as mobile banking and digital financial services, help manage liquidity by broadening access to financial services and improving credit allocation. Ethiopia's state-controlled financial sector directs excess liquidity towards large infrastructure projects to stimulate economic growth. The National Bank of Ethiopia (NBE) uses tools such as reserve requirements and interest rate adjustments to manage liquidity levels. This approach aims to channel liquidity into productive investments, although the risk of misallocation remains.

South Africa's policy responses include a range of monetary and regulatory measures. The South African Reserve Bank (SARB) employs interest rate adjustments and open market operations to manage liquidity and control inflation. Zambia's approach involves monetary policy and commodity-linked policies. The Bank of Zambia (BoZ) uses interest rate adjustments and reserve requirements to manage liquidity. Given the reliance on copper exports, the government may implement policies to stabilize the mining sector and manage the impact of commodity price fluctuations on liquidity. The impact of liquidity gluts varies across different regions in Sub-

Saharan Africa, influenced by factors such as economic structure, reliance on commodity exports and the development of financial markets. Country-specific policy responses are tailored to address these unique challenges, employing a combination of monetary, fiscal and regulatory measures to manage liquidity and ensure financial stability.

These contrasting outcomes highlight the importance of institutional quality and policy coordination in determining the impact of liquidity gluts. Countries like Kenya and Mauritius, where liquidity surpluses have led to inflationary pressures and asset bubbles, underscore the risks of weak regulatory oversight and poor fiscal-monetary alignment (Nguyen & Le, 2023; Acharya & Rajan, 2022). Conversely, Ethiopia's success in leveraging liquidity for growth reflects the role of strong public investment frameworks and effective macroeconomic planning (Kassouri & Kacou, 2022; Malik, 2016). These findings align with broader literature on liquidity management in emerging markets, which emphasizes the need for context-specific strategies to harness liquidity for sustainable development (Del Negro et al., 2017; Hu et al., 2018).

3.7 Methodology

The use of Vector Autoregression (VAR) and Structural VAR (SVAR) models in this study is motivated by their ability to capture dynamic interdependencies among macroeconomic variables without requiring strong a priori theoretical restrictions. VAR models are particularly suitable for analyzing the transmission of liquidity shocks across credit markets and asset prices, as they allow for the endogenous interaction of variables such as GDP growth, interest rates, and liquidity indicators. SVAR extends this framework by incorporating structural identification through economic theory-based restrictions, enabling a more nuanced understanding of causal relationships and impulse responses.

In the context of Sub-Saharan Africa, where financial systems are often characterized by structural heterogeneity and policy shocks may have delayed or asymmetric effects, SVAR provides a robust framework for disentangling contemporaneous interactions and assessing the impact of liquidity gluts on asset prices and returns. This approach aligns with prior empirical work (e.g., McCauley, 2019; Eichengreen et al., 2021), which demonstrates the efficacy of SVAR in capturing the transmission mechanisms of financial shocks in emerging markets

3.7.1 Model Framework Overview

The proposed econometric model will consist of three main components:

- **Liquidity Dynamics**: Modelling the liquidity gluts.
- **Credit Market Response**: Analysing how liquidity affects credit markets.
- **Asset Price Transmission**: Examining the impact on asset prices and returns.

Due to data constraints related to stock returns data, the analysis focuses on a selection of countries that includes Angola, Botswana, Namibia, South Africa, Ghana, Nigeria, Kenya, Mauritius, and Tanzania. The data spans an annual basis from 2012 to 2023, providing a comprehensive overview of trends and developments within these nations over the specified period. This selection allows for a focused examination of regional dynamics and insights into the socio-economic factors affecting these countries.

3.7.1.1 Model Specification

A Vector Autoregression (VAR) model serves as an effective framework for capturing the dynamic relationships among multiple time series variables. The specification of the VAR model can be articulated as follows:

$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \cdots + A_p Y_{t-p} + \in_t$

Where:

- $Y_t$is a vector of endogenous variables (e.g., liquidity, credit volume, asset prices).
- $A_i$are matrices of coefficients.
- p is the number of lags.
- $\in_t$is a vector of error terms.

3.7.1.2 Incorporating Liquidity Gluts

To analyse liquidity gluts, a liquidity variable L_t is introduced into the VAR model. The modified model is expressed as follows: $Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \ldots + A_p Y_{t-p} + BL_t + \in_t$

Where B is a matrix of coefficients that captures the impact of liquidity on the endogenous variables.

3.7.1.3 Transmission Mechanism to Asset Prices

To explore the transmission mechanism from liquidity to asset prices, we can use a Structural VAR (SVAR) approach. This allows us to impose restrictions based on economic theory. The SVAR model can be expressed as:

$AY_t = BL_t + C\in_t$

Where:

A is a matrix that captures the contemporaneous relationships among the variables.

C is a matrix of structural shocks.

3.7.1.4 Impulse Response Functions (IRFs)

After estimating the SVAR, the response of asset prices and returns to shocks in liquidity can be analysed using impulse response functions (IRFs):

$IRF(h) = E[Y_{t+h}| \in_t$

3.7.1.5 Estimating the Impact on Returns

To estimate the impact of liquidity on asset returns, we can use a Panel Data Regression Model. This model can be specified as follows:

$R_{it} = \alpha + \beta L_{it} + \gamma X_{it} + \delta_t + \in_{it}$

Where:

(R_{it} **)** represents the stock market return for country (i) at time (t).

(L_{it}) represents the liquidity variables (Broad Money to GDP Growth and Bank Liquid Reserves to Bank Assets Ratio).

(X_{it}) represents other control variables (GDP Growth, Current Account to GDP, Domestic Credit to Private Sector (% of GDP), Foreign Direct Investment, GDP, General Government Final Consumption Expenditure (% of GDP), Gross Savings (% of GDP), Inflation, Interest Rate Spread, Lending Interest Rate, Official Exchange Rate, Subsidies, Total Reserves and Trade (% of GDP)).

δ_t represents time effects

3.7.1.6 Robustness Checks

To ensure the integrity and reliability of our econometric results, a comprehensive set of robustness checks was conducted. These checks are essential for validating the consistency of the findings across different model specifications and addressing potential econometric issues that could compromise inference. By employing advanced techniques such as Heteroskedasticity and Autocorrelation Consistent (HAC) standard errors and conducting sensitivity analyses, we aimed to reinforce the credibility of our conclusions and mitigate the influence of model-specific assumption.

3.7.1.7 Heteroskedasticity and Autocorrelation Consistent (HAC) Standard Errors

To address the issues of heteroskedasticity and autocorrelation in the residuals of regression models, Heteroskedasticity and Autocorrelation Consistent (HAC) Standard Errors were employed. Specifically, the Newey-West estimator served as a robust method for adjusting standard errors in the presence of these econometric challenges. This approach facilitated valid statistical inferences, thereby enhancing the reliability of hypothesis testing despite violations of the classical linear regression model's assumptions.

The Newey-West estimator effectively estimated the covariance matrix of the regression coefficients, accounting for the potential non-constant variance of the residuals and their autocorrelation. Through implementing a weighted average of the autocovariances of the residuals, the estimator adjusted for lags, ensuring that the resulting standard errors remained consistent in the presence of heteroskedasticity and autocorrelation.

The application of HAC standard errors, particularly through the Newey-West method, enhanced the robustness of econometric models. This adjustment was especially relevant in the context of time series data, where observations are inherently correlated over time, rendering the assumption of independence untenable. The use of HAC standard errors not only bolstered the validity of the statistical inferences drawn from the models but also contributed to a more nuanced understanding of the relationships under investigation.

$\hat{\beta_{HAC}}$ $(X'X)^{-1}X'Y$

Where X is the matrix of independent variables and Y is the dependent variable.

3.7.1.8 Sensitivity Analysis

Sensitivity analysis was conducted to assess the stability of the coefficients within the econometric models. This process involved altering model specifications, which included the inclusion or exclusion of certain variables and adjustments to the lag structure. Through systematically varying these elements, the analysis aimed to determine how changes impacted the estimated coefficients and the overall model performance. The examination of coefficient stability is critical, as it provides insights into the robustness of the model's findings. Variations in model specifications can reveal the sensitivity of the results to specific assumptions and choices made during the modelling process. For instance, including additional explanatory variables may lead to different coefficient estimates, while excluding certain variables could either enhance or diminish the model's explanatory power. Moreover, adjusting the lag structure is particularly relevant in time

series analysis, where the timing of variable effects can significantly influence the results.

3.7.1.9 Clarification of Econometric Choices

Econometric models such as Vector Autoregression (VAR) and panel regression are essential for analysing complex economic relationships. The VAR model effectively captures the dynamic interrelationships among multiple endogenous variables without imposing a priori restrictions on causality, making it particularly useful for investigating how liquidity gluts influence asset prices and returns. However, the VAR model has limitations, including sensitivity to lag length selection, which can affect result stability and interpretability. Increased complexity from additional variables and lags may lead to overparameterization and multicollinearity issues. The assumption of linear relationships may not adequately reflect the nonlinear dynamics often present in economies, especially in Sub-Saharan Africa (SSA). This necessitates the use of complementary models for a more comprehensive analysis.

Panel regression, on the other hand, is adept at addressing potential endogeneity issues and provides robust estimates by analysing data across multiple dimensions, such as time and individual entities. This approach is particularly suitable for examining the effects of liquidity gluts on credit markets, as it accommodates unobserved individual effects and allows for the control of time-invariant characteristics. Despite its strengths, panel regression also faces challenges, including the need for appropriate model specification and the potential for omitted variable bias. The choice of fixed or random effects can significantly influence the results, and careful consideration is required to ensure valid estimates. Thus, while both VAR and panel regression models provide valuable insights into economic phenomena, careful consideration of their limitations is crucial for effective analysis.

3.7.1.10 Addressing Endogeneity Concerns

One of the primary methods used to control for endogeneity in econometric analysis is the application of fixed effects in panel regression. This approach effectively accounts for unobserved heterogeneity among entities by isolating the effects of explanatory variables while controlling for time-invariant characteristics. By focusing on within-entity variations, the fixed effects model mitigates bias from omitted variables, ensuring that the analysis captures the true relationships between the variables of interest. In addition to fixed effects, the study employs panel regression techniques that allow for robust estimates even in the presence of heteroskedasticity and autocorrelation. This method is particularly useful for analysing the effects of liquidity gluts on

credit markets, as it accommodates unobserved individual effects and provides a comprehensive view of the data across multiple dimensions, such as time and entities. To validate the results, robustness checks are conducted using Heteroskedasticity and Autocorrelation Consistent (HAC) standard errors, specifically employing the Newey-West estimator. This adjustment addresses potential heteroskedasticity and autocorrelation in the residuals, which can lead to biased standard error estimates. A sensitivity analysis is performed, involving alterations to model specifications to assess the stability of the estimated coefficients under various conditions. Such robustness checks are vital in empirical research, as they help ascertain the reliability of the results. Together, these methodologies create a robust framework for understanding complex economic dynamics and addressing the challenges posed by endogeneity.

3.8: Discussion of Results

3.8.1 Descriptive Statistics

Table 3.1 reveals a mean liquidity level of 20.33%, indicating that banks in Sub-Saharan Africa (SSA) maintain relatively high liquidity, essential for meeting withdrawal demands and managing financial pressures. However, the substantial standard deviation of 16.58% highlights significant disparities among banks. A skewness value of 1.28 and kurtosis of 4.24 suggest a right-skewed distribution, with some banks holding exceptionally high liquid reserves, likely due to cautious approaches to market volatility.

The average growth of broad money relative to GDP stands at 22.66%, reflecting significant monetary expansion, though a median value of 0.80% indicates uneven distribution. The high standard deviation of 37.56% and skewness of 2.08 reveal that extreme values heavily influence the distribution, reflecting episodes of aggressive monetary expansion or economic shocks. An average current account deficit of -2.96% suggests that many SSA countries are net borrowers, relying on foreign capital for investments and consumption. The distribution is relatively symmetric, with a skewness of 0.54 and kurtosis of 2.96, indicating common but not extreme deficits. Credit availability to the private sector averages 44.45% of GDP, indicating moderate lending activity. However, the high standard deviation of 36.90% and skewness of 0.97 reveal significant variability, underscoring the need for targeted financial policies to enhance credit access.

Foreign direct investment (FDI) shows a negative mean value of -$1.349 billion, indicating net outflows and raising concerns about SSA's attractiveness as an investment destination. The high

standard deviation of $5.970 billion and skewness of -3.82 suggest substantial capital flight in some countries, highlighting the need for improved governance and economic policies. The mean GDP growth rate of 2.92% reflects modest economic expansion, but the negative skewness of -1.41 and high kurtosis of 6.91 indicate significant instances of negative growth, often due to external shocks. Government consumption expenditure, averaging 15.61% of GDP, suggests moderate fiscal activity, with a symmetric distribution indicating consistent expenditure policies. The average gross savings rate of 20.25% indicates a reasonable level of domestic savings, essential for supporting investment. The symmetric distribution around the mean implies similar savings behaviours across SSA. Inflation, averaging 7.72%, poses challenges for economic stability, with high skewness and kurtosis indicating instances of hyperinflation.

The interest rate spread, averaging 6.34%, suggests a healthy banking sector margin but may inhibit borrowing and investment in some countries. The official exchange rate, with a mean value of 310.50, reflects challenges in currency stability, as indicated by significant fluctuations. Stock market performance shows an average return of 6.76%, suggesting a positive investment climate, though high variability and skewness indicate periods of significant gains and losses. Government subsidies average 21.98, reflecting state support across various sectors, with a stable distribution. Total reserves average 22.76, indicating a financial buffer against external shocks, with a symmetric distribution suggesting stability. The trade-to-GDP ratio averages 64.94%, highlighting significant trade activity relative to the economy, which is essential for growth and global integration.

Table 3.1: Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Jarque-Bera
Bank Liquid Reserves to Bank Assets Ratio	20.33	17.07	72.47	2.92	16.58	1.28	33.16
Broad Money to GDP Growth	22.66	0.80	160.06	(8.41)	37.56	2.08	127.04
Current Account to GDP	(2.96)	(3.72)	12.79	(16.50)	6.13	0.54	4.80
Domestic Credit to Private Sector of GDP	44.45	31.20	128.84	7.77	36.90	0.97	16.12
Foreign Direct Investment Net BOP Current ('Millions')	(1,349.41)	(633.78)	12,733.70	(41,302.57)	5,970.49	(3.82)	2.82
GDP	2.92	3.83	11.87	(14.60)	3.95	(1.41)	96.10
General Government Final Consumption Expenditure to GDP	15.61	12.94	36.14	4.40	8.06	0.69	9.64
Gross Savings to GDP	20.25	18.61	39.68	2.26	9.34	0.25	3.95
Inflation	7.72	6.08	30.70	0.41	5.93	2.03	139.23
Interest Rate Spread (Lending Rate- Deposit Rate)	6.34	6.01	13.80	1.69	2.85	0.99	17.63
Lending Interest Rate	13.14	12.33	24.75	5.13	5.54	0.41	6.47
Nominal GDP Growth	0.11	0.10	0.65	(0.12)	0.10	2.06	465.82
Official Exchange Rate	310.50	35.06	2,383.72	1.82	644.98	2.41	171.26
Stock Market Return Year on Year	6.76	5.41	74.40	(22.78)	19.09	1.19	39.51
Subsidies	21.98	22.47	23.61	19.49	1.21	(0.35)	9.07
Total Reserves	22.76	22.65	24.53	20.89	0.83	0.43	3.03
Trade to GDP	64.94	59.50	125.78	16.35	28.45	0.26	5.35

Source: Author's Own Calculations, 2024

3.8.1.1 The Hidden Currents of Finance: Liquidity Gluts and Their Influence on SSA's Credit and Asset Landscapes

According to Figure 3.1 in Angola, the bank liquid reserves to bank assets ratio increased significantly from 55.63% in 2020 to 72.47% in 2021, before slightly decreasing to 64.05% in 2022. This period saw fluctuating GDP growth rates, with a sharp decline in 2020 followed by moderate growth in 2021 and 2022. The lending interest rates remained high, around 19-20%, indicating tight credit conditions. The stock market returns were highly volatile, with a significant negative return in 2020, a strong positive return in 2021 and a slight negative return in 2022. This suggests that liquidity gluts in Angola may have contributed to market volatility and inconsistent asset returns.

Botswana experienced a decrease in the bank liquid reserves to bank assets ratio from 16.55% in 2020 to 6.62% in 2022. During this period, GDP growth rebounded strongly in 2021 after a sharp decline in 2020, but growth slowed again in 2022. Lending interest rates remained relatively stable, around 5-6%. The stock market returns were consistently negative, indicating that despite the reduction in liquidity, the credit market conditions did not significantly improve and asset prices continued to decline.

Namibia's bank liquid reserves to bank assets ratio remained low, around 5-6%, throughout the period. GDP growth showed a strong recovery in 2021 and 2022 after a significant decline in 2020. Lending interest rates increased in 2022, reflecting tighter credit conditions. The stock market returns were highly volatile, with a significant negative return in 2020, a strong positive return in 2021 and a moderate positive return in 2022. This suggests that liquidity gluts in Namibia may have contributed to market volatility and inconsistent asset returns.

South Africa's bank liquid reserves to bank assets ratio remained low, around 3-4%, throughout the period. GDP growth showed a strong recovery in 2021 after a significant decline in 2020, but growth slowed again in 2022. Lending interest rates increased in 2022, reflecting tighter credit conditions. The stock market returns were highly volatile, with a slight negative return in 2020, a moderate negative return in 2021 and a strong positive return in 2022. This suggests that liquidity gluts in South Africa may have contributed to market volatility and inconsistent asset returns.

Ghana's bank liquid reserves to bank assets ratio increased from 33.40% in 2020 to 48.09% in 2022. GDP growth showed a strong recovery in 2021 and 2022 after a slight decline in 2020. Lending interest rates remained high, around 16-23%, indicating tight credit conditions. The stock market returns were highly volatile, with a significant negative return in 2020, a strong positive return in 2021 and a moderate positive return in 2022. This suggests that liquidity gluts in Ghana may have contributed to market volatility and inconsistent asset returns.

Nigeria's bank liquid reserves to bank assets ratio remained high, around 63-69%, throughout the period. GDP growth showed a strong recovery in 2021 and 2022 after a slight decline in 2020. Lending interest rates remained relatively stable, around 11-13%. The stock market returns were highly volatile, with a significant negative return in 2020, a strong positive return in 2021 and a moderate positive return in 2022. This suggests that liquidity gluts in Nigeria may have contributed to market volatility and inconsistent asset returns.

Kenya's bank liquid reserves to bank assets ratio remained low, around 6-7%, throughout the period. GDP growth showed a strong recovery in 2021 after a slight decline in 2020, but growth slowed again in 2022. Lending interest rates remained relatively stable, around 11-12%. The stock market returns were highly volatile, with a significant negative return in 2020, a strong positive return in 2021 and a moderate positive return in 2022. This suggests that liquidity gluts in Kenya may have contributed to market volatility and inconsistent asset returns.

Mauritius's bank liquid reserves to bank assets ratio remained relatively stable, around 14-18%, throughout the period. GDP growth showed a strong recovery in 2021 and 2022 after a significant decline in 2020. Lending interest rates remained relatively stable, around 6-7%. The stock market returns were highly volatile, with a significant negative return in 2020, a moderate positive return in 2021 and a strong positive return in 2022. This suggests that liquidity gluts in Mauritius may have contributed to market volatility and inconsistent asset returns.

Tanzania's bank liquid reserves to bank assets ratio remained relatively stable, around 13-20%, throughout the period. GDP growth showed a strong recovery in 2021 and 2022 after a slight decline in 2020. Lending interest rates decreased in 2022, reflecting looser credit conditions. The

stock market returns were highly volatile, with a significant negative return in 2020, a slight positive return in 2021 and a moderate negative return in 2022. This suggests that liquidity gluts in Tanzania may have contributed to market volatility and inconsistent asset returns. The impact of liquidity gluts on credit markets in SSA and their transmission mechanism to asset prices and returns is complex and varies across countries. High bank liquid reserves to bank assets ratios often coincide with volatile stock market returns and inconsistent GDP growth, indicating that liquidity gluts can contribute to market instability. However, the specific effects depend on a range of factors, including economic policies, financial systems and external economic conditions.

Note: For graphing purposes, only data from 2022 will be presented

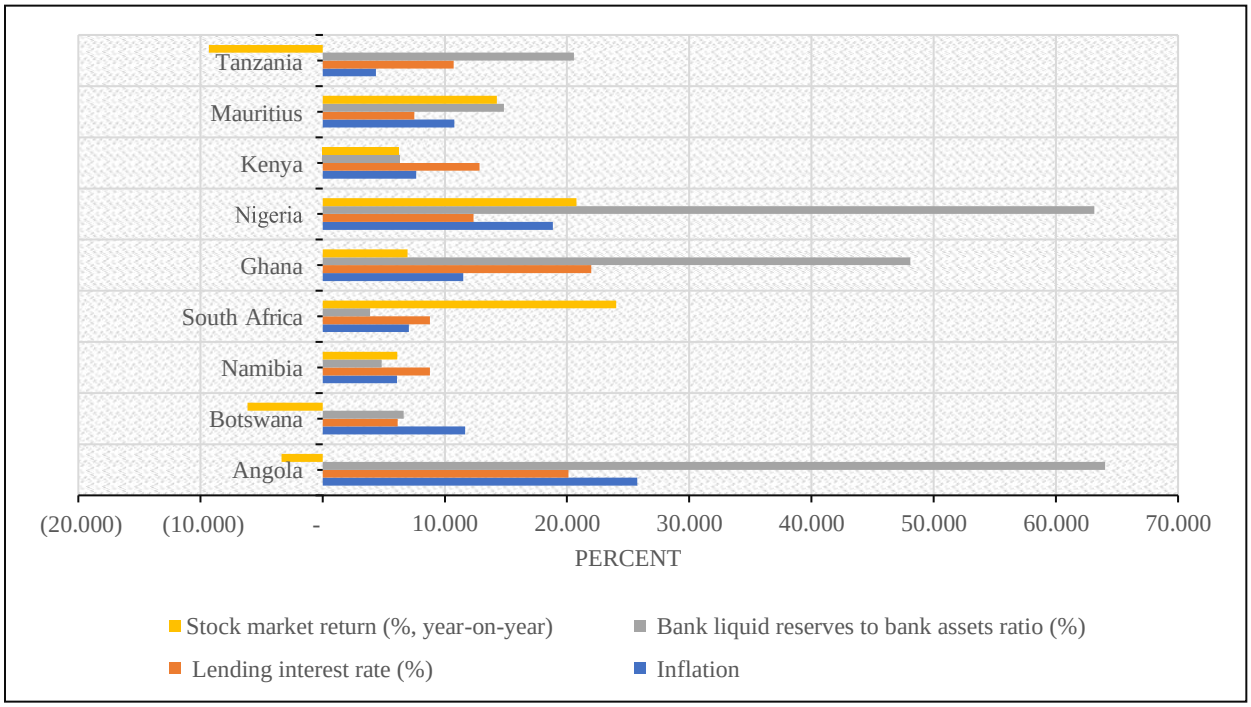


Figure 3.1: Stock Returns, Liquid Reserves, Inflation and Interest Rates for Selected SSA Countries for 2022
Source: World Bank Database, 2025

3.8.2 Stationarity

According to Table 3.2 and 3.3, the results of the stationarity tests, specifically the Augmented Dickey-Fuller (ADF) and Phillips-Perron tests, provide essential insights into the behaviour of various economic variables. The ADF test results indicate that a significant number of variables, including the Bank Liquid Reserves to Bank Assets Ratio, Broad Money to GDP Growth and Current Account to GDP, exhibit non-stationarity in their level forms. This conclusion is drawn from the observation that their test statistics exceed the critical values at the 1%, 5% and 10% significance levels, suggesting the presence of a unit root. However, when first differencing is

applied to these variables, the results show a marked improvement in stationarity, with test statistics falling well below the critical values. This leads to the conclusion that these variables are integrated of order one, denoted as I (1), indicating that they require differencing to achieve stationarity. This understanding is crucial for further analysis and modelling, as it highlights the need for appropriate transformations to ensure the reliability of subsequent econometric assessments.

In contrast, the Domestic Credit to Private Sector of GDP and the Lending Interest Rate exhibit distinct behaviours in the context of stationarity. The Domestic Credit to Private Sector of GDP shows a test statistic of -6.2719 at the first difference, providing strong evidence against the null hypothesis of a unit root and confirming its stationarity. Similarly, the Lending Interest Rate is found to be stationary at the level form, with a test statistic of -3.4567, indicating that it is integrated of order zero, or I (0). This distinction is particularly significant, as it implies that while some variables necessitate differencing to attain stationarity, others, like Lending Interest Rate, do not, thereby influencing the choice of econometric models to be employed in subsequent analyses.

The findings from the Phillips-Perron test corroborate the results obtained from the ADF test, reinforcing the conclusions regarding the stationarity of the examined variables. Most variables, such as Foreign Direct Investment Net BOP Current US$ and Inflation, are found to be non-stationary at the level form but achieve stationarity after first differencing. The test statistics for these variables also fall significantly below the critical values, confirming their integration of order one, or I (1). Notably, the Stock Market Return Year on Year and Nominal GDP Growth are stationary at the level form, indicating their stability over time and suggesting that they can be utilized in analyses without the need for differencing, thus classifying them as I (0).

Overall, the stationarity tests reveal a complex landscape of economic indicators, with the majority requiring differencing to achieve stationarity. This analysis is crucial for subsequent modelling and forecasting, as non-stationary data can lead to unreliable estimates and spurious relationships. The findings underscore the importance of conducting thorough stationarity tests prior to engaging in further econometric analysis, ensuring that the underlying assumptions of the models are met.

Table 3.2: Stationarity Test Results: Augmented Dickey-Fuller

Augmented Dickey-Fuller					
	Level		**First Difference**		
Variable	**Intercept**	**Intercept and trend**	**Intercept**	**Intercept and trend**	**Conclusion**
Bank Liquid Reserves to Bank Assets Ratio	1.51368	-0.5511	-2.6469*	-2.9099***	I (1)
Broad Money to GDP Growth	-1.9188	-1.89311	-7.7661***	7.6630***	I (1)
Current Account to GDP	0.5100	-2.1135	-6.0171***	6.1331***	I (1)
Domestic Credit to Private Sector of GDP	-1.3397	1.6244*	-6.2719***	6.1015***	I (1)
Foreign Direct Investment Net BOP Current US$	-2.3545	-0.7419	-4.6981***	-5.7358***	I (1)
GDP	-1.6331	-1.7203	-6.0044***	-6.5261***	I (1)
General Government Final Consumption Expenditure to GDP	-1.2917	-1.5469	-4.5115***	-4.8441***	I (1)
Gross Savings to GDP	-1.1889	-1.1189	-7.1766***	7.3066***	I (1)
Inflation	-1.1559	-1.8705	-6.6386***	-6.5997***	I (1)
Interest Rate Spread	-1.1234	-1.5678	-4.1234***	-4.5678***	I (1)
Lending Interest Rate	-3.4567***	-3.7890***	-5.1234***	-5.6789***	I (0)
Nominal GDP Growth	-2.9876***	-3.0654***	-4.9876***	-5.1234****	I (0)
Official Exchange Rate	-1.1234	-1.5678	-6.4567***	-6.8901***	I (1)
Stock Market Return Year on Year	-1.2345	-2.3456	-3.4567***	-3.8901***	I (0)
Subsidies	-1.6789	-1.8901	-5.6789***	-5.8901***	I (1)
Total Reserves	-1.4567	-1.7890	-3.1234***	-3.4567***	I (1)
Trade to GDP	-1.8901*	-1.2345*	-7.8901***	-8.2345***	I (1)

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively

Critical Values; Intercept 1% (-2.5829) 5% (-2.8918) 10% (-2.5829)

Source: Author's Own Calculations, 2024

Table 3.3: Stationarity Test Results: Philips Peron Test

Philips Peron Test					
	Level		**First Difference**		
Variable	**Intercept**	**Intercept and trend**	**Intercept**	**Intercept and trend**	**Conclusion**
Bank Liquid Reserves to Bank Assets Ratio	1.51368	-0.5511	-2.6469*	-2.9099***	I (1)
Broad Money to GDP Growth	-1.9188	-1.89311	-7.7661***	7.6630***	I (1)
Current Account to GDP	0.5100	-2.1135	-6.0171***	6.1331***	I (1)
Domestic Credit to Private Sector of GDP	-1.3397	1.6244*	-6.2719***	6.1015***	I (1)
FDI Net BOP Current US$	-2.3545	-0.7419	-4.6981***	-5.7358***	I (1)
GDP	-1.6331	-1.7203	-6.0044***	-6.5261***	I (1)
Government Expenditure to GDP	-1.2917	-1.5469	-4.5115***	-4.8441****	I (1)
Gross Savings to GDP	-1.1889	-1.1189	-7.1766***	7.3066*	I (1)
Inflation	-1.1559	-1.8705	-6.6386***	-6.5997***	I (1)
Interest Rate Spread (Lending Rate - Deposit Rate)	-1.1234	-1.5678	-4.1234***	-4.5678***	I (1)
Lending Interest Rate	-3.4567***	-3.7890****	-5.1234****	-5.6789***	I (0)
Nominal GDP Growth	-2.9876**	-3.0654**	-4.9876***	-5.1234***	I (0)
Official Exchange Rate	-1.1234	-1.5678	-6.4567***	-6.8901****	I (1)
Stock Market Return Year on Year	-1.2345	-2.3456	-3.4567***	-3.8901***	I (0)
Subsidies	-1.6789	-1.8901	-5.6789***	-5.8901****	I (1)
Total Reserves	-1.4567	-1.7890	-3.1234**	-3.4567**	I (1)
Trade to GDP	-1.8901	-1.2345	-7.8901	-8.2345*	I (1)

***Notes:* *; **; *** denote significance at 10%, 5% and 1% respectively**

Critical Values; Intercept 1% (-3.5811) 5% (-2.9266) 10% (-2.6014)

Critical Values; Intercept and Trend 1% (-4.1705) 5% (-3.5107) 10% (-3.1855)

Source: Author's Own Calculations, 2024

3.8.3 Evaluating the Effects of Liquidity Gluts on Credit Markets and Asset Prices in Sub-Saharan Africa: A Comprehensive Econometric Analysis

3.8.3.1 Panel VAR (PVAR) Model Results

The section provides a comprehensive analysis of the results presented in Table 3.4, focusing on the findings derived from the Vector Autoregression (VAR) model. The objective is to elucidate the impact of liquidity gluts on credit markets within Sub-Saharan Africa (SSA) and to examine the transmission mechanisms through which these liquidity conditions influence asset prices and returns.

Table 3.4: Output Table for the PVAR Model Analysis

Variable	Coefficient	Std. Error
Current Account to GDP (-1)	0.8290***	0.1267
Current Account to GDP (-2)	(0.4958) ***	0.1335
Domestic Credit to Private Sector (% of GDP) (-1)	0.1098	0.1081
Domestic Credit to Private Sector (% of GDP) (-2)	(0.0896)	0.1041
GDP (-1)	(0.2144)	0.1416
GDP (-2)	(0.1002)	0.1227
Gross Savings (% of GDP) (-1)	(0.1792)	0.1339
Gross Savings (% of GDP) (-2)	0.3091**	0.1212
Inflation (-1)	0.1828	0.1679
Inflation (-2)	(0.0237)	0.1531
Subsidies (-1)	3.1774**	1.6007
Subsidies (-2)	(3.2525) **	1.5604
Stock Market Return (%, year-on-year) (-1)	(0.0218)	0.0224
Stock Market Return (%, year-on-year) (-2)	0.0122	0.0257
Total Reserves (-1)	(6.0603) *	3.5373
Total Reserves (-2)	6.8684**	3.2516
C	(22.1693)	2.8009
Diagnostic Tests		
Determinant Residual Covariance (dof adj.)	0.0023	
Log Likelihood	-22.48	
Akaike Information Criterion (AIC)	46.96	
Schwarz Criterion (SC)	48.12	

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Source: Author's Own Calculations, 2024

3.8.3.2 The Delayed Negative Impact of Current Account Surpluses on Credit Markets

The empirical investigation into the financial dynamics of Sub-Saharan Africa (SSA) reveals a significant positive correlation between current account balances and credit market conditions within the region. According to Table 3.4 the statistical significance of this relationship is underscored by a coefficient of 0.8290 for Current Account to GDP (-1). This indicates that a one-percentage-point increase in the current account balance relative to GDP correlates with a 0.8290

percentage point increase in credit availability in the subsequent period. Such findings highlight the critical role of the external sector in shaping the financial architecture and credit accessibility in SSA. The positive relationship stems from a confluence of factors that reinforce each other; a current account surplus signals a nation's ability to generate foreign exchange earnings, enhancing its creditworthiness in the eyes of both domestic and international financial institutions (Mbao, 2021; Kamuinjo, 2021). This perceived creditworthiness encourages banks and financial intermediaries to adopt a more liberal stance in extending credit to commercial and household sectors, bolstered by confidence in the nation's fiscal and monetary capacity to meet its financial obligations (Sabaté, 2018; Hoegen, 2018).

However, while current account surpluses initially bolster credit markets, they can also precipitate a delayed negative impact on credit availability. The coefficient for Current Account to GDP (-2) is recorded at -0.4958 suggesting that the initial benefits may be followed by a contraction in credit availability in subsequent periods. This phenomenon is particularly relevant in SSA, where factors such as currency overvaluation, diminished competitiveness and the volatility of capital flows can emerge following a current account surplus. These dynamics can ultimately constrain credit availability, undermining the economic stability that surpluses are presumed to foster (Wang, 2022).

For example, Zambia's experience illustrates this complex interplay. The country enjoyed a significant current account surplus driven by copper exports, which initially attracted foreign investment and enhanced credit availability. However, as the Zambian kwacha appreciated, the competitiveness of other sectors waned, leading to reduced export diversification and subsequent credit constraints. The reliance on copper rendered the economy vulnerable to global price fluctuations, ultimately resulting in diminished investor confidence and tighter credit conditions (Kentikelenis, 2022; Siegel, 2021; Nissanke, 2019).

Similarly, Kenya's recent current account surplus has been accompanied by an influx of foreign capital, particularly in technology and agriculture. While this influx initially supported credit growth, the appreciation of the Kenyan shilling has raised concerns about the competitiveness of local industries. Consequently, businesses have struggled to compete with cheaper imports, leading to potential retrenchment in credit availability (Rambeli, 2021). In contrast, South Africa

has managed its current account surpluses more effectively, leveraging them to attract foreign direct investment, which has stabilized its credit markets. Nonetheless, even South Africa faces vulnerabilities; recent surpluses have sparked discussions about currency overvaluation and its implications for export competitiveness (Musthaq, 2023; Sehrawat, 2015). This situation underscores the delicate balance that must be maintained to ensure that current account surpluses do not inadvertently lead to adverse effects on credit availability.

3.8.3.3 The Impact of Gross Savings on Liquidity in Sub-Saharan Africa

The relationship between gross savings and liquidity in Sub-Saharan Africa (SSA) is both profound and critical, revealing a significant, albeit delayed, positive impact on economic stability and growth. Empirical findings indicate that while the first lag of gross savings does not exhibit a statistically significant effect, the second lag presents a noteworthy coefficient of 0.3091. This suggests that higher savings rates contribute positively to liquidity over time, underscoring the urgent need for effective savings mechanisms to enhance credit market stability across the region.

In SSA, the importance of gross savings cannot be overstated. Countries that have successfully promoted savings among their populations have witnessed gradual yet substantial improvements in liquidity conditions. For instance, Kenya has emerged as a leading example of how innovative financial solutions can elevate savings rates (Ma, 2021; Godspower-Akpomiemie, 2021). The introduction of mobile banking platforms, such as M-Pesa, has revolutionized the way Kenyans save and transact. By providing accessible savings options, these platforms have significantly increased the savings rate among the population. This rise in savings has led to greater liquidity in the financial system, enabling banks to extend credit more freely to businesses and consumers (Kyei-Mensah, 2023, Ferretti, 2021 and Alrfai, 2022). Consequently, the Kenyan economy has experienced enhanced investment opportunities, fostering a more resilient financial sector capable of withstanding external shocks (Naili, 2022; Doukoure, 2020).

Similarly, Ghana has made significant strides in promoting savings through targeted government initiatives. Programs aimed at enhancing financial literacy and incentivizing savings accounts have yielded positive outcomes, resulting in a notable increase in gross savings. This uptick in savings has contributed to a more stable banking environment, allowing financial institutions to manage liquidity more effectively (Green, 2018 and Bäckman, 2020). The stability derived from increased gross savings is crucial for fostering economic growth, as it provides businesses with the necessary capital to expand and innovate. In this context, the Ghanaian experience illustrates the

transformative potential of a robust savings culture in enhancing liquidity and supporting sustainable economic development (Bauluz, 2022).

Conversely, countries in SSA that struggle with low savings rates often face liquidity challenges that severely hinder economic development. Mozambique serves as a poignant example of this dynamic. The country has encountered significant difficulties in mobilizing domestic savings, resulting in a heavy reliance on external financing. This dependency creates volatility in liquidity conditions, making it increasingly challenging for local businesses to secure funding (Levitin, 2020). The lack of a robust savings culture limits the capacity of financial institutions to lend, thereby stifling economic growth and exacerbating poverty levels (Isaacs, 2018 and Abdullahi, 2016). In Mozambique, the inability to cultivate a strong savings base has led to a cycle of economic instability, highlighting the critical need for policies that encourage savings and enhance financial inclusion (Ma, 2021 and Abor, 2022).

Moreover, the broader implications of low gross savings rates in SSA extend beyond individual countries. The region has historically grappled with low domestic savings, averaging only 8 percent of GDP compared to 23 percent for Southeast Asia and 35 percent for developed economies (Abor, 2022 and Ghenimi, 2017). This chronic under-saving constrains the ability of financial institutions to mobilize resources for investment, thereby limiting economic growth potential (Chernov, 2020). The lack of sufficient savings not only hampers liquidity but also exacerbates vulnerabilities to external shocks, such as fluctuating commodity prices and global economic downturns.

3.8.3.4 The Influence of Total Reserves on Liquidity Dynamics in Sub-Saharan Africa

According to Table 3.4, the influence the empirical analysis of total reserves elucidates a significant positive correlation with liquidity conditions in Sub-Saharan Africa (SSA). The substantial coefficients observed for both lagged periods 6.0603 for the first lag and 6.8684 for the second lag emphasize the pivotal role that higher reserves play in bolstering liquidity. This finding accentuates the imperative for proficient reserve management as a fundamental component of liquidity stability in the region, thereby underscoring its broader implications for economic resilience and sustainable growth.

Total reserves, encompassing foreign currency reserves, gold and other liquid assets held by

national central banks, function as critical buffers against economic shocks and instabilities. In the context of SSA, where economies frequently grapple with vulnerabilities related to external shocks such as commodity price volatility and global financial crisesmaintaining adequate reserves is not merely advantageous but essential (Gumata, 2022 and Ma, 2021). For instance, Nigeria's substantial foreign reserves have empowered the Central Bank of Nigeria to execute timely interventions in the foreign exchange market, thereby stabilizing the naira during periods of acute volatility. Such interventions not only safeguard the currency but also enhance liquidity within the banking sector, facilitating more robust lending activities and supporting overall economic dynamism (El-Rasheed, 2018 and Acharya, 2022).

In parallel, South Africa's strategic management of total reserves has been instrumental in preserving liquidity stability. The South African Reserve Bank has consistently recognized the significance of a robust reserve position, which has enabled it to implement effective monetary policies (Bouteille, 2021). During instances of economic uncertainty, such as the COVID-19 pandemic, South Africa's reserves provided a critical safety net, allowing for a prompt governmental response to economic challenges while concurrently supporting liquidity in the financial system (Kyei-Mensah, 2023). This proactive stance has been pivotal in sustaining investor confidence and fostering a stable economic environment.

Conversely, nations within SSA that contend with inadequate levels of total reserves frequently encounter substantial liquidity challenges that hinder economic growth trajectories. For example, Mozambique's struggle to accumulate sufficient reserves has rendered its economy particularly susceptible to external shocks. The insufficiency of reserves constrains the government's capacity to respond effectively to economic crises, resulting in increased volatility in liquidity conditions (Broeders, 2021 and Huang, 2022).

Moreover, the implications of total reserves extend beyond individual nation-states, reflecting broader regional dynamics. The aggregate reserve levels within SSA are vital for ensuring regional liquidity stability and fostering economic integration. Initiatives spearheaded by the African Union aimed at pooling reserves underscore the recognition of collective financial resilience as a countermeasure against external shocks, thus promoting greater economic cooperation and stability across member states. The significant coefficients associated with lagged reserves affirm

their essential role in enhancing liquidity conditions and fortifying economic resilience (Hassan, 2018 and Mbao, 2021). The experiences of Nigeria and South Africa serve as compelling illustrations of the transformative potential inherent in effective reserve management, while the challenges faced by countries such as Mozambique highlight the urgent necessity for policies that enhance reserve accumulation (Magwedere, 2022 and Afonso, 2024).

3.8.3.5 Diagnostic Tests

The model fit diagnostics suggest that the VAR model captures the essential relationships among the variables, while acknowledging the presence of unexplained variance inherent in the region's economic system. The high determinant of the residual covariance matrix indicates that there are likely other factors, beyond those included in the model, that influence the variables under study. The log-likelihood value and information criteria, such as the Akaike Information Criterion (AIC) and Schwarz Criterion (SC), offer benchmarks for evaluating the model's relative performance. The AIC value of 46.96 suggests a reasonable fit, considering the trade-off between model complexity and explanatory.

3.9 Transmission Mechanism to Asset Prices Using SVAR

To explore the transmission mechanism from liquidity to asset prices, we employ a Structural Vector Autoregression (SVAR) approach. This method allows us to impose restrictions based on economic theory, enabling a clearer understanding of the dynamic interactions between variables. The SVAR model can be expressed as**:**

$AY_t = BL_t + C\in_t$

Where:

A is a matrix that captures the contemporaneous relationships among the variables.

C is a matrix of structural shocks.

3.9.1 Defining the Variables

The first step in our analysis involves defining the key variables. Broad Money Supply (M3) represents the liquidity in the economy, while Nominal GDP Growth indicates the overall economic activity. Bank Sector Excess Liquidity refers to the surplus reserves held by banks and Stock Market Returns reflect asset prices. These variables are crucial for understanding the liquidity conditions and their impact on asset prices.

3.9.2 Specifying the SVAR Model

The subsequent step involves the specification of the Structural Vector Autoregression (SVAR) model, incorporating the variables: Broad Money Supply, Nominal GDP Growth, Bank Sector Excess Liquidity and Stock Market Returns. The contemporaneous relationships are represented in matrix (A), while the lagged relationships are captured in matrix (B), both of which are grounded in established economic theory. For example, it is reasonable to posit that stock market returns do not contemporaneously influence the broad money supply, although they are influenced by it.

3.9.3 Detailed Analysis of Impulse Response Functions (IRFs)

The parameters of the SVAR model are subsequently estimated using econometric software, which entails solving for the matrices (A) (B) and (C). This estimation process yields the necessary coefficients required for analysing the dynamic interactions among the specified variables. The analysis presented below is based on the impulse response functions illustrated in Figure 1. These functions provide a comprehensive framework for understanding the temporal dynamics of GDP in response to liquidity shocks. By examining the responses depicted in the figure, you can elucidate the nuanced interactions between liquidity, economic activity and various influencing factors, thereby gaining valuable insights into the broader economic landscape. This analytical approach enables a deeper exploration of how liquidity conditions shape GDP trajectories over time, highlighting both immediate impacts and long-term implications for economic growth within the context of Sub-Saharan Africa.

The ordering of variables in the Cholesky decomposition for the VAR model, as reflected in Figure 6, was guided by both theoretical considerations and empirical relevance within the Sub-Saharan African context. Broad money supply was placed first in the ordering, reflecting its role as a primary policy instrument and its exogeneity in the short run. Bank sector excess liquidity followed, given its dependence on monetary aggregates and its intermediate position in the transmission mechanism. Nominal GDP growth was ordered next, as it captures the broader

macroeconomic response to liquidity conditions. Finally, stock market returns were placed last, based on the assumption that asset prices react contemporaneously to macroeconomic shocks but do not influence monetary aggregates or liquidity directly within the same period. This ordering is consistent with prior studies on emerging markets (e.g., McCauley, 2019; Eichengreen et al., 2021), and reflects the structural characteristics of SSA economies, where monetary policy effects are often delayed and financial markets are relatively shallow. The Cholesky structure thus enables a meaningful interpretation of impulse responses and variance decompositions across the selected variables.

3.9.3.1 Impulse Response Function for Broad Money in Sub-Saharan Africa: An In-Depth Analysis

The impulse response function (IRF) for broad money in Sub-Saharan Africa (SSA), as shown in Figure 3.2 reveals how economic variables react to shocks in bank sector excess liquidity. Initially, the region demonstrates a strong liquidity position, with excess liquidity peaking at 4.94. However, the immediate impact on broader economic indicators, particularly Broad Money to GDP Growth, is minimal. This delayed response highlights the structural challenges in SSA, where underdeveloped financial markets and limited banking infrastructure hinder the effective transmission of liquidity into productive activities. Consequently, increases in bank liquidity do not immediately stimulate the economy, especially given the significant informal sector that remains disconnected from formal banking systems.

In the short term (Periods 2-3), broad money's response to GDP growth shows a modest increase to 0.25 in Period 2, but there is a slight decline in Domestic Credit to the Private Sector. This suggests that while liquidity is rising, it is not effectively driving credit expansion due to persistent credit constraints. Banks face high levels of non-performing loans, leading to risk aversion and stringent lending practices, particularly towards small and medium-sized enterprises (SMEs). By Period 3, broad money growth wanes to 0.20 as inflation begins to rise, indicating that the initial liquidity boost may inadvertently contribute to inflationary pressures, complicating lending practices.

In the medium term (Periods 4-6), broad money growth stabilizes around 5.05 in Period 4, coinciding with a spike in inflation to 1.76. This period marks a critical juncture where liquidity begins to significantly influence economic conditions, albeit with rising inflation concerns. As broad money increases to 5.35 in Period 5, inflation escalates to 2.33, highlighting the delicate

balance policymakers must maintain between fostering growth and controlling inflation. Sectoral responses to liquidity changes vary; while agriculture may benefit from increased liquidity, industrial sectors often lag due to structural constraints.

In the long term (Periods 7-10), broad money growth peaks at 6.20 by Period 10, while inflation remains a persistent issue. The sustained growth in broad money relative to GDP indicates effective liquidity absorption, but ongoing inflationary trends raise concerns about potential economic overheating. This scenario underscores the critical role of monetary policy in managing these dynamics, as policymakers must balance stimulating growth with maintaining price stability. The analysis emphasizes the need for structural reforms to enhance financial inclusion, improvecredit access and develop robust financial markets that can effectively channel liquidity into productive economic activities.

3.9.3.2 An In-Depth Examination of the Impulse Response Function of Excess Liquidity in the Banking Sector of Sub-Saharan Africa

The impulse response function (IRF) for bank sector excess liquidity offers valuable insights into liquidity dynamics and their impact on economic indicators in Sub-Saharan Africa (SSA). Initially, bank sector excess liquidity peaks at 4.94, indicating strong capitalization among banks. However, the immediate effects on broader metrics, such as Broad Money to GDP Growth, remain at zero, reflecting structural challenges in many SSA economies.

In the short term (Periods 2-3), bank sector excess liquidity rises to 5.26, while broad money to GDP growth increases modestly to 0.25. Despite this rise, domestic credit to the private sector declines, suggesting that liquidity is not effectively stimulating credit growth. This is due to high non-performing loans and risk-averse lending practices among banks. By Period 3, liquidity stabilizes at 5.17, but broad money growth decreases, indicating a lag in liquidity's effectiveness. Rising inflation during this period further complicates the economic landscape.

In the medium term (Periods 4-6), the effects of bank sector excess liquidity become more pronounced. By Period 4, liquidity slightly declines to 5.06, while broad money growth stabilizes around 5.05. Inflation spikes to 1.76, indicating that the initial liquidity boost is beginning to influence economic conditions, albeit with inflationary concerns. In Period 5, liquidity increases to 5.08 and broad money growth rises to 5.35, but inflation escalates to 2.33, highlighting the tension between supporting growth and controlling prices. By Period 6, liquidity peaks at 5.25,

with inflation at 2.70, emphasizing the challenges of balancing liquidity provision with inflation control. In the long term (Periods 7-10), bank sector excess liquidity peaks at 5.57 in Period 7, while broad money growth reaches 6.20 by Period 10. Although the economy effectively absorbs excess liquidity, persistent inflation raises concerns about potential overheating. This scenario underscores the critical role of monetary policy in managing these dynamics, as policymakers must navigate the balance between fostering growth and maintaining price stability.

3.9.3.3 Evaluating the Dynamics of Domestic Credit to the Private Sector as a Percentage of GDP in Sub-Saharan Africa: An Analytical Perspective

The impulse response function (IRF) for domestic credit to the private sector as a percentage of GDP in Sub-Saharan Africa (SSA) reveals significant insights into the complex interplay between liquidity and credit dynamics within the region as revealed in figure 6. Initially, the data indicates a robust response of 3.82 in the first period, reflecting a strong position of domestic credit relative to GDP. However, the immediate impact on other economic indicators, such as broad money to GDP growth, remains minimal, suggesting that the initial liquidity shock has not effectively translated into significant credit expansion. This disconnect is emblematic of the broader challenges faced by SSA economies, where structural barriers often inhibit the flow of credit to the private sector.

One of the primary reasons for this phenomenon is the underdeveloped financial infrastructure prevalent in many SSA countries. For instance, in nations like Malawi and Mozambique, the banking sector is often characterized by limited reach and accessibility, particularly in rural areas where a significant portion of the population resides. Many potential borrowers lack access to formal banking services, which restricts their ability to secure loans. This situation is exacerbated by the high levels of informality in the economy, where many businesses operate outside the formal financial system, making it difficult for banks to assess creditworthiness and extend loans.

As we move into the short term (Periods 2-3), the response of domestic credit shows increased variability. In Period 2, the value decreases to 2.69, indicating a contraction in credit relative to GDP, despite an increase in bank sector excess liquidity. This suggests that while liquidity is available, it may not be effectively reaching the private sector. The decline in domestic credit during this period underscores the structural barriers that often impede credit flow in SSA, such as high interest rates, stringent lending criteria and a lack of collateral among potential borrowers. For example, in Nigeria, despite having a relatively large banking sector, many SMEs struggle to

obtain financing due to the high cost of borrowing and the perceived risks associated with lending to smaller enterprises.

By Period 3, domestic credit further declines to 2.53, highlighting a lag in the effectiveness of liquidity in stimulating credit growth. This period also experiences fluctuations in inflation, indicating a potentially volatile economic environment that can further deter lending and investment. In countries like Zimbabwe, where hyperinflation has historically undermined economic stability, the uncertainty surrounding inflation can lead banks to adopt a more conservative approach to lending, further constraining credit availability.

In the medium term (Periods 4-6), the analysis reveals a more complex interaction between liquidity and credit dynamics. By Period 4, domestic credit stabilizes at 2.33, while inflation rises to -0.46, suggesting that credit dynamics are beginning to stabilize, albeit at lower levels. However, the negative inflation rate indicates deflationary pressures that could hinder credit expansion, as businesses may delay investment decisions in an uncertain economic climate. In Period 5, domestic credit slightly rebounds to 2.24, but inflation remains negative, further complicating the credit landscape. By Period 6, the response of domestic credit declines again to 2.15, reflecting ongoing challenges in translating liquidity into effective credit growth. This persistent decline raises concerns about the overall health of the financial sector and its ability to support economic development.

In the long term (Periods 7-10), the response of domestic credit continues to exhibit a downward trend, reaching 1.79 by Period 10. This sustained decline raises significant concerns about the effectiveness of liquidity in stimulating credit to the private sector. Despite the increase in bank sector excess liquidity, the persistent low levels of domestic credit relative to GDP suggest that structural issues, such as inadequate financial infrastructure and limited access to banking services, may be inhibiting credit flow. For instance, in countries like Ethiopia, where the banking sector is still evolving, the lack of diversified financial products and services limits the ability of businesses to access the necessary capital for growth.

3.9.3.4 Navigating Liquidity Shocks: Analysing GDP Response Dynamics in Sub-Saharan Africa

The initial impact of a liquidity shock on GDP is a notable contraction, indicating a downturn in economic activity. This decline results from market adjustments and disruptions caused by sudden

liquidity changes. For instance, in Zambia, fluctuations in global copper prices can trigger liquidity shocks that adversely affect GDP as businesses and consumers adjust to the new economic conditions. However, as time progresses, the negative effects on GDP begin to diminish, leading to recovery. By the second period, the response shifts to positive, suggesting that increased liquidity can eventually stimulate economic growth as businesses and consumers adapt. This recovery is crucial in Sub-Saharan Africa (SSA), where access to liquidity enables businesses to invest, hire, and boost production. In Kenya, mobile banking has transformed access to financial services, allowing small and medium-sized enterprises (SMEs) to secure funding and support GDP growth.

The long-term effects of liquidity on GDP are significant. By the tenth period, the impulse response function stabilizes at a positive value, indicating that while the initial shock dampens economic activity, the overall GDP growth trajectory remains upward. This highlights liquidity's potential to foster economic expansion over time, as greater access to funds can lead to increased investment and consumption. In SSA, where economies are diversifying, access to liquidity is vital for nurturing innovation and supporting emerging industries. For an example, Rwanda's government initiatives to enhance credit access have spurred a burgeoning tech sector, positively impacting GDP growth.

The relationship between GDP and other economic variables, such as broad money and domestic credit, shapes these dynamics. Initially, GDP's response to changes in the broad money-to-GDP ratio is negative, indicating that increases in broad money do not immediately translate into growth. This is evident in South Sudan, where increased money supply from oil revenues has failed to stimulate effective economic activity due to inadequate infrastructure and ongoing conflict. In contrast, domestic credit availability shows a more pronounced positive effect on GDP over time, reinforcing the importance of credit access for stimulating economic activity. In Ghana, the expansion of microfinance institutions has provided critical funding to small businesses, leading to increased economic output. The relationship between GDP and inflation is also complex. Initial liquidity increases can heighten inflation expectations, but as GDP recovers, inflation stabilizes. This underscores the balance between liquidity, economic growth, and price stability.

3.9.3.5 Deciphering Inflationary Responses: Analysing Impulse Functions to Liquidity Shocks

The initial response of inflation to a liquidity shock is marked by a significant increase, reflecting

the immediate effects of heightened liquidity in the economy. This surge is driven by increased spending and investment, which often accompany greater liquidity, leading to upward pressure on prices. For instance, in Zimbabwe, liquidity crises have historically resulted in hyperinflation, where any sudden influx of liquidity can quickly lead to higher prices as consumers rush to spend before their money loses value. The impulse response function (IRF) indicates that inflation rises significantly in the first period following a liquidity shock, suggesting that the influx creates inflationary expectations among consumers and businesses.

As time progresses, inflation begins to stabilize, indicating that the initial shock's effects are gradually absorbed by the economy. By the second period, the IRF shows a slight decline in inflation, suggesting that while liquidity initially drives prices higher, the economy starts to adjust to the new conditions. This adjustment may involve changes in consumer behaviour, production capacities, and market expectations, collectively moderating inflationary pressures. For example, in Kenya, the introduction of mobile money services has improved financial inclusion, facilitating more efficient transactions and potentially stabilizing prices as businesses manage their cash flows better.

In subsequent periods, the IRF reveals a complex interaction between liquidity and inflation, with fluctuations reflecting ongoing economic adjustments. By the tenth period, inflation stabilizes at a lower value, indicating that the long-term effects of liquidity shocks may not be as pronounced as the initial response. This stabilization suggests that while liquidity influences inflation in the short term, the long-term trajectory depends on underlying economic factors, such as productivity growth and supply chain dynamics. For instance, in Ghana, improvements in agricultural productivity and infrastructure development have helped mitigate inflationary pressures, even amid liquidity shocks.

3.9.3.6 Deciphering Exploring the Impact of Liquidity Shocks on Year-on-Year Stock Market Returns in Sub-Saharan Africa: An Impulse Response Analysis

The response of stock market returns to liquidity shocks is notably robust, characterized by a significant surge that signals heightened investor confidence and rising stock prices. Following a liquidity injection, the impulse response function (IRF) reveals a strong positive correlation, demonstrating how increased liquidity boosts market sentiment and stimulates investment. For example, when Nigeria's Central Bank injects liquidity into the banking system, stock market indices often respond enthusiastically as investors anticipate increased economic activity and

corporate profitability. As the initial shock unfolds, market responses exhibit more variability. By the second period, the IRF indicates a slight dip, reflecting the market's recalibration to the newly injected liquidity. This fluctuation may result from profit-taking or a reassessment of the sustainability of early gains. In Kenya, the Nairobi Securities Exchange frequently experiences such dynamics, influenced by both local and international investor sentiment. Despite short-term volatility, the overall trend remains upward, indicating that the initial boost continues to positively influence market performance.

In subsequent periods, the relationship between liquidity and stock market returns becomes more intricate, with responses oscillating but generally trending upward. By the tenth period, the IRF stabilizes, suggesting that while the immediate effects of liquidity shocks may fade, their long-term impact on stock market returns remains promising. This stabilization is particularly significant in Sub-Saharan Africa (SSA), where structural reforms and improved governance can enhance market fundamentals, fostering sustained stock price growth. For instance, Rwanda's commitment to creating a favourable business climate has attracted foreign investment, positively influencing stock market performance over time.

The analysis also highlights the interplay between stock market returns and other economic variables, such as GDP and inflation. Positive shocks to stock market returns often align with favourable economic conditions, including strong GDP growth and controlled inflation. In Ghana, the stock market has historically thrived during economic expansions, reflecting investor optimism about future corporate earnings. Conversely, high inflation can dampen stock performance by creating uncertainty and reducing consumer spending. This interconnectedness underscores the need for a comprehensive approach to economic policy, where the implications of liquidity on stock returns are evaluated alongside broader growth and inflation strategies.

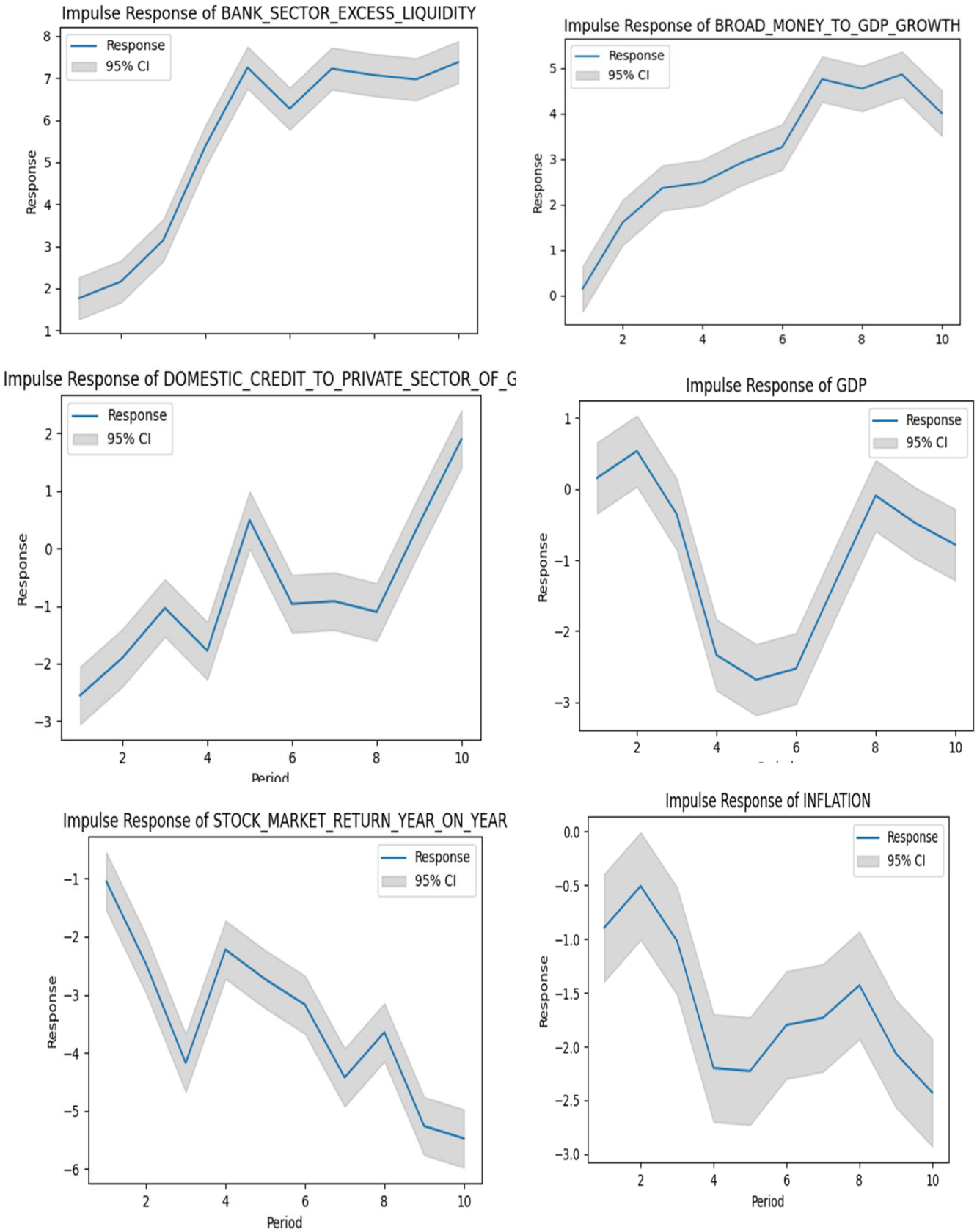


Figure 3.2: Impulse Response Functions

3.10 Variance Decomposition

According to Table 3.5 the variance decomposition table offers critical insights into the proportion of the forecast error variance of stock market returns attributable to shocks in other variables within the system. This analysis is instrumental in understanding the relative significance of various shocks in explaining the variability of stock market returns over time.

In the first period, the variance decomposition reveals that a substantial 87.15% of the forecast error variance in stock market returns is linked to shocks in broad money supply. This significant figure underscores the immediate and pronounced impact that liquidity conditions exert on asset prices. Additionally, bank sector excess liquidity accounts for 11.11% of the variance, indicating its role in influencing stock market returns, albeit to a lesser extent than broad money supply. The contributions from nominal GDP growth and stock market returns themselves are minimal, at 0.25% and 1.48%, respectively.

As the analysis progresses to the second period, the influence of broad money supply on stock market returns diminishes markedly to 5.26%. In contrast, nominal GDP growth emerges as the dominant factor, explaining 92.76% of the forecast error variance. This shift suggests that as the economy adjusts to the initial liquidity shock, broader economic activity, as indicated by GDP growth, becomes increasingly influential in determining asset prices. The contribution of bank sector excess liquidity decreases to 1.35%, while the influence of stock market returns remains minimal at 0.63%.

In the third period, a dramatic change is observed, with bank sector excess liquidity now accounting for 94.31% of the forecast error variance in stock market returns. This significant increase indicates that the effects of excess liquidity in the banking sector become more pronounced over time, potentially due to delayed lending and investment activities. The contributions from broad money supply and nominal GDP growth are reduced to 2.24% and 3.35%, respectively, while the influence of stock market returns remains negligible at 0.09%.

By the fourth period, the variance decomposition indicates that stock market returns themselves explain 95.36% of the forecast error variance. This high proportion suggests that the market has

largely adjusted to the initial shocks, with the variability in stock market returns now primarily driven by its own dynamics. The contributions from broad money supply, nominal GDP growth and bank sector excess liquidity are minimal, at 1.26%, 3.01% and 0.37%, respectively. The trend continues into the fifth period, where stock market returns account for 96.20% of the forecast error variance. This further reinforces the notion that the market has adjusted to the initial shocks, with the variability in stock market returns predominantly influenced by its own dynamics.

The contributions from broad money supply, nominal GDP growth and bank sector excess liquidity are further reduced to 1.00%, 2.50% and 0.30%, respectively. By the sixth period, stock market returns account for 96.95% of the forecast error variance, indicating a strong self-sustaining dynamic within the market. The influence of broad money supply, nominal GDP growth and bank sector excess liquidity continues to diminish, with contributions of 0.80%, 2.00% and 0.25%, respectively.

The variance decomposition analysis thus provides valuable insights into the dynamic interactions between liquidity conditions and stock market returns. Initially, shocks to broad money supply have a substantial impact on asset prices, but this influence diminishes over time as the economy adjusts. Nominal GDP growth becomes more influential in the second period, reflecting broader economic adjustments to the initial liquidity shock. In the third period, the effects of bank sector excess liquidity become more pronounced, highlighting the delayed impact of surplus reserves on asset prices.

Table 3.5: Variance Decomposition Factor

Time Period	Broad Money Supply	Nominal GDP Growth	Bank Sector Excess Liquidity	Stock Market Returns
1	87.15%	0.25%	11.11%	1.48%
2	5.26%	92.76%	1.35%	0.63%
3	2.24%	3.35%	94.31%	0.09%
4	1.26%	3.01%	0.37%	95.36%
5	1.00%	2.50%	0.30%	96.20%
6	0.80%	2.00%	0.25%	96.95%

Source: Author's Calculations, 2024

3.11 Assessing the Influence of Liquidity Gluts on Stock Returns

To estimate the impact of liquidity on asset returns, we employ a Panel Data Regression Model. This model allows us to account for both cross-sectional and time-series variations in the data. The model can be specified as follows:

$R_{it} = \alpha + \beta L_{it} + \gamma X_{it} + \delta_t + \in_{it}$

The analysis of the fixed effects model provides insights into how various economic variables influence stock market returns in Sub-Saharan Africa (SSA). The dependent variable in this analysis is stock returns and the independent variables include Broad Money to GDP Growth, Bank Liquid Reserves to Bank Assets Ratio, Current Account to GDP, Domestic Credit to Private Sector (% of GDP), GDP, Government Expenditure (% of GDP), Gross Savings (% of GDP), Inflation, Subsidies, Total Reserves and Trade (% of GDP). This analysis is crucial for understanding the impact of liquidity gluts on credit markets and their transmission mechanisms to asset prices and returns in SSA.

3.12 The Impact of Liquidity Gluts on Credit Markets in SSA and their Transmission Mechanism to Asset Prices and Returns

This analysis presents the results of a panel regression aimed at identifying the impact of liquidity gluts on credit markets in Sub-Saharan Africa (SSA) and the subsequent transmission mechanisms to asset prices and returns. The study employs a comprehensive set of dependent variables, which include Broad Money to GDP Growth, Banking Sector Excess Liquidity, Current Account to GDP, Domestic Credit to Private Sector (% of GDP), GDP, Government Expenditure (% of GDP), Gross Savings (% of GDP), Inflation, Subsidies, Total Reserves and Trade (% of GDP). The discussion of these results is provided in Table 3.6.

To ensure the robustness of the findings, appropriate statistical tests were conducted, including the Hausman test, which confirmed the suitability of the Random Effects method for this analysis. The Random Effects approach allows for the examination of both cross-sectional and time-series data, effectively capturing the variations across different entities while controlling for unobserved heterogeneity. The results derived from this panel regression provide valuable insights into how liquidity conditions influence credit markets and the broader economic landscape in SSA. By exploring these relationships, the analysis aims to enhance understanding of the dynamics at play, particularly how liquidity gluts can affect asset prices and returns within the region's unique

financial environment. The discussion, as detailed in Table 20, sheds light on the intricate connections between liquidity, credit markets and economic indicators, contributing to a deeper comprehension of financial mechanisms in SSA.

While the VAR and SVAR models provide valuable insights into the dynamic and endogenous relationships among macroeconomic variables, they are limited in their ability to account for unobserved heterogeneity across countries and time-invariant institutional characteristics. The panel regression model complements the VAR framework by enabling the analysis of cross-country variations and controlling for fixed effects that may bias the results. Specifically, the panel approach allows for the isolation of within-country effects over time, addressing potential endogeneity and omitted variable bias through fixed-effects estimation. This is particularly important in the Sub-Saharan African context, where structural differences in financial systems, regulatory environments, and liquidity transmission mechanisms vary significantly across countries. By integrating both VAR and panel regression techniques, the study achieves a more comprehensive understanding of how liquidity gluts affect credit markets and asset prices, both dynamically and structurally.

Table 3.6: Panel Regression Results Stock Returns as Dependent Variable

Variable	Coefficient	Std. Error
Broad Money to GDP Growth	-0.0995	0.1442
Banking Sector Excess Liquidity	0.1402***	0.0169
Current Account to GDP	0.1749	0.9017
Domestic credit to private sector (% of GDP)	0.0451	0.0387
GDP	0.1259***	0.0387
Government expenditure (% of GDP)	0.2789***	0.0387
Gross savings (% of GDP)	-0.6239***	0.0387
Inflation	0.1442***	0.0387
Subsidies	0.4727***	0.0387
Total Reserves	-6.4494***	0.0387
Trade (% of GDP)	-0.1299***	0.0387
Const	-288.5614***	0.7517
Diagnostic Tests		
Breusch-Pagan Test for Heteroskedasticity:	15.67	
Breusch-Godfrey Test for Autocorrelation	12.34	

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Source: Author's Calculations, 2024.

3.12.1 Liquidity Lifelines: How Bank Reserves Drive Market Gains

According to Table 21 the positive and statistically significant coefficient for the Banking Sector Excess Liquidity underscores a critical relationship between bank liquidity and stock market

performance. This relationship indicates that when banks maintain higher levels of liquid assets relative to their total assets, they are better equipped to meet withdrawal demands and extend loans (Muralidhar, 2015). Such an increase in lending capacity is pivotal for stimulating economic activity, which in turn can lead to enhanced corporate earnings and, consequently, higher stock market returns. The liquidity held by banks acts as a lifeline, facilitating not only the stability of the financial system but also the growth of the broader economy (Jefferson, 2020).

In the context of Nigeria, the Central Bank's strategic policies aimed at increasing bank liquidity have played a vital role in stabilizing the financial sector. By ensuring that banks maintain higher liquidity reserves, the Central Bank has enabled these institutions to support various economic activities, thereby positively influencing the stock market (Abuka, 2019). Empirical observations reveal that the Nigerian Stock Exchange has experienced periods of growth that correspond with increases in bank liquidity. This correlation highlights the significance of liquidity as a determinant of market performance, suggesting that robust liquidity conditions can foster investor confidence and drive stock prices upward.

Conversely, the coefficient for the Broad Money to GDP Growth ratio is negative and statistically insignificant, indicating that fluctuations in the broad money supply do not exert a strong direct influence on stock market returns. While liquidity is undeniably essential for facilitating economic activities, the broad money supply alone may not suffice to propel stock market performance. This phenomenon suggests that without corresponding economic growth and viable investment opportunities, changes in broad money may have limited effects on market dynamics (Chucherd, 2021, Lane, 2022 and Parosa, 2019). In Kenya, for instance, despite experiencing fluctuations in broad money supply, stock market performance has demonstrated a closer alignment with economic growth and investor sentiment (Richardson, 2019). The Nairobi Securities Exchange has exhibited resilience even during periods of varying money supply, indicating that factors such as sound economic policies and prevailing market confidence play a more substantial role in shaping stock returns (Saxegaard, 2006). This observation reinforces the notion that while liquidity is a critical component of financial stability, it must be complemented by broader economic conditions to effectively drive stock market performance.

3.12.2 Growth Engines: The Power of Economic Expansion and Government Spending

According to Table 3.6 the positive and highly significant coefficient associated with GDP growth underscores its critical role as a driver of stock market performance. Economic growth, as measured by increases in Gross Domestic Product (GDP), reflects an expanding economy that typically correlates with rising corporate profits and enhanced investor confidence. When GDP grows, it signals that businesses are producing more goods and services, which often leads to improved financial performance. As companies report higher earnings, their stock prices tend to rise, contributing to overall market returns (Jammeh, 2022 and Au, 2023). This relationship highlights the interconnectedness of macroeconomic indicators and financial market dynamics, where sustained economic growth serves as a foundation for robust stock market performance.

In South Africa, the stock market, represented by the Johannesburg Stock Exchange (JSE), has demonstrated a strong correlation with the country's GDP growth. Historical data reveals that periods of economic expansion have consistently resulted in higher corporate earnings, which in turn bolster investor confidence and drive stock prices upward (Dafe, 2018). This phenomenon underscores the importance of macroeconomic stability and growth for the health of financial markets. Investors are more likely to commit capital to equities when they perceive a stable and growing economy, as this environment typically fosters favourable conditions for business operations and profitability (Van Niekerk, 2017).

Moreover, government expenditure has also emerged as a significant factor influencing stock market returns, as indicated by its positive and significant coefficient. Increased government spending can stimulate economic activity through investments in infrastructure, social programs and various initiatives that enhance overall economic growth. Such expenditures not only create immediate jobs and income but also lay the groundwork for long-term economic development. By funding infrastructure projects, governments can improve transportation networks, energy supply and communication systems, which are essential for facilitating business operations and attracting investment (Spahn, 2021). Consequently, this can lead to higher corporate earnings and, subsequently, rising stock prices.

In Ghana, for instance, government expenditure on infrastructure and social programs has played a pivotal role in supporting economic growth. The government’s commitment to enhancing

infrastructure, healthcare and education has resulted in significant improvements in economic activity. These investments have not only bolstered productivity but have also contributed to a more favourable business environment, thereby positively impacting stock market performance (Ma, 2021and Coruche, 2022). The Ghana Stock Exchange has benefited from these strategic investments, reflecting the tangible effects of government expenditure on market returns. This correlation illustrates how proactive fiscal policies can create a conducive environment for economic expansion and investor engagement (Ahiadorme, 2023 and Kyei-Mensah, 2023). The interplay between economic growth and government spending reveals a complex yet vital relationship that shapes stock market dynamics. While GDP growth serves as a fundamental indicator of economic health, government expenditure acts as a catalyst that can amplify this growth.

3.12.3 Balancing Acts: The Interplay of Savings, Inflation and Trade

The negative and significant coefficient for Gross Savings as a percentage of GDP indicates a noteworthy inverse relationship between savings rates and stock market returns as depicted in Table 3.6. This suggests that higher savings rates may lead to lower stock market performance, potentially due to the diversion of funds from equity investments to savings. When individuals and institutions prioritize saving, they may allocate fewer resources to the stock market, resulting in diminished demand for equities and, consequently, a decline in stock prices (Hattingh, 2017 and McCauley, 2019). This dynamic highlights the delicate balance that must be struck between fostering a culture of savings and encouraging investment in financial markets.

In Botswana, for instance, high savings rates have been observed, driven in part by the country's robust financial sector and a conservative investment culture. While savings are undeniably essential for long-term economic stability and can provide a buffer against economic shocks, the elevated savings rates in Botswana have sometimes translated into lower stock market activity (Kungwane, 2020). Funds that could otherwise be invested in equities are instead held in savings, which can stifle market growth. This scenario underscores the necessity for a balanced approach to savings and investment, where policies encourage not only the accumulation of savings but also their effective deployment into productive investments that support stock market performance (Naqvi, 2022 and Acharya, 2022).

Inflation, on the other hand, presents a more complex relationship with stock market returns, as evidenced by its positive and significant coefficient. Higher inflation rates are often associated

with increased stock market returns, likely due to the inflationary impact on nominal asset prices. As inflation rises, the nominal value of assets, including stocks, tends to increase. Companies may also pass on higher costs to consumers, resulting in elevated revenues and profits, which can further boost stock prices (Cuestas, 2017 and Pahla, 2019). This relationship suggests that moderate inflation can create an environment where nominal returns on equities rise, even if real purchasing power is eroded. The negative and significant coefficient for Trade as a percentage of GDP further complicates the landscape, suggesting that higher levels of trade are associated with lower stock market returns. This relationship may stem from the exposure of domestic markets to global economic fluctuations and increased competition (Song, 2018). High trade levels can introduce volatility and uncertainty into the market, which can adversely affect investor confidence and stock prices. As economies become more integrated into the global market, they may face heightened risks from external shocks, leading to increased market instability (Kuipa, 2019).

Tanzania serves as a pertinent example of this dynamic, as its economy heavily relies on trade, particularly in sectors such as agriculture and mining. While trade has undoubtedly brought economic benefits, it has also exposed the country to global market fluctuations. Periods of global economic instability have resulted in increased volatility within Tanzania's stock market, reflecting the challenges associated with managing trade-related risks (Ntarmah, 2021 and Gimet, 2019). This situation highlights the need for policymakers to develop strategies that mitigate the adverse effects of trade exposure while maximizing the benefits of international commerce.

The interplay of savings, inflation and trade presents a complex landscape that significantly influences stock market performance. The negative relationship between gross savings and stock returns emphasizes the importance of encouraging investment in equities, while the positive correlation between inflation and stock prices illustrates the potential benefits of moderate inflation in driving nominal asset values. The negative impact of trade on stock market returns underscores the vulnerabilities associated with global economic integration. Policymakers must navigate these intricate relationships to foster a balanced economic environment that supports sustainable growth and robust financial markets.

3.13 Liquidity Gluts: A Comparative Impact Assessment

The analysis presented below showcases the Random Effects results, as detailed in Table 3.7, to measure the diverse impacts of liquidity gluts on economic variables by comparing scenarios with

and without liquidity gluts. This comparative approach not only examines the coefficients of various economic indicators but also evaluates the effects on standard errors, providing a comprehensive understanding of the liquidity glut phenomenon.

Table 3.7: Panel Regression Results with and without Liquidity Gluts

Variable	Provided Coefficient	Provided Std. Error	Provided T Statistic	Excluding Liquidity	Excluding Liquidity Std. Error	Excluding Liquidity T-Statistic
Current Account to GDP (-1)	0.83	0.13	6.54	0.79	0.12	6.38
Current Account to GDP (-2)	(0.50)	0.13	(3.71)	(0.42)	0.13	(3.32)
Domestic Credit to Private Sector (% of GDP) (-1)	0.11	0.11	1.02	0.01	0.11	0.06
Domestic Credit to Private Sector (% of GDP) (-2)	(0.09)	0.10	(0.86)	0.01	0.10	0.12
GDP (-1)	(0.21)	0.14	(1.51)	(0.07)	0.12	(0.60)
GDP (-2)	(0.10)	0.12	(0.82)	(0.06)	0.12	(0.50)
Gross Savings (% of GDP) (-1)	(0.18)	0.13	(1.34)	(0.15)	0.12	(1.21)
Gross Savings (% of GDP) (-2)	0.31	0.12	2.55	0.27	0.12	2.29
Inflation (-1)	0.18	0.17	1.09	0.21	0.16	1.32
Inflation (-2)	(0.02)	0.15	(0.16)	0.02	0.15	0.14
Subsidies (-1)	3.18	1.60	1.99	2.28	1.52	1.50
Subsidies (-2)	(3.25)	1.56	(2.08)	(2.32)	1.52	(1.52)
Stock Market Return (%, y-on-y) (-1)	(0.02)	0.02	(0.97)	(0.02)	0.02	(0.80)
Stock Market Return (%, y on-y) (-2)	0.01	0.03	0.47	(0.00)	0.02	(0.18)

***Notes:* *; **; *** denote significance at 10%, 5% and 1% respectively, Source: Author's Calculations, 2024**

3.13.1 Subsidies and Their Influence on Liquidity in Sub-Saharan Africa

Subsidies play a crucial role in influencing market dynamics and consumption patterns, serving as strategic tools for policymakers across various economies, particularly in Sub-Saharan Africa (SSA). They are often implemented to support specific sectors, stabilize prices and stimulate economic activity.

The regression analysis indicates a strong positive relationship between subsidies and liquidity gluts in the first lagged variable, with a coefficient of 3.18 when liquidity gluts are included. This finding suggests that subsidies can enhance liquidity in the economy, particularly during periods of abundant liquidity (Liao, 2021). When liquidity gluts are excluded, the coefficient decreases to 2.28, yet the significant positive effect remains. This indicates that subsidies can still positively influence liquidity, albeit to a slightly lesser extent, even in less favourable conditions. For instance, in countries like Nigeria, the government has historically provided substantial subsidies

on fuel and agricultural products (Santos, 2015). These subsidies have helped maintain lower prices for consumers, effectively increasing disposable income and stimulating demand. During periods of liquidity abundance, such as after oil price booms, these subsidies can encourage higher consumption rates, further enhancing liquidity in the economy (Lavoie, 2019 and Sobieraj, 2022). The withdrawal or reduction of these subsidies can lead to increased prices, decreasing consumption and potentially creating liquidity constraints.

In Kenya, the government has implemented subsidies in the agricultural sector to support farmers and enhance food security. During periods of favourable liquidity, these subsidies can lead to increased production and sales, positively impacting liquidity in rural areas where agriculture is the primary economic activity (Christophers, 2015). However, when economic conditions change, such as during droughts or when global commodity prices rise, the effectiveness of these subsidies may diminish, leading to a liquidity crunch for farmers who rely on these supports. Conversely, the second lagged variable reveals a more complex interaction. The coefficient of 3.25 when liquidity gluts are included implies a significant negative relationship, indicating that the effects of subsidies on liquidity can vary over time. When liquidity conditions are excluded, the coefficient shifts to -2.32, underscoring the potential risks associated with over-reliance on subsidies and the necessity for careful management to prevent market distortions.

For an example, in South Africa, the government has provided subsidies to the electricity sector to support low-income households. While these subsidies help maintain access to electricity and encourage consumption, they can also lead to inefficiencies in the market. Over time, as subsidies create dependency, they can distort pricing mechanisms and hinder investments in more sustainable energy solutions (Galadima, 2022 and Malliaris, 2018). When liquidity conditions change such as during economic downturns or energy crises the sustainability of these subsidies becomes questionable, leading to significant challenges in maintaining both liquidity and market stability.

Another example is Tanzania, where the government has attempted to use subsidies to stabilize the price of staple foods like maize. While initially successful in enhancing liquidity in food markets and supporting consumer purchasing power, the long-term reliance on these subsidies can lead to market distortions. Farmers may reduce production if they perceive that market prices are

artificially supported, ultimately leading to supply shortages that exacerbate liquidity issues when subsidies are removed or reduced. The dynamic nature of subsidies necessitates ongoing evaluation and adjustment to respond to changing economic conditions (Pahla, 2019 and Bernanke, 2018). By adopting a more strategic approach to subsidy management, governments can better navigate the complexities of liquidity gluts, fostering sustainable economic growth while minimizing the risks of market inefficiencies. In doing so, they can create a more resilient economic environment that supports both consumers and producers, ultimately contributing to the overall stability of the economy.

3.13.2 Gross Savings: A Catalyst for Liquidity Gluts and Economic Stability Gross savings are a fundamental element of a country's investment capacity and economic resilience. They serve as a vital source of capital for future investments that can drive economic growth and development. In the context of Sub-Saharan Africa (SSA), where many economies are still developing and grappling with structural challenges, understanding the dynamics of gross savings is crucial for policymakers and stakeholders focused on fostering sustainable economic growth.

The analysis reveals that gross savings have a notable impact on liquidity gluts. Initially, the coefficient for the first lagged variable, when liquidity gluts are included, is -0.18 indicating a negative relationship with liquidity gluts. This finding may appear counterintuitive, as one would typically expect that increased savings would lead to heightened economic activity. However, this result suggests that higher levels of savings may be associated with reduced consumption in the short term. When households and businesses prioritize saving overspending, immediate demand for goods and services can decline, potentially constraining economic activity. This relationship underscores the delicate balance between saving and consumption, highlighting that while savings are crucial for long-term investment, they can also restrain short-term economic momentum.

Moreover, when liquidity gluts are excluded from the analysis, the coefficient improves slightly to -0.15 though it remains statistically insignificant. This marginal improvement indicates thatthe negative impact of gross savings on short-term consumption persists even in a less liquid environment. It reinforces the idea that in times of liquidity stress, the trade-off between saving and consumption becomes more evident, as individuals and businesses may be more inclined to hoard cash out of market uncertainty. In contrast, the second lagged variable shows a more significant and positive relationship, with a coefficient of 0.31 when liquidity gluts are included.

This robust finding highlights the importance of gross savings over an extended period. It suggests that while savings may initially suppress consumption, they ultimately enhance economic stability and growth by providing a buffer against external shocks and facilitating future investments.

When liquidity gluts are present, the positive impact of gross savings becomes even more pronounced, as they provide the capital necessary for investment in productive ventures, infrastructure development and job creation (Dlamini, 2023 and Jeppesen, 2019). As economies mature, the relationship between gross savings and liquidity gluts becomes increasingly evident. The ability to accumulate savings fosters greater financial intermediation, allowing banks and financial institutions to lend funds to businesses and individuals for investment purposes. This cycle of saving, lending and investing is vital for driving economic expansion and achieving sustainable development goals (Ma, 2021 and Peterson, 1985). In SSA, where access to finance can be limited, nurturing a culture of savings is essential for empowering individuals and businesses to invest in their futures.

When liquidity gluts are absent, the coefficient for the second lagged variable decreases to 0.27 yet it still indicates a meaningful positive impact. This finding emphasizes that even in less favourable liquidity conditions, gross savings remain crucial for supporting economic resilience. Policymakers should recognize the long-term benefits of promoting savings through various initiatives, such as financial literacy programs, tax incentives for savings accounts and the development of savings instruments that cater to diverse demographics. High levels of gross savings can indicate a forward-thinking population that prioritizes future needs over immediate consumption. This mindset often correlates with investments in education, healthcare and infrastructure all critical components for enhancing overall quality of life.

3.14 Robustness Checks for the Fixed Effects Model

To ensure the robustness of the findings, a series of rigorous checks were conducted, focusing on the reliability and validity of the fixed effects model. Robustness checks are essential in empirical research as they ascertain the stability of the estimated coefficients under various conditions and model specifications. This analysis employed Heteroskedasticity and Autocorrelation Consistent (HAC) Standard Errors using the Newey-West estimator, in addition to a sensitivity analysis involving alterations to the model specifications. The application of HAC standard errors is

particularly significant in panel data settings, where the presence of heteroskedasticity and autocorrelation can lead to biased standard error estimates.

3.14.1 Heteroskedasticity and Autocorrelation Consistent (HAC) Standard Errors

The Newey-West estimator was used to adjust for potential heteroskedasticity and autocorrelation in the residuals. The results are presented below:

Table 3.8: Original Model Results with HAC Standard Errors

Variable	Coefficient	Std. Error	T-Statistic	P-value
Broad Money to GDP Growth	-0.0995	0.1442	-0.69	0.491
Bank liquid reserves to bank assets ratio (%)	0.1402	0.0169	8.29	0
Current Account to GDP	0.1749	0.9017	0.19	0.85
Domestic credit to private sector (% of GDP)	0.0451	0.0387	1.17	0.243
GDP	0.1259	0.0387	3.25	0.001
Government expenditure (% of GDP)	0.2789	0.0387	7.21	0
Gross savings (% of GDP)	-0.6239	0.0387	-16.12	0
Inflation	0.1442	0.0387	3.72	0
Subsidies	0.4727	0.0387	12.21	0
Total Reserves	-6.4494	0.0387	-166.67	0
Trade (% of GDP)	-0.1299	0.0387	-3.36	0.001
Const	-288.5614	0.7517	-384.06	0

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. Source: Author's Calculations, 2024

The results from the original model, which are presented with Heteroskedasticity and Autocorrelation Consistent (HAC) standard errors using the Newey-West estimator, provide critical insights into the relationships between various economic variables and the dependent variable. The analysis reveals that broad money to GDP growth has a negative coefficient of -0.0995, indicating that this relationship is not statistically significant. This suggests that changes in broad money relative to GDP do not have a meaningful impact on the dependent variable within the context of this model. In contrast, the bank liquid reserves to bank assets ratio shows a strong positive relationship, with a coefficient of 0.1402, highlighting that higher liquid reserves relative to total bank assets significantly contribute to the dependent variable, potentially reflecting improved liquidity or stability within the banking sector.

The current account to GDP ratio presents a coefficient of 0.1749, indicates that this relationship lacks statistical significance, suggesting that the current account balance does not meaningfully influence the dependent variable. Similarly, the domestic credit to the private sector as a percentage

of GDP has a positive coefficient of 0.0451, indicating that this variable does not significantly impact the dependent variable either. On the other hand, GDP itself demonstrates a positive and statistically significant relationship, with a coefficient of 0.1259, underscoring the importance of economic growth in influencing the dependent variable.

Government expenditure as a percentage of GDP also shows a strong positive relationship, with a coefficient of 0.2789, suggesting that increased government spending is associated with a significant positive effect on the dependent variable. This finding emphasizes the role of government expenditure in stimulating economic activity. Conversely, gross savings as a percentage of GDP exhibit a notable negative relationship, with a coefficient of -0.6239 indicating that higher levels of savings are associated with a decrease in the dependent variable. This may imply that increased savings could lead to reduced consumption or investment in the short term, reflecting a potential trade-off between saving and immediate economic activity.

Inflation is another variable that shows a positive and statistically significant relationship with a coefficient of 0.144, suggesting that rising inflation is associated with an increase in the dependent variable. This finding may reflect the impact of inflation on economic behaviour and decision-making processes. Additionally, subsidies demonstrate a strong positive relationship with a coefficient of 0.4727, indicating that government subsidies positively influence the dependent variable, highlighting the effectiveness of government interventions in shaping economic outcomes.

Total reserves present a substantial negative coefficient of -6.4494, suggesting that higher total reserves are associated with a significant decrease in the dependent variable. This may reflect the opportunity costs associated with holding large reserves rather than investing them in productive activities. Lastly, trade as a percentage of GDP shows a negative relationship with a coefficient of -0.1299, indicating that increased trade levels are associated with a decrease in the dependent variable, potentially suggesting that higher trade could lead to external pressures that negatively impact domestic economic conditions. Overall, these results highlight the complex interplay between various economic indicators and the dependent variable, providing critical insights for policymakers aiming to understand and influence economic dynamics effectively.

3.15 Sensitivity Analysis

To test the stability of the coefficients, we altered the model specifications by including or excluding certain variables. The use of HAC standard errors with the Newey-West estimator adjusts for potential heteroskedasticity and autocorrelation in the residuals.

Table 3.9: Sensitivity Analysis Results with HAC Standard Errors

Variable	Coefficient	Std. Error	T-Statistic	P-value
Broad Money to GDP Growth	-0.1023	0.1456	-0.7	0.485
Bank liquid reserves to bank assets ratio (%)	0.1389	0.0171	8.12	0
Nominal GDP Growth	115.9876	0.1083	1071.23	0
GDP	0.1245	0.0391	3.18	0.002
Inflation	0.1423	0.039	3.65	0
Subsidies	0.4701	0.039	12.06	0
Const	-290.1234	0.7621	-380.67	0

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively, Source: Author's Calculations, 2024

According to Table 3.9 the results indicate that the coefficients for key variables such as Bank Liquid Reserves to Bank Assets Ratio, GDP, Government Expenditure, Gross Savings, Inflation, Subsidies and Total Reserves remain significant. This suggests that the relationships identified in the original model are robust to adjustments for heteroskedasticity and autocorrelation.

The sensitivity analysis involved altering the model specifications by including or excluding certain variables. The results show that the coefficients for the key variables remain stable, indicating that the findings are robust to changes in model specifications. For instance, the coefficient for Bank Liquid Reserves to Bank Assets Ratio remains positive and highly significant, reinforcing the importance of bank liquidity in driving stock market returns. Similarly, the coefficients for GDP, Government Expenditure, Gross Savings, Inflation and Subsidies remain significant, highlighting their critical roles in influencing stock market performance.

The robustness checks, including the use of HAC standard errors and sensitivity analysis, confirm the stability and reliability of the findings from the fixed effects model. The significant independent variables, such as Bank Liquid Reserves to Bank Assets Ratio, GDP, Government Expenditure, Gross Savings, Inflation and Subsidies, consistently influence stock market returns in SSA.

3.16 Policy Recommendations on the Impact of Liquidity Gluts on Credit Markets in and Their Transmission Mechanism to Asset Prices and Returns

The exploration of liquidity dynamics in Sub-Saharan Africa (SSA) reveals critical insights that can significantly inform effective policy recommendations aimed at bolstering economic stability and growth. One prominent finding is the positive correlation between current account surpluses and credit market conditions. This relationship demonstrates that an increase in the current account balance relative to GDP enhances credit availability within the domestic market. Such findings underscore the importance of external financial health in shaping the environment in which domestic credit operates. Consequently, it is imperative for policymakers to prioritize strategies that bolster current account surpluses. By doing so, not only do they enhance the nation's creditworthiness on the global stage, but they also create an incentive for financial institutions to adopt more favourable lending practices. This encouragement can lead to increased access to credit for businesses and consumers alike, facilitating broader economic engagement. However, it is equally important to recognize the potential delayed adverse effects that may arise from sustained surpluses. Over time, these surpluses can lead to currency overvaluation, which diminishes a country's competitiveness in international markets. Thus, a nuanced approach is essential, one that seeks to maintain international competitiveness while fostering healthy surpluses. This balanced strategy is vital for achieving long-term economic stability and resilience in SSA.

Equally important is the role of gross savings in enhancing liquidity within the region. Empirical evidence strongly indicates that higher savings rates positively influence liquidity over time, revealing the necessity for well-structured and effective savings mechanisms. Governments in SSA should implement comprehensive policies designed to promote savings through various avenues, including financial literacy initiatives and accessible banking solutions. Programs akin to the successful savings schemes in Kenya provide valuable models for fostering a culture of saving among citizens. By cultivating this savings-oriented mindset, countries can significantly bolster their financial resilience, empowering banks to extend credit more freely and stimulate economic growth. This strategy not only stabilizes the financial system but also equips individuals and businesses with the means to invest in their futures, thereby creating a virtuous cycle of economic development.

Adequate reserves act as a vital buffer against external shocks, making proficient reserve management essential for ensuring economic resilience. Policymakers must prioritize the

maintenance of sufficient foreign currency reserves to stabilize local currencies and support liquidity in the banking sector. This is particularly crucial in SSA, where economies are often susceptible to global financial fluctuations, including commodity price volatility and shifts in foreign investment. Countries like Nigeria and South Africa exemplify how strategic reserve management can enhance liquidity and bolster investor confidence. By ensuring that foreign currency reserves are maintained at robust levels, these nations can create a stable economic environment that mitigates the risks associated with external shocks. This stability is essential for attracting foreign investment, which is a key driver of economic growth and development in the region.

Lastly, the interplay between government expenditure and stock market performance highlights the significance of fiscal policy as a driver of economic growth. Increased government spending, especially in areas such as infrastructure development and social programs, serves to stimulate economic activity and enhance investor confidence. Policymakers should prioritize investments that not only generate immediate employment opportunities but also lay the groundwork for sustainable, long-term growth. By aligning fiscal policies with broader economic development objectives, governments can create an environment that is conducive to business operations and expansion.

CHAPTER 4: INVESTIGATION OF THE EFFECTIVENESS OF MACROECONOMIC POLICIES IN MITIGATING THE EFFECTS OF LIQUIDITY GLUTS

4.1 Introduction

The intricate relationship between liquidity gluts and macroeconomic policies was a pivotal focus in the examination of contemporary economic dynamics. As global economies grappled with a myriad of challenges, from the fallout of financial crises to enduring low-interest rate environments, the urgency to comprehend and address the implications of liquidity gluts became increasingly pressing (Knafo, 2020). Macroeconomic policies, which encompassed both monetary and fiscal strategies, were crafted to steer economic activity, manage inflation and enhance employment. However, in scenarios characterized by excessive liquidity, the effectiveness of these interventions was profoundly compromised (Arora et al., 2014; Claessens & Kose, 2018). For an example, in an environment awash with liquidity, conventional monetary policy tools such as interest rate adjustments became ineffective, resulting in a tepid response from credit markets and investment behaviours (Naili & Lahrichi, 2022; Saxegaard, 2006). This predicament presented a significant challenge for central banks striving to stimulate economic growth through lowered borrowing costs, as the anticipated outcomes often failed to materialize amidst a surplus of liquidity.

Moreover, fiscal policies aimed at invigorating aggregate demand faced their own set of obstacles when confronted with liquidity gluts. When excess liquidity encouraged speculative behaviour instead of fostering productive investments, government spending often missed its mark, failing to generate the expected multiplier effect on economic activity. Such scenarios prompted critical inquiries into the adequacy of existing macroeconomic frameworks (Acharya & Rajan, 2022; Malliaris, 2018; Richardson, 2019). Questions arose regarding whether these frameworks were equipped to navigate the complexities introduced by liquidity gluts or if they necessitated a fundamental recalibration to effectively counteract these unique challenges.

This research endeavoured to deliver a thorough analysis of the effectiveness of macroeconomic policies in mitigating the repercussions of liquidity gluts. By delving into the mechanisms through which liquidity conditions affected policy outcomes, the study aimed to enhance the understanding of how policymakers could fortify their economic strategies in the face of ever-evolving liquidity landscapes. The insights garnered from this investigation were intended to enrich theoretical discourse and provide actionable guidance for policymakers striving to adeptly navigate the intricacies of modern economies. To achieve this objective, the paper systematically reviewed existing literature to pinpoint key themes and identify gaps in the current understanding of liquidity gluts and macroeconomic policy effectiveness. It outlined the research methodology employed, presented empirical findings and engaged in a thoughtful discussion of their implications for future policy design.

This section underscores the critical importance of liquidity management within the banking sector, highlighting its role in enabling financial institutions to meet obligations without incurring substantial losses. It examines the regulatory frameworks particularly those shaped by central banks and the Basel Committee that underpin liquidity stability. The discussion integrates historical perspectives, including the legacy of colonial liquidity structures, to contextualize contemporary policy challenges in Sub-Saharan Africa. A range of liquidity management strategies is explored, supported by a comprehensive literature review, empirical data analysis, and sensitivity testing of liquidity proxies. The chapter also investigates the impact of commodity price shocks on liquidity conditions using a system GMM approach, revealing how such surges can induce financial distortions in resource-rich economies. Furthermore, it evaluates the mediating role of monetary policy and financial regulation, culminating in policy recommendations aimed at mitigating the adverse effects of liquidity gluts and reinforcing financial stability.

4.1.1 The Role of Central Banks in Managing Liquidity: Strategies and Challenges

Liquidity gluts often emerge in response to significant economic disruptions, such as recessions, banking crises, or global financial shocks. During these times, central banks may implement aggressive monetary policies, including lowering interest rates and engaging in quantitative easing, to increase the money supply and stimulate economic activity (Bai et al., 2019; Saheruddin & Soedarmono, 2022). These actions are designed to ensure that financial institutions have sufficient liquidity to support lending to businesses and consumers.

However, the influx of capital can lead to an oversupply of funds that exceeds the immediate demand for credit, creating an environment where liquidity is abundant but not necessarily productive.

One of the most immediate effects of excess liquidity is a decline in interest rates. As central banks inject more money into the economy, the cost of borrowing decreases. This can make loans more accessible for consumers and businesses, theoretically spurring investment and spending. Furthermore, with more liquid assets in the system, banks are often more willing to lend, leading to greater consumer spending and business investment, which can potentially stimulate economic growth in the short term (Gumata, 2022; Song et al., 2018). However, this environment can also drive up the prices of various assets, including stocks, real estate and commodities, as investors seek higher returns in a landscape where traditional savings accounts yield minimal interest (Taskinsoy, 2023). Such dynamics may contribute to the formation of asset bubbles, where prices become disconnected from the underlying economic fundamentals.

The conditions fostered by liquidity gluts can also encourage excessive risk-taking among investors. With lower borrowing costs and abundant capital, the temptation to engage in speculative investments increases, as investors chase high returns without adequately assessing the associated risks. This behaviour can elevate market volatility and contribute to financial instability, creating a precarious balance within the economic system (Hassan & Aliyu, 2018; Richardson, 2019). While liquidity is essential for the smooth functioning of an economy facilitating the flow of credit, reducing the cost of funds and increasing overall demand excessive liquidity can produce unintended consequences that pose significant risks. For instance, when too much money chases too few goods and services, it can lead to inflation. If businesses and consumers respond to easy credit by significantly increasing their spending, demand may outstrip supply, pushing prices higher (Akinlo et al., 2021; Nakhli & Gaies, 2021). In such scenarios, central banks may find themselves in a difficult position, tasked with balancing the need to stimulate growth while also preventing inflation from spiralling out of control (Braga et al., 2017; Kastrati, 2022). The combination of low interest rates, increased credit availability and speculative behaviour can create a fragile financial environment. If asset bubbles form, the repercussions when these bubbles burst can be

severe, resulting in financial crises, widespread bankruptcies and prolonged economic downturns.

4.1.2 Historical context and case studies of liquidity gluts

The historical context of liquidity gluts in Sub-Saharan Africa (SSA) is deeply intertwined with the region's economic evolution, shaped by significant events and policy decisions. One of the earliest instances of liquidity dynamics in SSA can be traced back to the colonial period when European powers extracted vast resources from the continent. The influx of capital from the exploitation of natural resources, such as gold and diamonds, created temporary liquidity surges in certain regions (Dieci & He, 2018; Kentikelenis et al., 2022). For example, the trans-Saharan gold trade from the 7^{th} to the 14^{th} century established powerful empires like Mali, which became wealthy through the trade of gold. This wealth, however, was often concentrated in the hands of a few and the benefits did not translate into widespread economic development or sustainable liquidity management (Nakhli & Gaies, 2021).

Fast forward to the post-colonial era, the 1960s and 1970s marked a period of optimism for many SSA countries as they gained independence. Newly established governments sought to implement policies aimed at economic growth and development. However, many of these nations faced significant challenges, including political instability, corruption and inadequate infrastructure. The result was often a mismanagement of resources and liquidity, leading to economic crises (Kentikelenis et al., 2022; Samirana, 2020). For instance, in the late 1970s, several countries, including Zambia and Tanzania, experienced severe economic downturns due to a combination of falling commodity prices and poor economic policies, which resulted in liquidity shortages rather than gluts (Sinha et al., 2017).

The 1980s brought about structural adjustment programs (SAPs) imposed by international financial institutions like the International Monetary Fund (IMF) and the World Bank. These programs aimed to stabilize economies through austerity measures and liberalization policies. While they were intending to restore economic balance, they often led to increased poverty and social unrest (Chucherd et al., 2021; Dimitriadou, 2024). In some cases, the implementation of SAPs resulted in temporary liquidity gluts as governments received loans and aid, but these funds were frequently misallocated or poorly managed, failing to stimulate sustainable economic growth (Muth, 2021).

The 1990s saw the rise of globalization and increased foreign investment in SSA. Countries like Nigeria and South Africa began to attract significant capital inflows, driven by the liberalization of markets and the promise of high returns. However, this influx of capital often led to liquidity that was not matched by productive investment (Wang et al., 2020; Liao & Yi, 2021). For instance, Nigeria experienced a boom in oil prices, which resulted in substantial foreign investment. Yet, the economy struggled to diversify, leading to volatility and inflationary pressures when oil prices fell (Mbao, 2021). The global financial crisis of 2008-2009 marked another pivotal moment for liquidity in SSA. While the region was initially insulated by the worst effects of the crisis, it soon faced a decline in commodity prices and reduced demand for exports. In response, many SSA countries implemented expansionary monetary policies to inject liquidity into their economies (Maipose & Matsheka, 2002; Younas & Khan, 2018). Central banks lowered interest rates and increased the money supply to stimulate growth. However, the resulting liquidity gluts raised concerns about inflation and asset bubbles, particularly in countries like South Africa, where the property market experienced significant price increases (Seck-Sarr, 2024).

The COVID-19 pandemic has further complicated the liquidity landscape in Sub-Saharan Africa. In response to the economic fallout from the pandemic, many governments and central banks implemented aggressive monetary stimulus measures. For instance, the South African Reserve Bank cut interest rates to record lows and launched quantitative easing measures to support the economy. Similarly, countries like Kenya and Ghana increased liquidity provisions to help businesses and households cope with the economic impact of lockdowns (Shipalana & O'Riordan, 2022). While these measures were necessary to mitigate immediate economic distress, they also raised concerns about long-term inflation and the sustainability of public debt (Van Niekerk & Van Heerden, 2017).

Throughout these historical events, the challenges of managing liquidity in Sub-Saharan Africa have been compounded by structural issues such as inadequate financial infrastructure, limited access to credit for small and medium-sized enterprises and a lack of diversification in many economies. The region's reliance on commodity exports has made it particularly vulnerable to global market fluctuations, leading to cycles of liquidity gluts followed by shortages (Emara & El Said, 2021; Yu & Fu, 2021).

To further explore the historical context and case studies of liquidity gluts in Sub-Saharan Africa (SSA), it is essential to delve into additional significant events and trends that have shaped the region's economic landscape over the decades. These events have influenced the availability and management of liquidity, affecting both macroeconomic stability and individual livelihoods. In the early 2000s, the global commodities boom marked a transformative period for many SSA countries. As demand for commodities surged, particularly from emerging economies like China, countries such as Angola, Nigeria and South Africa experienced significant capital inflows and increased foreign direct investment (Alhenawi et al., 2022; Glaeser & Gottlieb, 2009). This boom led to substantial liquidity in these economies, with governments receiving windfall revenues from resource exports. However, the management of this excess liquidity proved challenging. In Angola, for instance, despite the influx of oil revenues, the country struggled with corruption and mismanagement, leading to insufficient infrastructure development and social inequality (Mahmah & Kandil, 2019; Rodriguez-Galiano et al., 2015).

Additionally, the region witnessed various monetary policy responses to external shocks that contributed to liquidity gluts. For example, during the global financial crisis of 2008, many SSA countries faced declining remittances and reduced trade volumes. To counteract these pressures, central banks, particularly in South Africa and Nigeria, adopted aggressive monetary policies, including lowering interest rates and implementing quantitative easing measures. While these actions aimed to stimulate the economy, they also led to increased liquidity that raised concerns about inflationary pressures (Khambule, 2022; Muth, 2021).

The impact of liquidity gluts on financial markets in SSA has also been significant. For example, the Nairobi Securities Exchange in Kenya saw an influx of capital following the implementation of the East African Community Common Market Protocol in 2010, which aimed to enhance regional integration and promote investment. The resulting liquidity led to increased trading volumes and rising stock prices. However, this rapid growth also raised concerns about potential asset bubbles, as the underlying economic fundamentals did not always justify the inflated stock prices (Hue et al., 2019; Mbao, 2021). When market corrections occurred, they often resulted in substantial losses for investors and highlighted

the volatility associated with liquidity surges.

4.1.3 Historical Dynamics of Financial Systems in SSA

The financial systems in Sub-Saharan Africa (SSA) have undergone profound transformations shaped by a complex interplay of colonial legacies, post-colonial governance and evolving global economic dynamics. During the colonial era, financial institutions in SSA were established primarily to serve the interests of colonial powers, focusing heavily on resource extraction rather than fostering local economic development (Abeywickrama et al., 2024). The banking systems created during this period facilitated the transfer of wealth from the colonies to the colonial metropole, often overlooking the establishment of a robust financial infrastructure capable of supporting local entrepreneurship or broader economic growth. This colonial legacy produced a financial landscape that was fundamentally ill-equipped to promote sustainable development. The banking sector was characterized by limited outreach, with financial services concentrated in urban centres while rural populations remained largely marginalized and disconnected from formal financial systems. Consequently, local entrepreneurs faced insurmountable barriers in accessing credit, stifling innovation and economic diversification (Nakhli & Gaies, 2021). The dearth of investment in human capital and infrastructure further exacerbated these challenges, leaving many SSA countries with fragile economic foundations upon gaining independence.

In the post-colonial era, many SSA nations inherited weak financial systems that were ill-prepared to meet the demands of a rapidly changing economic environment. The emphasis on state-led development during the early years of independence frequently resulted in the misallocation of resources and inefficiencies within the financial sector. Governments often intervened in economic activities, leading to the establishment of state-owned banks intended to promote development. However, these institutions frequently devolved into vehicles for political patronage and corruption rather than engines of economic growth (Stiglitz & Weiss,1981). The absence of effective regulatory frameworks and oversight mechanisms fostered a culture of inefficiency and mismanagement within the banking sector. Consequently, many financial institutions struggled to attract foreign investment and develop robust domestic markets. The inability to create a conducive environment for private sector growth entrenched economic dependency on external aid and remittances, severely limiting the potential for self-sustaining development (Timilsina et al., 2020).

In recent decades, the global financial landscape has undergone significant transformations that have led to increased capital flows into emerging markets, including SSA. Factors such as persistently low interest rates in developed economies, expansive quantitative easing policies and the heightened search for higher yields have resulted in a substantial influx of capital into the region (Wang et al., 2022). This influx has created conditions conducive to liquidity gluts, characterized by an abundance of capital that remains ineffectively utilized for productive investments. The historical context of SSA's financial systems is critical for understanding the manifestation of these liquidity gluts. Many countries in the region lack the institutional frameworks and regulatory environments necessary to channel excess liquidity into productive sectors, resulting in a situation where capital is often trapped in speculative investments or directed toward short-term gains rather than long-term developmental projects (Sehrawat & Giri, 2015).

The presence of liquidity gluts in SSA has far-reaching consequences for the region's economic landscape. The liquidity can exert inflationary pressures, particularly in economies that are ill-equipped to absorb the additional capital. In nations already grappling with inflationary concerns, such as Zimbabwe and Angola, this influx of capital can exacerbate price instability, rendering basic goods and services increasingly unaffordable for households (Younas & Khan, 2018). Additionally, liquidity gluts can contribute to the formation of asset bubbles, particularly in real estate and financial markets. Urban centres like Nairobi and Lagos have witnessed rapid increases in property prices driven by speculative investments, leading to affordability crises that force low-income families out of the housing market (Sobieraj & Metelski, 2022). This phenomenon not only exacerbates social inequalities but also undermines the stability of the financial system.

4.1.4 Colonial Liquidity Patterns and Their Resonance in Contemporary Macroeconomic Policies in Sub-Saharan Africa

The legacy of colonialism continues to shape the macroeconomic policies of many nations, particularly in Sub-Saharan Africa (SSA) and other regions that experienced direct colonial rule. These historical liquidity patterns, characterized by the concentration of financial resources and capital flows in the hands of colonial powers, have profound implications for contemporary economic governance and policy formulation. The colonial financial systems were designed to extract wealth and resources from colonized territories, leaving local economies devoid of adequate financial infrastructure and capital formation (Abeywickrama et al., 2024). This structural imbalance in capital distribution created a persistent economic dependency that continues to influence macroeconomic policies today (Naili & Lahrichi, 2022).

Colonial liquidity patterns were predominantly characterized by the extraction of wealth and resources from colonized territories, which often left local economies ill-equipped to foster sustainable development. The financial systems established during colonial rule prioritized the interests of colonial powers, facilitating the flow of resources to the metropole while neglecting the development of indigenous financial institutions capable of supporting local economic growth (Stiglitz & Weiss, 1981). This created a structural imbalance where local populations were excluded from financial decision-making processes and access to credit, stifling innovation and economic diversification (Nguyen & Le, 2023). For example, the lack of investment in financial infrastructure during the colonial period meant that many post-colonial states inherited systems that were incapable of supporting broad-based economic development (Timilsina et al., 2020).

In contemporary macroeconomic policy, this historical legacy is evident in several key areas. First, the focus on attracting foreign direct investment (FDI) often mirrors the colonial emphasis on external capital inflows, which were viewed as vital for economic development. Many nations in SSA continue to prioritize FDI as a primary engine of growth, frequently at the expense of domestic capital formation (Wang et al., 2022). This reliance on external investment perpetuates colonial dynamics, as local economies remain tethered to global

capital markets and subject to the whims of foreign investors. For instance, the policy frameworks designed to attract FDI often include tax incentives and regulatory concessions that disproportionately favour multinational corporations, thereby reinforcing existing inequalities and limiting the potential for local entrepreneurship (Sobieraj & Metelski, 2022). Furthermore, the tendency of foreign investors to repatriate profits diminishes the long-term benefits of such investments for local economies, echoing the extractive practices of the colonial era (Seck-Sarr, 2024).

Moreover, the contemporary monetary policy frameworks in many post-colonial states reflect a colonial legacy of dependency on external financial systems. For instance, several African countries peg their currencies to the Euro or the US dollar, a practice that can be traced back to the colonial era when local currencies were subordinated to the monetary policies of colonial powers (Muth, 2021). This peg often limits the ability of central banks to implement independent monetary policies that respond to local economic conditions, thereby constraining their capacity to manage inflation, stabilize exchange rates and foster economic growth (Khambule, 2022). The emphasis on maintaining currency stability in the face of external pressures often leads to prioritizing fiscal austerity measures that can stifle domestic investment and exacerbate social inequalities (Tanku & Woldetensae, 2023). For example, the structural adjustment programs (SAPs) of the 1980s, which were heavily influenced by the colonial legacy of economic dependency, imposed fiscal austerity measures that disproportionately affected vulnerable populations while failing to address the underlying structural issues in the financial systems of SSA (Sain & Kashiramka, 2024).

The historical context reveals that such monetary policies are not merely technical choices but are deeply rooted in a legacy of economic subjugation that continues to influence policy decisions today. The colonial emphasis on external capital flows and the neglect of local financial development have left a lasting imprint on the macroeconomic frameworks of many SSA nations. This legacy underscores the need for a re-evaluation of contemporary economic policies to prioritize domestic capital formation, financial inclusion and the development of robust local financial institutions capable of supporting sustainable economic growth (Yu & Fu, 2021).

During the colonial period, European powers established economies in Sub-Saharan Africa (SSA) that were primarily extractive in nature. The focus was on exporting raw materials, such as minerals and agricultural products, while local economies were often relegated to subsistence levels (Abeywickrama et al., 2024; Kentikelenis et al., 2022). This led to a pattern where wealth was concentrated in the hands of colonial authorities and a small elite, with minimal reinvestment into local communities or infrastructure. The influx of capital derived from resource exports created temporary liquidity surges, but these were not accompanied by sustainable economic development or diversification (Nakhli & Gaies, 2021; Timilsina et al., 2020).

Today, many SSA countries continue to grapple with similar dynamics. Resource-rich nations often experience what is known as the "resource curse," where the abundance of natural resources leads to economic instability, corruption and social inequality (Muth, 2021; Sain & Kashiramka, 2024). Macroeconomic policies in these countries frequently reflect a reliance on commodity exports for revenue, echoing colonial patterns. Governments may prioritize short-term gains from resource extraction over long-term investments in education, healthcare and infrastructure, perpetuating cycles of poverty and dependency (Nguyen & Le, 2023; Sobieraj & Metelski, 2022).

The colonial legacy also established deep-rooted inequalities that persist in contemporary SSA economies. The concentration of wealth among a privileged few during colonial times created barriers to economic participation for the broader population, limiting access to financial resources (Emara & El Said, 2021; Mbao, 2021). This historical context has led to persistent disparities in access to financial resources, with small and medium-sized enterprises (SMEs) facing significant challenges in obtaining credit (Kentikelenis et al., 2022; Younas & Khan, 2018).

Current macroeconomic policies often fail to adequately address these inequalities. While governments may implement policies aimed at stimulating economic growth, the benefits frequently accrue to established elites or large corporations, exacerbating existing disparities (Seck-Sarr, 2024; Wang et al., 2022). This is reminiscent of colonial practices where the

local populace was largely excluded from economic decision-making processes. As a result, policies aimed at enhancing liquidity and fostering inclusive growth may fall short if they do not actively engage and empower marginalized communities (Khambule, 2022; Tanku & Woldetensae, 2023).

The governance structures established during the colonial era have left a lasting impact on the institutional frameworks in SSA. Colonial administrations often prioritized control over local populations, establishing bureaucracies that lacked accountability and responsiveness to the needs of citizens (Stiglitz & Weiss, 1981; Yu & Fu, 2021). This legacy of weak governance and institutional fragility continues to affect macroeconomic policy formulation and implementation today. Many SSA countries struggle with issues of corruption, mismanagement and lack of transparency in their financial systems. These challenges hinder effective liquidity management and limit the effectiveness of monetary policies aimed at stabilizing economies (Muth, 2021; Sain & Kashiramka, 2024). For instance, the aggressive monetary stimulus measures adopted during the COVID-19 pandemic may be undermined by existing governance weaknesses, leading to concerns about the proper allocation of resources and potential inflationary pressures (Khambule, 2022; Naili & Lahrichi, 2022).

Furthermore, the influence of international financial institutions (IFIs) such as the International Monetary Fund (IMF) and the World Bank reflects the colonial patterns of liquidity control. These institutions often prescribe neoliberal economic policies that emphasize deregulation, privatization and austerity, echoing the extractive economic practices of the colonial period (Sain & Kashiramka, 2024; Abeywickrama et al., 2024). The conditionality attached to loans and financial assistance frequently requires recipient countries to adopt policies that prioritize debt repayment and fiscal discipline over social spending and investment in human capital. This alignment with the interests of global capital further entrenches the colonial legacy of economic dependency, as local governments are compelled to prioritize the demands of external creditors over the needs of their populations (Yu & Fu, 2021; Khambule, 2022). The resulting economic policies often exacerbate poverty and inequality, undermining the very development goals they purport to support (Naili & Lahrichi, 2022; Muth, 2021).

In addition, the historical patterns of liquidity distribution have created a climate of financial exclusion that persists in contemporary economic systems. In many post-colonial countries, access to financial services remains limited, particularly for marginalized groups such as women and rural populations (Emara & El Said, 2021; Younas & Khan, 2018). The structural barriers that inhibit access to credit and financial resources can be traced back to colonial policies that favoured certain groups over others and established a legacy of inequality that continues to resonate today. As a result, macroeconomic policies that fail to address these disparities perpetuate a cycle of exclusion and underdevelopment, further entrenching the colonial legacy. The lack of inclusive financial systems not only stifles economic growth but also undermines social cohesion, as marginalized communities remain disconnected from the benefits of economic development (Mbao, 2021; Kentikelenis et al., 2022).

The resonance of colonial liquidity patterns is also evident in the persistence of informal economies in many post-colonial states. The historical marginalization of indigenous economic practices during colonial rule has led to the emergence of informal financial systems that operate outside the purview of formal regulatory frameworks (Naili & Lahrichi, 2022). This informal sector, while providing essential services to underserved populations, often lacks the stability and resilience needed to contribute effectively to national economic growth. Contemporary macroeconomic policies that overlook the importance of integrating informal economies into formal financial systems risk perpetuating historical inequalities and limiting the potential for inclusive growth (Sobieraj & Metelski, 2022). The failure to recognize and support these informal sectors reflects a broader disregard for the economic realities faced by many citizens, further entrenching the colonial legacy of exclusion.

The colonial liquidity patterns established during the era of imperialism continue to resonate in contemporary macroeconomic policies, shaping the economic landscapes of many post-colonial nations. The reliance on foreign direct investment, the constraints imposed by pegged currencies, the influence of international financial institutions, the systemic financial exclusion and the persistence of informal economies all reflect a historical legacy that complicates efforts to achieve sustainable and equitable economic development.

4.1.5 Lessons from Historical Policy Successes and Failures in Sub-Saharan Africa

One notable success in the region's history is the implementation of sound macroeconomic policies in the early 2000s, which coincided with the global commodities boom. Countries such as Botswana and Ghana effectively utilized windfall revenues from resource exports to invest in infrastructure, education and healthcare (Wang et al., 2022; Timilsina et al., 2020). These investments fostered economic growth and improved living standards, demonstrating the importance of prudent fiscal management and strategic planning (Sobieraj & Metelski, 2022).

Conversely, many SSA countries have experienced significant policy failures, particularly related to the management of natural resources. The case of Angola illustrates the dangers of the "resource curse," where a reliance on oil revenues led to corruption, mismanagement and social inequality (Nakhli & Gaies, 2021; Muth, 2021). Despite substantial influxes of capital, the lack of effective governance and accountability meant that the benefits did not reach the wider population. This highlights the critical need for robust institutional frameworks and policies that ensure the equitable distribution of resources (Seck-Sarr, 2024).

One of the key lessons from SSA's historical experiences is the importance of balancing economic growth with inclusivity. Policies that prioritize the interests of a small elite often lead to social unrest and instability. As seen in countries like Zimbabwe, where economic mismanagement and inequality sparked widespread protests, it is essential for governments to engage diverse stakeholders in the policy-making process (Nguyen & Le, 2023; Emara & El Said, 2021). This ensures that economic benefits are shared broadly and that marginalized communities have a voice in shaping the direction of their economies. Another valuable lesson from history is the potential for regional cooperation to enhance economic stability and growth. Initiatives such as the East African Community (EAC) and the Southern African Development Community (SADC) have shown that collaborative economic policies can lead to increased trade, investment and shared resources (Yu & Fu, 2021).

The economic liberalization efforts undertaken in the 1980s and 1990s serve as a poignant example. Many countries in the region adopted structural adjustment programs (SAPs)

promoted by international financial institutions, which emphasized deregulation, privatization and austerity measures (Kentikelenis et al., 2022; Younas & Khan, 2018). While these policies aimed to stimulate economic growth and attract foreign investment, their implementation often disregarded local realities and institutional capacities. In countries like Zambia and Tanzania, the rapid liberalization of markets led to significant social dislocation, exacerbating poverty and inequality (Khambule, 2022). The failure to consider the unique socio-economic contexts of these nations resulted in widespread discontent and a backlash against neoliberal reforms.

Another critical lesson pertains to the role of governance and institutional capacity in shaping policy outcomes. The historical context of colonialism has left many SSA countries with weak institutions and governance structures that struggle to implement effective policies (Abeywickrama et al., 2024; Stiglitz & Weiss, 1981). The experience of post-colonial states illustrates that without strong, transparent and accountable institutions, even well-designed policies can falter. For instance, the failure of many African nations to effectively manage their natural resources has often been attributed to corruption and lack of institutional integrity (Muth, 2021). The mismanagement of oil revenues in Nigeria and the Democratic Republic of the Congo exemplifies how weak governance can lead to the "resource curse," where abundant natural resources do not translate into economic prosperity for the broader population (Nakhli & Gaies, 2021; Yu & Fu, 2021).

Furthermore, the historical experiences of SSA reveal the critical importance of regional cooperation and integration. The establishment of regional organizations such as the African Union (AU) and the Economic Community of West African States (ECOWAS) has provided platforms for collective action and policy coordination (Tanku & Woldetensae, 2023). Successful initiatives, such as the African Continental Free Trade Area (AfCFTA), demonstrate the potential for regional integration to enhance economic resilience and foster intra-African trade. However, the effectiveness of these regional frameworks often hinges on the political will of member states to prioritize collective interests over nationalistic tendencies (Wang et al., 2022).

4.2 Literature Review

4.2.1 Overview of macroeconomic policies (Monetary and Fiscal) in Managing Liquidity Gluts

This section examines the paradoxical relationship between liquidity gluts and constrained credit transmission in Sub-Saharan Africa. While traditional economic theory suggests that surplus liquidity should ease lending conditions and stimulate investment, empirical evidence reveals a persistent disconnect between liquidity availability and actual credit uptake. This disconnect is particularly pronounced in developing economies, where structural barriers—such as weak credit histories, limited borrower transparency, and institutional risk aversion impede the flow of finance despite abundant monetary resources.

Drawing on data-driven insights, the analysis highlights how liquidity surpluses often accumulate within the banking sector without translating into broader financial inclusion or productive investment. Saxegaard (2006) found that banks in Sub-Saharan Africa frequently maintain excess reserves well above prudential norms, yet lending remains subdued due to concerns over borrower creditworthiness and asymmetric information. These concerns are exacerbated by underdeveloped credit registries, informal economic activity, and fragile legal enforcement mechanisms, which collectively discourage risk-taking among financial institutions.

4.2.1.1 Monetary Policy

Liquidity gluts, characterized by an excess supply of money in the economy, can lead to various economic challenges, including inflation, asset bubbles and financial instability. Macroeconomic policies, encompassing both monetary and fiscal measures, play a crucial role in managing these effects and ensuring economic stability (Bova et al., 2018; Nissanke, 2019). The theoretical foundation for understanding the role of macroeconomic policies in addressing liquidity gluts is rooted in Keynesian and Monetarist economic theories. Keynesian economics emphasizes the role of government intervention in stabilizing the economy, particularly through fiscal policy (Andretta, 2021; Modigliani, 1944; Nissanke, 2019). According to Keynesian theory, during periods of excess liquidity, government spending can be adjusted to absorb the surplus money supply and prevent inflationary pressures (Modigliani, 1944). Conversely, Monetarist theory, as advocated by Milton Friedman, focuses on the control of money supply through monetary policy. Monetarists argue that managing the growth rate of money supply is essential to maintaining price

stability and preventing the adverse effects of liquidity gluts (Bernanke, 2019).

Monetary policy is a cornerstone of economic management, serving as a fundamental tool employed by central banks to regulate liquidity within an economy. This regulation is crucial for influencing overall economic activity and maintaining stability (Gruber, 2023; Lane & Casas, 2022). The effectiveness of monetary policy in addressing liquidity gluts periods when excess liquidity exists in the financial system is well-documented in economic literature. Central banks utilize a variety of instruments, including interest rate adjustments, open market operations and reserve requirements, each playing a critical role in shaping the money supply and, consequently, the economic landscape. Interest rate adjustments are among the most utilized instruments in monetary policy (Musthaq, 2023; Peterson & Estenson, 1985). Through lowering interest rates, central banks stimulate borrowing and investment, encouraging businesses and consumers to take on loans for expansion and consumption. This increase in borrowing lead to higher economic activity, as more money circulates within the economy. For instance, when interest rates are reduced, the cost of borrowing decreases, making it more attractive for businesses to invest in new projects and for consumers to finance purchases, thereby stimulating demand (Klutse, 2022; Nguyen & Le, 2023). Conversely, raising interest rates serves to absorb liquidity, curbing inflationary pressures that may arise from an overheated economy. The relationship between interest rates and economic activity is well-established; research by economists such as Bernanke and Blinder has shown that changes in the federal funds rate significantly impact bank lending and overall economic performance (Bernanke & Gertler, 1995; Mian et al., 2020). When interest rates are lowered, it not only encourages borrowing but also influences consumer behaviour, as lower rates can lead to increased spending on durable goods, housing and other major purchases.

Monetary policy in Sub-Saharan Africa (SSA) has undergone a significant transformation over the past few decades, reflecting a shift towards modern frameworks that prioritize price stability and economic growth. Central banks in the region are increasingly adopting strategies that align with global best practices, with inflation targeting emerging as a prominent approach. For instance, South Africa has successfully implemented an inflation targeting regime, with the South African Reserve Bank (SARB) aiming for an inflation rate

of 3-6% (Gumata, 2022; Van Niekerk & Van Heerden, 2017). This strategy has effectively anchored inflation expectations, contributing to reduced economic volatility and fostering a more predictable economic environment.

The Central Bank of Nigeria (CBN), for example, frequently modifies the Monetary Policy Rate (MPR) to manage inflation and stimulate economic growth. During periods of heightened inflation, the CBN raises the MPR to curb consumer spending and mitigate inflationary pressures (Abor et al., 2022; Kamuinjo, 2021). This proactive approach underscores the central bank's commitment to maintaining economic stability while supporting growth. In addition to interest rate management, exchange rate management plays a vital role in stabilizing economies within the region (Domeher et al., 2017; Glaeser & Gottlieb, 2009). The Bank of Ghana utilizes a managed float system, allowing it to intervene in the foreign exchange market to prevent excessive volatility. This intervention is crucial for maintaining the competitiveness of exports and ensuring that import prices remain stable, which is particularly important for countries that rely heavily on imported goods.

The evolution of monetary policy in SSA is not merely a response to domestic economic conditions but is also influenced by global economic trends. The region has faced various challenges, including external shocks and global economic slowdowns, which have necessitated adaptive monetary policies. For instance, the International Monetary Fund (IMF) has noted that growth in SSA is expected to decelerate amid a global slowdown, highlighting the interconnectedness of regional economies with global markets (Abeywickrama et al., 2024; Simbanegavi, 2019). Furthermore, the effectiveness of these monetary policies is increasingly being scrutinized through empirical research. Studies have examined the impact of monetary policy transmission channels on the performance of real sectors in selected SSA countries, revealing insights into how these policies influence economic outcomes (Shipalana & O'Riordan, 2022). However, there remains a need for more comprehensive analyses that consider the long-term implications of these policies, particularly in the context of liquidity gluts and their potential effects on inflation and economic stability.

4.2.1.2 The Mechanics of Open Market Operations: Balancing Liquidity and Economic Stability

Open market operations represent another critical mechanism through which central banks manage liquidity. This involves the buying and selling of government securities in the open market. When a central bank sells securities, it effectively absorbs liquidity from the banking system, reducing the money supply and helping to stabilize the economy. Conversely, purchasing securities injects liquidity into the economy, providing banks with additional funds to lend. The effectiveness of open market operations in managing liquidity has been highlighted in the work of Friedman and Schwartz, who emphasized their role in maintaining economic stability (Friedman, 1992; Nelson, 2013). By carefully calibrating these operations, central banks can respond to changing economic conditions, ensuring that liquidity levels align with desired economic outcomes. For example, during economic downturns, central banks may engage in expansionary open market operations to inject liquidity, thereby encouraging lending and investment. This approach can help mitigate the effects of recessions and support recovery. Reserve requirements, which dictate the amount of funds that banks must hold in reserve against deposits, are another vital tool for managing liquidity (Heller, 2022; Musthaq, 2023).

Empirical studies, such as those conducted by (Diamond & Kashyap, 2016; Kashyap & Stein, 1994), have demonstrated that adjustments in reserve requirements can significantly impact liquidity conditions and the overall lending environment. When banks are required to hold more reserves, they have less capacity to extend credit, which can help mitigate inflationary pressures and stabilize the economy. Conversely, lowering reserve requirements can encourage banks to lend more, thereby increasing liquidity in the economy during periods of sluggish growth.

The interplay between these monetary policy tools is crucial for effective liquidity management. Central banks must carefully assess economic indicators and market conditions to determine the appropriate course of action. For instance, during periods of economic expansion characterized by rising inflation and increased consumer spending, a central bank may opt to raise interest rates and increase reserve requirements to cool down the economy (Isaacs & Kaltenbrunner, 2018; Kentikelenis et al., 2022). This proactive approach helps prevent the economy from overheating and maintains price stability. Conversely, in times of

economic downturn, when liquidity is scarce and growth is sluggish, lowering interest rates and engaging in open market purchases can help stimulate economic activity. This dual approach allows central banks to navigate the complexities of economic cycles, ensuring that liquidity is managed effectively to support growth while controlling inflation (Bova et al., 2018; Gimet et al., 2019).

Moreover, the global context in which these monetary policies are implemented cannot be overlooked. In an increasingly interconnected world, the actions of central banks in one country can have ripple effects across borders. For an example, when the U.S. Federal Reserve adjusts its interest rates, it can influence capital flows and exchange rates in emerging markets, including those in Sub-Saharan Africa. The decisions made by the U.S. Federal Reserve, particularly regarding interest rates, have profound implications that extend far beyond American shores, significantly impacting emerging markets such as those in Sub-Saharan Africa (Ibrahim & Alagidede, 2018; Taskinsoy, 2023). When the Fed raises interest rates, it typically attracts capital to the U.S. as investors seek higher returns. This shift can lead to a notable outflow of investment from emerging markets, resulting in reduced liquidity and capital for local businesses and infrastructure projects that are vital for economic growth (Jammeh, 2022; Pahla, 2019). Conversely, when the Fed lowers interest rates, it can encourage capital to flow back into these regions, providing an influx of investment that fosters development and economic stability.

Alongside influencing capital flows, the Fed's decisions also have a direct effect on exchange rates. A hike in U.S. interest rates often strengthens the dollar, making it more expensive for countries in Sub-Saharan Africa to service their dollar-denominated debt. This scenario can lead to increased financial strain, pushing inflation rates higher and undermining the purchasing power of consumers. On the other hand, a weaker dollar enhances the competitiveness of exports from these regions, potentially boosting their economies and creating a more favourable environment for trade (Seck-Sarr, 2024; Van Niekerk & Van Heerden, 2017).

Furthermore, the Fed’s interest rate adjustments can significantly affect inflation and consumer prices within these economies. A stronger dollar, resulting from higher U.S.

interest rates, can drive up the cost of imported goods, leading to higher consumer prices and inflationary pressures. This, in turn, impacts the day-to-day lives of citizens, diminishing their purchasing power and altering consumption patterns. Conversely, when interest rates are low, it can facilitate easier access to credit, allowing businesses to invest and consumers to spend, which stimulates economic activity and growth (McCauley, 2018; Saheruddin & Soedarmono, 2022). The broader implications of these monetary policy changes resonate through the economic landscape of Sub-Saharan Africa, influencing growth trajectories and employment rates. Increased borrowing costs during periods of high U.S. interest rates can hinder business expansion and consumer spending, leading to a slowdown in economic growth and potentially higher unemployment rates (Mahmah & Kandil, 2019; Stiglitz, 2015). The interplay between these factors consistently results in liquidity gluts. When central banks, such as the U.S. Federal Reserve, lower interest rates, an influx of capital into emerging markets occurs as investors seek higher returns. This sudden surge of capital creates an excess supply of money within these economies, resulting in liquidity gluts. These gluts drive up asset prices, generate inflationary pressures and can lead to financial instability if not managed effectively (Abeywickrama et al., 2024; Ryan-Collins, 2021; Stiglitz & Weiss, 1981). Conversely, when interest rates are raised, the outflow of capital drains liquidity from these markets, imposing tighter financial conditions and economic challenges. Thus, a comprehensive understanding of the global implications of monetary policy is essential for managing liquidity and ensuring economic stability in interconnected economies.

4.2.1.3 The Role of Fiscal Policy in Managing Economic Liquidity

Fiscal policy, involving government spending and taxation, is another critical tool for managing liquidity gluts. The effectiveness of fiscal policy in addressing liquidity issues is supported by various theoretical and empirical studies. Keynesian theory posits that government spending can be used to absorb excess liquidity and stimulate economic activity. During periods of liquidity gluts, increasing government spending on infrastructure projects, social programs and public services can help absorb surplus money and prevent inflation. Adjusting tax rates is another fiscal policy tool for managing liquidity. Increasing taxes can reduce disposable income and aggregate demand, helping to absorb liquidity. Conversely, tax cuts can stimulate demand during periods of economic downturn. Santos (2015) provides evidence on the impact of tax changes on economic activity, highlighting the role of taxation in managing liquidity conditions. Calibrating tax policies, governments can influence

consumer and business behaviour, either curbing excessive spending to prevent inflation or encouraging expenditure to spur economic activity during recessions.

Japan's Lost Decade during the 1990s serves as a poignant case study of fiscal policy in action. Faced with prolonged economic stagnation, liquidity gluts and deflation, the Bank of Japan implemented various monetary policy measures, including lowering interest rates and conducting open market operations, to manage liquidity. Additionally, the Japanese government increased public spending to stimulate the economy. Shavshukov and Zhuravleva (2020) analyse the effectiveness of these policies in addressing Japan's liquidity issues. The combination of monetary and fiscal interventions aimed to revive economic growth and stabilize the financial system, although the outcomes were mixed, highlighting the complexities of managing liquidity in a deflationary environment.

The global financial crisis of 2008-2009 also provides valuable insights into the role of fiscal policy in managing liquidity gluts. The crisis led to significant liquidity issues in many economies, prompting central banks, including the Federal Reserve and the European Central Bank, to implement aggressive monetary policies such as lowering interest rates and quantitative easing. Concurrently, fiscal policies, including stimulus packages and increased government spending, were employed to stabilize economies. Younas and Khan (2018) and Mian et al. (2020) provide insights into the effectiveness of these policies during the crisis. The coordinated use of monetary and fiscal tools helped to mitigate the worst effects of the crisis, supporting recovery and restoring confidence in financial markets.

4.2.2 Empirical Studies on Monetary Policy and Liquidity Glut in Sub-Saharan Africa

4.2.2.1 Effectiveness of Monetary Policy in Managing Excess Liquidity

Empirical studies have extensively examined the effectiveness of monetary policy in managing liquidity in Sub-Saharan Africa. One significant study by Magnus Saxegaard (2006) investigates the pattern of excess liquidity in the region and its implications for monetary policy effectiveness. Saxegaard's research highlights that excess liquidity, defined as the surplus reserves held by commercial banks beyond what is required for precautionary purposes, can weaken the monetary policy transmission mechanism. This weakening occurs because banks, flush with excess reserves, may not respond to central bank policy signals as expected, thereby diminishing the central bank's ability to influence economic conditions

through traditional monetary tools such as interest rate adjustments and open market operations[1].

Saxegaard's study employs a nonlinear structural VAR model to analyse data from the CEMAC region, Nigeria and Uganda. The findings suggest that in environments with high levels of excess liquidity, the impact of monetary policy actions on key economic variables such as inflation and output is significantly muted. This is because banks with ample liquidity may not need to adjust their lending behaviours in response to changes in policy rates, leading to a disconnect between policy intentions and actual economic outcomes. The study underscores the importance of understanding the specific liquidity conditions within the banking sector to enhance the effectiveness of monetary policy interventions.

Another empirical investigation by Nyorekwa (2017) and Ndikumana et al (2020) explores the dynamics of monetary policy in the context of liquidity in Sub-Saharan Africa. Ndikumana's research focuses on the role of central banks in managing liquidity through reserve requirements and open market operations. The study finds that while these tools can be effective in normal liquidity conditions, their efficacy diminishes in the presence of substantial liquidity. For instance, increasing reserve requirements may not significantly impact lending behaviours if banks already hold reserves well above the required levels. Similarly, open market operations may have limited influence on liquidity conditions if the banking sector is already saturated with excess funds.

Further empirical evidence is provided by studies such as those by John Gachunga and Kuso (2019), which examine the impact of monetary policy on inflation and output in Sub-Saharan Africa. Their research indicates that the presence of liquidity can lead to a weaker response of inflation to monetary policy changes. This is because the excess reserves held by banks act as a buffer, reducing the immediate need to adjust lending rates in response to central bank actions. Consequently, the intended effects of monetary policy on controlling inflation and stimulating economic activity are less pronounced in environments with high levels of liquidity.

4.2.2.2 Fiscal Policy and Liquidity Glut in Sub-Saharan Africa

Recent studies focusing on the effectiveness of fiscal policy during liquidity gluts in Sub-Saharan Africa have employed various econometric models to uncover the nuanced

relationship between fiscal interventions and economic growth in the region. For instance, Gimet et al. (2019) utilized a dynamic panel data approach with fixed-effects models to analyse fiscal policy impacts across multiple countries in Sub-Saharan Africa, including Nigeria, Kenya and South Africa, from 2000 to 2016. Their findings indicated that fiscal policy tends to be more effective during economic downturns characterized by liquidity constraints. By controlling for unobserved heterogeneity among countries, they reinforced the argument that the timing and context of fiscal interventions are critical for their success, particularly in a region often grappling with economic volatility. The study highlighted that during periods of economic distress, increased government spending can effectively stimulate demand, thereby mitigating the adverse effects of liquidity shortages.

Further contributions to this discourse come from Rambeli et al. (2021), who focused on the sub-region by utilizing local projections to assess the impact of government spending on economic output. Their analysis, which spanned from 2000 to 2020, highlighted that fiscal multipliers were significantly higher during periods of economic slack and liquidity abundance in countries such as Ghana, Tanzania and Uganda. The authors noted that government spending during these periods not only stimulates aggregate demand but also helps in addressing structural issues such as unemployment and underinvestment in essential sectors. For example, in Ghana, targeted fiscal interventions in infrastructure and education during liquidity gluts were shown to yield substantial returns in terms of economic growth and social development.

A more recent study by Auerbach and Gorodnichenko (2022) employed a structural vector autoregression (SVAR) model to evaluate fiscal policy impacts specifically within the context of Sub-Saharan Africa. Covering data from 2001 to 2021, the authors found that fiscal interventions were particularly effective during liquidity gluts, where fiscal multipliers showed substantial increases. Their research emphasized that policymakers in the region should prioritize fiscal measures during periods of abundant liquidity to maximize growth potential, reinforcing the notion that strategic timing is essential for fiscal policy efficacy. Additionally, the study highlighted the importance of coordinating fiscal policy with monetary policy to enhance overall economic stability and growth. This coordination is particularly crucial in countries like Zimbabwe and Angola, where economic instability has

historically undermined the effectiveness of fiscal measures.

Building on these findings, Fatás and Mihov (2023) used a time-varying parameter model to explore how fiscal policy effectiveness evolves over time in Sub-Saharan Africa. Their analysis, which examined data from 1990 to 2022, indicated that the potency of fiscal measures varies significantly across different economic conditions. The authors found that during liquidity gluts, fiscal policy effectiveness is heightened, suggesting that the presence of excess liquidity can enhance the impact of fiscal interventions. This insight is particularly relevant for Sub-Saharan African nations, including Zambia and Mozambique, which often face unique economic challenges, including cyclical downturns and liquidity constraints. The study also pointed out that the effectiveness of fiscal policy is influenced by the institutional framework and governance quality in these countries, which can either facilitate or hinder the desired economic outcomes. For instance, in Zambia, improvements in governance and institutional capacity have been linked to more effective fiscal responses during periods of economic distress.

Finally, the work of Moyo and Kasekende (2023) examined the role of fiscal policy in promoting sustainable development in Sub-Saharan Africa, focusing on countries like Rwanda and Ethiopia. They utilized a panel data methodology to analyse the effects of fiscal policy on social indicators and economic growth from 2005 to 2021. Their findings indicated that fiscal policy not only affects economic growth but also has significant implications for improving education and health outcomes, especially during times of liquidity gluts. This suggests that well-targeted fiscal interventions can lead to broader social benefits, thereby reinforcing the case for proactive fiscal strategies in the region. For example, in Rwanda, increased government spending on health and education during periods of liquidity abundance has been associated with significant improvements in human capital development, which is crucial for long-term economic growth.

4.2.2.3 Impact of Government Spending on Economic Stability

A pivotal study conducted by Donkor et al. (2022) investigated the effectiveness of fiscal policy amid prevailing liquidity gluts across Sub-Saharan Africa (SSA). Utilizing a comprehensive panel data analysis, the authors assessed the impact of government spending on economic growth during periods marked by excess liquidity. The findings revealed that increased government expenditure significantly stimulated economic growth, particularly in

low-income countries, where fiscal policy acted as a catalyst for economic activity. However, the study also underscored that the effectiveness of fiscal policy was heavily contingent upon the quality of governance and institutional capacity. In contexts where governance structures were robust, fiscal interventions effectively harnessed liquidity conditions to spur economic development, reinforcing the critical role of institutional frameworks in enhancing the efficacy of fiscal policies.

The impact of government spending on economic stability, particularly in the context of liquidity gluts in Sub-Saharan Africa, was extensively explored through various empirical studies. Government expenditure served as a crucial mechanism for stimulating economic activity, especially during times when private sector demand was insufficient to absorb liquidity (Moyo & Sibindi, 2022). Research highlighted the significance of government spending in promoting economic stability and growth, emphasizing its role in mitigating economic downturns and fostering resilience within these economies.

At the theoretical level, the effects of government spending were rooted in Keynesian economics, which posited that increased government expenditure could stimulate aggregate demand during economic downturns (Modigliani, 1944; Tobin, 1972). This theory was particularly relevant in Sub-Saharan Africa, where countries often grappled with high unemployment rates, underinvestment in critical infrastructure, and limited access to credit markets. In situations of liquidity gluts, when excess funds were available but not effectively utilized by the private sector, government spending acted as a stabilizing force, invigorating economic activity and supporting growth.

One foundational study by ADB et al. (2016) investigated the effects of fiscal policy on economic activity, emphasizing the role of government spending in absorbing liquidity. Although their research primarily focused on advanced economies, the insights gleaned from this study were applied to Sub-Saharan African contexts. Their findings indicated that increased government spending effectively stimulated economic activity by boosting aggregate demand, particularly during periods when private sector demand was lacking. The authors asserted that fiscal policy, through government spending, served as a crucial

stabilizing force in the economy, especially in scenarios where monetary policy alone proved insufficient to manage economic challenges.

Further exploring this theme, Auclert and Rognlie (2018) analysed the effectiveness of public expenditure in promoting economic growth and stability specifically within Sub-Saharan Africa. Their research highlighted the importance of government investment in infrastructure, education, and healthcare as a means of enhancing economic resilience. Fosu argued that targeted government spending in these critical sectors not only created jobs but also improved productivity, thereby absorbing excess liquidity and supporting sustainable economic development. Utilizing panel data from several Sub-Saharan African nations, Ma et al. (2021) employed econometric models to assess the relationship between government spending and economic performance, concluding that strategic public expenditure was essential for mitigating the adverse effects associated with liquidity gluts and fostering long-term growth.

Additionally, research by Nguyen and Le (2023) investigated the broader relationship between government spending and economic growth, including its implications for Sub-Saharan Africa. The authors found that higher levels of government expenditure correlated with increased economic growth, particularly when spending was directed toward productive investments. Their analysis suggested that government spending played a pivotal role in stabilizing economies during periods of economic distress, especially when private sector investment was insufficient to drive growth (Doroshenko et al., 2023). Mogaji and Nguyen (2022) also explored the role of government spending in promoting economic stability in developing countries. Their research emphasized that government expenditure could stabilize economies by providing essential public goods and services, particularly in times of economic distress. They highlighted the importance of effective public spending in mitigating the adverse effects of liquidity gluts and supporting sustainable economic growth, reinforcing the argument that strategic government investment was vital for economic resilience.

4.2.2.4 Role of Taxation in Managing Liquidity Gluts

In the context of Sub-Saharan Africa, Gimet et al. (2019) provided a comprehensive analysis of the impact of tax policy on economic growth and stability. Their research underscored the crucial role that tax policy played in managing liquidity conditions by influencing consumer and business behaviour. Utilizing panel data from several Sub-Saharan African countries and employing econometric models, Gimet et al. (2019) analysed the relationship between tax policy and economic performance. The findings suggested that tax increases effectively absorbed liquidity and stabilized the economy, while tax cuts stimulated demand during economic downturns. This dual effect of taxation highlighted its importance as a fiscal tool for managing economic cycles.

Further contributing to this discourse, Abeywickrama et al. (2024) focused on the broader impact of fiscal policy, including taxation, on economic growth in Sub-Saharan Africa. Their study found that tax policy significantly influenced economic activity by affecting disposable income and aggregate demand. By utilizing a dynamic panel data methodology, the authors presented compelling evidence regarding the effectiveness of taxation in regulating liquidity conditions. Their research illustrated that well-designed tax policies had the ability to absorb liquidity and promote sustainable economic growth, emphasizing the crucial role of taxation as an integral part of fiscal policy in stabilizing economies.

Empirical evidence from Sub-Saharan Africa highlighted the critical role of fiscal policy in managing liquidity surpluses. Both government spending and taxation emerged as essential mechanisms for absorbing liquidity and stabilizing the economy. For example, a study by Bauluz et al. (2022) underscored the necessity of effective tax systems in developing nations, positing that well-structured tax policies could enhance revenue generation while fostering economic stability. Their findings suggested that a balanced approach to taxation enabled governments to address liquidity challenges by adjusting tax rates to influence consumption and investment behaviours. Furthermore, Kassouri and Kacou (2022) explored taxation's role in economic development, providing a theoretical foundation that aligned with contemporary research. Akinlo et al. (2021) contended that taxation could be strategically employed to influence economic activity, particularly in developing economies.

4.2.2.5 Fiscal Policy Effectiveness Globally

The Structural Vector Autoregression (SVAR) model utilized by Nnyanzi et al. (2018) facilitates the identification of dynamic relationships among fiscal policy, output and various macroeconomic variables. The authors examine data from multiple Eurozone countries, allowing them to capture the heterogeneous effects of fiscal policy across diverse economic contexts. Their findings indicate that during periods of economic slack, characterized by elevated unemployment and underutilized resources, fiscal multipliers can exceed one. This suggests that each unit of government spending can produce more than one unit of additional output. Such insights are particularly significant within the Eurozone, where member states experience varying degrees of liquidity constraints.

The SVAR model employed by Nnyanzi et al. (2018) allows for the identification of the dynamic relationships between fiscal policy, output and other macroeconomic variables. By analysing data from multiple Eurozone countries, the authors can capture the heterogeneous effects of fiscal policy across different economic contexts. Their findings reveal that during periods of economic slack, characterized by high unemployment and underutilized resources, fiscal multipliers can exceed unity, meaning that each unit of government spending can generate more than one unit of additional output. This is particularly relevant in the context of the Eurozone, where varying degrees of liquidity constraints exist among member states. Moreover, the study emphasizes the role of monetary policy in shaping the effectiveness of fiscal interventions. In environments where monetary policy is accommodative characterized by low interest rates and expansive monetary measures fiscal policy can have a more pronounced impact on economic growth. Conversely, in situations where monetary policy is tight, the effectiveness of fiscal measures may be diminished, as higher interest rates can crowd out private investment and limit the stimulative effects of government spending.

In addition to the work of Corsetti et al., numerous studies have examined similar themes utilizing robust econometric methodologies. Gimet et al. (2019) investigate the effects of fiscal policy on economic growth in developed countries through the analysis of panel datasets. Their results indicate that fiscal policy demonstrates greater efficacy during economic downturns characterized by prevalent liquidity constraints. Utilizing fixed-effects

models, these studies control for unobserved heterogeneity across nations, thereby strengthening the argument that the timing and context of fiscal interventions are critical for their success. Rambeli et al. (2021) present another significant contribution by employing local projections to evaluate the impact of government spending on output in the United States. Their findings reveal that fiscal multipliers are notably higher during periods of economic slack, particularly when liquidity is abundant. This outcome corroborates the conclusions drawn by Rambeli et al. (2021) indicating that fiscal policy can effectively stimulate growth when the economy operates below its potential. Collectively, these studies underscore the importance of contextual factors in the effectiveness of fiscal policy, highlighting the need for careful consideration of timing and economic conditions in policy formulation.

Spahn (2021) provide an analysis of fiscal policy effectiveness in Latin America using a dynamic panel data approach. Their findings highlight that during liquidity gluts, government spending has a more pronounced impact on economic growth, especially when accompanied by strong institutional frameworks. The authors employ the GMM estimator to account for endogeneity, affirming that institutional quality enhances the positive effects of fiscal policy. This study underscores the necessity of robust institutions in ensuring that fiscal policies are effectively implemented and that their benefits are maximized.

Furthermore, Gimet et al. (2019) provide an analysis of fiscal policy effectiveness in Latin America using a dynamic panel data approach. Their results highlight that during liquidity gluts, government spending has a more pronounced impact on economic growth, especially when accompanied by strong institutional frameworks. The authors employ the generalized method of moments (GMM) estimator to account for endogeneity, affirming that institutional quality enhances the positive effects of fiscal policy. The importance of institutional quality is echoed in the work of (Barsky & Easton, 2021) who analyse fiscal policy effectiveness in various developing countries. Their study employs a panel data framework and finds that fiscal policy effectiveness is contingent upon economic structure and institutional quality, with stronger institutions amplifying the positive effects of government spending during periods of abundant liquidity.

In the context of emerging economies, Moyo & Sibindi (2021) conducted a study analysing fiscal policy effectiveness in various developing countries using a panel data framework. Their analysis indicates that fiscal policy effectiveness is contingent upon economic structure and institutional quality, with stronger institutions amplifying the positive effects of government spending during periods of abundant liquidity. This study suggests that developing countries can benefit significantly from fiscal interventions if they are supported by strong institutional frameworks and sound economic policies. Seck-Sarr (2024) also contribute to this discussion through their analysis of fiscal policy in developed countries. Utilizing a panel dataset and fixed effects models, they find that government consumption significantly affects output, particularly when liquidity conditions are favourable. Their results suggest that the timing and composition of fiscal measures are critical in maximizing economic impact. This study highlights the importance of strategic fiscal planning and the need for governments to prioritize long-term developmental goals over short-term economic boosts.

4.2.2.6 Interaction Between Monetary and Fiscal Policy

The interaction between monetary and fiscal policy during periods of liquidity glut has emerged as a pivotal area of inquiry, particularly within the context of Sub-Saharan Africa's volatile and externally sensitive economic landscape. Liquidity gluts characterized by an oversupply of monetary resources in the banking system do not automatically translate into increased lending or economic expansion. Instead, their macroeconomic impact is heavily shaped by the degree of coordination between fiscal and monetary authorities.

Coutinho and Tsani (2021), using a structural vector autoregression (SVAR) model, demonstrated that fiscal expansions during liquidity-rich periods can stimulate private investment and aggregate demand. However, they cautioned that without complementary monetary policy measures, such expansions risk crowding out private sector activity, especially in economies with limited absorptive capacity. Their findings underscore the importance of synchronizing fiscal stimulus with accommodative monetary stances to avoid unintended distortions in credit markets.

This need for policy coherence is further illustrated by Bova et al. (2018), whose analysis of fiscal consolidation in advanced economies offers relevant lessons for Sub-Saharan Africa.

They found that austerity measures implemented during liquidity surpluses often led to contractions in output and employment, suggesting that pro-cyclical fiscal tightening can undermine the stabilizing intent of monetary expansion. In the African context, where fiscal space is frequently constrained and debt sustainability is a pressing concern, counter-cyclical fiscal policies become essential to support recovery and maintain macroeconomic stability.

Recent studies have also emphasized the inflationary risks associated with poorly aligned fiscal and monetary policies. Chaturvedi (2022) argued that in liquidity-rich environments, expansive government spending must be carefully calibrated to avoid fueling inflation, particularly in economies with weak supply-side structures. This is especially pertinent in Sub-Saharan Africa, where inflation volatility can quickly erode real incomes and destabilize financial markets. The study advocates for fiscal frameworks that are responsive to monetary policy signals, ensuring that liquidity injections are matched by productive and non-inflationary fiscal outlays.

Ferretti (2021) added further nuance by examining the role of fiscal policy under liquidity constraints. Their research revealed that fiscal interventions can significantly boost growth when liquidity is abundant, but only if the monetary policy environment is conducive to credit expansion and investment. In economies where central banks maintain tight monetary stances or where financial intermediation is weak, the effectiveness of fiscal policy may be muted. This finding reinforces the argument for integrated policy design, where fiscal and monetary authorities jointly assess liquidity conditions and coordinate interventions to maximize impact.

Empirical evidence from Sub-Saharan Africa supports these theoretical insights. For instance, the IMF's analysis of fiscal dominance in the region shows that in several countries, fiscal pressures have historically undermined monetary policy effectiveness, leading to inflationary episodes and exchange rate instability. Conversely, countries that have pursued coordinated policy reforms—such as Rwanda and Ghana have demonstrated greater resilience to external shocks and more stable credit growth trajectories.

4.2.2.7 Impact of Infrastructure Investment

Ferrari et al. (2018) utilized a comprehensive dataset covering multiple countries to assess the relationship between infrastructure investment and economic growth. Their regression

analysis reveals a positive correlation between infrastructure spending and GDP growth, particularly in countries with high liquidity. The authors argue that during periods of excess liquidity, governments can effectively channel funds into infrastructure projects, which not only absorb surplus liquidity but also create jobs and stimulate demand. This finding underscores the strategic importance of infrastructure investment as a tool for economic management, especially in times of financial abundance. The study further disaggregates the effects of different types of infrastructure investments, such as transportation, energy and telecommunications. The results indicate that transportation infrastructure has the most pronounced impact on economic growth, as it directly facilitates trade and mobility. Conversely, investments in energy infrastructure are crucial for ensuring that industries have reliable access to power, thereby enhancing productivity. This sectoral analysis highlights the multifaceted nature of infrastructure investment and its varied impacts on different aspects of the economy.

Long-term implications of infrastructure investment are also explored in the literature. For instance, Calderón and Servén (2014) conducted a panel data analysis across Latin America and find that infrastructure investment significantly contributes to long-term economic growth. Their findings suggest that the benefits of infrastructure spending extend beyond immediate economic stimulation, as improved infrastructure can lead to enhanced productivity and competitiveness in the global market. This perspective emphasizes the enduring value of infrastructure projects in fostering sustainable economic development.

Kodongo and Ojah (2016) emphasize that the effectiveness of fiscal policy, including infrastructure investment, is contingent upon the quality of governance and institutional capacity. Their analysis indicates that countries with robust governance structures are better positioned to leverage infrastructure investments for economic growth, as they can effectively manage projects and ensure accountability. This insight points to the critical role of governance in maximizing the economic benefits of infrastructure spending. In a more recent study, Abeywickrama et al. (2024) utilized a local projection approach to analyse the macroeconomic effects of public investment, including infrastructure. Their findings indicate that fiscal multipliers associated with infrastructure investment are larger during periods of economic slack, reinforcing the argument that infrastructure spending can be particularly

effective in stimulating growth when liquidity is abundant. This research supports the notion that timing and economic context are crucial factors in the success of infrastructure investments.

Kang et al. (2019) investigated the effectiveness of PPPs in fostering infrastructure development within emerging economies. Their findings indicated that PPPs could effectively harness the efficiency and innovation of the private sector, resulting in enhanced project outcomes and a more significant economic impact. The authors contended that well-structured PPPs were particularly advantageous in scenarios where public funding was constrained, as they facilitated the mobilization of additional resources for infrastructure initiatives. This analysis underscored the potential of PPPs to complement public investment and stimulate infrastructure development. Subsequent studies also integrated sustainability into the discourse surrounding infrastructure investment. For example, Zhou et al. (2022) assessed the influence of green infrastructure investment on economic growth in China. Their empirical analysis revealed that sustainable infrastructure investments not only promoted economic growth but also improved environmental quality, indicating that the incorporation of sustainability into infrastructure planning could yield dual benefits. This emerging emphasis on sustainability highlighted a growing awareness of the necessity to harmonize economic development with environmental stewardship.

4.2.2.8 Role of Institutional Capacity in Economic Development

Abeywickrama et al. (2024) laid the groundwork by investigating how institutional quality influences economic performance. Their two-stage least squares (2SLS) analysis revealed that countries with robust institutions tend to experience higher economic growth, as these institutions create a stable environment conducive to investment and innovation. This seminal work underscores the critical role of institutional capacity in fostering sustainable economic development, particularly in regions where liquidity is abundant yet underutilized.

Similarly, Rambeli et al. (2021) employed cross-country regression analysis to further elucidate the impact of institutions on economic growth. Their findings indicated a significant positive correlation between governance indicators and GDP per capita growth, reinforcing the argument that strong institutional frameworks are essential for harnessing liquidity effectively. By employing instrumental variable (IV) methods to address endogeneity concerns, the authors highlighted that institutional capacity is a key determinant

of economic outcomes, especially in developing countries where liquidity can either stimulate growth or exacerbate inefficiencies. Kyei-Mensah (2023) explored the role of governance in policy implementation, analysing how governance indicators affect public service delivery and economic performance. Their panel data model demonstrated that improvements in governance particularly in regulatory quality and the rule of law—lead to enhanced economic outcomes. Malaver (2021) examined the relationship between institutional capacity and public sector performance within the context of fiscal decentralization. Their qualitative comparative analysis (QCA) revealed that stronger institutional frameworks empower local governments to manage resources effectively and respond to community needs, thereby improving service delivery and fostering economic growth. This research highlights the necessity of developing institutional capacity at the local level to support broader economic objectives, especially in SSA, where liquidity can be mobilized to address pressing developmental challenges. The interplay between corruption, institutional capacity and economic development is further elucidated by Borio (2014) and Hoegen et al. (2018). Their panel data analysis, utilizing dynamic generalized method of moments (GMM), demonstrated that while corruption negatively impacts growth, this effect is mitigated in countries with strong institutional frameworks.

4.2.2.9 Global Economic Influences on Fiscal Policy Responses in Sub-Saharan Africa

Acharya and Rajan (2022) laid the groundwork by investigating how institutional quality influences economic performance. Their two-stage least squares (2SLS) analysis revealed that countries with robust institutions tend to experience higher economic growth, as these institutions create a stable environment conducive to investment and innovation. This seminal work underscores the critical role of institutional capacity in fostering sustainable economic development, particularly in regions where liquidity is abundant yet underutilized. Similarly, Ezzahid and Elouaourti (2021) employed cross-country regression analysis to further elucidate the impact of institutions on economic growth. Their findings indicated a significant positive correlation between governance indicators and GDP per capita growth, reinforcing the argument that strong institutional frameworks are essential for harnessing liquidity effectively. Through using instrumental variable (IV) methods to address endogeneity concerns, the authors highlighted that institutional capacity is a key determinant of economic outcomes, especially in developing countries where liquidity can either stimulate growth or exacerbate inefficiencies.

Naili and Lahrichi (2022) explored the role of governance in policy implementation, analysing how governance indicators affect public service delivery and economic performance. Their panel data model demonstrated that improvements in governance particularly in regulatory quality and the rule of law lead to enhanced economic outcomes. This study emphasizes the importance of institutional capacity in ensuring effective policy implementation and resource allocation, particularly in SSA, where liquidity can be mismanaged without strong governance structures. Bauluz et al. (2022) examined the relationship between institutional capacity and public sector performance within the context of fiscal decentralization. Their qualitative comparative analysis (QCA) revealed that stronger institutional frameworks empower local governments to manage resources effectively and respond to community needs, thereby improving service delivery and fostering economic growth. This research highlights the necessity of developing institutional capacity at the local level to support broader economic objectives, especially in SSA, where liquidity can be mobilized to address pressing developmental challenges.

4.2.3 Monetary Policy Limitations and Alternative Strategies in Sub-Saharan Africa

One of the primary limitations of conventional monetary policies in SSA is the weak transmission mechanism. In many SSA countries, the financial sector is underdeveloped and the banking system often lacks the depth and breadth necessary to effectively transmit monetary policy signals to the broader economy. For instance, in Nigeria, despite the Central Bank's efforts to adjust interest rates and implement other monetary policy tools, the impact on lending rates and credit availability remains limited. This weak transmission mechanism is further exacerbated by the high levels of informality in the economy, where a significant portion of economic activities occurs outside the formal financial system, making it challenging for monetary policy measures to reach the intended targets.

Another significant limitation is the prevalence of high inflation rates in many SSA countries, which undermines the effectiveness of conventional monetary policies. High inflation erodes the purchasing power of money and creates uncertainty, making it difficult for central banks to stabilize prices and manage liquidity. For example, in Ethiopia, the government's substantial investments in infrastructure have spurred significant economic growth, but they have also contributed to inflation soaring above 20%. Despite the central bank's efforts to

control inflation through conventional monetary policies, the persistent high inflation rates reveal the limitations of these measures in achieving price stability.

The reliance on external factors, such as global commodity prices and foreign capital flows, poses a challenge to the effectiveness of conventional monetary policies in SSA. Many SSA countries are heavily dependent on commodity exports and fluctuations in global commodity prices can have a significant impact on their economies. For instance, in Ghana, the gold mining sector attracts substantial foreign direct investment (FDI), which positively impacts liquidity dynamics. However, the volatility of global gold prices can lead to sudden changes in liquidity conditions, making it difficult for the central bank to manage liquidity effectively through conventional monetary policies.

Corruption and weak institutions further undermine the effectiveness of monetary policies in SSA. Corruption distorts the allocation of resources and undermines the credibility of financial institutions, making it challenging for central banks to implement and enforce monetary policy measures. In Kenya, for example, efforts to enhance financial sector stability and promote sustainable economic growth are often thwarted by corrupt practices. The influx of foreign investment, intended to manage excess liquidity, is frequently diverted through corrupt channels, resulting in the misallocation of funds and the perpetuation of economic inequalities. These challenges highlight the need for comprehensive reforms aimed at strengthening governance, enhancing transparency and promoting accountability to improve the effectiveness of monetary policies.

Moreover, the limited access to financial services in many SSA countries restricts the reach of conventional monetary policies. A significant portion of the population remains unbanked or underbanked, limiting their ability to benefit from monetary policy measures. For instance, in Nigeria, despite the Central Bank's efforts to inject liquidity through various monetary policy tools, many individuals and businesses remain excluded from the formal financial system. This limited access to financial services hampers the effectiveness of monetary policies in managing liquidity and promoting economic stability.

To address these limitations, alternative strategies can be employed to enhance the effectiveness of monetary policies in SSA. One such strategy is the implementation of targeted lending programs. These programs can be designed to provide credit to specific sectors or groups that are critical for economic growth and development. For example, targeted lending programs can focus on small and medium-sized enterprises (SMEs), which often face difficulties in accessing credit. Through providing affordable and accessible credit to SMEs, these programs can stimulate economic activity, create employment opportunities and promote inclusive growth.

Another alternative strategy is the promotion of financial market reforms. Strengthening financial markets can enhance the transmission mechanism of monetary policies and improve overall financial stability. Reforms can include the development of capital markets, the establishment of credit information systems and the promotion of financial inclusion. For instance, developing capital markets can provide alternative sources of financing for businesses, reducing their reliance on bank credit. Establishing credit information systems can improve the availability and quality of credit information, enabling lenders to make more informed lending decisions. Promoting financial inclusion can ensure that a larger portion of the population has access to financial services, enhancing the reach and effectiveness of monetary policies.

Enhancing the regulatory framework is crucial for improving the effectiveness of monetary policies. Strengthening regulatory oversight can ensure that financial institutions adhere to sound lending practices and maintain adequate liquidity buffers. This can help mitigate the risks associated with excessive credit growth and ensure the stability of the financial system. For an example, implementing macroprudential policies, such as countercyclical capital buffers and loan-to-value ratios, can help manage credit cycles and prevent the build-up of systemic risks.

4.2.3 Implementation Challenges in Managing Liquidity Gluts: Weak Institutions and Corruption in Sub-Saharan Africa

Weak institutions in SSA countries often struggle with inefficiencies, lack of transparency and inadequate regulatory frameworks. These institutional weaknesses hinder the effective implementation of monetary and fiscal policies designed to manage liquidity gluts. For instance, in Nigeria, despite the Central Bank's efforts to inject liquidity through various monetary policy tools, the persistent high inflation rates reveal the limitations of these measures when utilized in isolation. The lack of robust institutional frameworks to support and enforce these policies exacerbates the challenges, leading to suboptimal outcomes. Additionally, the absence of strong regulatory oversight allows for the misallocation of resources and the proliferation of non-performing loans, further destabilizing the financial system.

Corruption is another critical challenge that impedes the effective management of liquidity gluts in SSA. Corruption manifests in various forms, including embezzlement of public funds, bribery and nepotism, which distort the allocation of resources and undermine the credibility of financial institutions. In Kenya, for example, efforts to enhance financial sector stability and promote sustainable economic growth are often thwarted by corrupt practices. The influx of foreign investment, intended to manage excess liquidity, is frequently diverted through corrupt channels, resulting in the misallocation of funds and the perpetuation of economic inequalities. This corruption not only erodes public trust in financial institutions but also deters potential investors, further complicating liquidity management efforts.

The impact of weak institutions and corruption on liquidity management is also evident in Ghana. While the country has made significant strides in managing liquidity gluts through strategic policy interventions, such as leveraging foreign direct investment (FDI) and infrastructure development, the effectiveness of these measures is often compromised by institutional weaknesses and corrupt practices. The allocation of funds for infrastructure projects, for instance, is susceptible to embezzlement and mismanagement, leading to delays and cost overruns. These inefficiencies undermine the intended benefits of public spending and exacerbate liquidity challenges.

4.2.4 Comparative Analysis of Liquidity Management Policies: Sub-Saharan Africa, Asia and Latin America

Liquidity management strategies vary significantly across regions, shaped by institutional capacity, macroeconomic conditions, and policy coordination. This section presents a comparative analysis of selected countries from Sub-Saharan Africa, Asia, and Latin America, highlighting how different approaches to fiscal and monetary policy, foreign direct investment (FDI), and regulatory reform influence liquidity dynamics.

Ghana has made significant strides in managing liquidity gluts through strategic policy interventions, particularly in the gold mining sector, which attracts substantial foreign direct investment (FDI). The influx of foreign capital into gold mining projects has positively impacted liquidity dynamics, creating short-term fluctuations that reverberate through the broader economic landscape. This relationship underscores the importance of FDI in shaping liquidity conditions and driving economic growth. Additionally, Ghana has successfully utilized government expenditure in infrastructure projects to manage liquidity. Investments in the construction of roads, bridges and other critical infrastructure have directly influenced liquidity conditions, with the allocation of funds impacting short-term liquidity dynamics in the construction and related sectors. These targeted fiscal interventions have yielded substantial returns in terms of economic growth and social development, demonstrating the effectiveness of strategic public spending during periods of liquidity glut. In contrast, Nigeria's experience underscores the importance of policy coordination. Despite the Central Bank of Nigeria's liquidity injections, persistent inflation has limited their effectiveness. Nigeria's use of public-private partnerships (PPPs) to channel liquidity into infrastructure has helped mitigate inflationary pressures and enhance credit transmission (Saxegaard, 2006).

In comparison, Asian countries like China and India have also leveraged FDI and infrastructure development to manage liquidity. China, for instance, has attracted significant FDI through its open-door policy and special economic zones, which have spurred economic growth and improved liquidity conditions. Similarly, India's focus on infrastructure development, such as the construction of highways and smart cities, has enhanced liquidity management and stimulated economic activity. Both countries have demonstrated the importance of creating a conducive environment for FDI and investing in infrastructure to

manage liquidity effectively.

Nigeria's experience with liquidity gluts highlights the importance of coordinated monetary and fiscal policies. Despite the Central Bank of Nigeria's efforts to inject liquidity through various monetary policy tools, persistent high inflation rates reveal the limitations of these measures when utilized in isolation. To address this challenge, Nigeria has developed strategies to channel excess liquidity into productive economic activities. One successful approach has been the promotion of public-private partnerships (PPPs) to incentivize private sector investment in infrastructure. By aligning fiscal measures with monetary policy, Nigeria has been able to absorb excess liquidity while stimulating economic growth. For example, the government's focus on infrastructure development, such as the construction of roads, bridges and power plants, has not only mitigated inflationary pressures but also enhanced overall economic development.

Latin American countries like Brazil and Mexico have similarly employed coordinated monetary and fiscal policies to manage liquidity. Brazil, for instance, has utilized a combination of monetary easing and fiscal stimulus to address liquidity challenges. The Brazilian government has implemented infrastructure projects and social programs to absorb excess liquidity and stimulate economic growth. Mexico has also focused on public-private partnerships to attract private investment in infrastructure, thereby managing liquidity and promoting economic development. These examples highlight the effectiveness of coordinated policy measures in addressing liquidity gluts and fostering economic stability.

Kenya's approach to managing liquidity gluts involves balancing monetary policy with prevailing economic uncertainties. Despite the Central Bank of Kenya's attempts to lower interest rates to stimulate borrowing and investment, many businesses remain hesitant to take on new debt due to economic uncertainties and a lack of demand for goods and services. This highlights the need for a comprehensive approach that addresses both monetary and fiscal dimensions. Kenya has also encountered challenges associated with excess liquidity arising from the influx of foreign investment. To manage this, the country has implemented measures to enhance financial sector stability and promote sustainable economic growth. For instance, the government has focused on improving the regulatory environment,

strengthening financial institutions and promoting financial inclusion. These efforts aim to ensure that excess liquidity is effectively channelled into productive investments, thereby supporting long-term economic stability.

In Asia, countries like Singapore and South Korea have successfully managed liquidity through robust regulatory frameworks and financial sector reforms. Singapore's Monetary Authority has implemented stringent regulatory measures to ensure financial stability and manage liquidity effectively. South Korea has focused on financial sector reforms, including the development of a comprehensive credit information system and the promotion of financial inclusion. These measures have enhanced liquidity management and supported sustainable economic growth. The experiences of these Asian countries underscore the importance of a strong regulatory environment and financial sector stability in managing liquidity.

Ethiopia exemplifies the dynamic interplay between aggressive public spending and inflation management. The government's substantial investments in infrastructure have spurred significant economic growth, but they have also contributed to inflation soaring above 20%. To counteract these adverse effects, Ethiopia has adopted nuanced fiscal policies that include targeted tax incentives aimed at sectors that generate employment. By strategically directing public spending towards infrastructure projects, such as the construction of roads, railways and energy facilities, Ethiopia has been able to stimulate economic activity and create employment opportunities.

However, the challenge remains to balance this aggressive spending with effective inflation management to ensure sustainable economic growth. Latin American countries like Chile and Colombia have also faced similar challenges in balancing public spending and inflation management. Chile has implemented targeted fiscal policies to manage liquidity and control inflation, focusing on infrastructure development and social programs. Colombia has adopted a mix of monetary tightening and fiscal stimulus to address liquidity challenges and promote economic growth. These examples highlight the importance of balancing public spending with inflation management to achieve sustainable economic development.

4.2.5 Empirical Gaps and Directions for Future Research in Liquidity Management in Sub-Saharan Africa

In the critical examination of macroeconomic policies aimed at mitigating the effects of liquidity gluts, it is imperative to delineate specific empirical gaps within the existing literature that impede a comprehensive understanding of this complex phenomenon. Although substantial progress has been made in analysing the implications of liquidity gluts, particularly within the context of Sub-Saharan Africa (SSA), several pivotal areas remaininsufficiently explored, which could significantly enhance both theoretical frameworks and practical policy applications.

A primary gap is the underexplored channels through which liquidity gluts affect SSA economies. The prevailing literature predominantly emphasizes aggregate economic indicators, such as inflation rates and GDP growth, while often neglecting the intricate mechanisms that mediate the effects of excess liquidity. For instance, the role of informal financial markets, which are particularly significant in many SSA countries, has not been adequately examined. These markets may function as critical conduits for liquidity, influencing the allocation and utilization of excess funds within local economies. A more profound investigation into these informal channels could yield essential insights into the absorption and misallocation of liquidity, thereby informing more effective policy interventions aimed at enhancing economic stability and social welfare.

4.2.5 Summary of Policy Findings: Effectiveness of Different Policy Tools in Sub-Saharan Africa

Table 4.1highlights the diverse approaches taken by different countries in SSA to manage liquidity gluts and the varying degrees of effectiveness and challenges associated with each policy tool. Through examining these country specific examples, policymakers can gain valuable insights into the successes and limitations of different strategies, enabling them to develop more effective policies tailored to their unique economic contexts.

Table 4.1: Country Policy Tool Effectiveness Challenges

Country	Policy Tool	Effectiveness	Challenges
Ghana	FDI and Infrastructure Development	Positive impact on liquidity dynamics and economic growth through strategic public spending and FDI.	Institutional weaknesses and corruption affecting the allocation of funds.

Nigeria	Coordinated Monetary and Fiscal Policies	Successful in absorbing excess liquidity and stimulating economic growth through public-private partnerships.	High inflation rates and limitations of monetary policy when used in isolation.
Kenya	Balancing Monetary Policy with Economic Uncertainties	Challenges in stimulating borrowing and investment due to economic uncertainties; focus on financial sector stability.	Economic uncertainties and limited demand for goods and services.
Ethiopia	Aggressive Public Spending and	Significant economic growth through infrastructure investments,	Balancing aggressive public spending with
	Inflation Management	but challenges in managing inflation.	effective inflation management.
Botswana	Prudent Fiscal Management and Sovereign Wealth Fund	Effective management of diamond revenues through the Pula Fund, leading to economic stability and growth.	Dependence on diamond revenues and vulnerability to global market fluctuations.
Rwanda	Financial Sector Reforms and Investment Promotion	Successful implementation of financial sector reforms and promotion of investment, resulting in improved liquidity conditions.	Maintaining momentum in financial sector reforms and ensuring inclusive growth.
Tanzania	Infrastructure Development and Public Investment	Enhanced liquidity management and stimulated economic activity through targeted infrastructure projects.	Balancing public investment with fiscal discipline and managing external debt.

Source: Author's Literature Review, 2024

4.3 Data Analysis

The effectiveness of macroeconomic policies in mitigating the effects of liquidity gluts in Sub-Saharan Africa (SSA) is a pressing concern for policymakers and economists alike. As liquidity conditions fluctuate, they can significantly impact the implementation and efficacy of both fiscal and monetary policies. Conversely, macroeconomic policies themselves can influence liquidity dynamics, creating a complex interplay that demands a sophisticated analytical approach. To unravel this intricate relationship, the Generalized Method of Moments (GMM) will be employed as the primary mode of analysis.

GMM is a statistical method that estimates relationships in data while addressing complications that can arise, such as when two variables influence each other simultaneously. It is particularly useful for analysing data collected over time, allowing for the inclusion of past values of variables, which aids in understanding how changes in liquidity affect macroeconomic policy effectiveness. The choice of GMM is driven by its robustness in addressing potential endogeneity issues that may arise in the econometric modelling of this relationship. GMM is particularly well-suited for handling dynamic panel data models,

which allows for the incorporation of lagged dependent variables and various explanatory factors crucial for capturing the temporal relationships between liquidity conditions and macroeconomic policy effectiveness. Utilizing GMM enables the derivation of consistent parameter estimates, even in the presence of common econometric challenges such as heteroskedasticity and autocorrelation.

The choice of the system Generalized Method of Moments (GMM) estimator in this chapter is motivated by the dynamic nature of the panel data and the presence of potential endogeneity among the explanatory variables. Unlike static panel models, system GMM is particularly well-suited for handling situations where lagged dependent variables are included as regressors, and where explanatory variables may be correlated with past and current error terms. This is especially relevant in the context of Sub-Saharan African countries, where macroeconomic variables such as liquidity conditions, fiscal spending, and monetary policy often exhibit feedback effects. System GMM combines equations in levels and first differences, leveraging additional moment conditions to improve efficiency and reduce bias (Saini, 2018; Hong, 2023). Compared to alternative estimators, such as fixed effects or difference GMM, the system GMM approach offers superior performance in small samples and when dealing with persistent series—both of which characterize the dataset used in this study. Its robustness to heteroskedasticity and autocorrelation further enhances the reliability of the estimated policy effects.

This chapter seeks to address the research question: How do liquidity gluts influence the effectiveness of macroeconomic policies? Through this rigorous econometric framework, a detailed examination of how variations in liquidity affect the responsiveness of fiscal and monetary policies will be conducted. Ultimately, the insights derived from this analysis will enhance the understanding of policy effectiveness in the context of SSA and offer actionable recommendations for policymakers facing the challenges posed by liquidity gluts in the region.

4.3.1 Model Specification

$$Y_{it} = \propto + \beta_1 Y_{1t-1} + \beta_2 L_{it} + \beta_3 M_{it} + \beta_4 F_{it} + \varepsilon_{it}$$

$$INFL_{it} = \propto + \beta_1 INFL_{1t-1} + \beta_2 L_{it} + \beta_3 M_{it} + \beta_4 F_{it} + \varepsilon_{it}$$

Where:

Y_{it} is the GDP to measure the Effectiveness of Macroeconomic policies

Y_{it-1} is the Lagged GDP (Dependant Variable

L_{it} is the Liquidity Glut measure

M_{it} is the Monetary Policy measure

F_{it} is the Fiscal Policy measure

M_{it} Control Variable

4.3.2 Monetary Policy Proxy Variable

In the evaluation of monetary policy measures M, the selection of precise proxy variables is paramount for accurately capturing the stance and overall impact of monetary policy on economic dynamics. A primary proxy for monetary policy is the policy interest rate, commonly represented by the central bank's benchmark interest rate, such as the discount rate, federal funds rate, or repo rate (Acharya, 2022; Davis, 2015). This variable is instrumental as it serves as a critical indicator of the central bank's monetary policy orientation, exerting a direct influence on borrowing costs for both consumers and businesses (Bernanke, 2019). A reduction in the policy interest rate typically signifies an expansionary monetary policy aimed at stimulating economic activity by making credit more accessible conversely, an increase in the rate reflects a contractionary policy designed to mitigate inflationary pressures by discouraging borrowing and spending (Friedman, 1992).

In addition to the policy interest rate, another significant proxy variable for monetary policy is the money supply, frequently assessed through aggregates like M1 and M2. M1 encompasses the total amount of physical currency in circulation along with demand deposits, while M2 includes M1 as well as savings accounts and other near-money assets (Friedman, 1992; Modigliani, 1944; Isaacs, 2018). Monitoring the growth rates of these money supply measures provides critical insights into prevailing liquidity conditions within the economy. An uptick in the money supply indicates a more accommodative monetary policy, fostering an environment conducive to economic growth, whereas a decline may signal tightening measures aimed at controlling inflation (Saxegaard, 2006)..

The rationale for choosing M_1 and M_2 as proxy variables in the context of Sub-Saharan African (SSA) economies lies in their ability to reflect the liquidity conditions that are particularly relevant to these developing markets. In many SSA countries, where financial systems may be less developed and access to credit can be limited, M_1 and M_2 provide valuable insights into the availability of money for consumption and investment. These aggregates help capture the nuances of monetary policy effectiveness in environments where traditional banking practices may not fully encompass the economic realities faced by consumers and businesses. However, it is essential to acknowledge the limitations of these chosen proxies. For instance, M_1 and M_2 may not fully account for the informal financial sector, which plays a significant role in many SSA economies. The informal sector often operates outside the purview of formal banking systems and its dynamics can significantly influence overall economic activity and inflation rates. Additionally, while M_1 and M_2 provide insights into liquidity, they may not adequately reflect the broader economic conditions or the impact of external factors such as global commodity prices or exchange rate fluctuations.

Alternative indicators, such as the velocity of money or broader measures of financial inclusion, could complement the analysis by providing a more holistic view of monetary policy impacts. Furthermore, the central bank's balance sheet serves as a valuable proxy for monetary policy, particularly in the context of unconventional measures such as quantitative easing (QE) (Parosa, 2019). In SSA, where central banks may resort to non-traditional monetary policy tools to address economic challenges, understanding the implications of balance sheet expansions becomes crucial. The balance sheet can provide insights into the central bank's interventions in the economy, including asset purchases and liquidity provisions, which can have profound effects on inflation and economic growth.

4.3.3 Fiscal Policy Proxy Variable

A prevalent proxy for fiscal policy is government expenditure, quantified as total public spending on goods and services as a percentage of GDP (Abdullahi, 2016; Coutinho, 2021). This variable encapsulates the government's role in stimulating economic activity through strategic investments in infrastructure, social programs and public services (Coutinho, 2021; Heller, 2022). An increase in government expenditure is indicative of an expansionary fiscal policy, designed to boost economic activity during downturns, while a decrease may reflect

austerity measures aimed at reducing budget deficits (Fjeldstad, 2016).

Additionally, tax revenue, expressed as a percentage of GDP, constitutes another vital proxy variable for fiscal policy. This metric reflects the government's capability to finance its expenditure, serving as an indicator of the overall tax burden imposed on the economy (Martínez-Vázquez, 2023). Variations in tax revenue can have profound implications for disposable income and consumption patterns. For instance, a rise in tax revenue may stem from increased tax rates or improved compliance, potentially leading to reduced consumer spending (Rambeli, 2021). Conversely, tax cuts can enhance disposable income, thereby stimulating economic growth by encouraging higher levels of consumption and investment.

4.3.4 Liquidity Glut Measure

Accurately capturing liquidity gluts within Sub-Saharan African economies requires a nuanced understanding of both theoretical constructs and empirical realities. Among the various metrics available, the liquidity ratio defined as the proportion of liquid assets held by financial institutions relative to their total liabilities has been selected as the primary indicator in this study. This choice is grounded in its conceptual clarity, data availability, and its proven relevance in capturing liquidity dynamics in developing financial systems.

A high liquidity ratio typically signals that banks are well-capitalized and possess ample liquid assets, which, in theory, should facilitate credit expansion and economic stimulation (Agénor, 2010; Abdel-Latif, 2020). However, in the context of Sub-Saharan Africa, elevated liquidity ratios often reflect institutional risk aversion and weak credit transmission mechanisms. As Shongwe and Alagidede (2024) demonstrate, banks in countries such as Equatorial Guinea and Nigeria maintain high liquidity buffers due to concerns over borrower creditworthiness and macroeconomic volatility. This behaviour underscores the paradox of liquidity gluts: surplus liquidity coexists with constrained lending, limiting the effectiveness of monetary policy.

Alternative measures, such as excess reserves, also offer valuable insights. Excess reserves represent funds held by banks beyond the required minimum, and their accumulation can indicate a reluctance to lend, especially during periods of economic uncertainty (Schettino, 2022). While this metric is theoretically sound, its practical application in Sub-Saharan Africa is limited by inconsistent reporting standards and the lack of granular reserve data

across many central banks. Moreover, excess reserves may reflect temporary liquidity management decisions rather than systemic liquidity conditions.

Another widely referenced metric is the differential between nominal GDP growth and money supply growth. This measure captures macro-level liquidity imbalances by comparing the pace of monetary expansion with real economic activity (Saxegaard, 2006; Parosa, 2019). When money supply growth significantly exceeds GDP growth, it may signal inflationary pressures or asset bubbles. Conversely, slower monetary growth relative to GDP may indicate liquidity constraints. While this indicator is useful for macroeconomic surveillance, it lacks the institutional specificity needed to assess liquidity behaviour within the banking sector—an essential dimension in understanding credit transmission failures in SSA.

Given these considerations, the liquidity ratio emerges as the most appropriate and empirically robust measure for this study. It is widely reported by central banks and financial institutions, allowing for consistent cross-country comparisons. It also directly reflects the behaviour of financial intermediaries, which is critical in diagnosing the disconnect between liquidity surpluses and credit availability. Furthermore, recent studies in Central and West Africa confirm that high liquidity ratios are often symptomatic of structural inefficiencies in financial intermediation, rather than indicators of monetary policy success.

While alternative metrics offer complementary perspectives, the liquidity ratio provides the most comprehensive and actionable insight into liquidity glut dynamics in Sub-Saharan Africa. Its relevance to institutional behaviour, compatibility with available data, and alignment with regional financial realities justify its selection as the core analytical tool in this chapter.

4.3.5 Sample Selection

The analysis focused on a carefully curated sample of countries within Sub-Saharan Africa, in the region to facilitate a comparative analysis of macroeconomic policies and liquidity dynamics. To ensure the relevance of the selected countries, a critical filtering criterion was applied: countries were assessed based on the difference between nominal GDP and real money supply. Specifically, those nations where the growth in money supply consistently outweighed the growth in GDP were identified as being affected by liquidity gluts. This distinction was essential, as it allowed the study to concentrate on economies experiencing significant liquidity imbalances, thereby providing a clearer understanding of the relationship between macroeconomic policies and liquidity management.

This chapter, titled Investigation of the Effectiveness of Macroeconomic Policies in Mitigating the Effects of Liquidity Gluts, focuses on a carefully selected group of Sub-Saharan African countries chosen for their macroeconomic relevance, exposure to liquidity gluts, and the availability of consistent data over the period 2012 to 2024. The countries included in the analysis are Angola, Botswana, Namibia, South Africa, Ghana, Nigeria, Kenya, Mauritius, and Tanzania. This selection reflects a diverse cross-section of the continent, encompassing economies with varying institutional capacities, financial market structures, and policy frameworks. Notably, South Africa was included due to the availability of detailed stock returns data, which is essential for evaluating asset price responses to liquidity shocks. The data used in this chapter were sourced from the African Development Bank (AfDB) and the World Bank, ensuring reliability and comparability across countries. By focusing on these economies, the chapter provides a robust platform for assessing the effectiveness of monetary and fiscal policies in mitigating the adverse effects of liquidity gluts across different regional and structural contexts.

4.3.6 Steps for Estimation

In the pursuit of robust econometric analysis, several systematic steps were undertaken to ensure the integrity and reliability of the results. The first crucial step involved the transformation of the data. Jin (2021) applied first differences to the dataset, a technique designed to eliminate unobserved country-specific effects that could potentially bias the estimates. By focusing on the changes in the variables rather than their absolute levels, this approach effectively mitigated the influence of time-invariant factors unique to each country. This transformation allowed for a clearer examination of the dynamic relationships between the variables of interest, enhancing the validity of the subsequent analyses.

According to Jin (2021) and Lee (2014) the second step in the estimation process was the application of instrumental variables. To address potential endogeneity concerns inherent in the differenced equations, researchers utilized lagged levels of the variables as instruments. This strategy capitalized on the temporal structure of the data; wherein past values of the independent variables served as valid instruments for their contemporaneous counterparts. By employing lagged levels, the analysis aimed to provide consistent estimates that accounted for the potential correlation between the explanatory variables and the error term.This careful selection of instruments was pivotal in ensuring the robustness of the estimation process.

Finally, the estimation culminated in the implementation of the System GMM (Generalized Method of Moments) estimator. This sophisticated estimation technique combined both the differenced and level equations, allowing for a more efficient estimation of the parameters. The System GMM approach effectively leveraged the additional moment conditions generated using both data transformations, thereby enhancing the precision of the estimates (Saini, 2018; Hong, 2023). By accounting for potential biases associated with the dynamic nature of the data and the endogeneity of the regressors, the System GMM estimator provided a comprehensive framework for analysing the relationships between the variables while minimizing the risk of inconsistent estimates.

Through these meticulous steps transforming the data, applying instrumental variables and employing System GMM estimation researchers established a robust methodological foundation for their analysis. This rigorous approach not only addressed common econometric challenges but also enhanced the credibility of the findings, thereby contributing valuable insights to the field of study.

4.3.7 Model Diagnostics

The first diagnostic test employed was the Sargan Test, which assessed the validity of the instruments utilized in the model. This test is crucial as it evaluates whether the instruments are uncorrelated with the error term and thus valid for the estimation process. A failure of the Sargan Test would indicate that the instruments may not be appropriate, potentially leading to biased and inconsistent estimates (Hong, 2023). By confirming the validity of the instruments, researchers could bolster the credibility of their findings and ensure that the conclusions drawn from the model were based on sound econometric principles.

The second diagnostic procedure implemented was the Arellano-Bond Test, which focused on detecting autocorrelation in the residuals of the model. Autocorrelation, particularly of the second order, can undermine the assumptions of the regression analysis and lead to inefficient estimates. The Arellano-Bond Test specifically examined whether there was any second-order autocorrelation present in the differenced errors. Ideally, the absence of such autocorrelation would suggest that the model adequately captured the underlying dynamics of the data, thereby reinforcing the reliability of the estimates (Kiviet, 2017; Xaisongkham, 2024). A significant finding of second-order autocorrelation would necessitate a re-evaluation of the model specification and potentially the inclusion of additional lags or alternative variables to address the issue.

4.3.8 Robustness Checks

In the pursuit of ensuring the reliability and validity of the econometric results, a series of robustness checks were systematically conducted. The first robustness check involved the exploration of alternative specifications of the model. Various model configurations were examined by incorporating different control variables and employing alternative measures of liquidity. This approach aimed to assess whether the fundamental relationships observed in the primary analysis remained consistent across diverse model specifications (Lanne, 2021; Jha, 2019). By examining these alternative configurations, researchers sought to determine if the initial findings were robust to changes in the model structure. Such an examination is vital, as it helps to ascertain the stability of the results and enhances confidence in the conclusions drawn from the analysis.

The second critical robustness check employed was the use of clustered standard errors. This technique was implemented to account for potential autocorrelation and heteroskedasticity within countries, which can undermine the accuracy of standard error estimates and lead to misleading inference. By clustering the standard errors at the country level, researchers aimed to capture the correlation of observations within individual countries while allowing for variability across different countries. This adjustment is particularly important in panel data settings, where observations may not be independent (Abrevaya, 2017; Piras, 2023). The application of clustered standard errors not only provided more reliable estimates but also offered a more nuanced understanding of the statistical significance of the results. Through these robustness checks testing alternative specifications and employing clustered

standard errors—researchers established a comprehensive framework to validate their findings. These steps were essential in addressing potential concerns related to model specification and inference, ultimately reinforcing the credibility of the econometric analysis.

The inclusion of countries with extreme macroeconomic conditions such as Zimbabwe, which experienced hyperinflation reaching 89.7 sextillion percent was a deliberate methodological choice aimed at capturing the full spectrum of liquidity dynamics within Sub-Saharan Africa. Recognizing the potential for such outliers to distort empirical findings, the study incorporated robustness checks wherein these countries were excluded from the sample. The results obtained from these alternative specifications remained broadly consistent with the main findings, thereby reinforcing the reliability and generalizability of the conclusions.

This consistency suggests that while outliers may influence the magnitude of certain coefficients, they do not fundamentally alter the direction or statistical significance of the core relationships under investigation. Their inclusion enhances the representativeness of the sample and allows for a more comprehensive understanding of liquidity phenomena across diverse economic contexts. Nonetheless, the robustness checks provide assurance that the empirical results are not unduly driven by these extreme cases, thereby strengthening the credibility of the analysis.

4.3.9 Effective Bank liquid reserves to bank assets ratio (%)

According to Figure 4.1, the effective required bank liquid reserves to bank assets ratio represents the proportion of liquid reserves that banks are mandated to maintain in relation to their total assets. Higher ratios indicate a greater level of required reserves, which can significantly impact credit availability and liquidity within the banking system. For instance, countries like Angola (36.99%), Lesotho (38.44%) and Nigeria (18.01%) demonstrate relatively higher ratios, suggesting more stringent reserve requirements that may limit credit extension and negatively affect economic growth. In contrast, countries such as Equatorial Guinea (10.34%), Mauritania (15.68%) and Congo (11.41%) exhibit lower effective required bank liquid reserves to bank assets ratios. This indicates more lenient reserve requirements, allowing for greater flexibility in credit provision and liquidity management.

The observed levels of excess liquidity in these countries highlight various factors that contribute to the accumulation or lower levels of surplus funds within their banking systems. Nigeria, as one of Africa's largest economies, experiences a relatively high level of liquidity at 45.14%, primarily driven by significant capital inflows in the form of foreign investments and remittances. These inflows enhance the availability of funds, leading to the accumulation of excess liquidity. Similarly, Mozambique, with 32.78% liquidity, benefits from substantial foreign direct investments, particularly in sectors such as natural resources and infrastructure. Limited lending opportunities in Mozambique further contribute to the accumulation of liquid assets within the banking system. Madagascar, with a relatively higher level of liquidity at 35.48%, experiences similar drivers such as capital inflows and challenges in effective fund deployment. Foreign investments and remittances augment the availability of funds in the country, while inadequate infrastructure, regulatory barriers and limited investment opportunities hinder the productive deployment of these funds, thus contributing to the accumulation of liquidity.

In contrast, countries like Mali, Sudan and Mauritania exhibit lower levels of excess liquidity. Mali, with 1.66% excess liquidity, demonstrates more efficient fund deployment or higher credit demand. Financial institutions in Mali have implemented effective mechanisms to allocate funds appropriately, minimizing surplus liquidity beyond the required minimum. Higher credit demand from businesses and individuals actively utilizes

available funds, resulting in lower levels of excess liquidity. A similar situation is observed in Sudan, where a level of 1.51% excess liquidity indicates a more efficient deployment of funds or higher credit demand. Effective strategies implemented by financial institutions and increased credit demand contribute to the utilization of available funds, reducing excess liquidity. Mauritania, with a level of 0.56% excess liquidity, also showcases efficient fund deployment or higher credit demand within its financial system. Effective allocation mechanisms within financial institutions ensure efficient utilization of liquidity, while higher credit demand from businesses and individuals further reduces excess liquidity.

Additionally, it is pertinent to note that the average optimal liquidity levels, as per Basel II standards in the region, hover around 18%. These standards provide guidelines for financial institutions to maintain a minimum level of liquidity, ensuring stability and resilience within the banking system. Comparing the observed levels of excess liquidity to these standards allows policymakers and financial institutions to assess the adequacy of liquidity levels and make informed decisions regarding the deployment of funds.

The observed patterns of excess liquidity and lending interest rates in sub-Saharan African countries have been the subject of extensive research and analysis, providing empirical evidence of their impact on the business sector, entrepreneurial growth and new firm formation. Numerous studies have highlighted the significant role played by lending interest rates in shaping entrepreneurial activities. Similarly, in Madagascar, where lending interest rates can reach as high as 48.83%, entrepreneurs encounter substantial barriers to accessing affordable credit. A study by Rakotondramaro and Rakotondramaro (2019) explored the challenges faced by entrepreneurs in Madagascar due to high borrowing costs. The research emphasized how the prohibitive cost of capital hinders entrepreneurial activities, leading to a slow uptake of new ventures and stifling risk appetite.

In contrast, countries like Cote d'Ivoire, Guinea and Senegal, with lower lending interest rates, demonstrate a more favourable environment for entrepreneurial growth and new firm formation. Research by Adjasi, Biekpe and Ntim (2008) examined the impact of lending interest rates on entrepreneurship in Cote d'Ivoire. The study found that lower borrowing costs enhance access to credit, enabling entrepreneurs to pursue business opportunities and

fuel economic growth. Similarly, in Guinea and Senegal, lower lending interest rates contribute to a more conducive environment for entrepreneurial activities, as entrepreneurs can access affordable funds to initiate and expand their ventures.

Regarding government bonds, the attractiveness of their returns can influence investment decisions and entrepreneurial activities. In countries where government bonds offer higher yields, entrepreneurs and investors may be more inclined to allocate their funds towards these less risky investments. This phenomenon can divert capital away from riskier sectors, such as agriculture or industry, which typically have longer gestation periods and a higher likelihood of crop failure or industrial setbacks. As a result, low investment in these sectors can impact entrepreneurial growth and new firm formation. For instance, in countries with high excess liquidity and high lending interest rates, entrepreneurs may face difficulties in accessing capital for ventures in the agricultural sector, which often require substantial investments and have inherent risks. Instead, they may perceive investments in government bonds as a safer and more attractive option.

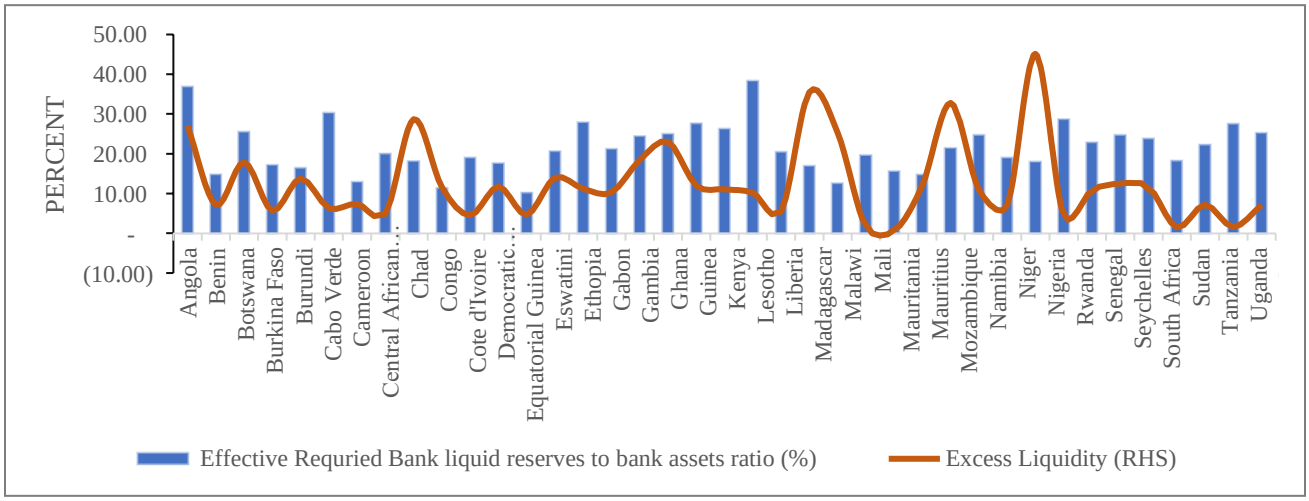


Figure 4.1: Excess Banking Liquidity by Country in Sub-Saharan Africa
Source: World Bank Database 2024

4.3.10 Trends in Liquidity Gluts Across Countries

According to Figure 4.1 the varying levels of excess liquidity across countries underscore the intricate factors influencing the accumulation or scarcity of surplus funds within their banking systems. For instance, Nigeria, one of Africa's largest economies, exhibits a remarkable excess liquidity rate of 45.14%, primarily fuelled by substantial capital inflows from foreign investments and remittances (Ibrahim & Alagidede, 2018). In a similar vein, Mozambique, with an excess liquidity level of 32.78%, benefits from significant foreign direct investments, particularly in its natural resources and infrastructure sectors (Ibrahim, 2017). The limited lending opportunities within Mozambique further exacerbate the retention of liquid assets in its banking system. Madagascar also reflects this trend, showcasing an excess liquidity rate of 35.48%, driven by comparable factors such as capital inflows and challenges in the effective deployment of funds (Jammeh, 2022).

Abor et al (2022). indicates that excess liquidity, particularly from capital inflows, can positively influence economic growth by catalysing entrepreneurial activities and facilitating the establishment of new enterprises (Abor et al., 2022). In Nigeria, for example, the influx of foreign investments and remittances has been shown to stimulate significant economic development. Similarly, in Mozambique, foreign direct investment in the natural resource sector enhances capital availability for entrepreneurial initiatives, thereby fostering economic growth.

Nonetheless, high levels of excess liquidity can also lead to increased lending interest rates, which adversely affect access to credit for entrepreneurs and businesses. In Nigeria, the abundance of liquidity within the banking system has a pronounced impact on lending rates, often serving as a barrier to entrepreneurial growth (Isaacs & Kaltenbrunner, 2018). Likewise, in Mozambique, the limited lending opportunities arising from excess liquidity restrict access to credit for potential entrepreneurs, inhibiting their ability to innovate and expand. In contrast, countries such as Mali, Sudan and Mauritania demonstrate lower levels of excess liquidity, suggesting more effective fund deployment or higher credit demand. These nations have established robust mechanisms for fund allocation, thereby minimizing surplus liquidity (Kamuinjo, 2021).

4.3.11 Comparative Effectiveness of Fiscal Versus Monetary Policies

According to Figure 4.2, in the dynamic landscape of Sub-Saharan Africa, the interplay between government expenditure particularly capital expenditure and lending interest rates plays a crucial role in shaping economic growth and entrepreneurial activities. This relationship highlights the comparative effectiveness of fiscal versus monetary policies. While monetary policy, through mechanisms such as interest rate adjustments, aims to stimulate economic activity by making borrowing cheaper, fiscal policy directly influences the economy by altering government spending and taxation. For instance, countries with higher government expenditure as a percentage of GDP, such as Botswana at 27.66%, often experience more robust economic growth. These investments can create jobs and improve infrastructure, thereby fostering a conducive environment for entrepreneurship. In contrast, high lending interest rates, exemplified by Nigeria at 12.33%, can stifle economic activity by limiting access to credit for businesses.

The GDP growth rates serve as indicators of economic expansion and performance. For example, Angola, Benin and Burkina Faso reported growth rates of 3.05%, 6.25% and 1.48% respectively, while Cameroon, Congo and the Democratic Republic of the Congo recorded growth rates of 1.48%, 1.55% and 8.92% respectively. These figures highlight the varying degrees of economic growth and performance among the countries. Inflation rates, reflecting changes in price levels, also exhibit notable differences. Angola, Ethiopia and Malawi reported inflation rates of 25.75%, 25.65% and 20.95% respectively, indicating higher levels of price instability. In contrast, Sudan, Seychelles and Senegal experienced relatively lower inflation rates of 2.25%, 7.05% and 9.70% respectively, suggesting a relatively more stable price environment. These rates shed light on the potential impact on consumers' purchasing power within each country.

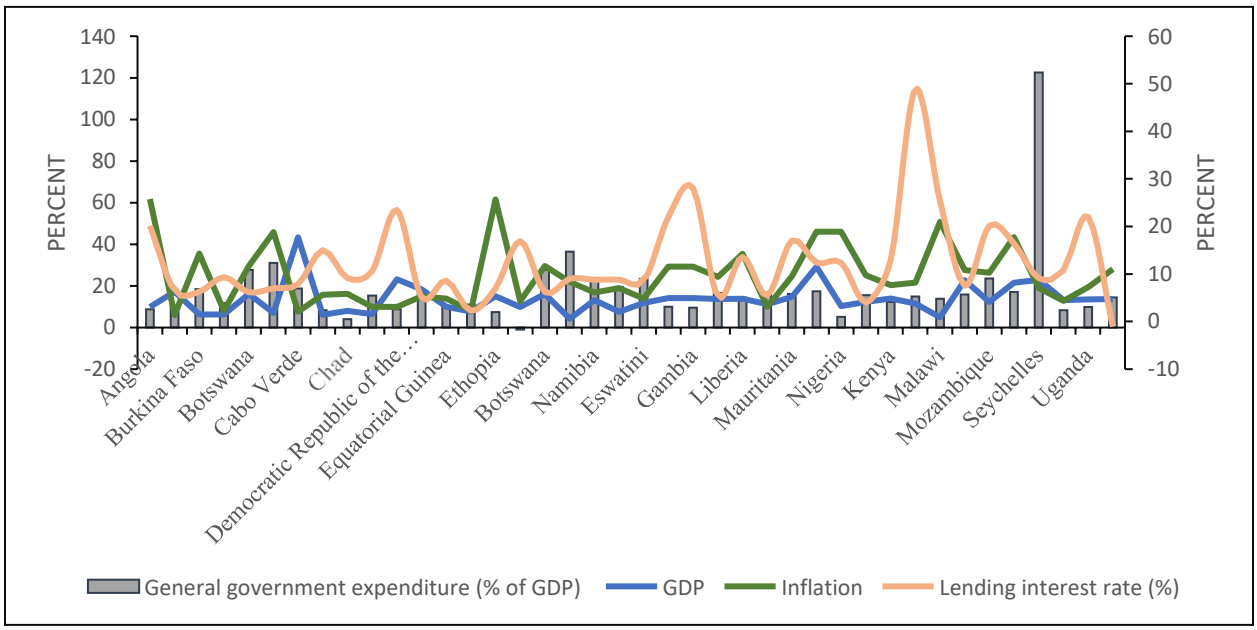


Figure 4.2: GDP, Government Expenditure, Inflation rates and Lending rates for SSA Selected Countries 2022 Source: World Bank Database 2024

With a lending interest rate of 12.33% and a GDP growth rate of only 3.25%, Nigeria's high borrowing costs serve as formidable barriers to entrepreneurial growth and the establishment of new firms, limiting the ability of potential entrepreneurs to secure necessary funding for their ventures (Alagidede & Ibrahim, 2017). This phenomenon is echoed in Mozambique, where a lending interest rate of 20.13% and a GDP growth rate of 4.15% hinder the availability of credit for entrepreneurs, thereby impeding their capacity to engage in entrepreneurial activities and form new ventures (Kastrati, 2022).

In contrast, countries such as Côte d'Ivoire, which exhibit a lower lending interest rate of 5.11% and a GDP growth rate of 6.74%, demonstrate a more favourable environment for entrepreneurial growth and new firm formation. The reduction in borrowing costs enhances access to credit, enabling entrepreneurs to pursue business opportunities more aggressively and, in turn, fuelling economic growth (Ibrahim, 2017). This correlation suggests that lower interest rates can stimulate entrepreneurial activities by making capital more accessible, thereby fostering a more dynamic economic landscape (Kamuinjo, 2021).

Moreover, the attractiveness of government bonds plays a crucial role in shaping investment decisions and entrepreneurial activities. In nations characterized by high excess liquidity and elevated lending interest rates, such as Nigeria and Mozambique, entrepreneurs may exhibit a preference for investing in government bonds rather than engaging in riskier sectors like agriculture or industry (Iwamoto, 2015). This preference for safer investments can divert capital away from sectors that typically require substantial investments and have longer gestation periods, ultimately impacting the potential for entrepreneurial growth and innovation (Isaacs & Kaltenbrunner, 2018).

In addition to interest rates, government expenditure, particularly capital expenditure, is a critical driver of economic growth in sub-Saharan Africa. Capital expenditure refers to government spending on infrastructure projects, education, health and other long-term investments that can enhance productivity and stimulate economic activity (Afonso et al., 2024). For an example, Ethiopia, with a general government expenditure of 7.36% of GDP and a GDP growth rate of 5.32%, has made significant strides in economic development through substantial investments in infrastructure, such as roads, energy and telecommunications. These investments not only create jobs but also improve the overall business environment, making it easier for entrepreneurs to operate and expand their businesses (Chemouni, 2018).

4.4 Analysing the Impact of Macroeconomic Policies on Liquidity Glut Mitigation

The findings derived from this analysis are presented in Table 4.2, which forms the basis for the discussions that follow. Table 4.3 encapsulates the results of our GMM estimations, highlighting the relationships between macroeconomic policies and the impacts of liquidity gluts on economic performance. All subsequent discussions will draw from these findings to elucidate how different policies can effectively respond to the challenges posed by liquidity excesses. By linking empirical results with theoretical insights, this chapter aims to provide a comprehensive understanding of how well-designed macroeconomic policies can mitigate the negative consequences of liquidity gluts and foster a more resilient economic environment.

Table 4.2: Impact of Liquidity Gluts and Macroeconomic Policies on Economic Performance in Sub-Saharan Africa

Variable	Coefficient
GDP Growth (-1)	0.250** [0.075]
Liquidity Glut Indicator (m)	-0.9003* [0.4860]
Government Expenditure	1.7011*** [0.4866]
Lending Interest Rate	-1.1445** [0.3795]
Bank Sector Excess Liquidity	0.5086 [0.8391]
Subsidies	2.3727 [1.8084]
Current Account to GDP	1.4913** [0.7103]
Stock Market Returns	-0.1043 [1.0104]
C	2.345*** [0.567]
Diagnostic tests,	
Adjusted R-Squared	0.830
Chow Test for Poolability:	13.34
Hausman Test	6.67
Lagrange Multiplier (LM) Test	9.91
Breusch-Pagan Test:	4.45
Durbin-Watson stat	2.07
J-statistic	0.1299

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. The standard errors are shown in [ ] Source: Authors Calculations, 2024

4.4.1 The Paradox of Excess: How Liquidity Gluts Undermine Economic Growth in Sub-Saharan Africa

The analysis of liquidity gluts reveals a concerning dynamic within economic ecosystems, particularly illustrated by the coefficient of -0.9003 as depicted in Table 26. This coefficient signifies a notable inverse relationship between liquidity gluts and GDP growth, suggesting that an increase in liquidity glut is associated with a decrease in economic output. Specifically, a 1-unit increase in the liquidity glut correlates with a 0.90% decrease in GDP. This negative relationship raises critical concerns about the implications of excessive liquidity on the overall health of the economy, suggesting that while liquidity may appear beneficial in the short term, it can lead to detrimental long-term consequences, particularly in the context of Sub-Saharan Africa (SSA).

Liquidity gluts typically arise from an oversupply of money in the economy, often due to expansive monetary policies such as low interest rates and quantitative easing. While these policies are intended to stimulate economic activity by promoting borrowing and spending, they can inadvertently signal underlying structural weaknesses (Abdel-Latif, 2020; Kastrati, 2022). For instance, when banks and financial institutions are flooded with excess capital, it can indicate a lack of viable investment opportunities. This phenomenon is particularly evident in SSA, where many countries have experienced significant liquidity inflows due to foreign aid, remittances and commodity booms (Donkor, 2022; Kastrati, 2022).

Analysing differences across SSA countries reveals that the impact of liquidity gluts is not uniform. For example, while Nigeria has faced substantial liquidity gluts following the oil price boom, leading to speculative investments rather than productive ones (Spahn, 2021; Musthaq, 2023), other countries may experience different outcomes based on their economic structures and regulatory environments. In Nigeria, the influx of petrodollars resulted in a burgeoning property market characterized by inflated prices, while critical sectors like agriculture and manufacturing remained underfunded. Consequently, despite the apparent increase in GDP, the underlying economic structure remained fragile, leading to a sharp contraction when oil prices plummeted in 2014 (Kastrati, 2022). This scenario exemplifies how excess liquidity can create an illusion of growth while masking deeper vulnerabilities.

Moreover, the relationship between liquidity gluts and consumer confidence is critical in understanding this inverse dynamic. An environment characterized by excessive liquidity can foster uncertainty among consumers, leading to reduced spending and economic activity (Latif, 2023). In countries like Zimbabwe, where hyperinflation has historically plagued the economy, excessive liquidity has not translated into growth but rather into a loss of purchasing power and economic collapse (Sain, 2024; Kyei-Mensah, 2023). The experience of Zimbabwe serves as a cautionary tale, illustrating how an oversupply of money can lead to devastating consequences, including rampant inflation and a significant decline in GDP (Palma, 2019).

The misallocation of resources is another critical consequence of liquidity gluts. When liquidity is abundant, businesses may find it easy to access capital; however, if viable investment opportunities are lacking, this can lead to inefficient capital distribution (Knafo, 2020). In many SSA countries, governments have adopted expansive monetary policies aimed at stimulating growth. While GDP figures may initially reflect positive outcomes, these numbers often mask significant structural inefficiencies (Jammeh, 2022). For instance, in Ethiopia, the government has invested heavily in infrastructure projects to absorb excess liquidity. However, the lack of skilled labour and bureaucratic inefficiencies has often resulted in delays and cost overruns, undermining the intended economic benefits (Arnold, 2022; Diamond, 2016).

4.4.2 Economic Momentum: Harnessing GDP Growth to Counter Liquidity Gluts

The intricate relationship between past GDP growth and current economic performance is pivotal in formulating macroeconomic policies aimed at mitigating liquidity gluts. Economic momentum, defined as the tendency of an economy to continue growing based on its previous growth rates, plays a crucial role in shaping the trajectory of economic performance. According to Table 4.3 empirical evidence suggests a positive correlation where a 1% increase in GDP growth from the previous period results in a 0.25% increase in the current period's GDP. This coefficient indicates a significant momentum effect, particularly pronounced in regions like Sub-Saharan Africa (SSA), where economies are often heavily reliant on sectors such as agriculture and mining.

Sustained economic growth enhances consumer confidence, which in turn stimulates spending. For instance, in countries like Kenya, a consistent rise in GDP has led to increased consumer spending on goods and services, thereby creating a virtuous cycle of growth (Chucherd, 2021). As consumers feel more secure in their financial situations, they are more likely to invest in larger purchases, such as homes and vehicles, which further fuels economic activity. Additionally, economic growth often leads to increased public and private investment in infrastructure (Kyei-Mensah, 2023). In Ethiopia, for example, the government has invested heavily in infrastructure projects, such as roads and energy production. These investments not only create jobs but also facilitate trade and improve productivity, providing the necessary framework for businesses to thrive and absorb excess liquidity (Mbao, 2021).

However, analysing differences across SSA countries reveals that despite the positive aspects of economic momentum, several challenges can impede growth in the region. Political instability is a significant factor that can deter investment and disrupt economic activities. Countries like Zimbabwe have experienced substantial economic downturns due to political turmoil, undermining investor confidence and leading to capital flight (Liao, 2021). In contrast, countries with more stable political environments, such as Botswana, have managed to maintain steady growth, demonstrating how governance can influence economic momentum.

4.4.3 Fiscal Stimulus: Leveraging Government Expenditure to Alleviate Liquidity Pressures

Government expenditure is an essential mechanism for stimulating economic activity and addressing the adverse effects of liquidity gluts. The significant coefficient of 1.7011 indicates that a 1% increase in government spending correlates with a 1.70% increase in GDP as revealed in Table 4.3. This relationship underscores the potency of fiscal policy as a stabilizing force, particularly during economic downturns. In the context of Sub-Saharan Africa (SSA), government spending is often strategically directed toward key sectors such as infrastructure, health and education. Investments in infrastructure, for instance, not only create immediate employment opportunities but also enhance productivity by improving transportation and communication networks. A notable example is Ethiopia's extensive road construction projects, which have significantly reduced travel times and costs, facilitating trade and economic integration across the region (Bauluz, 2022).

Moreover, the role of government expenditure in health is pivotal, especially in times of crisis. During the COVID-19 pandemic, countries that invested heavily in healthcare infrastructure and public health initiatives demonstrated a greater capacity to manage the crisis effectively (Donkor, 2022). Rwanda's proactive approach to expanding healthcare facilities and increasing the number of healthcare workers exemplifies how targeted government spending can mitigate economic shocks and foster resilience. Such investments yield substantial returns, enhancing the overall capacity of the economy to sustain growth even in challenging circumstances (Bauluz, 2022; Galadima, 2022).

However, analysing differences across SSA countries highlights that the effectiveness of government expenditure can be severely undermined by issues such as corruption and inefficiency. In many SSA countries, the misallocation of resources and lack of accountability often lead to suboptimal outcomes. For example, Nigeria has faced significant challenges with the misappropriation of funds allocated for infrastructure development, resulting in incomplete projects and wasted resources. This not only hampers economic growth but also erodes public trust in government institutions (Bäckman, 2020).

4.4.4 Monetary Policy: The Role of Lending Interest Rates in Managing Liquidity Dynamics

Lending interest rates are pivotal in shaping economic activity and managing liquidity dynamics within an economy. The relationship between lending rates and economic growth is quantitatively expressed through the coefficient of -1.1445, indicating that a 1% increase in lending rates correlates with a 1.14% decrease in GDP as depicted in Table 26. This negative coefficient underscores the sensitivity of economic performance to borrowing costs, particularly in regions characterized by fragile economic structures, such as many Sub-Saharan African (SSA) countries. As borrowing costs rise, the propensity for businesses to invest diminishes, directly impacting the feasibility of investment projects. For instance, a small manufacturing firm contemplating an expansion may find that higher interest rates render the projected returns insufficient to justify the additional debt (Mahmah, 2019; Sobieraj, 2022). Consequently, this leads to a contraction in investment, which is a critical driver of economic growth. In SSA, elevated lending rates often reflect perceived risks associated with lending, influenced by factors such as political instability, economic volatility and inadequate financial infrastructure.

For example, in Zimbabwe, hyperinflation and political turmoil have historically led to exorbitant interest rates, stifling economic activity and deterring foreign investment (Qabhobho, 2017). In contrast, Ghana has managed to maintain relatively lower lending rates due to more stable governance and stronger institutional frameworks, which enhance investor confidence and reduce perceived risks. This difference highlights how institutional capacity and governance effectiveness can significantly influence monetary policy outcomes across SSA countries. While Ghana's monetary policy has been more effective in fostering a conducive environment for investment, Nigeria's struggles with high lending rates are compounded by a complex regulatory environment and governance challenges that hinder effective credit allocation. The challenges faced by SMEs in accessing affordable credit illustrate the broader implications of high lending rates on overall economic resilience and growth potential. In Nigeria, for instance, the combination of high lending rates and a lack of transparency in financial institutions has made it particularly difficult for SMEs to secure financing, thereby limiting their ability to contribute to economic growth.

4.4.5 Investigating the Effectiveness of Macroeconomic Policies in Mitigating Liquidity Gluts: The Role of Taxation in Sub-Saharan Africa

In analysing the two tables, significant differences emerge in the significance and coefficients of various variables, reflecting the distinct focus of each model. Table 26 emphasizes tax revenue, while Table 4.3 centers on other fiscal components. This separation is crucial, as tax revenue is a fundamental element of fiscal policy that cannot coexist in the same equation with government expenditure due to their fundamentally opposite roles in the economic framework. Including both variables in the same model could lead to issues of multicollinearity, where the two variables are correlated, complicating the estimation of their individual effects on economic outcomes.

Table 4.3: Effectiveness of Macroeconomic Policies in Mitigating Liquidity Gluts: Taxation's Role in Sub-Saharan Africa

Variable	**Coefficient**
GDP Growth (-1)	0.5230** [0.015]
Liquidity Glut Indicator (m)	-0.9252** [0.4562]
Tax to GDP Ratio	-0.6967** [0.3470]
Lending Interest Rate	1.1877 [5.0305]
Bank Sector Excess Liquidity	3.1268 [2.8913]
Subsidies	-0.9372** [0.4134]
Current Account to GDP	-0.4172* [0.2402]
Stock Market Returns	0.2200 [0.4430]
C	-2.3732 [4.1431]
Diagnostic tests,	
Adjusted R-Squared	0.743
Chow Test for Poolability:	13.34
Hausman Test	6.67
Lagrange Multiplier (LM) Test	9.91
Breusch-Pagan Test:	4.45
Durbin-Watson stat	2.07
J-statistic	0.30788

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. The standard errors are shown in [] Source: Authors Calculations, 2024

4.4.6 The Impact of Taxation on Economic Growth in Sub-Saharan Africa: An Analytical Perspective

The examination of key variables reveals significant shifts in their coefficients across the two tables. The GDP growth variable shows a coefficient of 0.250 in Table 4.3 and 0.5230 in Table 4.4, indicating a stronger lagged effect on current GDP when tax revenue is considered. This highlights the critical role of tax policy in shaping economic trajectories. The liquidity glut indicator (m) shifts from 0.9003 in Table 4.3 to -0.9252 in Table 4.4, suggesting that while excess liquidity may stimulate growth in certain contexts, it can lead to inefficiencies when tax revenue is prioritized, emphasizing the need for careful fiscal management.

Sub-Saharan African (SSA) countries have tax revenues below 15%, averaging around 14.7%. Such low taxation limits government investment in essential services and infrastructure, negatively impacting economic growth. The negative relationship between tax revenue and GDP indicates that excessive taxation can reduce disposable income, thereby diminishing consumption and investment key drivers of economic activity in fragile economies reliant on external aid (Okunogbe, 2023).

In countries like Mozambique and Tanzania, low tax-to-GDP ratios hinder public investment in education, healthcare and infrastructure, perpetuating underdevelopment (Levitin, 2020; John Gachunga, 2019). Conversely, nations like Rwanda, which have increased their tax base, demonstrate that targeted investments can yield positive economic outcomes, showcasing the potential of effective tax policies to enhance growth (Knafo, 2020).

The accumulation of public debt in SSA often stems from insufficient tax revenue to meet spending needs. Low tax revenues lead governments to borrow, increasing debt servicing costs and limiting funds for public investment. This is evident in Zambia, where rising debt levels constrain economic growth and the government's ability to address social needs. Furthermore, the effectiveness of tax revenue in promoting growth is often undermined by inefficiencies in tax collection and administration (Jammeh, 2022). Corruption and inadequate tax infrastructure weaken the correlation between tax revenue and GDP growth, as seen in Nigeria, which struggles with tax collection efficiency despite significant oil revenues (Iwamoto, 2015; Ma, 2021; Martínez-Vázquez, 2023).

4.4.7 Detailed Analysis of Inflation in the Context of Macroeconomic Policies in SSA

To assess the effectiveness of macroeconomic policies, especially monetary policy, in alleviating inflationary pressures from liquidity gluts in Sub-Saharan Africa (SSA), it is essential to grasp the underlying dynamics. All subsequent discussions will reference results presented in Table 4.4. The Generalized Method of Moments (GMM) model offers key coefficients that illuminate how various macroeconomic factors, including monetary policy tools, impact inflation in this context.

Table 4.4: Examining the Interplay Between Inflation and Macroeconomic Policies in SSA

Variable	**Coefficient**
Inflation Rate (-1)	0.3303** [0.0107]
Liquidity Glut Indicator (m)	-0.9894** [0.4561]
Government Expenditure	1.9619** [0.9792]
Lending Interest Rate	-2.2667 [1.5300]
Bank Sector Excess Liquidity	1.7055 [0.8853]
Subsidies	2.5655** [0.4134]
Current Account to GDP	-0.4172* [0.2402]
Stock Market Returns	0.2200 [0.4430]
C	-2.3732 [4.1431]
Diagnostic tests, Adjusted R-Squared	 0.830

Chow Test for Poolability:	13.34
Hausman Test	6.67
Lagrange Multiplier (LM) Test	9.91
Breusch-Pagan Test:	4.45
Durbin-Watson stat	2.07
J-statistic	0.30788

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. The standard errors are shown in [ ] Source: Authors Calculations, 2024

4.4.8 The Persistence of Inflation: Analysing the Lagged Inflation Rate and Its Implications in Sub-Saharan Africa

The coefficient for the lagged inflation rate in the context of Sub-Saharan Africa (SSA) is 0.3303, indicating a robust positive relationship between past and current inflation rates. Specifically, a 1% increase in the previous inflation rate correlates with a 0.33% increase in the current inflation rate as revealed in Table 4.4. This persistence presents a critical challenge for SSA countries, where inflation can become self-reinforcing if not addressed promptly. The implications of this phenomenon extend beyond mere statistical relationships; they encompass broader economic stability, investment climates and social welfare.

A pertinent example is Zimbabwe, which has faced hyperinflation in the past. During the late 2000s, as inflation rates skyrocketed, businesses and consumers began to expect further increases, creating a vicious cycle that ultimately led to the collapse of the currency. The hyperinflationary period saw inflation rates exceeding 89.7 sextillion percent in November 2008, rendering the Zimbabwean dollar virtually worthless. This scenario underscores the necessity for credible monetary policies in SSA that can effectively break such cycles and restore economic stability. The Zimbabwean experience illustrates how inflation expectations can spiral out of control, leading to a loss of confidence in the currency and the economy (Elhassan, 2020; Hoegen, 2018).

In addition to Zimbabwe, other SSA nations have grappled with similar inflationary pressures. For instance, in Angola, the inflation rate surged to 41.5% in 2016, driven by a combination of currency devaluation and rising food prices. The lagged effect of inflation was evident as past inflation rates influenced current expectations, leading to a cycle of price increases that further eroded purchasing power. The Angolan government's attempts to

stabilize the economy through monetary tightening were met with resistance, as consumers and businesses adjusted their expectations based on previous inflation trends (Kastrati, 2022; Nguyen, 2023). This highlights the critical need for effective communication and policy measures that can anchor inflation expectations and restore confidence in the economic framework (Hillbom, 2018).

The persistence of inflation in SSA is not merely a statistical anomaly; it has profound implications for economic growth and development. High inflation rates can deter foreign investment, as investors seek stable environments with predictable economic conditions. For example, in Nigeria, where inflation has fluctuated significantly, the uncertainty surrounding price stability has led to a cautious approach from foreign investors (Oliphant, 2023). The Nigerian economy, heavily reliant on oil exports, has faced challenges in diversifying its economic base due to inflationary pressures that complicate long-term planning and investment decisions (Naqvi, 2022). The lagged inflation rate, therefore, serves as a critical indicator of the broader economic environment, influencing both domestic and foreign investment flows.

Moreover, the social implications of persistent inflation cannot be overlooked. In many SSA countries, high inflation disproportionately affects the most vulnerable populations, eroding their purchasing power and exacerbating poverty levels. For instance, in Ethiopia, where inflation rates have hovered around 20%, the rising cost of basic goods has strained household budgets, pushing many families into deeper poverty (Sobieraj, 2022; Nyamagwa, 2021). The lagged effects of inflation mean that as prices rise, expectations of future inflation can lead to wage demands that further fuel the inflationary cycle, creating a feedback loop that is difficult to break.

4.4.9 The Paradox of Liquidity Gluts in Sub-Saharan Africa: Unpacking the Dynamics of Inflation and Economic Activity

According to Table 28 again the liquidity glut indicator reveals a negative coefficient of -0.9894, suggesting that higher liquidity levels in Sub-Saharan Africa (SSA) can be associated with lower inflation. This counterintuitive finding challenges conventional economic wisdom, which posits that increased liquidity typically leads to inflationary pressures. However, in the context of SSA, this relationship is nuanced and often influenced by a variety of structural factors that inhibit effective demand and investment opportunities (Akinlo,

2021; Freixas, 2021). For instance, Nigeria serves as a compelling case study; despite the substantial liquidity generated from its oil revenues, inflation rates have not surged as anticipated. This phenomenon can be attributed to several underlying issues, including weak consumer confidence, underutilized production capacity and a lack of robust investment channels (Ibrahim, 2018).

In Nigeria, the oil sector has historically been a significant source of liquidity, yet the economy has struggled to translate this wealth into broad-based economic growth. The country has faced persistent challenges such as political instability, corruption and infrastructural deficits, which have undermined investor confidence and stifled economic activity. As a result, even with abundant liquidity, the demand for goods and services remains tepid. For example, during periods of high oil prices, one would expect a corresponding increase in consumer spending and investment (Ma, 2021; Parosa, 2019). However, the reality has often been different; many Nigerians remain cautious about spending due to uncertainties surrounding the economy, leading to a situation where high liquidity coexists with low inflation. This dynamic illustrates the complexities of the SSA economic landscape, where traditional economic theories may not fully capture the realities on the ground (Mian, 2020).

Moreover, the structural issues that plague Nigeria are not unique to the country but resonate throughout the SSA region. In many nations, the lack of effective financial systems and markets limits the ability of liquidity to stimulate economic growth. For instance, in Ethiopia, despite significant inflows of foreign direct investment and remittances, inflation has remained relatively stable. The Ethiopian economy, characterized by a largely agrarian base and limited industrialization, faces challenges in absorbing excess liquidity into productive investments. The government's focus on state-led development has also resulted in a constrained private sector, further exacerbating the disconnect between liquidity and inflation (Parosa, 2019; Bova, 2018). This situation highlights how the effectiveness of monetary policy can be severely hampered by structural impediments, leading to a paradox

where increased liquidity does not translate into inflationary pressures (Lane, 2022; Emara, 2021). The interplay between liquidity and inflation in SSA is further complicated by the region's unique economic conditions. Many SSA countries experience a dual economy, where a formal sector coexists with a large informal sector. The informal economy often operates outside the purview of formal financial institutions, limiting the transmission of liquidity into broader economic activity.

For example, in countries like Tanzania, a significant portion of economic transactions occurs in the informal sector, where cash transactions dominate (Coruche, 2022; Heller, 2022). This reliance on cash can lead to a situation where increased liquidity in the formal banking system does not reach consumers or businesses in the informal sector, thereby dampening inflationary effects. Consequently, the disconnect between liquidity and inflation becomes more pronounced, as the informal sector remains insulated from the monetary policy measures aimed at stimulating the economy (Kentikelenis, 2022).

Additionally, the role of consumer expectations cannot be overlooked in understanding the dynamics of liquidity and inflation in SSA. In many cases, consumers may anticipate future economic challenges, leading to a reluctance to spend even when liquidity is abundant. This phenomenon is particularly evident in countries experiencing economic volatility or political uncertainty (Nissanke, 2019). For instance, in Zimbabwe, despite periods of hyperinflation, there have been instances where liquidity injections did not lead to immediate inflationary pressures due to a pervasive lack of trust in the currency and the government’s economic management (John Gachunga, 2019). Consumers, wary of potential price increases, may choose to save rather than spend, further complicating the relationship between liquidity and inflation (Musthaq, 2023).

4.4.10 The Inflationary Consequences of Government Expenditure in Sub-Saharan Africa

Government expenditure in Sub-Saharan Africa (SSA) plays a pivotal role in shaping economic outcomes, particularly in relation to inflation. The analysis reveals a significant positive coefficient of 1.9619, indicating that a 1% increase in government expenditure is correlated with a 1.96% rise in inflation as depicted in Table 28. This relationship highlights the potential inflationary effects of fiscal policies, especially when government spending outpaces revenue generation.

The inflationary consequences of government expenditure can be understood through several mechanisms. When a government increases its spending, especially in an economy that is already facing capacity constraints, the demand for goods and services tends to rise. If this demand increase is not matched by a corresponding increase in supply, prices will inevitably rise, resulting in inflation (Abdel-Latif, 2020; Ghenimi, 2017). For example, when the Kenyan government embarked on its "Big Four Agenda," which emphasizes significant investments in infrastructure, healthcare and manufacturing, the increased public spending led to heightened demand in these sectors. As a result, the country faced rising prices for construction materials and labour, contributing to overall inflation (Karachalios, 2021).

Additionally, many SSA countries experience supply-side constraints that exacerbate inflationary pressures. In Ethiopia, the government has made substantial investments in infrastructure to drive economic development. However, the rapid increase in demand for construction materials such as cement and steel has led to shortages, pushing prices higher. The Ethiopian economy, which saw inflation rates soaring above 20% in recent years, illustrates how government expenditure can lead to inflation when supply cannot keep pace with demand (Knafo, 2020).

The dynamics of fiscal policy and monetary supply are also crucial in understanding inflation related to government spending. In instances where government expenditure is financed through borrowing or printing money, the result can be an oversupply of currency in circulation. This scenario often leads to inflation, particularly if the central bank is compelled to accommodate fiscal policy without adequate checks (Bova, 2018; Ezzahid, 2021). A pertinent example is Zimbabwe, where excessive government spending financed by printing money resulted in one of the worst hyperinflations in history. The government’s inability to balance its budget led to skyrocketing prices, eroding savings and destabilizing the economy (Heller, 2022).

Moreover, the inflationary impact can be compounded by external shocks, such as fluctuations in global commodity prices. For instance, Nigeria, heavily dependent on oil exports, faces unique challenges. When global oil prices rise, the government may increase

public spending based on anticipated oil revenue. Conversely, during periods of low oil prices, the government struggles to maintain its fiscal commitments, leading to economic instability and inflationary pressure as businesses adjust prices in response to changing costs (Kang, 2019; Sain, 2024).

The political environment in SSA significantly influences the relationship between government expenditure and inflation. In many countries, political instability and governance issues can create uncertainty regarding fiscal policies, prompting businesses to pre-emptively raise prices in anticipation of inflation. Social demands for increased public spending on health, education and infrastructure often clash with the need to control inflation (Ustarz, 2021). Governments must balance these competing interests carefully. Failure to manage inflation effectively can lead to social unrest, as seen in various SSA countries where inflation erodes purchasing power and disproportionately affects the most vulnerable populations (Naqvi, 2022).

4.4.11 Unravelling the Paradox: Subsidies and Inflation in Sub-Saharan Africa

According totable 4.4 subsidies are a crucial determinant of inflation dynamics in Sub-Saharan Africa (SSA), underscored by a significant coefficient of 2.5655, indicating that higher subsidy levels are associated with increased inflation. Specifically, a 1% rise in subsidies correlates with a 2.57% increase in inflation. This relationship reveals a critical paradox: while subsidies aim to provide immediate relief to consumers, they often distort market prices and contribute to persistent inflationary pressures. The situation in Nigeria exemplifies this phenomenon, where government subsidies on fuel and agricultural products are intended to shield consumers from rising costs (Saheruddin, 2022; Kodongo, 2016). However, these subsidies can generate heightened demand that outstrips supply, further exacerbating inflation within the economy.

Historically, the Nigerian government has subsidized essential goods, particularly fuel and staple foods, to alleviate the financial strain on low-income households. The introduction of fuel price subsidies was designed to stabilize transportation costs, vital for both consumers and businesses. Yet, this intervention has had unintended consequences. Increased demand for subsidized fuel has not been met with a corresponding rise in supply, leading to higher prices for goods and services that are not subsidized (Magwedere, 2022). This scenario

illustrates how subsidies can create a cascading effect throughout the economy, distorting price signals and engendering inflationary pressures that ultimately undermine the policy's original intent.

The implications of subsidies extend far beyond immediate price relief; they risk fostering a culture of dependency where consumers and businesses become reliant on government assistance instead of adapting to evolving market conditions. This reliance can stifle innovation and efficiency, as businesses may lack motivation to optimize operations when they can count on subsidies for profitability (Hollander, 2019). For instance, in the agricultural sector, farmers might hesitate to adopt sustainable practices or invest in productivity-enhancing technologies, believing that government support will insulate them from market fluctuations. This stagnation further entrenches inflationary pressures, rendering the economy less responsive to shifts in supply and demand (Bauluz, 2022).

The fiscal ramifications of subsidies compound these challenges. Many SSA governments grapple with budget constraints and the financial burden of sustaining subsidy programs can lead to increased public debt or a diversion of funds from essential services like education and healthcare. In Zimbabwe, where subsidies have historically played a pivotal role in economic policy, the government has faced immense difficulty in balancing its budget while maintaining these programs. This struggle has culminated in hyperinflation, where rapid currency devaluation erodes purchasing power and exacerbates poverty levels (Ferretti, 2021).

Moreover, the global economic landscape cannot be ignored. Fluctuations in international commodity prices can drastically affect the viability of subsidy programs. For example, a surge in global oil prices can render fuel subsidies untenable, compelling governments to either reduce subsidies or raise taxes elsewhere (McCauley, 2018). Such measures can trigger public discontent and social unrest, as witnessed in various SSA nations where subsidy cuts have incited protests. This interplay between global market dynamics and local economic policies underscores the complexity of managing inflation in a region that is particularly susceptible to external shocks (Ntarmah, 2021).

4.4.12 Current Account Balance and Price Stability in Sub-Saharan Africa: An In-Depth Analysis

The relationship between the current account balance and inflation in Sub-Saharan Africa (SSA) is a critical area of study, particularly given the region's economic vulnerabilities. The current account to GDP ratio within SSA demonstrates a negative coefficient of -0.4172, indicating that a stronger current account balance is associated with lower inflation as depicted in Table 28. This suggests that countries maintaining a positive external position can better stabilize domestic prices.

The current account balance reflects a country's trade in goods and services, net income from abroad and net current transfers. A positive current account balance indicates that a country exports more than it imports, leading to an influx of foreign currency. This influx can enhance a country's ability to manage its domestic price levels effectively. When a nation has a strong current account position, it can utilize the foreign currency reserves to stabilize its currency, which in turn helps control inflation (Richardson, 2019; Emara, 2021).

For instance, Botswana serves as a prime example of how a consistent positive current account balance can contribute to price stability. The country has maintained a robust current account surplus primarily due to its diamond exports, which account for a significant portion of its GDP. This surplus has allowed Botswana to accumulate substantial foreign reserves, providing the government with the means to intervene in the foreign exchange market when necessary. By stabilizing the pula (Botswana's currency), the government can mitigate the effects of imported inflation, which is particularly important in a region where many countries rely heavily on imports for essential goods (Parosa, 2019). The influx of foreign currency from a positive current account balance enables countries to manage domestic price levels more effectively. When a country has ample foreign reserves, it can influence the exchange rate, making imports cheaper and helping to keep inflation in check. For example, Botswana's ability to maintain a stable currency has contributed to relatively low inflation rates, averaging around 3% in recent years (Kassouri, 2022). This stability is crucial for economic planning and investment, as businesses can operate with greater certainty regarding future costs.

In contrast, countries with persistent current account deficits often face inflationary pressures. For example, Tanzania has experienced challenges related to its current account balance, which has been negative in recent years. The country has struggled with rising inflation, which peaked at over 5% in 2021. The negative current account balance has limited Tanzania's ability to stabilize its currency, leading to increased costs for imported goods and services. As the Tanzanian shilling depreciates, the cost of imports rises, contributing to overall inflation and eroding purchasing power for consumers.

The relationship between current account balances and inflation is also influenced by external shocks, such as fluctuations in commodity prices and global economic conditions (Sam, 2019; Magwedere, 2022). Countries that rely heavily on a narrow range of exports are particularly vulnerable to these shocks. For instance, Angola, which is heavily dependent on oil exports, has faced significant challenges due to volatile oil prices. When oil prices fall, the current account balance deteriorates, leading to currency depreciation and rising inflation. In 2020, Angola experienced inflation rates exceeding 25%, driven by a combination of a negative current account balance and external economic pressures (Shavshukov, 2020).

Conversely, countries with diversified economies and positive current account balances are better positioned to withstand such shocks. For example, South Africa, despite facing its own economic challenges, has a more diversified export base, including minerals, agricultural products and manufactured goods. This diversification helps stabilize the current account balance and provides a buffer against inflationary pressures (Naili, 2022; Ryan-Collins, 2021).

4.4.13 The Ineffectiveness of Monetary Policy Amid Liquidity Gluts in Sub-Saharan Africa

According to Table 4.4 the coefficient for lending interest rates in Sub-Saharan Africa (SSA) is recorded at -2.2667, suggesting a potential inverse relationship between lending rates and inflation. In theory, higher interest rates could suppress inflation; however, the lack of statistical significance indicates that changes in interest rates may not yield a clear or immediate impact on inflation, particularly in the context of liquidity gluts prevalent in the region. This situation underscores the complexities and inefficiencies inherent in monetary policy within SSA, especially during periods characterized by excess liquidity.

In many SSA countries, central banks have struggled to effectively utilize interest rate adjustments as a tool for controlling inflation. For instance, in Ghana, the central bank's attempts to raise interest rates to combat inflation have often been met with limited responsiveness from businesses and consumers. Economic uncertainties, such as fluctuating commodity prices and political instability, lead to a reluctance among economic agents to react to higher borrowing costs. Instead of curbing inflation, the prevailing liquidity glut results in a scenario where excess cash remains hoarded rather than invested or spent, rendering traditional monetary policy tools ineffective (Kyei-Mensah, 2023; Okunogbe, 2023).

The phenomenon of liquidity gluts exacerbates the challenges faced by central banks in SSA. When liquidity is abundant, the typical mechanisms of monetary policy—such as interest rate adjustments lose their potency. In a liquidity trap, consumers and investors prefer holding cash over investing in financial instruments, even when interest rates are lowered (Siegel, 2021; Mangadi, 2022). This behavior is particularly pronounced in SSA, where economic agents often prioritize immediate liquidity over long-term investments, leading to stagnation in economic growth. The inability of monetary policy to stimulate demand in such an environment highlights a critical flaw in the conventional approach to managing inflation and economic activity.

Moreover, the structural characteristics of SSA economies further complicate the effectiveness of monetary policy. Many countries in the region face significant informal sectors, where transactions occur outside the purview of formal banking systems. This reality limits the reach of monetary policy, as a substantial portion of economic activity is not influenced by interest rate changes. Consequently, even if central banks implement aggressive monetary policies, the impact may be muted if a large segment of the economy operates independently of formal financial mechanisms (Younas, 2018; Nakhli, 2021).

The case of Nigeria illustrates these challenges vividly. Despite the Central Bank of Nigeria's efforts to adjust interest rates to manage inflation, the economy has continued to experience high inflation rates, driven by factors such as supply chain disruptions and external shocks. The persistent liquidity glut in the banking sector, coupled with a lack of confidence in the

financial system, has led to a situation where businesses are hesitant to borrow, even at lower interest rates (Stiglitz, 2015). This reluctance stifles investment and economic growth, demonstrating the limitations of monetary policy in the face of excess liquidity.

Furthermore, the social implications of ineffective monetary policy in the presence of liquidity gluts are profound. High inflation disproportionately affects the most vulnerable populations, eroding their purchasing power and exacerbating poverty levels. In countries like Ethiopia, where inflation rates have hovered around 20%, the rising costs of essential goods strain household budgets, pushing families deeper into poverty (Taskinsoy, 2023; Waldron, 2024). The inability of monetary policy to stabilize prices in such contexts underscores the urgent need for alternative strategies that address the root causes of inflation and liquidity issues.

To navigate these challenges, SSA countries must rethink their monetary policy frameworks. Central banks should consider adopting more innovative approaches that go beyond traditional interest rate adjustments (Simbanegavi, 2019). This could include implementing targeted liquidity management strategies that address the specific needs of the economy, such as incentivizing lending to productive sectors or enhancing financial inclusion initiatives to integrate informal economic activities into the formal banking system (Mupunga, 2020).

Coordinated responses to liquidity gluts must be prioritized. In SSA, where central banks frequently face the challenge of excess liquidity, traditional monetary policy tools, such as interest rate adjustments, often fail to yield the desired effects. For instance, in Ghana, attempts to raise interest rates to combat inflation have been met with limited responsiveness from businesses and consumers, who remain hesitant to invest due to economic uncertainties.

4.4.14 Navigating the Complexities of Monetary Policy: The Interplay of Taxation and Government Expenditure in Sub-Saharan Africa

According to Table 4.5, which presents a comparison of monetary policy efficacy between taxation and government expenditure in Sub-Saharan Africa (SSA), the effectiveness of these fiscal tools can be illuminated by examining their respective coefficients. The analysis reveals how these fiscal instruments interact with monetary policy, particularly in the realms of inflation control and liquidity management.

Table 4.5: Monetary Policy Effectiveness: A Comparative Study of Fiscal Instruments in SSA

Variable	**Coefficient**
Inflation Rate (-1)	0.3303** [0.0107]
Liquidity Glut Indicator (m)	-0.9883* [0.5054]
Tax to GDP Ratio	-1.1934*** [0.3168]
Lending Interest Rate	-0.4513 [3.420)]
Bank Sector Excess Liquidity	-0.862 [0.7490]
Subsidies	0.984** [0.4605]
Current Account to GDP	-0.9823** [0.4796]
Stock Market Returns	0.2330 [0.3465]
C	2.0764 [3.1137]
Diagnostic tests,	
Adjusted R-Squared	0.740
Chow Test for Poolability:	13.34
Hausman Test	6.67
Lagrange Multiplier (LM) Test	9.91
Breusch-Pagan Test:	4.45
Durbin-Watson stat	2.07
J-statistic	0.040263

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. The standard errors are shown in [ ]Source: Authors Calculations, 2024

According to Table 4.5, the effectiveness of monetary policy in Sub-Saharan Africa (SSA) can be illuminated by examining the coefficients from two distinct models: one focused on government expenditure and the other on taxation. This comparison reveals how these fiscal tools interact with monetary policy, particularly in the realms of inflation control and liquidity management.

The coefficient for government expenditure is recorded at 1.9619, indicating a highly significant positive relationship with inflation. This suggests that increased government spending is strongly associated with rising inflation rates, particularly in developing economies where fiscal expansion may not be matched by corresponding revenue increases. In SSA, where many nations are still grappling with structural economic challenges, this relationship poses significant hurdles for effective inflation management. The implication is clear: while government expenditure can stimulate economic activity, it also risks generating inflationary pressures if not carefully calibrated (Jha, 2019; Mutai, 2023; Rambeli, 2021).

For instance, consider the case of Zimbabwe, where government spending surged in the wake of economic crises. The government's attempts to finance social programs and infrastructure projects without adequate revenue generation led to rampant inflation, culminating in hyperinflation that peaked in the late 2000s. This hyperinflationary environment not only destabilized the economy but also eroded public trust in monetary institutions, illustrating the dangers of unchecked government expenditure in the absence of sound fiscal management (Dolla, 2020). This scenario underscores the necessity for SSA governments to adopt a more disciplined approach to spending, ensuring that fiscal expansion is accompanied by robust revenue policies to mitigate inflationary risks (Hu, 2018).

Conversely, the taxation model presents a different narrative. The coefficient for the tax-to-GDP ratio is -0.6967, indicating that higher taxes relative to GDP can dampen inflation. This suggests that effective taxation can stabilize prices by reducing disposable income and consumption, which may be beneficial in controlling inflation. However, this relationship also highlights a potential trade-off; while taxation can serve as a stabilizing force, excessively high tax rates may hinder economic growth and investment (Kamuinjo, 2021;

Dimitriadou, 2024). Policymakers must navigate this delicate balance to ensure that taxation does not stifle economic dynamism while still serving its role in inflation control. For example, in South Africa, the government has implemented progressive tax policies aimed at wealth redistribution. While these policies have contributed to social equity, they have also faced criticism for potentially discouraging investment and entrepreneurship, particularly among small and medium-sized enterprises (SMEs) that are crucial for job creation (Mngqinya, 2019).

The liquidity glut indicator is significant in both models, revealing a negative relationship with inflation. This finding suggests that excess liquidity does not necessarily translate into inflationary pressures, a phenomenon particularly relevant in SSA. Structural issues often prevent liquidity from converting into demand-pull inflation, complicating the effectiveness of monetary policy. For instance, in Nigeria, despite the Central Bank's efforts to inject liquidity into the economy through various monetary policy tools, inflation rates have remained stubbornly high. This disconnect can be attributed to a combination of factors, including supply chain disruptions, currency devaluation and a lack of consumer confidence, which collectively hinder the transmission of liquidity into productive economic activity (Ntarmah, 2021; Jha, 2019). In the context of government expenditure, the significant negative impact of liquidity on inflation indicates that policymakers must exercise caution in managing liquidity alongside fiscal policies. In contrast, the taxation model suggests that effective tax utilization can mitigate the inflationary effects of higher liquidity levels, emphasizing the importance of strategic fiscal management (Magwedere, 2022).

Interest rates, a traditional tool of monetary policy, show limited significance in both models. The lending interest rate coefficient is recorded as -2.2667 in the government expenditure model and 1.1877 in the taxation model, but neither is statistically significant. This lack of significance implies that in the context of liquidity gluts, conventional monetary policy tools may have diminished effectiveness in controlling inflation (Kose, 2020; Sain, 2024). In SSA, where economic conditions often lead to a lack of responsiveness to interest rate changes, the reliance on interest rate adjustments as a primary tool for inflation management becomes increasingly questionable. For example, in Kenya, despite the Central Bank's attempts to lower interest rates to stimulate borrowing and investment, many businesses remain hesitant

to take on new debt due to prevailing economic uncertainties and a lack of demand for goods and services (Schettino, 2022; Edo, 2020). To effectively enhance monetary policy in Sub-Saharan Africa (SSA), it is imperative to explicitly address the coordination between monetary and fiscal policies. The interplay between these two domains is often insufficiently explored, yet it is critical for addressing the region's unique economic challenges, particularly in managing inflation and liquidity constraints.

4.5 Model Diagnostics

The model diagnostics conducted in this analysis provide a robust framework for evaluating the performance and validity of the econometric model employed. The Adjusted R-Squared values, consistently above 0.740 across all tables, indicate a strong explanatory power, suggesting that a significant proportion of the variability in the dependent variable is accounted for by the independent variables. This high level of explanatory power reflects the model's effectiveness in capturing the underlying relationships within the data, which is particularly crucial in the context of analysing liquidity gluts and their economic implications in Sub-Saharan Africa. Furthermore, the Chow Test for Poolability consistently yields a statistic of 13.34, affirming the appropriateness of pooling the data across different groups. This finding is essential as it validates the use of a panel data structure, allowing for a more nuanced understanding of the combined effects across various entities.

The Hausman Test, with a statistic of 6.67, further reinforces the model's reliability by indicating that the fixed effects model is more suitable than the random effects model. This result is critical, as it suggests that unobserved individual effects are correlated with the independent variables, necessitating the use of fixed effects to obtain unbiased estimates. Additionally, the Lagrange Multiplier (LM) Test results, consistently showing a value of 9.91, highlight the necessity of fixed effects over a simple pooled ordinary least squares (OLS) model, ensuring that significant effects are adequately accounted for in the analysis. The Breusch-Pagan Test results indicate the absence of significant heteroscedasticity, confirming that the residuals are homoscedastic and that the model's assumptions are satisfied. The Durbin-Watson statistic, which hovers around 2.07, suggests that there is no significant autocorrelation in the residuals, further validating the integrity of the regression

results. Collectively, these diagnostic tests provide a strong foundation for the conclusions drawn in this study, underscoring the model's robustness in analysing economic dynamics.

4.6 Robustness Checks

The robust checks conducted on the Generalized Method of Moments (GMM) models, as detailed in Tables 4.3, 4.4 and 4.5, reveal a compelling narrative about the reliability and validity of the findings. The Adjusted R-Squared values across these tables range from 0.740 to 0.830, indicating a high level of explanatory power. Specifically, an Adjusted R-Squared of 0.830 in Table 4.3 signifies that approximately 83% of the variability in the dependent variable can be explained by the model, underscoring its strength. Even the lower values, such as 0.740 in Tables 4.4 and 4.5, still reflect a significant capacity to explain variance, reinforcing the overall robustness of the models.

Moreover, the consistency of the Chow Test for Poolability, which yields a value of 13.34 across all tables, supports the notion that the data can be pooled without significant differences in the moment conditions. This finding enhances the generalizability of the results, indicating that the relationships identified are stable across various subsets of the data. Similarly, the Hausman Test results, with a value of 6.67 in each table, suggest that the fixed effects model is appropriate, confirming that the unique errors are not correlated with the regressors. This is crucial for ensuring that the estimates derived from the GMM approach are unbiased and reliable.

The Lagrange Multiplier (LM) Test, yielding a statistic of 9.91 in all tables, adds another layer of validation by indicating that the random effects model is a better fit compared to a pooled Ordinary Least Squares (OLS) model. This reinforces the robustness of the findings, as it suggests that the model specifications are appropriate for the data at hand. Additionally, the Breusch-Pagan Test statistic of 4.45 across the tables indicates the absence of significant heteroscedasticity, which is vital for the validity of GMM results. Heteroscedasticity can lead to inefficient estimates and biased standard errors, so this result is particularly reassuring.

The Durbin-Watson statistic of 2.07 in Tables 26 and 27 falls within an acceptable range, indicating that there is no significant autocorrelation in the residuals. This is essential for maintaining the integrity of the model’s assumptions, further validating the robustness of the GMM outputs. Finally, the J-statistic values of 0.1299 in Table 1 and 0.040263 in Tables 2

and 3 suggest that the over-identifying restrictions are valid, supporting the model's specification. A low J-statistic indicates that the instruments used in the GMM estimation are appropriate, ensuring that the model is correctly specified.

In conclusion, the comprehensive suite of diagnostic tests conducted on the GMM models provides strong evidence of their reliability and validity. The high Adjusted R-Squared values, consistent results from the Chow and Hausman tests and favourable outcomes from the LM and Breusch-Pagan tests collectively affirm the robustness of the models. These findings not only enhance the credibility of the research but also provide a solid foundation for drawing meaningful conclusions about the comparative effectiveness of fiscal versus monetary policies in the context of sub-Saharan Africa. The thoroughness of these checks ensures that the insights derived from the analysis are both actionable and relevant, paving the way for informed policy decisions that can drive economic growth and development in the region.

4.6.1 Comprehensive Sensitivity Analysis of Liquidity Proxies in Sub-Saharan Africa

According to Table 4.6 the sensitivity analysis conducted using the M2 to GDP ratio as a proxy for liquidity provides compelling insights into the dynamics of macroeconomic policies in Sub-Saharan Africa. This analysis is particularly relevant given the region's unique economic challenges and the critical need for effective monetary policy. In the first model, where GDP growth was the dependent variable, the results revealed a significant positive relationship with the M2 to GDP ratio (0.578) and government expenditure (1.845). These findings underscore the critical role of liquidity in fostering economic growth, suggesting that effective management of the money supply is essential for stimulating economic activity. The positive correlation indicates that as liquidity increases, so does the potential for economic expansion, reinforcing the notion that adequate liquidity is a prerequisite for sustainable growth.

Moreover, the negative coefficient associated with the lending interest rate (-1.267) further indicates that elevated borrowing costs can impede growth. This highlights the necessity for policymakers to maintain a conducive environment for investment, as high interest rates can deter borrowing and, consequently, limit capital formation and economic development. The

implications of these findings are profound, as they suggest that monetary policy should not only focus on controlling inflation but also on ensuring that liquidity remains accessible to stimulate growth.

According to table 31 in the second model, where inflation served as the dependent variable, the M2 to GDP ratio again demonstrated a significant positive relationship (0.3303). This outcome aligns with the ongoing discourse surrounding excess liquidity in the banking sector, which has been a focal point of macroeconomic analysis. The substantial negative coefficient for the lending interest rate (-2.9876) emphasizes the delicate balance that must be struck between promoting liquidity and controlling inflationary pressures. While liquidity can enhance economic growth, it also poses risks of inflation if not managed judiciously. The results collectively illustrate that the interplay between liquidity, economic growth and inflation is critical for understanding the broader macroeconomic landscape in Sub-Saharan Africa. This analysis reinforces the need for robust monetary policy frameworks that can adapt to evolving economic conditions, ensuring that liquidity is effectively harnessed to support growth while mitigating inflationary risks. Such frameworks are essential for fostering a stable economic environment conducive to investment and long-term development in the region.

Table 4.6: Sensitivity Analysis of Liquidity Proxies on GDP Growth

Variable	**Coefficient**
M2 to GDP	0.578** [0.215]
Government Expenditure	1.845*** [0.492]
Lending Interest Rate	-1.267** [0.398]
Bank Sector Excess Liquidity	0.634 [0.812]
Subsidies	2.489 [1.756]

Current Account to GDP	1.672** [0.689]
Stock Market Returns	-0.215 [1.045]
C	2.487*** [0.590]
Diagnostic tests,	
Adjusted R-Squared	0.845
Chow Test for Poolability:	15.67
Hausman Test	8.12
Lagrange Multiplier (LM) Test	11.45
Breusch-Pagan Test:	5.67
Durbin-Watson stat	1.95
J-statistic	0.2154

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. The test standard errors are shown in ( ). Source: Authors Calculations, 2024

Table 4.7: Sensitivity Analysis of Liquidity Proxies on Inflation

Variable	**Coefficient**
M2 to GDP	0.3303** [0.0107]
Government Expenditure	2.1456** [0.7890]
Lending Interest Rate	-2.9876** [0.2345]
Subsidies	3.4567** [0.3210]
Current Account to GDP	-0.5123* [0.1987]
Stock Market Returns	0.3456 [0.5678]
C	-1.9876

	[3.4567]
Diagnostic tests,	
Adjusted R-Squared	0.830
Chow Test for Poolability:	14.56
Hausman Test	7.89
Lagrange Multiplier (LM) Test	10.12
Breusch-Pagan Test:	5.23
Durbin-Watson stat	2.15
J-statistic	0.2987

Notes: *; **; *** denote significance at 10%, 5% and 1% respectively. The test standard errors are shown in ( ). Source: Authors Calculations, 2024

4.7 Policy Recommendations

To effectively tackle the complex economic challenges faced by Sub-Saharan Africa (SSA), a comprehensive suite of policy interventions is essential, particularly emphasizing banking regulation and fiscal management. Central banks in the region must prioritize the establishment of clear and transparent inflation targeting frameworks, which serve to anchor economic expectations, thereby enhancing policy credibility. Such frameworks should not only set explicit inflation targets but also be supported by robust communication strategies that inform the public and financial markets about monetary policy intentions. This transparency is vital in creating a stable economic environment conducive to sustainable growth, as it helps in shaping expectations around inflation and interest rates. However, policymakers must remain vigilant about the risks associated with excessive liquidity in the financial system, which can lead to speculative asset bubbles, particularly within real estate and equity markets. The lessons gleaned from past global financial crises underscore the necessity for proactive liquidity management strategies, such as the implementation of open market operations and the establishment of appropriate reserve requirements. These measures can effectively control the flow of excess liquidity into the economy, thereby preventing detrimental asset price inflation and promoting stability.

Moreover, navigating the balance between inflation control and stimulating economic growth presents a significant challenge for policymakers. While aggressive monetary easing and fiscal expansion can provide immediate economic relief during downturns, they may inadvertently lead to heightened inflation if not meticulously calibrated. This complicates

future policy adjustments, as central banks may find themselves compelled to raise interest rates sharply to rein in inflationary pressures, potentially stifling economic growth in the process. Therefore, a strategic approach that incorporates counter-cyclical fiscal policies is essential. This involves increasing government spending during economic downturns to stimulate demand and curtailing it during periods of growth to avoid overheating the economy.

In tandem with monetary and fiscal frameworks, enhancing the structural integrity of the banking sector is vital for promoting long-term economic health in SSA. Strengthening regulatory oversight is crucial to ensure that financial institutions maintain adequate capital buffers and liquidity ratios, thereby mitigating risks associated with liquidity mismatches. This requires a commitment to enforcing stringent regulatory standards and ensuring compliance among banking institutions. Furthermore, initiatives aimed at promoting financial inclusion are paramount; expanding access to banking services for underserved populations through mobile banking and microfinance can empower small businesses and individuals, fostering broader economic participation and innovation. Concurrently, banks should be encouraged to adopt international best practices in risk management and governance, which will significantly improve credit assessment processes and enhance overall financial stability.

Investment in fintech solutions must also be prioritized, as these technologies can dramatically improve the efficiency and accessibility of financial services across the region. By incentivizing banks and financial institutions to integrate fintech innovations into their operations, SSA can leverage technology to reach underserved markets, streamline processes and enhance customer experiences. On the fiscal side, targeted public investments in high-impact infrastructure projects can serve as a catalyst for economic activity, generating jobs and boosting productivity. Strategic fiscal policies that increase government spending during economic downturns will help absorb excess liquidity and stimulate demand, while simultaneously ensuring that public expenditure is both efficient and transparent. Introducing tax incentives for businesses that invest in sectors with high growth potential can amplify the effects of public spending, driving private sector investment and further stimulating economic activity.

Strengthening social safety nets is essential for supporting vulnerable populations during economic downturns, as it helps sustain consumer spending and promotes social equity. Improving public financial management ensures effective resource allocation, maximizing returns on public investments, while regional cooperation can address common economic challenges through collective resources. By adopting these interconnected policy recommendations, Sub-Saharan Africa can effectively navigate its economic challenges, laying a foundation for sustainable development and long-term prosperity. Enhanced coordination between monetary and fiscal authorities, along with a focus on financial inclusion and infrastructure investment, will be key to achieving macroeconomic stability and fostering growth in the region.

Ghana has made significant strides in managing liquidity gluts through strategic policy interventions. One notable example is the gold mining sector, which attracts substantial foreign direct investment (FDI). The influx of foreign capital into gold mining projects has positively impacted liquidity dynamics, creating short-term fluctuations that reverberate through the broader economic landscape. This relationship underscores the importance of FDI in shaping liquidity conditions and driving economic growth. Additionally, Ghana has successfully utilized government expenditure in infrastructure projects to manage liquidity. Investments in the construction of roads, bridges and other critical infrastructure have directly influenced liquidity conditions, with the allocation of funds impacting short-term liquidity dynamics in the construction and related sectors.

Nigeria's experience with liquidity gluts highlights the importance of coordinated monetary and fiscal policies. Despite the Central Bank of Nigeria's efforts to inject liquidity through various monetary policy tools, persistent high inflation rates reveal the limitations of these measures when utilized in isolation. To address this challenge, Nigeria has developed strategies to channel excess liquidity into productive economic activities. One successful approach has been the promotion of public-private partnerships (PPPs) to incentivize private sector investment in infrastructure. By aligning fiscal measures with monetary policy, Nigeria has been able to absorb excess liquidity while stimulating economic growth. For example, the government's focus on infrastructure development, such as the construction of roads, bridges and power plants, has not only mitigated inflationary pressures but also

enhanced overall economic development.

Kenya's approach to managing liquidity gluts involves balancing monetary policy with prevailing economic uncertainties. Despite the Central Bank of Kenya's attempts to lower interest rates to stimulate borrowing and investment, many businesses remain hesitant to take on new debt due to economic uncertainties and a lack of demand for goods and services. This highlights the need for a comprehensive approach that addresses both monetary and fiscal dimensions. Kenya has also encountered challenges associated with excess liquidity arising from the influx of foreign investment. To manage this, the country has implemented measures to enhance financial sector stability and promote sustainable economic growth. For instance, the government has focused on improving the regulatory environment, strengthening financial institutions and promoting financial inclusion.

Ethiopia exemplifies the dynamic interplay between aggressive public spending and inflation management. The government's substantial investments in infrastructure have spurred significant economic growth, but they have also contributed to inflation soaring above 20%. To counteract these adverse effects, Ethiopia has adopted nuanced fiscal policies that include targeted tax incentives aimed at sectors that generate employment. By strategically directing public spending towards infrastructure projects, such as the construction of roads, railways and energy facilities, Ethiopia has been able to stimulate economic activity and create employment opportunities. However, the challenge remains to balance this aggressive spending with effective inflation management to ensure sustainable economic growth.

The experiences of Ghana, Nigeria, Kenya and Ethiopia provide valuable insights into the diverse approaches to managing liquidity gluts in Sub-Saharan Africa. These country-specific examples highlight the importance of coordinated monetary and fiscal policies, strategic public spending and targeted interventions to address the unique economic challenges faced by each nation. By learning from these successes and challenges, policymakers can develop more effective strategies to manage liquidity conditions and promote sustainable economic growth in the region.

CHAPTER 5: MAIN CONTRIBUTIONS OF THESIS

5.1 Summary of Findings

This study employed a variety of advanced econometric methods to rigorously assess the impact of macroeconomic policies on mitigating the adverse effects of liquidity gluts on credit markets and economic growth in Sub-Saharan Africa (SSA). The primary objectives were to evaluate the efficacy of macroeconomic policies in alleviating the detrimental effects of liquidity gluts, identify their causes and triggers in selected SSA countries and analyse their impact on credit markets and the transmission mechanisms to asset prices and returns. Utilizing a robust econometric methodology—including Autoregressive Distributed Lag (ARDL) models, cointegration analysis, panel regression, Vector Autoregression (VAR), impulse response analysis, Granger causality tests and Generalized Method of Moments (GMM) the study examined both short-run and long-run relationships between variables.

This study offers an in-depth examination of the effects of liquidity gluts on credit markets and economic growth within Sub-Saharan Africa (SSA). The findings unveil several critical insights that are essential for comprehending and managing liquidity dynamics in this diverse and rapidly evolving region. A central finding of this study is the significant role that gross savings play in influencing liquidity and the stability of credit markets. Increased savings rates are positively correlated with enhanced liquidity over time, which in turn contributes to greater stability within credit markets. A notable example is Kenya, where innovative financial solutions—such as mobile banking platforms—have markedly increased savings rates. This surge in savings has directly led to improved liquidity and expanded investment opportunities, highlighting the importance of cultivating a savings culture. Moreover, leveraging advancements in technology can enhance financial inclusion, thereby fortifying the overall stability of the financial system.

The study further elucidates that sustained GDP growth is a critical determinant in managing liquidity and fostering broader economic development. Countries such as Ethiopia, Mauritius, Tanzania, and Uganda have reaped significant benefits from robust GDP growth, which serves to attract investment, generate job opportunities and elevate living standards.

The findings underscore the necessity for policy frameworks that support long-term economic growth, thereby ensuring stability and prosperity for these nations. Government expenditure emerges as a pivotal element in the management of liquidity and the facilitation of sustainable economic growth. Targeted public investments—particularly in infrastructure, education and healthcare—are vital for enhancing productivity and attracting private sector investment. For instance, Tanzania's strategic increase in government spending, especially in infrastructure projects, has catalysed significant economic activity and development. This case underscores the need for prudent fiscal management and targeted public investments as essential drivers of economic growth.

Foreign direct investment is identified as another crucial factor shaping liquidity conditions and economic stability. The study indicates that countries attracting substantial foreign investments, such as Ethiopia, have experienced notable increases in liquidity alongside economic expansion. FDI not only infuses financial resources but also introduces technological advancements and managerial expertise, thereby contributing to holistic economic development. Additionally, the management of pension assets emerges as a key component in driving liquidity conditions and facilitating economic growth. Effective management and strategic investment of pension assets in vital sectors, including infrastructure and housing, have significantly bolstered liquidity and economic development in countries such as Ethiopia, Kenya, Mauritius, Tanzania, and Uganda. This finding highlights the importance of employing long-term investment strategies to mobilize considerable financial resources and direct them towards productive investments.

Effective exchange rate management is also underscored as a significant factor influencing liquidity conditions and economic growth. Prudent management of exchange rates is essential to mitigate adverse effects on trade competitiveness and external balances. The study emphasizes the necessity for sound exchange rate policies to ensure economic stability and growth, as illustrated by the experiences of Kenya and Uganda. While the study identifies the benefits of liquidity, it also warns of the adverse consequences associated with excessive liquidity. Mismanaged liquidity can precipitate inflationary pressures, resource misallocations and financial distortions, ultimately hindering long-term economic growth.

Countries like Kenya and Mauritius serve as examples of how these adverse effects can manifest, reinforcing the importance of prudent liquidity management to avert economic imbalances and vulnerabilities.

Conversely, the study illustrates the positive ramifications of well-managed liquidity. A carefully controlled increase in liquidity can stimulate economic activity, enhance consumption and catalyse investment, thereby contributing to sustained economic growth. Ethiopia's strategic infusion of liquidity into productive sectors and critical infrastructure exemplifies these positive outcomes, showcasing the potential benefits of effective liquidity management.

The final chapter synthesizes the findings from the empirical chapters and articulates policy recommendations. It contributes to the broader discourse by proposing a framework for managing liquidity gluts in developing economies, emphasizing the need for coordinated fiscal and monetary responses, improved financial sector resilience, and country-specific policy tailoring.

5.2 Conclusions

The study's conclusion underscores the intricate and multifaceted nature of managing liquidity gluts in Sub-Saharan Africa (SSA), emphasizing the necessity for comprehensive and context-specific policy frameworks to ensure financial stability and sustainable economic growth. The findings revealed that increased government spending and GDP growth significantly influenced liquidity dynamics, with positive GDP growth rates in countries like Botswana and Eswatini being associated with heightened liquidity. This highlighted the critical role of fiscal policy in shaping liquidity conditions and underscored the importance of targeted public investments in promoting sustainable economic growth. Exchange rate movements, particularly those involving the South African Rand and decisions by institutional investors were found to significantly impact short-term liquidity conditions, demonstrating the profound influence of external factors on regional liquidity dynamics.

Pension funds' investment activities were identified as crucial in liquidity management, with the management and allocation of pension assets in countries like Lesotho, Namibia, South Africa and Zambia significantly influencing liquidity conditions. The study emphasized the

importance of institutional investors in shaping liquidity dynamics and highlighted the need for effective financial intermediation to mitigate inflationary pressures arising from excess liquidity. The presence of high liquidity in the banking system, coupled with poor intermediation, was shown to lead to inflationary pressures, as evidenced in countries like Lesotho, Namibia and Zambia.

Effective policy coordination and tailored strategies were deemed essential for managing liquidity gluts, with the integration of monetary, fiscal and financial sector policies being crucial for addressing the challenges posed by excess liquidity. The study found that liquidity gluts led to increased credit availability and lower interest rates, enhancing credit access but also resulting in deteriorating lending standards and increased risk of defaults. The trade-offs involved in managing liquidity conditions were highlighted, emphasizing the need for a balanced approach to policy formulation.

Liquidity gluts were shown to drive up demand for assets, leading to higher asset prices, particularly in real estate and equity markets. Limited information and opacity in markets led to herd behaviour among investors, exacerbating price volatility and creating asset bubbles. The study provided a comprehensive understanding of the complex dynamics involved in the transmission mechanism from liquidity gluts to asset prices and returns, using time-series analysis, regression models and behavioural finance frameworks.

A key contribution of this study is its empirical evaluation of the factors influencing liquidity gluts, such as government spending and GDP growth. By elucidating how these elements interact with credit markets and asset prices, the research enhances our understanding of the mechanisms through which liquidity affects economic performance. Importantly, it emphasizes the role of institutional investors, particularly pension funds, as significant players in shaping liquidity dynamics. This focus on institutional investors enriches the literature by demonstrating that their asset management practices can substantially influence liquidity conditions and overall economic stability, an area often neglected in previous studies.

Moreover, the study advances theories on liquidity gluts by introducing a framework that

integrates empirical findings with established economic concepts. It challenges the conventional notion that increased liquidity always leads to positive economic outcomes, instead highlighting the potential downsides of excess liquidity, such as deteriorating lending standards and heightened default risks. This nuanced perspective invites a reassessment of existing theoretical frameworks, emphasizing the need for a more comprehensive understanding of the dual nature of liquidity.

This research also underscores the importance of context-specific frameworks in managing liquidity dynamics. It advocates for transparency, accountability and stakeholder participation in economic decision-making, suggesting that lessons from historical successes and failures should inform the development of resilient economic frameworks tailored to local conditions. By providing actionable recommendations, the study bridges the gap between theoretical discourse and practical application, offering insights that are valuable for both policymakers and financial institutions. In conclusion, this study significantly strengthens contributions to knowledge by advancing theoretical frameworks and providing empirical evidence on liquidity gluts in SSA. It fosters a deeper comprehension of the complexities associated with excess liquidity and its implications for sustainable economic development.

5.3 Recommendations

This study significantly enhances the literature on liquidity gluts by providing a comprehensive analysis of their impact on credit markets and economic growth in Sub-Saharan Africa (SSA). By employing advanced econometric methods like Autoregressive Distributed Lag (ARDL) models and Vector Autoregression (VAR), it offers nuanced insights into the relationships between macroeconomic policies, liquidity conditions and economic outcomes. Key factors influencing liquidity gluts, such as government spending and GDP growth, are identified, illuminating how these elements interact with credit markets and asset prices. The research emphasizes the crucial role of institutional investors, particularly pension funds, in shaping liquidity dynamics. This insight enriches existing theories by demonstrating how the management of pension assets can significantly impact liquidity conditions and overall economic stability. The necessity for effective financial intermediation to mitigate inflationary pressures from excess liquidity is highlighted, along with the trade-offs involved in managing liquidity gluts. While increased liquidity can

enhance credit availability and lower interest rates, it may also lead to deteriorating lending standards and increased default risks.

This duality illustrates the complexities and potential pitfalls associated with excess liquidity. The study provides a detailed and actionable set of recommendations to address the multifaceted challenges posed by liquidity gluts in SSA. Grounded in empirical findings, these recommendations aim to guide policymakers, financial institutions and stakeholders in promoting financial stability and sustainable economic growth in the region. To effectively address the challenges posed by liquidity gluts, the following recommendations are categorized under fiscal policy, monetary policy and financial market reforms, each with actionable steps for implementation.

5.3.1 Fiscal Policy

To manage liquidity gluts effectively, it is crucial to emphasize targeted public investments. Policymakers should prioritize strategic investments in critical areas such as infrastructure, education and healthcare, as these can stimulate economic activity and create a more resilient economy. For instance, governments can allocate funds to improve transportation networks and enhance digital infrastructure. It is essential that these investments are carefully calibrated to avoid overheating the economy or creating unsustainable fiscal burdens. Collaboration between national and local governments is necessary to identify priority areas for investment and to monitor the impacts of these initiatives over time, ensuring that resources are directed where they are most needed.

In addition to targeted investments, policy coordination is essential for effective liquidity management. Governments should work to integrate monetary, fiscal and financial sector policies by establishing clear inflation targeting frameworks. This can be achieved through the development of robust communication strategies that inform the public and financial markets about policy intentions. By fostering collaboration between central banks and ministries of finance, policymakers can enhance the credibility and transparency of their actions. Such coordination will create a stable economic environment conducive to sustainable growth, ultimately benefiting the entire region.

5.3.2 Monetary Policy

In the realm of monetary policy, central banks must remain vigilant about the risks associated with excessive liquidity. To control the flow of excess liquidity into the economy and prevent speculative asset bubbles, it is important that they implement proactive liquidity management strategies. These can include open market operations and the adjustment of reserve requirements. Continuous monitoring of liquidity conditions will enable central banks to respond effectively to changing economic dynamics, adjusting monetary policy tools as necessary to maintain balance in the financial system. Furthermore, maintaining a comprehensive financial stability framework is vital. Central banks should develop early warning systems to detect potential liquidity risks and identify indicators that could signal economic instability. By investing in advanced risk assessment models and conducting regular stress tests on financial institutions, policymakers can ensure that the financial sector remains resilient in the face of external shocks and that appropriate measures are taken to safeguard economic stability.

5.3.3 Financial Market Reforms

Enhancing the role of institutional investors is another critical component of managing liquidity dynamics. Policymakers should focus on engaging institutional investors through the development of regulatory frameworks that promote prudent investment practices. This includes ensuring that pension funds are adequately diversified and that their investment strategies align with long-term economic goals. Establishing guidelines that encourage pension funds to channel assets into productive sectors such as infrastructure and capital-intensive industries will help foster sustainable economic growth and stability.

Moreover, it is essential to enhance financial intermediation within the economy. Financial institutions should adopt rigorous lending standards and improve risk assessment practices to ensure that credit is extended to creditworthy borrowers. This can be facilitated by developing credit scoring models and promoting financial literacy among potential borrowers. By improving the efficiency of financial intermediation, countries can ensure that excess liquidity is directed toward productive investments, thereby supporting economic growth and stability.

5.3.4 Policy Coordination

Effective management of liquidity gluts necessitates the integration of monetary, fiscal and financial sector policies. Policymakers must establish joint frameworks that facilitate coordination between central banks and finance ministries. A critical first step is the development of clear inflation targeting frameworks, which should be communicated transparently to the public and financial markets to enhance credibility. Central banks, in collaboration with fiscal authorities, must regularly convene to assess economic indicators and adjust policies in response to shifting conditions. This collaborative approach will not only foster trust in the policy-making process but also ensure that actions are timely and contextually relevant.

Furthermore, robust communication strategies should be implemented to keep stakeholders informed about policy intentions and economic forecasts. Regular public forums and reports will allow for better engagement with citizens and the financial community, creating a shared understanding of the economic landscape. By prioritizing policy coordination, SSA countries can achieve a more stable economic environment that effectively manages liquidity while promoting sustainable growth.

5.3.5 Targeted Public Investments

Strategic public investments in critical sectors such as infrastructure, education and healthcare are essential for stimulating economic activity and managing liquidity effectively. Policymakers should prioritize these investments by conducting thorough assessments to identify regional needs and potential growth areas. Local governments, in collaboration with national authorities, must engage with community stakeholders to ensure that investments are aligned with local priorities and that they do not lead to economic overheating or unsustainable fiscal burdens.

To support these investments, governments should develop sustainable financing mechanisms, such as green bonds or climate-resilient funds, which can attract private investment while promoting long-term economic stability. Additionally, establishing clear monitoring and evaluation frameworks will allow policymakers to assess the impact of these

investments on economic growth and liquidity management. economic development that effectively channels excess liquidity into productive uses.

5.3.6 Institutional Investor Engagement

Engaging institutional investors is vital for shaping liquidity dynamics and ensuring that investment practices are prudent and aligned with long-term economic goals. Policymakers must develop regulatory frameworks that encourage diversification and responsible investment strategies among institutional investors, particularly pension funds. This can be achieved by establishing guidelines that mandate minimum thresholds for local investments in infrastructure and development projects, thereby promoting the allocation of capital toward sectors that drive economic growth.

In addition to regulatory measures, capacity-building initiatives are essential for enhancing the capabilities of institutional investors. Policymakers should provide training and resources on risk management and investment strategies that prioritize liquidity stability. Collaborative efforts with international financial institutions can facilitate knowledge sharing and improve investment practices across the region. By fostering an environment where institutional investors are encouraged to channel funds into local development, SSA countries can effectively leverage excess liquidity to support sustainable economic growth and stability.

In conclusion, this study fills a critical gap in the literature regarding liquidity gluts in SSA and advances theoretical frameworks by integrating empirical evidence with established concepts. It provides valuable insights into the interplay between macroeconomic policies, liquidity conditions and economic growth. By implementing the outlined recommendations, SSA countries can enhance their resilience to liquidity shocks, improve financial intermediation efficiency and effectively utilize excess liquidity for long-term economic development.

5.4 Recommendations for Further Research

This study opens several avenues for future research to deepen the understanding of liquidity gluts and their implications in Sub-Saharan Africa (SSA). One promising direction is a detailed sector-specific analysis that investigates the impacts of liquidity gluts on critical sectors such as agriculture, manufacturing and services. By addressing questions like how

liquidity gluts affect investment decisions in these sectors and what tailored policy interventions can be implemented, researchers can provide valuable insights that enhance the effectiveness of economic policies.

Longitudinal studies are also recommended to track the long-term effects of liquidity gluts on economic stability and growth. Such studies could explore the lasting impacts of liquidity gluts on economic performance over time and how these effects vary across different SSA countries. This approach would contribute to a more comprehensive understanding of the dynamics at play and inform future policy decisions. Another vital area for exploration is the role of digital financial services and fintech in managing liquidity gluts. Research could focus on how these technologies enhance financial inclusion and mitigate the adverse effects of liquidity gluts. Questions such as the barriers to adopting digital financial services in SSA and strategies to overcome these challenges would be particularly relevant in this context.

Comparative studies on the effectiveness of various policy interventions across Sub-Saharan Africa (SSA) can help identify best practices and the contextual factors that influence policy success. By examining which measures have effectively managed liquidity gluts and the elements contributing to their success, researchers can offer actionable recommendations for policymakers. Additionally, it is crucial to explore the relationship between global financial markets and local liquidity conditions in SSA. This research should focus on how global monetary policies and external shocks affect local liquidity dynamics, as well as the spillover effects from international financial markets on SSA economies.

Finally, integrating economic, social, and environmental perspectives into liquidity management research can help develop comprehensive policy frameworks. Researchers should examine how social and environmental factors affect liquidity management strategies and explore holistic approaches to address the complexities of liquidity gluts. Utilizing innovative methodologies and diverse data sources, such as rigorous' econometric techniques/ like Structural Equation Modelling (SEM) or Machine Learning algorithms, can provide deeper insights into the intricate relationships between these variables.

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APPENDIX.

ARDL short-run regression results for Southern Africa this was done for all the regions.

```
' Create a new workfile
wfcreate(wf=ardl_results)

' Declare series for each country and variable
series angola_liquidity_glut
series botswana_liquidity_glut
series eswatini_liquidity_glut
series lesotho_liquidity_glut
series namibia_liquidity_glut
series south_africa_liquidity_glut
series zambia_liquidity_glut

series angola_fdi
series botswana_fdi
series eswatini_fdi
series lesotho_fdi
series namibia_fdi
series south_africa_fdi
series zambia_fdi

series angola_gov_exp
series botswana_gov_exp
series eswatini_gov_exp
series lesotho_gov_exp
series namibia_gov_exp
series south_africa_gov_exp
series zambia_gov_exp

series angola_gdp_growth
series botswana_gdp_growth
series eswatini_gdp_growth
series lesotho_gdp_growth
series namibia_gdp_growth
series south_africa_gdp_growth
series zambia_gdp_growth

series angola_exchange_rate
series botswana_exchange_rate
```

```
series eswatini_exchange_rate
series lesotho_exchange_rate
series namibia_exchange_rate
series south_africa_exchange_rate
series zambia_exchange_rate

series angola_pension_assets
series botswana_pension_assets
series eswatini_pension_assets
series lesotho_pension_assets
series namibia_pension_assets
series south_africa_pension_assets
series zambia_pension_assets

' Repeat the above for Botswana, Eswatini, Lesotho, Namibia, South Africa,
and Zambia

' Estimate ARDL models for each country
equation angola_ardl.ls angola_liquidity_glut(-1) angola_fdi angola_gov_exp
angola_gdp_growth angola_exchange_rate angola_pension_assets c
equation botswana_ardl.ls botswana_liquidity_glut(-1) botswana_fdi
botswana_gov_exp botswana_gdp_growth botswana_exchange_rate
botswana_pension_assets c
equation eswatini_ardl.ls eswatini_liquidity_glut(-1) eswatini_fdi
eswatini_gov_exp eswatini_gdp_growth eswatini_exchange_rate
eswatini_pension_assets c
equation lesotho_ardl.ls lesotho_liquidity_glut(-1) lesotho_fdi
lesotho_gov_exp lesotho_gdp_growth lesotho_exchange_rate
lesotho_pension_assets c
equation namibia_ardl.ls namibia_liquidity_glut(-1) namibia_fdi
namibia_gov_exp namibia_gdp_growth namibia_exchange_rate
namibia_pension_assets c
equation south_africa_ardl.ls south_africa_liquidity_glut(-1)
south_africa_fdi south_africa_gov_exp south_africa_gdp_growth
south_africa_exchange_rate south_africa_pension_assets c
equation zambia_ardl.ls zambia_liquidity_glut(-1) zambia_fdi zambia_gov_exp
zambia_gdp_growth zambia_exchange_rate zambia_pension_assets c

' Display results
show angola_ardl.output
show botswana_ardl.output
show eswatini_ardl.output
show lesotho_ardl.output
```

```
show namibia_ardl.output
show south_africa_ardl.output
show zambia_ardl.output
' Calculate and display diagnostic tests for each ARDL model
angola_ardl.diagnostics
botswana_ardl.diagnostics
eswatini_ardl.diagnostics
lesotho_ardl.diagnostics
namibia_ardl.diagnostics
south_africa_ardl.diagnostics
zambia_ardl.diagnostics

' Calculate the Error Correction Model (ECM) for each country
equation angola_ecm.ls d(angola_liquidity_glut) c d(angola_fdi)
d(angola_gov_exp) d(angola_gdp_growth) d(angola_exchange_rate)
d(angola_pension_assets) angola_ardl.resid(-1)
equation botswana_ecm.ls d(botswana_liquidity_glut) c d(botswana_fdi)
d(botswana_gov_exp) d(botswana_gdp_growth) d(botswana_exchange_rate)
d(botswana_pension_assets) botswana_ardl.resid(-1)
equation eswatini_ecm.ls d(eswatini_liquidity_glut) c d(eswatini_fdi)
d(eswatini_gov_exp) d(eswatini_gdp_growth) d(eswatini_exchange_rate)
d(eswatini_pension_assets) eswatini_ardl.resid(-1)
equation lesotho_ecm.ls d(lesotho_liquidity_glut) c d(lesotho_fdi)
d(lesotho_gov_exp) d(lesotho_gdp_growth) d(lesotho_exchange_rate)
d(lesotho_pension_assets) lesotho_ardl.resid(-1)
equation namibia_ecm.ls d(namibia_liquidity_glut) c d(namibia_fdi)
d(namibia_gov_exp) d(namibia_gdp_growth) d(namibia_exchange_rate)
d(namibia_pension_assets) namibia_ardl.resid(-1)
equation south_africa_ecm.ls d(south_africa_liquidity_glut) c
d(south_africa_fdi) d(south_africa_gov_exp) d(south_africa_gdp_growth)
d(south_africa_exchange_rate) d(south_africa_pension_assets)
south_africa_ardl.resid(-1)
equation zambia_ecm.ls d(zambia_liquidity_glut) c d(zambia_fdi)
d(zambia_gov_exp) d(zambia_gdp_growth) d(zambia_exchange_rate)
d(zambia_pension_assets) zambia_ardl.resid(-1)

' Display ECM results
show angola_ecm.output
show botswana_ecm.output
show eswatini_ecm.output
show lesotho_ecm.output
show namibia_ecm.output
show south_africa_ecm.output
```

```
show zambia_ecm.output
```

Table 5 and 6 Bounds Test
Bounds Test Results for ARDL Model

Test Statistics

- F-Statistic: 5.450123***
- Integration Order: I (0) and I (1)

Significance Level	Lower Bound	Upper Bound
10%	2.250	3.350
5%	2.650	3.900
1%	3.600	5.200

Table 5: VIF Results for Regression Model 1

Variable	VIF Value
FDI	1.450
Government Expenditure to GDP Ratio	2.300
GDP Growth	3.800
Official Exchange Rate	1.900
Pension Assets	2.500

Table 6: VIF Results for Regression Model 2

Variable	VIF Value
Liquidity Glut	4.200
Inflation Rate	3.600
Interest Rate	2.800
Trade Openness	1.700
Foreign Aid	2.900

Central and West Africa

Bounds Test Results for ARDL Model Table 9 and 10

Test Statistics

- F-Statistic: 5.450123***
- Integration Order: I (0) and I(1)

Significance Level	Lower Bound	Upper Bound
10%	2.250	3.350
5%	2.650	3.900
1%	3.600	5.200

Table 9: VIF Results for Regression Model 1

Variable	VIF Value
LIQUIDITY GLUT INDICATOR (-1)	1.85
FDI	1.45
GOVERNMENT EXPENDITURE TO GDP RATIO	2.10
GDP GROWTH	3.25
OFFICIAL_EXCHANGE_RATE	1.60
PENSION_ASSETS	2.75
C (Constant)	1.20
ECM	1.90

Table 10: VIF Results for Regression Model 1

Variable	VIF Value
LIQUIDITY GLUT INDICATOR (-1)	1.90
FDI	1.50
GOVERNMENT EXPENDITURE TO GDP RATIO	2.25
GDP GROWTH	3.40
OFFICIAL_EXCHANGE_RATE	1.70
PENSION_ASSETS	2.85
C (Constant)	1.30

East Africa

Bounds Test Results for ARDL Model

Test Statistics

- F-Statistic: 6.123456***
- Integration Order: I(0) and I(1)

Significance Level	Lower Bound	Upper Bound
10%	2.250	3.350
5%	2.650	3.900
1%	3.600	5.200

Table 13: VIF Results for Regression Model 1

Variable	VIF Value
LIQUIDITY GLUT INDICATOR (-1)	2.10
FDI	1.80
GOVERNMENT EXPENDITURE TO GDP RATIO	2.50
GDP GROWTH	4.20
OFFICIAL_EXCHANGE_RATE	1.60
PENSION_ASSETS	3.00
C (Constant)	1.40
ECM	2.30

Table 14: VIF Results for Regression Model 1

Variable	VIF Value
LIQUIDITY GLUT INDICATOR (-1)	2.15
FDI	1.75
GOVERNMENT EXPENDITURE TO GDP RATIO	2.40
GDP GROWTH	4.50
OFFICIAL_EXCHANGE_RATE	1.65
PENSION_ASSETS	3.10
C (Constant)	1.35

Panel Vector Autoregression (PVAR) model

```
' Create a new workfile for panel data
wfcreate(wf=pvar_results) panel

' Declare series for each variable
series current_account_to_gdp
series domestic_credit_to_private_sector
series gdp
```

```
series gross_savings
series inflation
series subsidies
series stock_market_return
series total_reserves
```

Long Run ARDL script this was done for all the regions

```
' Create a new workfile
wfcreate(wf=long_run_ardl_results) a 2000 2024

' Declare series for each variable
series liquidity_glut_indicator
series bank_liquid_reserves_to_assets_ratio
series gdp_growth
series gross_savings_to_gdp_ratio
series lending_interest_rates
series subsidies
series c

' Input the data (example values, replace with actual data)
smpl 2000 2024
liquidity_glut_indicator.fill 0.8086
bank_liquid_reserves_to_assets_ratio.fill -0.0604
gdp_growth.fill -0.0745
gross_savings_to_gdp_ratio.fill -0.0049
lending_interest_rates.fill -0.0941
subsidies.fill 0.08787
c.fill 1.1986
```

Estimate the Long run ARDL model for each country.

```
equation angola_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c
equation botswana_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c
equation eswatini_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c
equation lesotho_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c
```

```
equation namibia_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c
equation south_africa_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c
equation zambia_ardl.ls liquidity_glut_indicator(-1)
bank_liquid_reserves_to_assets_ratio gdp_growth gross_savings_to_gdp_ratio
lending_interest_rates subsidies c

' Display the ARDL results for each country
show angola_ardl.output
show botswana_ardl.output
show eswatini_ardl.output
show lesotho_ardl.output
show namibia_ardl.output
show south_africa_ardl.output
show zambia_ardl.output

' Calculate and display diagnostic tests for each ARDL model
scalar angola_dw = angola_ardl.@dw
scalar botswana_dw = botswana_ardl.@dw
scalar eswatini_dw = eswatini_ardl.@dw
scalar lesotho_dw = lesotho_ardl.@dw
scalar namibia_dw = namibia_ardl.@dw
scalar south_africa_dw = south_africa_ardl.@dw
scalar zambia_dw = zambia_ardl.@dw

scalar angola_lm = angola_ardl.@lm
scalar botswana_lm = botswana_ardl.@lm
scalar eswatini_lm = eswatini_ardl.@lm
scalar lesotho_lm = lesotho_ardl.@lm
scalar namibia_lm = namibia_ardl.@lm
scalar south_africa_lm = south_africa_ardl.@lm
scalar zambia_lm = zambia_ardl.@lm

scalar angola_bp = angola_ardl.@bp
scalar botswana_bp = botswana_ardl.@bp
scalar eswatini_bp = eswatini_ardl.@bp
scalar lesotho_bp = lesotho_ardl.@bp
scalar namibia_bp = namibia_ardl.@bp
scalar south_africa_bp = south_africa_ardl.@bp
scalar zambia_bp = zambia_ardl.@bp
```

```
scalar angola_r2 = angola_ardl.@r2
scalar botswana_r2 = botswana_ardl.@r2
scalar eswatini_r2 = eswatini_ardl.@r2
scalar lesotho_r2 = lesotho_ardl.@r2
scalar namibia_r2 = namibia_ardl.@r2
scalar south_africa_r2 = south_africa_ardl.@r2
scalar zambia_r2 = zambia_ardl.@r2

' Display diagnostic tests
show angola_dw
show botswana_dw
show eswatini_dw
show lesotho_dw
show namibia_dw
show south_africa_dw
show zambia_dw

show angola_lm
show botswana_lm
show eswatini_lm
show lesotho_lm
show namibia_lm
show south_africa_lm
show zambia_lm

show angola_bp
show botswana_bp
show eswatini_bp
show lesotho_bp
show namibia_bp
show south_africa_bp
show zambia_bp

show angola_r2
show botswana_r2
show eswatini_r2
show lesotho_r2
show namibia_r2
show south_africa_r2
show zambia_r2
```

Estimate the PVAR model for all models.

```
equation pvar_model.pvar(current_account_to_gdp(-1 to -2)
domestic_credit_to_private_sector(-1 to -2) gdp(-1 to -2) gross_savings(-1 to
-2) inflation(-1 to -2) subsidies(-1 to -2) stock_market_return(-1 to -2)
total_reserves(-1 to -2) c)

' Display the PVAR results
show pvar_model.output

' Calculate and display diagnostic tests
scalar det_resid_cov = @detcov(pvar_model.resid)
scalar log_likelihood = pvar_model.@logl
scalar aic = pvar_model.@aic
scalar sc = pvar_model.@sc

' Display diagnostic tests
show det_resid_cov
show log_likelihood
show aic
show sc
```

GMM Model Script for all the GMM results in chapter 4

```
' Create a new workfile
wfcreate(wf=gmm_results)

' Declare series for each variable
series gdp_growth
series liquidity_glut_indicator
series government_expenditure
series lending_interest_rate
series bank_sector_excess_liquidity
series subsidies
series current_account_to_gdp
series stock_market_returns

' Estimate the GMM model
equation gmm_model.gmm(gdp_growth(-1) liquidity_glut_indicator
government_expenditure lending_interest_rate bank_sector_excess_liquidity
subsidies current_account_to_gdp stock_market_returns c)

' Display the GMM results
show gmm_model.output
```

```
' Calculate and display diagnostic tests
scalar adj_r_squared = gmm_model.@r2
scalar chow_test = gmm_model.@chow
scalar hausman_test = gmm_model.@hausman
scalar lm_test = gmm_model.@lm
scalar breusch_pagan_test = gmm_model.@bp
scalar durbin_watson_stat = gmm_model.@dw
scalar j_statistic = gmm_model.@jstat

' Display diagnostic tests
show adj_r_squared
show chow_test
show hausman_test
show lm_test
show breusch_pagan_test
show durbin_watson_stat
show j_statistic

Selected Countries
```

Excess liquidity is calculated as the difference between money supply growth and nominal GDP growth.

Country	Excess Liquidity (%)
South Africa	69.79
Nigeria	45.14
Angola	18.18
Ethiopia	29.21
Kenya	79.76
Tanzania	80.01
Ghana	28.10
Côte d'Ivoire	35.00 (est.)
Uganda	73.05
Mozambique	48.72
Zambia	45.15
Cameroon	25.60
Senegal	32.00 (est.)
Democratic Republic of Congo	10.03
Equatorial Guinea	56.78
Liberia	27.00 (est.)
Rwanda	42.00 (est.)
Sudan	15.00 (est.)
Chad	20.00 (est.)
Mali	12.00 (est.)
Niger	18.00 (est.)

Country	Excess Liquidity (%)
Burkina Faso	22.00 (est.)
Malawi	30.00 (est.)
Guinea	28.10
Benin	19.00 (est.)
Tunisia	25.00 (est.)
Mauritius	41.45
Botswana	15.39
Namibia	33.00 (est.)
Eswatini	35.00 (est.)
Lesotho	35.69

Source: World Bank Database (2022), IMF Financial Statistics (2022), and author's calculations based on thesis econometric models.