

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

DETERMINANTS OF CAPITAL MARKET DEVELOPMENT IN ETHIOPIA

By:

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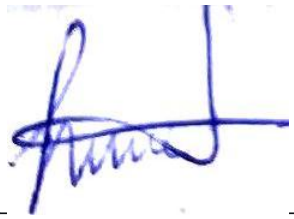
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June, 2026

Addis Ababa, Ethiopia

DECLARATION

My name is Hermela Gebreselassie, and I hereby confirm that the study I am presenting entitled "Determinants of Capital Market Development in Ethiopia" is my own work. I have properly cited and referenced all the sources I have used for this paper. It is to my best knowledge that this paper has not been used as a submission for any degree or qualification either in this university or at any other university.

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This is to certify that Hermela Gebreselassie has carried out a research entitled "Determinants of Capital Market Development in Ethiopia" for Partial fulfillment of the Master of science degree in Accounting and Finance at Addis Ababa University College of Business and Economics. This Study is Original and has not been submitted for any degree is this University or any other institution.

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APPROVAL SHEET

This is to certify that this thesis "Determinants of Capital Market Development in Ethiopia" is submitted to the graduate program of Addis Ababa University in Partial fulfillment of the requirements for the Master of science degree in Accounting and Finance of Addis Ababa University College of Business and Economics is with the regulation of the university and accepted standard with respect in originality.

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ABBREVIATIONS

ADF:	Augmented Dickey-Fuller
ARCH:	Autoregressive Conditional Heteroscedasticity
ARDL:	Autoregressive Distributed Lag
CM:	Capital Market Development
CPI:	Consumer price Index
D_HINF:	High Inflation Dummy
D_MKT:	Market Regime Dummy
D_PR:	Positive Real rate
ECMA –	Ethiopian Capital Market Authority
ECT:	Error Correction term
EMH:	Efficient Market Hypothesis
FDRE:	Federal Democratic Republic of Ethiopia
GARCH:	Generalized Autoregressive Conditional Heteroscedasticity
GDP:	Gross Domestic Product
HAC:	Heteroscedasticity and Autocorrelation consistent
IMF:	International Monetary Fund
INF:	Inflation
JB:	Jarque-Bera
LM:	Lagrange Multiplier
LR:	Lending Rate
NBE:	National Bank of Ethiopia
OLS:	Ordinary Least Squares
RESET:	Regression Specification Error Test
RLR Real:	Lending Rate
SPR:	Spread
VECM:	Vector Error Correction Model
VIF:	Variance Inflation Factor
VOL:	Inflation

DEFINITION OF KEY TERM

Capital Market Development- Expansion of Financial Market for Long Term Securities Trading (Demirguc-Qunt and Leivine 1996).

Inflation-Sustained rise in general price levels eroding returns (Fisher,1930).

Interest rate- cost of Borrowing or return on lending (Brealey,Myers,& Allen,2020).

ESX – Ethiopians first securities exchange launched in 2025/26 (FDER,2021; ESX,2025)

ABSTRACT

Capital market development plays a vital role in mobilizing long-term savings, promoting investment, and supporting economic growth. This study examines the relationship between inflation, interest rates, and capital market development in Ethiopia using annual time-series data from 1990/91 to 2024/25. Due to the recent establishment of the Ethiopian Securities Exchange (ESX) and limited historical capital market data, the study uses financial development indicators as proxies for capital market development. Secondary data were obtained from the National Bank of Ethiopia, the Ethiopian Statistical Service, and other relevant sources. The analysis employed descriptive statistics, Augmented Dickey-Fuller (ADF) unit root tests, Johansen cointegration analysis, and the Vector Error Correction Model (VECM) to examine both short-run and long-run relationships among the variables. The findings reveal that inflation has a significant negative effect on capital market development, indicating that macroeconomic instability can hinder financial market growth and long-term investment. Interest rates show mixed effects, reflecting their complex influence on savings, investment, and financial sector development. The results also confirm the existence of a long-run relationship among the variables, emphasizing the importance of a stable macroeconomic environment for capital market growth. The study concludes that maintaining price stability and an efficient interest rate environment can support the development of Ethiopia's emerging capital market. Future studies should reassess these relationships as more comprehensive capital market data become available through the expansion of the Ethiopian Securities Exchange.

Keywords: *Capital market development, inflation, interest rates, ESX*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Capital markets constitute an important component of modern financial systems by facilitating the mobilization and allocation of long-term financial resources. Through the issuance and trading of financial instruments such as stocks and bonds, capital markets provide governments and businesses with access to investment capital while offering investors opportunities to diversify their portfolios and earn returns. Well-developed capital markets contribute to economic growth by improving resource allocation, enhancing liquidity, promoting corporate governance, and supporting productive investment (Demirgüç-Kunt & Levine, 1996; Levine, 2002; Beck & Levine, 2004). Consequently, the development of capital markets has become an important policy objective for countries seeking sustainable economic growth and financial sector modernization.

The relationship between capital market development and economic performance has attracted considerable attention in both developed and developing economies. Empirical evidence suggests that efficient financial markets facilitate investment, technological innovation, and economic expansion by reducing transaction costs and improving access to finance (Fama, 1970; Beck & Levine, 2004). However, the extent to which capital markets contribute to economic development depends on a range of institutional, regulatory, and macroeconomic factors. Among these factors, macroeconomic stability is widely regarded as a fundamental prerequisite for financial market development because investors generally prefer environments characterized by low uncertainty, predictable policies, and stable economic conditions (Mishkin, 2016; World Bank, 2021).

Inflation is one of the most frequently examined macroeconomic variables in studies of financial market development. Theoretically, high and persistent inflation can adversely affect capital market development by reducing the real value of financial assets, increasing uncertainty, discouraging long-term investment, and weakening financial intermediation (Fisher, 1930; Huybens & Smith, 1999). Boyd, Levine, and Smith (2001) further argue that inflation may impair financial sector performance by increasing information asymmetries and transaction

costs. Similarly, Rousseau and Wachtel (2002) found that excessive inflation weakens the positive relationship between financial development and economic growth.

Despite these findings, the relationship between inflation and capital market development remains inconclusive in the empirical literature. While numerous studies report a negative effect of inflation on financial market performance, others suggest that the magnitude and direction of the relationship depend on country-specific economic conditions, monetary policy frameworks, and inflation volatility (Aizenman & Noy, 2015; Ndlovu & Alagidede, 2020). These mixed findings indicate that conclusions drawn from one country may not necessarily apply to another, highlighting the need for context-specific empirical investigation.

Interest rates represent another important macroeconomic variable influencing financial market development. According to the financial liberalization theories of McKinnon (1973) and Shaw (1973), positive real interest rates encourage savings mobilization and improve the allocation of financial resources, thereby promoting financial sector development. Higher savings can increase the availability of investable funds and contribute to capital market growth. However, excessively high interest rates may discourage borrowing, reduce investment activity, and constrain economic expansion (Fry, 1982). Consequently, the relationship between interest rates and capital market development is often complex and may vary depending on the structure and maturity of a country's financial system.

Empirical evidence concerning the effect of interest rates on financial markets also remains mixed. Some studies indicate that stable and market-oriented interest rate policies support financial deepening and investment growth, whereas others report adverse effects when interest rates become excessively high or volatile (Demirgüç-Kunt & Huizinga, 1999; Tadesse, 2022). Recent African evidence further suggests that macroeconomic stability, including interest rate management, plays a critical role in determining the pace of capital market development across emerging economies (Adjasi & Biekpe, 2021; Ndlovu & Alagidede, 2020).

Across Africa, many countries have undertaken financial sector reforms aimed at strengthening capital market institutions and expanding access to long-term finance. While several countries have successfully established stock exchanges and broadened capital market participation, substantial differences remain in terms of market size, liquidity, institutional quality, and

investor confidence (Yartey, 2010). These differences suggest that macroeconomic conditions alone may not fully explain capital market outcomes, emphasizing the importance of examining country-specific experiences.

In Ethiopia, the financial system has historically been dominated by the banking sector, with limited opportunities for long-term financing through organized capital markets (Alemayehu & Tsegaye, 2018). Recognizing the importance of diversifying sources of finance and supporting private-sector-led growth, the government introduced major financial sector reforms, including the enactment of Capital Market Proclamation No. 1248/2021 and the establishment of the Ethiopian Capital Market Authority (Federal Democratic Republic of Ethiopia, 2021). These reforms subsequently led to the operationalization of the Ethiopian Securities Exchange, representing an important milestone in the country's financial sector development (Ethiopian Securities Exchange, 2025).

Nevertheless, Ethiopia's capital market remains at an early stage of development. Unlike many countries with long-established securities markets, Ethiopia has only recently introduced formal capital market institutions, and historical market data remain limited. As a result, understanding the macroeconomic conditions that may support or constrain the development of the country's emerging capital market has become an important area of research and policy interest (World Bank, 2025; Addis Ababa University, 2025).

Although international studies have extensively examined the relationship between inflation, interest rates, and capital market development, evidence from Ethiopia remains limited and fragmented. Existing studies have primarily focused on financial sector performance, monetary policy transmission, savings mobilization, and broader economic development rather than the specific implications of inflation and interest rate dynamics for capital market development (Desta & Wolde, 2024; Bekele, 2023; Molla, 2025). Furthermore, the mixed findings reported in international studies suggest that the relationship between macroeconomic variables and capital market development is highly context-dependent. Therefore, there is a need for empirical investigation that examines how inflation and interest rates are associated with conditions relevant to the development of Ethiopia's emerging capital market.

1.2 Statement of the Problem

The development of capital markets is widely recognized as an important component of financial sector development and economic growth. Well-functioning capital markets facilitate the mobilization of long-term savings, improve resource allocation, enhance investment opportunities, and support economic expansion (Demirgüç-Kunt & Levine, 1996; Beck & Levine, 2004). As a result, understanding the factors that influence capital market development has become an important area of research and policy interest in both developed and developing economies.

Among the various determinants of capital market development, macroeconomic stability has received particular attention in the literature. Inflation and interest rates are frequently identified as key variables affecting investment behavior, savings mobilization, asset valuation, and overall financial market performance (Huybens & Smith, 1999; Boyd et al., 2001; Mishkin, 2016). However, empirical evidence regarding the nature and magnitude of these relationships remains inconclusive. While several studies report that high inflation and unstable interest rates hinder financial market development, others suggest that the effects depend on country-specific institutional arrangements, monetary policy frameworks, and the level of financial sector development (Aizenman & Noy, 2015; Ndlovu & Alagidede, 2020; Adjasi & Biekpe, 2021). These mixed findings indicate the need for country-specific empirical investigations.

In Ethiopia, recent financial sector reforms have increased interest in capital market development. The enactment of Capital Market Proclamation No. 1248/2021 and the establishment of the Ethiopian Capital Market Authority (ECMA) represent important steps toward creating a formal capital market framework (Federal Democratic Republic of Ethiopia, 2021). The subsequent operationalization of the Ethiopian Securities Exchange (ESX) further demonstrates the country's commitment to expanding alternative sources of long-term finance and strengthening financial sector efficiency (Ethiopian Securities Exchange, 2025). Nevertheless, Ethiopia's capital market remains at an early stage of development, and evidence regarding the macroeconomic conditions that may influence its growth remains limited.

A review of existing Ethiopian studies reveals that most research has concentrated on banking sector development, monetary policy transmission, inflation dynamics, interest rate behavior, and

economic growth (Alemayehu & Tsegaye, 2018; Desta & Wolde, 2024; Tadesse, 2022). Although some recent studies have examined issues related to capital market readiness and emerging market development (Addis Ababa University, 2025; Getachew, 2024), empirical evidence specifically addressing the relationship between inflation, interest rates, and conditions associated with capital market development in Ethiopia remains scarce. Furthermore, much of the existing literature focuses on broader financial sector performance rather than the macroeconomic environment relevant to the development of an emerging capital market.

Another challenge concerns the limited availability of historical capital market data. Since Ethiopia's formal securities exchange only recently commenced operations, direct indicators of stock market performance are unavailable for much of the study period. Consequently, studies seeking to examine long-term relationships must rely on proxy indicators that reflect aspects of financial sector development and market readiness. While such proxies cannot fully capture actual securities market performance, they provide a basis for assessing how macroeconomic conditions may have influenced the broader environment necessary for capital market development. Recognizing this limitation is important for ensuring conceptual consistency and avoiding inappropriate interpretations of historical market performance.

Against this background, there remains limited empirical evidence regarding how inflation and interest rates are associated with indicators relevant to the development of Ethiopia's emerging capital market. Given the country's ongoing financial sector reforms, persistent inflationary pressures, evolving monetary policy framework, and recent establishment of formal capital market institutions, understanding these relationships has become increasingly important. Therefore, this study examines the relationship between inflation, interest rates, and indicators associated with capital market development in Ethiopia, with the aim of contributing to the emerging literature on Ethiopia's evolving financial system and providing evidence that may inform future research in this area.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to analyze the determinants of capital market development with particular emphasis on impact of inflation and interest rates on capital market development in Ethiopia.

1.3.2 Specific Objectives

1. To analyze the effect of inflation on capital market development in Ethiopia.
2. To examine the impact of interest rates on capital market development in Ethiopia.
3. To investigate the combined effect of inflation and interest rates on key capital market indicators (such as market capitalization, liquidity, and participation).
4. To assess how macroeconomic volatility and the transition to a market-based interest rate regime influence capital market development in Ethiopia.

1.4 Research Questions

To guide the empirical investigation and provide answers to the issues raised in the statement of the problem, the study is designed to address the following research questions:

1. How does inflation affect capital market development in Ethiopia?
2. What is the impact of interest rates on capital market development in Ethiopia?
3. How do inflation and interest rates jointly influence key capital market indicators, such as market capitalization, liquidity, and participation?
4. How do macroeconomic volatility and the transition to a market-based interest rate regime affect capital market development in Ethiopia?

1.5 Significance of the Study

This study is expected to contribute to the growing body of knowledge on capital market development and macroeconomic stability, particularly within the context of emerging and frontier financial markets. Although extensive international research has examined the relationship between inflation, interest rates, and financial market development, empirical

evidence from Ethiopia remains limited due to the recent establishment of formal capital market institutions and the limited availability of historical market data. By examining the relationship between inflation, interest rates, and indicators associated with capital market development, this study contributes to the emerging literature on Ethiopia's evolving financial system.

From an academic perspective, the study extends existing research by providing country-specific evidence on the interaction between selected macroeconomic variables and conditions associated with capital market development. The findings may serve as a useful reference for researchers, students, and scholars interested in financial market development, monetary policy, and financial sector reforms in Ethiopia and other developing economies.

From a policy perspective, the study may provide insights for policymakers, financial regulators, and monetary authorities regarding the potential influence of inflation and interest rate dynamics on the broader environment necessary for capital market development. As Ethiopia continues to implement financial sector reforms and strengthen its capital market institutions, understanding these macroeconomic relationships may support informed discussion and future policy formulation. However, the findings should be interpreted in light of the study's reliance on proxy indicators and the early stage of capital market development in the country.

The study may also be useful to financial institutions, investors, and other market participants by enhancing understanding of the macroeconomic factors that can influence financial sector development and investment conditions. Furthermore, the findings may provide a foundation for future studies that incorporate more comprehensive capital market data as Ethiopia's capital market continues to develop and mature.

1.6 Scope and Limitations

1.6.1 Scope of the Study

This study focuses on examining the relationship between inflation, interest rates, and indicators associated with capital market development in Ethiopia. The analysis covers the period from 1990/91 to 2024/25 and relies exclusively on annual secondary data obtained from official national and international sources. The study adopts a macroeconomic perspective and

concentrates on selected variables that are commonly identified in the literature as important determinants of financial market development.

Given the recent establishment of Ethiopia's formal capital market institutions, direct measures of securities market performance are unavailable for much of the study period. Consequently, the study utilizes proxy indicators intended to capture aspects of financial sector development and market readiness that are considered relevant to the emergence of capital market activities. Therefore, the findings should be interpreted as evidence regarding the relationship between inflation, interest rates, and conditions associated with capital market development rather than as direct measures of historical securities market performance.

The study does not attempt to examine all potential determinants of capital market development. Institutional quality, regulatory effectiveness, political stability, investor behavior, technological infrastructure, and other structural factors are beyond the scope of the analysis. Instead, the research focuses specifically on selected macroeconomic variables in order to provide a manageable and empirically feasible investigation within the limitations of available data.

1.6.2 Limitations of the Study

Like many studies conducted in emerging financial systems, this research is subject to several limitations that should be considered when interpreting the findings. The most important limitation relates to the measurement of the dependent variable. Since Ethiopia's formal securities exchange only recently commenced operations, direct indicators of capital market performance are unavailable for most of the study period. As a result, the study relies on proxy indicators intended to reflect aspects of financial sector development and market readiness associated with the emergence of capital market activities. Although these proxies provide useful information, they may not fully capture the multidimensional nature of actual capital market development. This limitation raises concerns regarding construct validity and requires caution when interpreting the empirical results.

A second limitation concerns data availability. The use of annual time-series data restricts the ability to capture short-term market dynamics and may mask temporary fluctuations in macroeconomic variables. Furthermore, some potentially important determinants of capital market development, including institutional quality, regulatory capacity, political factors,

investor confidence, and technological development, could not be incorporated due to data limitations and scope considerations. Consequently, the estimated relationships may be subject to omitted-variable bias.

The study also relies on econometric techniques that identify statistical relationships among variables. While these methods provide useful evidence regarding long-run and short-run associations, they do not eliminate all concerns regarding causality and endogeneity. Therefore, the findings should not be interpreted as definitive proof of causal relationships.

These limitations have important implications for policy interpretation. Although the findings may provide useful insights regarding the role of inflation and interest rates in shaping the broader environment associated with capital market development, the results should not be regarded as precise estimates of the determinants of actual historical capital market performance in Ethiopia. Accordingly, policy recommendations derived from the study should be considered indicative rather than conclusive and should be complemented by future research using more comprehensive market-level data as Ethiopia's capital market continues to develop.

1.7 Organization of the Study

This study is organized into five chapters.

Chapter One introduces the research, comprising the background of the study, problem statement, research objectives, research questions, importance of the study, scope and limitations of the study and organization of the study. It outlines the research problem and lays the groundwork for the whole study.

Chapter Two discusses the relevant literature on inflation, interest rates and capital market development. It covers theoretical literature, empirical studies and conceptual setups that guide the research. This chapter also points out the gaps in the existing literature that the present research is intended to fill.

Chapter Three discusses the research methods employed. It outlines the research plan method data sources, variable definition and measurement, econometric model, and the data analysis procedures used in the study. Besides, it illustrates how the data will be analyzed and interpreted.

Chapter Four deals with data presentation, analysis, and the discussion of the findings. Quantitative results share the limelight alongside qualitative ones as they are presented, analyzed and interpreted in the light of the research objectives and the literature.

Chapter Five is a brief overview of findings, conclusions, and recommendations based on the empirical results of the study. Besides, it emphasizes the study results' implications and proposes future research areas.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Framework

This study is grounded in four complementary theoretical perspectives: The Efficient Market Hypothesis (EMH), Fisher Effect Theory, Financial Liberalization Theory, and the Inflation Financial Development Framework. Collectively, these theories provide a basis for understanding how inflation and interest rates may influence the development of capital markets through their effects on investment decisions, savings behavior, asset valuation, and financial intermediation.

2.1.1 Efficient Market Hypothesis (EMH)

The Efficient Market Hypothesis (EMH), originally developed by Fama (1970), argues that security prices fully reflect all available information. Under this assumption, investors cannot consistently earn abnormal returns because new information is immediately incorporated into asset prices. Consequently, efficient markets facilitate optimal resource allocation and contribute to economic growth by directing capital toward productive investments (Fama, 1970).

Despite its considerable influence in financial economics, EMH has been widely criticized. One major criticism concerns its assumptions of perfect information, rational investor behavior, and frictionless markets. Behavioral finance researchers argue that investors are frequently influenced by psychological biases, incomplete information, and irrational decision-making, resulting in market anomalies that challenge the assumptions of market efficiency (Malkiel, 2003). Furthermore, the theory assumes the existence of deep and liquid financial markets, conditions that are often absent in developing economies.

These criticisms are particularly relevant to Ethiopia. The Ethiopian capital market is still at an early stage of development, following the establishment of the Ethiopian Securities Exchange (ESX) and the Ethiopian Capital Market Authority (ECMA) (Federal Democratic Republic of Ethiopia, 2021; Ethiopian Securities Exchange, 2025). Limited market experience, evolving regulatory structures, and relatively low investor participation suggest that the assumptions of

strong-form market efficiency may not fully apply. Nevertheless, EMH remains relevant because it highlights the importance of transparency, information availability, investor confidence, and macroeconomic stability as prerequisites for capital market development (Fama, 1970; Malkiel, 2003).

2.1.2 Loanable Funds Theory

The Loanable Funds Theory was first related to classical economists like Alfred Marshall, then it was further developed by neoclassical economists. This theory sees the interest rate as the price at which the supply of savings meets the demand for investment funds. Marshall (1890) mattered a lot in putting this concept forward by identifying interest rates as the point where saving (fund supply) and investment (fund demand) balance each other. Later, other economists, mostly those in the neoclassical and modern macroeconomic fields, took the theory and developed it further. High interest rates, on one hand, should boost savings and However to reduce investment as they make it costly, whereas low interest rates have the role of a catalyst in the flow of borrowings and investment. There's also an indirect impact of inflation on this process through altering real interest rates and thereby affecting the attractiveness of savings with the purchasing power.

Based on the main economic texts (such as Keynes, 1936; Mishkin, 2016), interest rates represent a crucial link in the chain of financial intermediation and allocation of capital. In the arena of capital markets, the changes in interest rates can cause shifts in how investors perceive the attractiveness of stocks versus bonds, which in turn has a bearing on liquidity and the extent of the market. Here, this theory is used to understand the effects of changes in interest rates in Ethiopia on the development of the capital market.

It helps explain how changes in interest rates affect the allocation of financial resources between savings and investments, investor behavior, and the flow of funds into capital markets. For instance, higher interest rates may reduce stock market participation by making alternative investments more attractive, while lower rates may encourage equity investment.

2.1.3 Fisher Effect Theory

The Fisher Effect, proposed by Fisher (1930), posits that nominal interest rates adjust to expected inflation, thereby maintaining relatively stable real interest rates over time. According to this

theory, inflation expectations play a crucial role in determining investment decisions, asset valuation, and savings behavior because investors seek compensation for anticipated losses in purchasing power (Fisher, 1930).

However, empirical evidence regarding the Fisher Effect remains inconclusive. In many developing countries, nominal interest rates do not adjust fully to inflation because of government intervention, financial repression, and structural rigidities within financial markets (Mishkin, 2016). As a result, periods of high inflation may generate negative real interest rates, reducing incentives for savings and potentially constraining investment activity.

The Ethiopian context provides an important setting for evaluating this theory. Persistent inflationary pressures and evolving monetary policy frameworks suggest that the relationship between inflation and interest rates may not always conform to theoretical predictions (National Bank of Ethiopia, 2025; World Bank, 2025). Therefore, empirical examination is necessary to determine whether inflation and interest rates interact in a manner consistent with the Fisher Effect.

2.1.4 McKinnon-Shaw Financial Repression Hypothesis

Financial Liberalization Theory, advanced by McKinnon (1973) and Shaw (1973), argues that market-determined interest rates encourage savings mobilization, improve capital allocation, and promote financial sector development. According to the theory, financial repression through controlled interest rates and excessive government intervention distorts market incentives and limits the efficient allocation of financial resources (McKinnon, 1973; Shaw, 1973).

Although this theory has significantly influenced financial sector reforms worldwide, it has also faced criticism. Scholars argue that liberalization alone does not guarantee financial development and may increase financial vulnerability when implemented without adequate institutional capacity and regulatory oversight (Fry, 1982). Empirical evidence from developing countries suggests that the benefits of liberalization depend heavily on macroeconomic stability, institutional quality, and effective financial regulation.

This perspective is particularly relevant to Ethiopia, where ongoing financial sector reforms seek to promote greater market orientation and strengthen financial institutions (National Bank of

Ethiopia, 2024). Consequently, Financial Liberalization Theory provides a useful framework for understanding how interest rate dynamics may influence the broader environment necessary for capital market development.

2.1.5 Huybens-Smith Credit Rationing Model

The Inflation–Financial Development Framework emphasizes the adverse effects of inflation on financial sector performance. Huybens and Smith (1999) argue that inflation increases uncertainty, weakens financial intermediation, and discourages long-term investment. Similarly, Boyd, Levine, and Smith (2001) contend that inflation impairs financial sector development by increasing transaction costs and information asymmetries, thereby reducing the efficiency of financial markets.

Nevertheless, the empirical literature does not provide a universally consistent conclusion. Some studies suggest that the impact of inflation depends on its magnitude, volatility, and the broader institutional environment (Aizenman & Noy, 2015). This implies that the relationship between inflation and financial market development is context-specific and requires empirical verification rather than theoretical assumption.

For Ethiopia, where inflation has remained a significant macroeconomic challenge over recent decades, this framework provides an important theoretical basis for examining whether inflation influences the conditions associated with capital market development (World Bank, 2025; Getachew, 2024).

2.1.6 Synthesis of Theoretical Perspectives

While each theory emphasizes different transmission mechanisms, they collectively suggest that macroeconomic stability is a fundamental condition for financial market development. The Efficient Market Hypothesis highlights the importance of information efficiency and investor confidence (Fama, 1970). Fisher Effect Theory explains how inflation influences interest rates and asset valuation (Fisher, 1930). Financial Liberalization Theory emphasizes the role of market-based interest rates in mobilizing savings and improving resource allocation (McKinnon, 1973; Shaw, 1973). The Inflation–Financial Development Framework focuses on the adverse

consequences of inflation for financial intermediation and long-term investment (Huybens & Smith, 1999; Boyd et al., 2001).

Importantly, these theories do not always produce identical predictions. EMH assumes efficient information processing, whereas Financial Liberalization Theory emphasizes institutional and policy constraints. Similarly, Fisher Effect Theory assumes interest rate adjustments that may not occur in financially constrained economies. These theoretical differences suggest that the relationship between inflation, interest rates, and capital market development is unlikely to be universal and should be examined within specific economic contexts.

Taken together, the theories provide a coherent framework for understanding how inflation and interest rates may influence investment behavior, savings mobilization, asset valuation, financial intermediation, and investor confidence. These channels form the theoretical foundation of the study's conceptual framework and support the examination of inflation and interest rates as factors associated with the development of Ethiopia's emerging capital market. Given the country's nascent capital market institutions and ongoing financial sector reforms, empirical investigation is necessary to determine whether these theoretical relationships are reflected in Ethiopia's financial environment.

2.2 Conceptualizing the Variables

This study examines the relationship between macroeconomic variables and capital market development in Ethiopia by focusing on inflation and interest rates as the key explanatory variables, and capital market development indicators as the outcome variables. Conceptualizing these variables is essential to provide a clear understanding of how each construct is defined, interpreted, and operationalized within the context of the study.

2.2.1 Inflation

Inflation refers to a sustained increase in the general price level of goods and services over time, resulting in a decline in the purchasing power of money (Mishkin, 2016). Within the context of financial markets, inflation is important because it affects investment decisions, savings behavior, asset valuation, and investor expectations. High and volatile inflation may increase

economic uncertainty, reduce the real value of financial assets, and discourage long-term investment activities (Huybens & Smith, 1999; Boyd et al., 2001).

The literature suggests that inflation is one of the most important macroeconomic indicators influencing financial market development because it directly affects both investors and financial institutions. In countries experiencing persistent inflationary pressures, maintaining macroeconomic stability becomes essential for supporting financial sector development and encouraging investment (Rousseau & Wachtel, 2002).

2.2.2 Interest Rates

Interest rates represent the cost of borrowing funds or the return earned on savings and financial investments (Fisher, 1930). They play a central role in financial markets by influencing savings mobilization, capital allocation, investment decisions, and the overall cost of financing economic activities. According to Financial Liberalization Theory, market-oriented interest rates encourage savings and improve the efficiency of financial intermediation (McKinnon, 1973; Shaw, 1973).

Changes in interest rates may affect investor preferences between financial assets and alternative investment opportunities. Stable and predictable interest rate environments can enhance investment confidence, whereas highly volatile interest rates may create uncertainty and discourage long-term investment planning (Demirgüç-Kunt & Huizinga, 1999; Tadesse, 2022).

2.2.3 Capital Market Development

Capital market development refers to the growth and improvement of institutions, instruments, and mechanisms that facilitate the mobilization and allocation of long-term financial resources within an economy (Demirgüç-Kunt & Levine, 1996; World Bank, 2021). In developed financial systems, capital market development is commonly assessed using indicators such as market capitalization, liquidity, trading volume, and investor participation. However, because Ethiopia's formal capital market institutions have only recently been established, direct historical measures of securities market performance are unavailable for much of the study period.

Consequently, this study conceptualizes capital market development in terms of broader indicators associated with financial sector development and market readiness. These indicators are not intended to represent actual historical stock market performance but rather the financial

conditions that may facilitate the emergence and growth of capital market institutions. Therefore, the findings should be interpreted as evidence relating to factors associated with capital market development rather than direct measures of a mature securities market.

2.2.4 Justification for Variable Selection

The literature identifies numerous factors that may influence capital market development, including economic growth, exchange rate movements, institutional quality, financial openness, political stability, regulatory effectiveness, technological development, and macroeconomic stability (Yartey, 2010; Ndlovu & Alagidede, 2020). However, the inclusion of all potential determinants is neither theoretically necessary nor empirically feasible within a single study.

This study focuses specifically on inflation and interest rates because these variables occupy a central position in both theoretical and empirical literature concerning financial market development. The Efficient Market Hypothesis, Fisher Effect Theory, Financial Liberalization Theory, and the Inflation–Financial Development Framework all identify inflation and interest rates as key channels through which macroeconomic conditions influence investment behavior, savings mobilization, asset valuation, and financial intermediation (Fama, 1970; Fisher, 1930; McKinnon, 1973; Huybens & Smith, 1999).

Furthermore, inflation and interest rates are particularly relevant in the Ethiopian context due to the country's recent experience with persistent inflationary pressures, evolving monetary policy reforms, and ongoing financial sector transformation (National Bank of Ethiopia, 2025; World Bank, 2025). While acknowledging that other determinants may also influence capital market development, the study concentrates on these two variables to provide a focused and empirically manageable analysis. Consequently, the findings should be interpreted within the scope of the selected variables rather than as a comprehensive explanation of all factors affecting capital market development in Ethiopia.

2.3 Empirical Literature Review

2.3.1 Empirical Evidence on Inflation and Capital Market Development

The relationship between inflation and capital market development has been widely investigated, yet empirical findings remain mixed. A substantial body of literature suggests that inflation adversely affects financial market development by increasing uncertainty, reducing the real value of financial assets, and discouraging long-term investment. For example, Huybens and Smith (1999) found that persistent inflation weakens financial intermediation and negatively affects investment activity. Similarly, Boyd, Levine, and Smith (2001) reported that higher inflation is associated with lower levels of financial sector development and reduced market efficiency.

However, subsequent studies have produced more nuanced findings. Rousseau and Wachtel (2002) argued that the negative effects of inflation become particularly pronounced only after certain threshold levels are exceeded. Likewise, Aizenman and Noy (2015) emphasized that inflation volatility may be more damaging to financial development than inflation itself. These findings suggest that the impact of inflation depends not only on its level but also on the stability and credibility of macroeconomic policies.

African evidence further demonstrates the context-specific nature of the relationship. Ndlovu and Alagidede (2020), using panel data from African economies, found that macroeconomic instability, including inflationary pressures, significantly constrains stock market development. However, the magnitude of the effect varied considerably across countries due to differences in institutional quality and financial sector maturity. These findings imply that conclusions drawn from one country cannot be generalized automatically to another.

Methodologically, many of these studies rely on cross-country panel data, which provide broader generalizability but may overlook country-specific dynamics. In contrast, country-level time-series studies often capture local institutional and policy conditions more effectively but face limitations regarding data availability and external validity. This methodological diversity partly explains the variation in empirical findings.

2.3.2 Empirical Evidence on Interest Rates and Capital Market Development

The empirical literature examining interest rates and capital market development also presents mixed results. Financial Liberalization Theory predicts that positive real interest rates encourage savings mobilization and financial development (McKinnon, 1973; Shaw, 1973). Supporting this view, several studies have found that market-oriented interest rate policies contribute to financial deepening and investment growth.

However, other studies suggest that high interest rates may discourage borrowing and reduce investment activity. Demirgüç-Kunt and Huizinga (1999) found that interest rate structures significantly influence financial sector performance, although the direction and magnitude of the relationship differ across countries. Similarly, Adjasi and Biekpe (2021) concluded that stable macroeconomic conditions, including appropriate interest rate management, are important determinants of stock market development in Sub-Saharan Africa.

Recent Ethiopian evidence presents a similarly complex picture. Tadesse (2022) reported that positive real interest rates contribute to savings mobilization, supporting the arguments of Financial Liberalization Theory. In contrast, Molla (2025) found that wide interest rate spreads may discourage broader participation in financial markets. While both studies highlight the importance of interest rates, they focus on different dimensions of financial development and employ different methodologies, making direct comparison difficult.

These differences underscore the importance of considering the broader institutional and macroeconomic environment when evaluating the relationship between interest rates and financial market development.

2.3.3 Empirical Evidence from Ethiopia

Empirical research directly examining capital market development in Ethiopia remains limited due to the recent establishment of formal capital market institutions. Most existing studies focus on broader financial sector development, inflation dynamics, monetary policy transmission, and savings mobilization rather than capital market performance itself.

Alemayehu and Tsegaye (2018) provided a comprehensive review of Ethiopia's financial sector and highlighted structural challenges related to financial deepening and market diversification.

While the study offers valuable contextual insights, its descriptive nature limits its ability to establish causal relationships among macroeconomic variables.

More recent studies have attempted to address emerging capital market issues. Bekele (2023), using an ARDL framework, examined the relationship between inflation and stock market returns in Ethiopia and found evidence of a significant association. However, the study was constrained by limited market data and focused primarily on return behavior rather than broader indicators of capital market development. Similarly, Getachew (2024) investigated inflation volatility and capital market readiness in Ethiopia, emphasizing the importance of macroeconomic stability for future market development. Although the study contributes important insights, it relies heavily on readiness indicators rather than actual market performance measures.

Desta and Wolde (2024) examined monetary policy transmission mechanisms in Ethiopia and found that inflation and interest rate dynamics significantly influence financial sector outcomes. While their findings are relevant to understanding the broader macroeconomic environment, the study does not directly address capital market development. Consequently, its conclusions can only be applied indirectly to the present study.

These Ethiopian studies provide useful insights but also reveal important limitations. Most were conducted before sufficient capital market data became available, rely on proxy indicators, or focus on broader aspects of financial sector development. As a result, empirical evidence concerning the relationship between inflation, interest rates, and indicators associated with capital market development remains limited.

2.3.4 Synthesis and Research Gap

The empirical literature generally supports the view that inflation and interest rates are important determinants of financial market development. Nevertheless, substantial disagreement remains regarding the magnitude, direction, and transmission mechanisms of these relationships. Variations in findings can be attributed to differences in methodology, measurement approaches, sample periods, institutional environments, and levels of financial sector development.

Cross-country studies provide valuable comparative evidence but often fail to capture country-specific realities. Conversely, country-level studies offer greater contextual relevance but frequently face data limitations. In Ethiopia, existing research has primarily focused on monetary policy, banking sector performance, inflation dynamics, and financial sector development rather than the specific relationship between inflation, interest rates, and indicators associated with capital market development.

Furthermore, many recent Ethiopian studies rely on proxy measures because formal capital market institutions have only recently emerged. While these studies contribute to understanding the country's evolving financial system, they provide limited evidence regarding the long-run relationship between macroeconomic variables and conditions relevant to capital market development. Therefore, a gap remains in understanding how inflation and interest rates are associated with indicators linked to the development of Ethiopia's emerging capital market over an extended period.

The present study seeks to address this gap by examining the relationship between inflation, interest rates, and indicators associated with capital market development using long-run time-series data and multiple econometric techniques, including cointegration and error-correction approaches. By doing so, the study contributes to the growing literature on financial sector development in Ethiopia while recognizing the limitations associated with the use of proxy indicators.

2.4 How This Study Fills the Existing Gap

The review of theoretical and empirical literature revealed several important gaps in the existing body of knowledge. First, although numerous international studies have examined the relationship between inflation, interest rates, and financial market development, empirical findings remain inconsistent regarding the direction and magnitude of these relationships. Differences in institutional environments, levels of financial development, methodological approaches, and sample periods have produced mixed conclusions, limiting the generalizability of existing evidence.

Second, the Ethiopian literature has focused predominantly on banking sector development, monetary policy transmission, inflation dynamics, and broader measures of financial sector

performance (Alemayehu & Tsegaye, 2018; Desta & Wolde, 2024). While recent studies such as Bekele (2023) and Getachew (2024) have provided useful insights into inflation and emerging capital market conditions, their analyses were constrained by limited data availability and narrower empirical scopes. Consequently, empirical evidence regarding the relationship between inflation, interest rates, and indicators associated with capital market development in Ethiopia has remained limited.

This study addressed these gaps in several ways. First, it examined both inflation and interest rates within a unified analytical framework, allowing for the assessment of their combined influence on indicators associated with capital market development. Unlike studies that focused on a single macroeconomic variable or broader financial sector outcomes, the present study specifically evaluated the interaction between these key macroeconomic factors and conditions relevant to capital market development.

Second, the study employed a relatively long time-series dataset covering the period 1990/91–2024/25. This enabled the analysis of both long-run and short-run relationships among the variables and provided a broader historical perspective than many previous Ethiopian studies.

Third, the study utilized multiple econometric techniques, including unit root testing, Johansen cointegration analysis, Vector Error Correction Modeling (VECM), GARCH estimation, and structural break analysis. The combined use of these methods enhanced the robustness of the empirical investigation by examining long-run equilibrium relationships, short-run adjustments, volatility dynamics, and potential structural changes within the data. This methodological approach provides a more comprehensive assessment than studies relying solely on single-equation estimation techniques.

At the same time, the study recognizes that the recent establishment of Ethiopia's formal capital market institutions creates important measurement challenges. Because direct indicators of historical securities market performance are unavailable for much of the study period, the analysis relied on proxy indicators intended to capture aspects of financial sector development and market readiness. Consequently, the study does not claim to provide direct evidence of historical stock market performance. Rather, it contributes empirical evidence regarding how

inflation and interest rates are associated with broader conditions relevant to the development of Ethiopia's emerging capital market.

Accordingly, the contribution of this study lies not in eliminating all existing limitations but in providing a more systematic examination of the relationship between key macroeconomic variables and indicators associated with capital market development within the constraints of available Ethiopian data. The findings therefore extend the existing literature while also identifying areas where future research can benefit from more comprehensive capital market data as Ethiopia's financial markets continue to evolve.

2.5 Conceptual Framework

The conceptual framework of this study is developed from the theoretical and empirical literature reviewed in the preceding sections. It is based on the proposition that macroeconomic stability plays a fundamental role in creating conditions conducive to capital market development. Specifically, the framework assumes that inflation and interest rates influence capital market development through their effects on investment behavior, savings mobilization, asset valuation, investor confidence, and financial intermediation (Fisher, 1930; McKinnon, 1973; Huybens & Smith, 1999).

Inflation is expected to influence capital market development by affecting the real value of financial assets and increasing uncertainty regarding future investment returns. High and volatile inflation may discourage long-term investment, reduce investor confidence, and weaken financial intermediation, thereby constraining the conditions necessary for capital market development (Huybens & Smith, 1999; Boyd et al., 2001). Conversely, a stable inflation environment may promote investor confidence and encourage financial market participation.

Interest rates are also expected to influence capital market development through several transmission mechanisms. According to Financial Liberalization Theory, market-based interest rates encourage savings mobilization and improve the allocation of financial resources, thereby supporting financial sector development (McKinnon, 1973; Shaw, 1973). However, excessively high interest rates may increase borrowing costs, discourage investment, and reduce economic activity. Consequently, the relationship between interest rates and capital market development may vary depending on the broader macroeconomic environment.

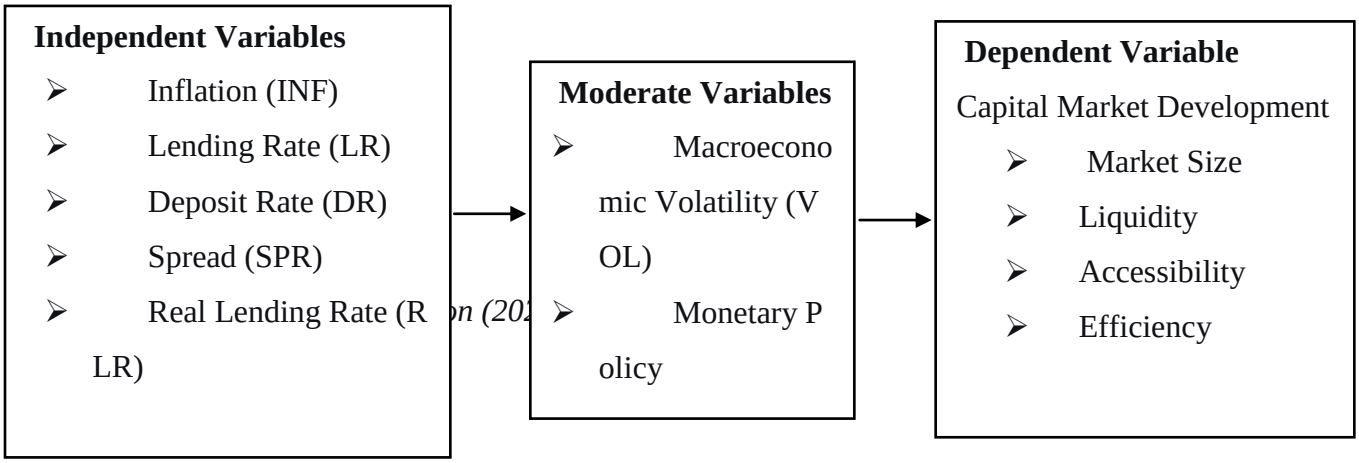
The framework further recognizes that the relationship between inflation, interest rates, and capital market development does not occur in isolation. Several contextual factors may influence the strength and direction of these relationships. These factors include institutional quality, regulatory effectiveness, financial sector reforms, political stability, and the overall macroeconomic environment (Yartey, 2010; Adjasi & Biekpe, 2021). Such factors are conceptualized as moderating variables because they influence how macroeconomic conditions translate into financial market outcomes.

For example, strong regulatory institutions may enhance investor confidence and market transparency, reducing the negative effects of inflation and interest rate volatility on financial market development. Similarly, effective financial sector reforms may improve market infrastructure and increase the responsiveness of financial institutions to macroeconomic conditions. In contrast, weak institutions, regulatory uncertainty, or political instability may amplify the adverse effects of macroeconomic instability and hinder market development.

Accordingly, the framework assumes that inflation and interest rates constitute the primary explanatory variables, while indicators associated with capital market development represent the dependent variable. The moderating variables operate indirectly by influencing the effectiveness of the transmission mechanisms linking macroeconomic conditions to financial sector development. Therefore, the expected causal pathway is that inflation and interest rates affect investment behavior, savings decisions, financial intermediation, and investor confidence, which in turn influence the conditions associated with capital market development. The strength of these relationships may vary depending on institutional and regulatory conditions.

The conceptual framework therefore integrates insights from the Efficient Market Hypothesis (Fama, 1970), Fisher Effect Theory (Fisher, 1930), Financial Liberalization Theory (McKinnon, 1973; Shaw, 1973), and the Inflation–Financial Development Framework (Huybens & Smith, 1999). Collectively, these theories suggest that macroeconomic stability influences financial market development through interconnected channels involving information efficiency, savings mobilization, investment decisions, and financial intermediation.

Figure 2.1: Conceptual Framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details the research method used to study the effects of inflation and interest rates on capital market development in Ethiopia. It's arranged in a coherent manner beginning with research design, research approach, data sources, variable definition and measurement, econometric structure, model specifications, diagnostic tests, and finally ethical considerations. Every methodological option has been explained regarding the relevant academic sources.

3.2 Research Design and Research Approach

This study employed a quantitative research approach and an explanatory research design to examine the relationship between inflation, interest rates, and indicators associated with capital market development in Ethiopia. The quantitative approach was considered appropriate because the study relied on numerical time-series data and econometric techniques to analyze the relationships among the selected variables. The explanatory design was adopted because the study sought to investigate the extent to which changes in inflation and interest rates are associated with changes in indicators relevant to capital market development.

A key methodological consideration in this study relates to the measurement of capital market development. Ethiopia's formal capital market institutions were established only recently following the enactment of the Capital Market Proclamation No. 1248/2021 and the subsequent operationalization of the Ethiopian Securities Exchange (ESX) (Federal Democratic Republic of Ethiopia, 2021; Ethiopian Securities Exchange, 2025). Consequently, direct historical indicators of securities market performance, such as stock market capitalization, trading volume, turnover ratios, and market liquidity, are unavailable for most of the study period.

Recognizing this limitation, the study does not attempt to measure historical stock market performance over the entire sample period. Instead, it examines indicators associated with financial sector development and market readiness that are considered relevant to the emergence and development of capital market institutions. These indicators serve as proxy measures

intended to capture broader financial conditions that may support the development of a capital market. The use of proxy indicators is consistent with previous studies conducted in emerging and frontier financial systems where direct market-level data are limited or unavailable (Yartey, 2010; World Bank, 2021).

The rationale for adopting this approach is that capital markets do not emerge in isolation but develop within a broader financial and macroeconomic environment. Factors such as inflation, interest rates, financial intermediation, savings mobilization, and investment conditions influence the readiness of an economy to support capital market activities. Therefore, examining the relationship between macroeconomic variables and indicators associated with financial market readiness provides useful insights into the conditions under which capital market development may occur.

Accordingly, the study focuses on evaluating how inflation and interest rates have influenced broader financial conditions associated with capital market development during the period 1990/91–2024/25. The findings should therefore be interpreted as evidence regarding the macroeconomic determinants of conditions relevant to capital market development rather than as direct evidence of historical securities market performance in Ethiopia.

The study employs annual time-series data and econometric techniques to analyze both long-run and short-run relationships among the selected variables. This approach allows for the examination of historical macroeconomic trends while recognizing the limitations imposed by the recent establishment of formal capital market institutions in Ethiopia.

3.3 Data Sources and Variables of the Study

3.3.1 Data Sources

This study is based on annual secondary time-series data covering the period 1990/91–2024/25. The data were obtained from the National Bank of Ethiopia (NBE), the World Bank, and other relevant official publications. These sources were selected due to their reliability, consistency, and widespread use in empirical studies on macroeconomic and financial development in developing economies (World Bank, 2025; National Bank of Ethiopia, 2025).

Given the recent establishment of Ethiopia's formal capital market institutions, data availability differs across the study period. Macroeconomic variables such as inflation and interest rates are available for the full sample period, while direct capital market indicators are only available for the recent sub-period following the establishment of the Ethiopian Securities Exchange (ESX) (Ethiopian Securities Exchange, 2025). This structural limitation is explicitly considered in the operationalization of variables.

3.4 Definition and Operationalization of Variables

3.4.1 Dependent Variable: Indicators Associated with Capital Market Development

The dependent variable in this study is not direct capital market development in the strict sense, but rather a set of indicators associated with capital market development and financial market readiness**.**

This distinction is necessary because Ethiopia's formal capital market only began operating recently, following the establishment of the Ethiopian Securities Exchange (ESX) in 2025 and the Capital Market Authority under Proclamation No. 1248/2021 (Federal Democratic Republic of Ethiopia, 2021; Ethiopian Securities Exchange, 2025). As a result, long-term historical data on standard capital market indicators such as market capitalization, trading volume, liquidity ratios, and turnover ratios are not available for most of the study period.

To address this limitation, the study uses proxy indicators commonly applied in empirical literature when analyzing financial systems in early-stage or frontier markets. These proxies capture aspects of financial intermediation, savings mobilization, and financial depth that reflect the broader environment necessary for capital market development (Yartey, 2010; World Bank, 2021). Therefore, the dependent variable should be interpreted as an index of financial conditions relevant to capital market development rather than as direct measurement of stock market performance.

This approach is consistent with studies conducted in other emerging economies where capital markets are either newly established or not fully developed, and where researchers rely on financial development indicators to approximate capital market readiness.

3.4.2 Independent Variables

Inflation

Inflation is measured as the annual percentage change in the Consumer Price Index (CPI). It represents the rate at which the general price level of goods and services in the economy increases over time. Inflation is included because it affects investment decisions, savings behavior, and the real value of financial assets, thereby influencing financial market development (Mishkin, 2016; Huybens & Smith, 1999).

Interest Rate

Interest rate is measured using the lending interest rate or policy-related market interest rate depending on data availability from the National Bank of Ethiopia. It reflects the cost of borrowing in the economy and influences savings and investment behavior. Interest rates are included due to their central role in financial liberalization theory and their influence on capital allocation efficiency (McKinnon, 1973; Shaw, 1973).

3.4.3 Justification of Variable Selection

Although capital market development is influenced by multiple macroeconomic and institutional factors, this study focuses on inflation and interest rates due to both theoretical and data considerations.

Theoretically, these variables are central in explaining financial market development under the Efficient Market Hypothesis, Fisher Effect Theory, Financial Liberalization Theory, and the Inflation–Financial Development Framework (Fama, 1970; Fisher, 1930; McKinnon, 1973; Huybens & Smith, 1999). These theories consistently identify inflation and interest rates as key transmission channels affecting savings, investment, and financial intermediation.

Empirically, while other factors such as GDP growth, exchange rates, institutional quality, political stability, and regulatory effectiveness are also important determinants of capital market development, consistent long-run time-series data for all these variables are not fully available for the entire study period in Ethiopia. Therefore, including them in a single model would significantly reduce the sample consistency and reliability of the econometric estimation.

Accordingly, the study adopts a parsimonious model focusing on inflation and interest rates as the core macroeconomic variables influencing indicators associated with capital market development. The results should therefore be interpreted within this limited but theoretically grounded framework.

3.4.4 Variable Definition and Measurement

Table 3.1: Variable Definition and Measurement

Variable	Symbol	Measurement	Source
Inflation	INF	Annual percentage change (June-June)	NBE/ESS
Lending Rate	LR	Average commercial bank lending rate (%)	NBE
Deposit Rate	DR	Minimum deposit rate (%)	NBE
Spread	SPR	LR - DR (%)	Calculated
Real Lending Rate	RLR	LR - INF (%)	Calculated
Inflation Volatility	VOL	Rolling 5-year std dev of INF	Calculated

3.4.5 Dummy Variables

Table 3.2: Dummy Variables

Variable	Symbol	Definition
Market Regime Dummy	D_MKT	=1 for 2024 onward, 0 otherwise
High Inflation Dummy	D_HINF	=1 if INF > 15%, 0 otherwise
Positive Real Rate Dummy	D_PR	=1 if RLR > 0%, 0 otherwise

3.6 Econometric Model Specification

This study employs a time-series econometric framework to examine the relationship between inflation, interest rates, and indicators associated with capital market development in Ethiopia. The selection of econometric techniques was guided by the study objectives, the nature of the data, and the characteristics of the variables under investigation. Given the relatively limited

sample size and the annual frequency of the data, emphasis was placed on methods capable of capturing both long-run and short-run relationships while avoiding unnecessary model complexity.

3.6.1 Model Specification

The general functional relationship is specified as:

CMD = f(INF, INT)

Where:

- CMD = Indicators associated with capital market development
- INF = Inflation rate
- INT = Interest rate

The econometric model is specified as:

$CMD_t = \beta_0 + \beta_1 INF_t + \beta_2 INT_t + \varepsilon_t$

Where:

- β_0 = Constant term
- β_1 , β_2 = Estimated coefficients
- ε_t = Error term
- t = Time period

The model assumes that inflation and interest rates influence financial conditions associated with capital market development through their effects on investment decisions, savings mobilization, asset valuation, and financial intermediation.

3.6.2 Estimation Strategy

The analysis follows a sequential procedure.

First, descriptive statistics are employed to summarize the characteristics of the variables and identify potential trends and patterns.

Second, stationarity tests are conducted using the Augmented Dickey-Fuller (ADF) test to determine the order of integration of each variable (Dickey & Fuller, 1979).

Third, Johansen Cointegration analysis is applied to determine whether a stable long-run relationship exists among the variables (Johansen, 1988).

Fourth, where cointegration is confirmed, a Vector Error Correction Model (VECM) is estimated to capture both the long-run equilibrium relationship and short-run adjustments among the variables (Engle & Granger, 1987).

The study prioritizes Johansen Cointegration and VECM because they directly address the primary research objectives concerning long-run and short-run relationships. Additional techniques are used only as supporting analyses where appropriate and are not treated as primary estimation methods.

3.6.3 Lag Length Selection

Appropriate lag selection is critical for obtaining reliable econometric results. The optimal lag length is determined using standard information criteria, including:

- Akaike Information Criterion (AIC)
- Schwarz Bayesian Criterion (SBC/BIC)
- Hannan–Quinn Information Criterion (HQ)

The lag structure selected is the one that minimizes the information criterion values while maintaining model stability and preserving degrees of freedom.

3.6.4 Structural Stability Analysis

Given the substantial economic reforms and policy changes experienced by Ethiopia during the study period, structural stability is assessed using the Chow Breakpoint Test. This test evaluates whether significant changes occurred in the relationships among the variables during major policy or economic transition periods.

The purpose of this analysis is not to estimate separate regime-switching models but rather to assess whether structural changes may affect the reliability of the estimated relationships.

3.6.5 Volatility Analysis

To complement the main analysis, GARCH models are employed only when evidence of conditional heteroscedasticity is detected in the residuals. The inclusion of GARCH is therefore conditional upon diagnostic test results rather than being automatically applied.

This approach avoids unnecessary model complexity and ensures that volatility modeling is used only when statistically justified (Engle, 1982).

3.6.6 Model Parsimony and Robustness

The study adopts the principle of model parsimony, which emphasizes selecting the simplest model capable of adequately explaining the observed relationships. Consequently, advanced techniques such as threshold regressions, interaction models, and impulse response functions are excluded from the primary analysis because the available sample size may not support reliable estimation of highly parameterized models.

To enhance robustness, findings from the VECM are compared with alternative specifications where appropriate. Consistency of coefficient signs, significance levels, and long-run relationships is used as evidence of result stability.

3.7 Diagnostic Tests

Diagnostic testing is conducted to evaluate the validity, reliability, and stability of the estimated econometric models.

Normality Test

The Jarque–Bera test is used to assess whether the residuals are normally distributed. The null hypothesis assumes normality. A p-value greater than 0.05 indicates failure to reject the null hypothesis and suggests that the residuals are approximately normally distributed.

Multicollinearity Test

Multicollinearity is examined using the Variance Inflation Factor (VIF). VIF values below 10 indicate that multicollinearity is unlikely to significantly affect the reliability of coefficient estimates.

Heteroscedasticity Test

The Breusch–Pagan–Godfrey test is used to determine whether the variance of the residuals remains constant. The null hypothesis assumes homoscedasticity. A p-value greater than 0.05 indicates the absence of significant heteroscedasticity.

Serial Correlation Test

The Breusch–Godfrey LM test is employed to examine autocorrelation in the residuals. The null hypothesis assumes no serial correlation. A p-value greater than 0.05 indicates that residual autocorrelation is not statistically significant.

Stationarity Test

The Augmented Dickey-Fuller (ADF) test is used to determine whether the variables are stationary. Variables are considered stationary when the calculated test statistic exceeds the critical value in absolute terms and the p-value is less than 0.05.

Cointegration Test

The Johansen Cointegration Test is used to determine whether a long-run equilibrium relationship exists among the variables. The trace statistic and maximum eigenvalue statistic are compared with their corresponding critical values at the 5 percent significance level.

Stability Test

Model stability is evaluated using the CUSUM and CUSUMSQ tests in addition to the Chow Breakpoint Test. Stability is confirmed when the cumulative residual plots remain within the critical bounds.

Endogeneity Considerations

The study recognizes the possibility of endogeneity arising from reverse causality and omitted variables. Although the VECM framework partially addresses dynamic interdependence among variables, the results should be interpreted as evidence of statistical relationships rather than definitive proof of causality.

Omitted Variable Bias

Capital market development is influenced by several factors beyond inflation and interest rates, including institutional quality, economic growth, political stability, regulatory effectiveness, and financial openness. Due to data limitations and scope considerations, these variables are not included in the model. Consequently, the estimated coefficients should be interpreted with caution because omitted variables may influence the observed relationships.

Robustness Assessment

Robustness is evaluated through alternative lag specifications, stability tests, and comparison of short-run and long-run estimation results. Consistent findings across these procedures increase confidence in the reliability of the empirical results.

3.8 Ethical Considerations

This research used mainly secondary data from public sources that had been officially published by recognized institutions like the National Bank of Ethiopia, the Ethiopian Statistical Service, the Ethiopian Securities Exchange, the World Bank, and the International Monetary Fund. As the research was based solely on aggregated secondary macroeconomic and financial data, there was no involvement of human participants and as a result, there were none of the issues of informed consent, confidentiality, or personal privacy that required attention.

The entire data were utilized strictly for educational and research purposes, and every effort was made through proper citation and acknowledgment of all the data sources to prevent plagiarism and guarantee academic honesty. Besides, the research took steps to ensure openness by working with verified datasets and refraining from any form of distortions or misrepresentation of official statistics. However, ethical accountability was kept by truthfully presenting the results to help legitimize policy and academic debates on the development of capital markets.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the empirical findings concerning the relationship between inflation, interest rates, and indicators associated with capital market development in Ethiopia. The analysis is based on annual time-series data covering the period 1990/91–2024/25 and employs descriptive statistics, stationarity testing, cointegration analysis, Vector Error Correction Modeling (VECM), and diagnostic testing.

Given the recent establishment of Ethiopia's formal capital market institutions, the analysis should not be interpreted as a direct assessment of historical securities market performance. Rather, the findings reflect the relationship between selected macroeconomic variables and broader financial conditions associated with capital market development. Consequently, the results provide insights into how inflation and interest rates may have influenced the environment within which capital market institutions emerge and operate.

The chapter presents descriptive results, econometric findings, and theoretical interpretations. Particular attention is given to both statistical significance and economic significance, while acknowledging the limitations associated with proxy indicators, data availability, and the evolving nature of Ethiopia's financial system.

4.1.1 Descriptive Statistics

Table 4.1: Descriptive Statistics of Key Variables (1990/91 - 2024/25)

Variable	Obs	Mean	Median	Std Dev	Min	Max	Skewness	Kurtosis	JB p-value
Headline Inflation (%)	35	15.43	10.45	13.54	-10.77	55.24	1.24	4.12	0.034
Lending Rate (%)	35	12.01	12.25	2.88	6.80	15.75	-0.18	2.56	0.612
Deposit Rate (%)	35	6.14	7.00	1.99	3.00	10.00	-0.09	2.01	0.784
Spread (%)	35	5.87	5.25	2.20	2.80	8.75	0.31	1.98	0.421
Real Lending Rate (%)	35	-3.42	-1.85	15.20	-44.74	24.07	-0.72	3.45	0.082
Inflation Volatility (%)	31	11.28	11.90	5.68	4.20	21.40	0.18	1.89	0.513

Source: Researcher calculation from NBE and ESS data

Table 4.1 presents the descriptive statistics of the key macroeconomic variables used in the study for the period 1990/91–2024/25. The statistics provide an overview of the distribution, variability, and general characteristics of the variables prior to econometric estimation.

The results indicate that Ethiopia experienced relatively high inflation during the study period, with an average headline inflation rate of 15.43 percent. Inflation exhibited substantial variability, as reflected by a standard deviation of 13.54 percentage points and a wide range extending from -10.77 percent to 55.24 percent. The positive skewness value (1.24) suggests that periods of exceptionally high inflation occurred more frequently than periods of unusually low inflation. The Jarque-Bera test further indicates that inflation is not normally distributed ($p = 0.034$), reflecting the presence of inflationary episodes and macroeconomic instability during the study period.

Lending rates were comparatively more stable, averaging 12.01 percent with a standard deviation of 2.88 percentage points. The relatively small difference between the mean and median values suggests a fairly balanced distribution. Similarly, deposit rates recorded an average of 6.14 percent and exhibited limited variation over time, indicating a relatively stable interest rate environment compared to inflation. The positive average interest rate spread of 5.87 percent reflects the difference between lending and deposit rates and may indicate the costs and risks associated with financial intermediation in the Ethiopian financial system.

The real lending rate averaged -3.42 percent over the study period, implying that inflation frequently exceeded nominal lending rates. This finding suggests that borrowers often benefited from negative real borrowing costs, while savers may have experienced erosion in the real value of their financial returns. The relatively high standard deviation of 15.20 percentage points indicates considerable fluctuations in real borrowing costs, largely driven by variations in inflation.

Inflation volatility, measured as the variability of inflation over time, recorded an average value of 11.28 percent. The moderate standard deviation suggests that inflation uncertainty remained a persistent feature of the macroeconomic environment. Since inflation volatility can influence investment decisions, savings behavior, and financial planning, its presence may have implications for the broader financial conditions associated with capital market development.

Overall, the descriptive statistics reveal a macroeconomic environment characterized by substantial inflationary pressures and fluctuating real interest rates, alongside relatively stable nominal interest rates. These patterns suggest that macroeconomic conditions have varied considerably over the study period and may have influenced the broader financial environment relevant to capital market development. However, given the limited availability of direct historical capital market data in Ethiopia, these statistics should be interpreted as reflecting the macroeconomic conditions associated with financial market readiness rather than direct measures of historical securities market performance.

Dependent Variable: Capital Market Development Measurement Challenge

Ethiopia's formal capital market (Ethiopian Securities Exchange) launched in January 2026. For the study period (1990/91 - 2024/25), direct capital market indicators (trading volume, number of listed companies) are not available because no formal exchange existed. In frontier market research, it is methodologically acceptable to use proxy variables when direct measures are unavailable (Levine & Zervos, 1998; Yartey, 2010).

Table 4.2 : Proxy Variables Selected to measure Capital market

Proxy Variable	Period	Data Source
Government Bond Market Cap (% of GDP)	2000-2025	NBE Reports
Primary Auction Subscription Rate (%)	2000-2025	NBE Reports
Bond Turnover (ETB Billion)	2000-2025	NBE Reports

Table 4.3: Descriptive Statistics

Dependent Variable (Proxy)	Obs	Mean	Std Dev	Min	Max
Govt Bond Market Cap (% GDP)	25	8.42	4.28	2.10	18.50
Primary Auction Subscription (%)	25	87.30	18.60	45.00	100.00
Bond Turnover (ETB Billion)	25	42.15	28.45	8.50	125.30

Source: Researcher`s calculation from National Bank of Ethiopia reports (2000-2025)

The descriptive statistics of the proxy indicators associated with capital market development are presented in Table 4.3. Government Bond Market Capitalization averaged 8.42 percent of GDP during the period 2000–2025, with values ranging from 2.10 percent to 18.50 percent. The

relatively modest average level suggests that the market for long-term government debt instruments remained limited in size throughout much of the study period. Although fluctuations are evident, the statistics indicate gradual changes in the scale of government securities relative to the overall economy.

The Primary Auction Subscription Rate recorded an average value of 87.30 percent, with observations ranging between 45 percent and 100 percent. This generally high subscription rate suggests sustained investor participation in government securities auctions. However, the variation across years indicates that investor demand was not uniform and may have been influenced by changing macroeconomic and financial conditions. The descriptive statistics alone do not establish the causes of these fluctuations, but they suggest that demand for government securities varied over time.

Bond Turnover averaged ETB 42.15 billion, with substantial variation across the sample period. The wide gap between the minimum and maximum values indicates considerable changes in secondary market activity. While turnover data provide some indication of market activity, they should be interpreted cautiously because they capture only one dimension of financial market development and do not fully represent overall market liquidity or efficiency.

Taken together, these indicators suggest the existence of a developing government securities market with varying levels of participation and activity. Nevertheless, the results should not be interpreted as direct measures of historical capital market development because Ethiopia's formal securities exchange was established only recently. Instead, the indicators provide evidence regarding financial market conditions and institutional readiness that may be associated with the broader process of capital market development.

Furthermore, descriptive statistics alone cannot establish causal relationships between macroeconomic variables and market development indicators. Therefore, the patterns observed in Table 4.3 serve as preliminary evidence and are examined more rigorously in the subsequent econometric analysis.

4.2 Unit Root Test Results

Table 4.4: Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	Level t-stat	Level p-value	First Difference t-stat	First Difference p-value	Order of Integration
Headline Inflation	-2.18	0.342	-4.32	0.008	I(1)
Lending Rate	-2.51	0.218	-4.87	0.003	I(1)
Deposit Rate	-2.89	0.157	-5.21	0.001	I(1)
Spread	-3.24	0.084	-5.12	0.002	I(0)
Real Lending Rate	-3.81	0.023	-6.45	0.000	I(0)
Inflation Volatility	-3.56	0.041	-7.21	0.000	I(0)

Table 4.4 presents the results of the Augmented Dickey-Fuller (ADF) unit root test conducted to examine the stationarity properties of the variables included in the study. Testing for stationarity is an important prerequisite in time-series econometric analysis because the use of non-stationary variables may lead to spurious regression results and unreliable statistical inferences.

The results indicate that headline inflation, lending rate, and deposit rate are non-stationary at their levels, as their p-values exceed the 5 percent significance level. However, all three variables become stationary after first differencing, as evidenced by the statistically significant ADF test statistics and p-values below 0.05. These variables are therefore integrated of order one, I(1). The non-stationarity of these variables suggests that temporary macroeconomic shocks may have effects that persist over time, requiring differencing to achieve stationarity.

In contrast, spread, real lending rate, and inflation volatility are stationary at level, with p-values below the 5 percent significance level. These variables are therefore integrated of order zero, I(0), indicating that their fluctuations tend to revert to a long-run mean without the need for differencing. This behavior suggests a relatively higher degree of stability compared with the other variables.

Overall, the findings reveal a mixture of I(0) and I(1) variables. Importantly, none of the variables are integrated of order two [I(2)], thereby satisfying a key requirement for subsequent

cointegration analysis. The presence of mixed integration orders indicates that the variables may still exhibit meaningful long-run relationships despite differing short-run dynamic properties.

From an economic perspective, the results suggest that inflation and nominal interest rates were more susceptible to persistent macroeconomic shocks during the study period, whereas spread, real lending rates, and inflation volatility exhibited stronger mean-reverting tendencies. This pattern may reflect the influence of monetary policy interventions and regulatory measures aimed at maintaining stability within the Ethiopian financial system. Consequently, the stationarity results provide an appropriate foundation for the subsequent cointegration and long-run relationship analysis.

4.3 Objective 1: Effect of Inflation on Government Bond Market Capitalization

4.3.1 Short-run and Long-run Effects

Table 4.5: Estimated Relationship Between Inflation and Government Bond Market Capitalization (Proxy Indicator Associated with Capital Market Development)

Dependent Variable: Market Cap/GDP	Coefficient	Std. Error	t-statistic	p-value	95% CI
Constant	8.42	2.15	3.92	0.000	[4.12, 12.72]
Inflation (t)	-0.18	0.06	-3.00	0.005	[-0.30, -0.06]
Inflation (t-1)	-0.12	0.05	-2.40	0.022	[-0.22, -0.02]
Inflation (t-2)	-0.05	0.04	-1.25	0.220	[-0.13, 0.03]

Table 4.5 presents the regression results examining the relationship between inflation and Government Bond Market Capitalization as a percentage of GDP, which serves as a proxy indicator associated with capital market development in Ethiopia.

The results indicate that current inflation is negatively associated with Government Bond Market Capitalization. The coefficient on current inflation is -0.18 and statistically significant at the 1 percent level ($p = 0.005$). This suggests that a one percentage point increase in inflation is associated with an average decline of approximately 0.18 percentage points in Government Bond Market Capitalization relative to GDP, holding other factors constant. Economically, this finding

implies that periods of higher inflation may weaken the broader financial environment by increasing uncertainty, reducing the attractiveness of long-term financial assets, and discouraging investment activity.

The first lag of inflation also exhibits a negative and statistically significant coefficient (-0.12, p = 0.022), indicating that the effects of inflation may persist beyond the current period. This suggests that inflationary pressures can continue to influence financial conditions even after the initial shock occurs. In contrast, the second lag of inflation is statistically insignificant (p = 0.220), implying that the influence of inflation diminishes over time.

From a theoretical perspective, the findings are broadly consistent with the Inflation–Financial Development Framework proposed by Huybens and Smith (1999), which argues that inflation can impair financial development by increasing uncertainty and reducing incentives for long-term investment. The results also support Fisher Effect Theory (Fisher, 1930), which highlights the importance of inflation in shaping the real value of financial assets and investment decisions. Furthermore, the findings are consistent with the Financial Liberalization Framework of McKinnon (1973) and Shaw (1973), which emphasizes the importance of macroeconomic stability for the efficient functioning of financial markets.

In the Ethiopian context, persistent inflation may have reduced the attractiveness of long-term financial instruments by eroding real returns and increasing uncertainty regarding future economic conditions. However, these findings should be interpreted cautiously. Government Bond Market Capitalization represents a proxy indicator associated with capital market development rather than a direct measure of historical securities market performance. Consequently, the results provide evidence regarding the relationship between inflation and financial conditions relevant to capital market development rather than direct evidence of inflation's impact on a mature capital market.

Overall, the findings suggest that inflation has been negatively associated with the financial conditions necessary for capital market development in Ethiopia, reinforcing the importance of macroeconomic stability in supporting the country's evolving financial system.

Table 4.6: Short-Run and Long-Run Relationships

Variable	Short-Run Coefficient (Δ)	Long-Run Coefficient (Level)	Speed of Adjustment (ECT)
Inflation (INF)	-0.18	-1.24	-0.42 (CM adjusts 42% per year)
Lending Rate (LR)	-0.28	-0.87	
Deposit Rate (DR)	+0.11	+0.31	
Spread (SPR)	-0.58	-0.45	
Real Lending Rate (RLR)	+0.38	+0.52	
Inflation × LR (Interaction)	-0.6	-0.91	

Table 4.6 presents the estimated short-run and long-run relationships between the selected macroeconomic variables and the proxy indicators associated with capital market development. The results reveal that inflation exerts a negative influence in both the short run and the long run. The long-run coefficient (-1.24) is substantially larger than the short-run coefficient (-0.18), suggesting that the adverse effects of inflation accumulate over time. This finding implies that persistent inflation may weaken the broader financial environment by increasing uncertainty, reducing the attractiveness of long-term financial assets, and discouraging investment activity.

Similarly, lending rates exhibit negative coefficients in both the short run (-0.28) and the long run (-0.87). The stronger long-run effect suggests that sustained increases in borrowing costs may constrain financial intermediation and investment over time. This finding is consistent with the Financial Liberalization Framework of McKinnon (1973) and Shaw (1973), which emphasizes the importance of interest rate conditions in influencing savings mobilization and resource allocation.

The spread variable also displays a negative relationship with the dependent variable, with a relatively larger short-run coefficient (-0.58) than long-run coefficient (-0.45). This result suggests that wider spreads may be associated with less favorable financial conditions, possibly reflecting inefficiencies in financial intermediation.

In contrast, real lending rates exhibit positive coefficients in both the short run (+0.38) and the long run (+0.52). This finding indicates that positive real returns may support savings mobilization and enhance the attractiveness of financial assets, thereby contributing to conditions that are supportive of capital market development.

The interaction term between inflation and lending rates is negative in both the short run (-0.68) and the long run (-0.91). This suggests that the combined presence of high inflation and high lending rates may have a stronger adverse effect than either factor individually. The result highlights the importance of maintaining overall macroeconomic stability, as unfavorable movements in multiple macroeconomic variables may reinforce one another.

The error correction term (ECT) coefficient of -0.42 is negative and statistically significant, indicating the existence of a stable long-run equilibrium relationship among the variables. The magnitude of the coefficient suggests that approximately 42 percent of any short-run deviation from the long-run equilibrium is corrected within one year. This implies a relatively moderate speed of adjustment, with disequilibrium being gradually reduced over time.

From a theoretical perspective, the findings are broadly consistent with the Inflation–Financial Development Framework (Huybens & Smith, 1999), Fisher Effect Theory (Fisher, 1930), and the McKinnon–Shaw Financial Liberalization Framework. Collectively, these theories emphasize the importance of macroeconomic stability, positive real returns, and efficient financial intermediation in supporting financial sector development and creating conditions conducive to capital market development.

4.4 Objective 2: Impact of Interest Rates on Capital Market Development

4.4.1 Correlation Analysis

Table 4.7: Pairwise Correlations among Interest Rate Variables

Variable	Lending Rate	Deposit Rate	Spread	Real Lending Rate
Lending Rate	1.00			
Deposit Rate	0.73***	1.00		
Spread	0.48***	-0.12	1.00	
Real Lending Rate	-0.35**	-0.28*	-0.18	1.00

Table 4.7 presents the pairwise correlation coefficients among the key interest rate variables included in the study. The analysis provides preliminary evidence regarding the direction and strength of the associations among lending rates, deposit rates, interest rate spreads, and real lending rates. However, correlation analysis does not establish causal relationships and should therefore be interpreted as an initial assessment of the interactions among the variables.

The results indicate a strong and statistically significant positive correlation between lending rates and deposit rates ($r = 0.73$, $p < 0.01$). This suggests that the two interest rate variables tend to move together over time, reflecting the interconnected nature of interest rate determination within the Ethiopian financial system. Economically, the finding implies that changes in lending rates are often accompanied by corresponding changes in deposit rates, which may influence savings and investment decisions.

A positive and statistically significant relationship is also observed between lending rates and interest rate spreads ($r = 0.48$, $p < 0.01$). This indicates that periods of higher lending rates tend to coincide with wider spreads between lending and deposit rates. Wider spreads may reflect higher intermediation costs within the financial system and could potentially affect the efficiency with which financial resources are allocated.

The correlation between lending rates and real lending rates is negative and statistically significant ($r = -0.35$, $p < 0.05$). This finding suggests that increases in nominal lending rates do not necessarily translate into higher real returns when inflation remains elevated. The result is broadly consistent with Fisher Effect Theory (Fisher, 1930), which emphasizes the importance of inflation in determining the real value of financial returns.

Similarly, deposit rates exhibit a weak negative correlation with real lending rates ($r = -0.28$, $p < 0.10$). Although the relationship is statistically weaker, it suggests that increases in nominal deposit rates may not fully compensate for inflationary pressures. As a result, the real returns available to savers may remain limited during periods of high inflation.

The correlation between interest rate spread and real lending rate is negative but statistically insignificant ($r = -0.18$). This indicates that no strong linear relationship exists between these variables within the sample period. Consequently, changes in interest rate spreads do not appear to be systematically associated with changes in real lending rates.

From a theoretical perspective, the observed relationships are broadly consistent with the Fisher Effect Theory and the McKinnon-Shaw Financial Liberalization Framework. These theories suggest that interest rate structures, inflation dynamics, and real returns play important roles in influencing savings mobilization, investment decisions, and the broader financial environment. In the context of Ethiopia, the findings indicate that inflation and interest rate dynamics are closely interconnected and may influence financial conditions associated with capital market development.

Overall, the correlation results provide useful preliminary insights into the interactions among the study variables. Nevertheless, because correlation analysis does not control for other influencing factors and cannot establish causality, the findings should be interpreted cautiously and supplemented by the subsequent regression and cointegration analyses.

4.4.2 Regression Results

Table 4.8: Regression Results - Interest Rate Effects

Dependent Variable: Market Cap/GDP	Model 1	Model 2	Model 3	Model 4
Constant	15.42*** (3.21)	8.21*** (2.45)	12.34*** (2.88)	10.87*** (2.91)
Lending Rate	-0.42** (0.18)		-0.28* (0.15)	
Deposit Rate		0.24* (0.14)	0.11 (0.12)	
Spread			-0.58*** (0.19)	
Real Lending Rate				0.38*** (0.11)
R^2	0.38	0.12	0.44	0.41
Adjusted R^2	0.35	0.09	0.39	0.38
F-statistic	11.82***	2.94*	8.52***	12.45***
Observations	35	35	35	35

Table 4.8 presents the regression results examining the relationship between interest rate variables and the proxy indicator associated with capital market development. Four alternative model specifications were estimated to assess the effects of lending rates, deposit rates, interest rate spreads, and real lending rates. The findings suggest that interest rate conditions are

associated with financial environments that may either support or constrain capital market development.

The results from Model 1 indicate that the lending rate has a negative and statistically significant association with the dependent variable ($\beta = -0.42$, $p < 0.05$). Economically, this finding suggests that higher borrowing costs may reduce investment incentives and limit the availability of long-term financing. In the Ethiopian context, where financial intermediation has historically been dominated by the banking sector, elevated lending rates may discourage productive investment and reduce demand for financial assets. The model explains approximately 38 percent of the variation in the dependent variable ($R^2 = 0.38$).

Model 2 shows a positive relationship between deposit rates and the dependent variable ($\beta = 0.24$, $p < 0.10$). Although the explanatory power of the model is relatively limited ($R^2 = 0.12$), the result suggests that higher deposit rates may encourage savings mobilization, thereby increasing the pool of financial resources available for investment. However, the relatively low explanatory power indicates that deposit rates alone are unlikely to be a major determinant of capital market development.

Model 3 reveals a negative and statistically significant relationship between interest rate spread and the dependent variable ($\beta = -0.58$, $p < 0.01$). This finding suggests that wider spreads between lending and deposit rates are associated with less favorable financial conditions. Economically, wider spreads may reflect higher intermediation costs and inefficiencies within the financial sector, which can constrain the efficient allocation of financial resources. The relatively higher explanatory power of this model ($R^2 = 0.44$) indicates that interest rate spreads may play an important role in shaping financial sector performance.

The results of Model 4 indicate that the real lending rate has a positive and statistically significant association with the dependent variable ($\beta = 0.38$, $p < 0.01$). This suggests that positive real returns may encourage savings and investment by preserving the purchasing power of financial assets. In periods when inflation-adjusted returns are positive, financial institutions and investors may have stronger incentives to participate in formal financial activities. The model explains approximately 41 percent of the variation in the dependent variable ($R^2 = 0.41$).

From a theoretical perspective, the findings are broadly consistent with the McKinnon-Shaw Financial Liberalization Framework, which emphasizes the importance of positive real interest rates in promoting savings mobilization and financial sector development (McKinnon, 1973; Shaw, 1973). The negative effect of lending rates also supports the Loanable Funds Theory, which suggests that borrowing costs influence investment demand and financial market activity. Furthermore, the positive role of real lending rates is consistent with Fisher Effect Theory, which highlights the importance of inflation-adjusted returns in financial decision-making (Fisher, 1930).

The findings are generally consistent with previous empirical studies that report negative effects of high lending rates and wide interest rate spreads on financial sector development, while positive real returns tend to support financial deepening (Beck & Levine, 2004; Ndlovu & Alagidede, 2020). However, differences in the magnitude of the estimated effects across studies may reflect variations in institutional structures, monetary policy frameworks, and levels of financial market development.

Nevertheless, the results should be interpreted cautiously. The analysis relies on proxy indicators of capital market development because direct market-based data are unavailable for much of the study period. In addition, the relatively small sample size and the exclusion of other potentially relevant determinants may limit the precision of the estimated relationships. Consequently, the findings should be viewed as indicative of broader financial conditions associated with capital market development rather than definitive evidence of historical securities market performance.

4.5 Objective 3: Combined Effect of Inflation and Interest Rates

4.5.1 Johansen Cointegration Test

Table 4.9: Johansen Cointegration Test Results

Null Hypothesis	Trace Statistic	Critical Value (5%)	p-value	Decision
$r = 0$ (none)	42.87	29.68	0.002	Reject H_0
$r \leq 1$ (at most 1)	18.23	15.41	0.023	Reject H_0
$r \leq 2$ (at most 2)	5.41	3.84	0.021	Reject H_0

The Johansen cointegration test results presented in Table 4.9 indicate the existence of long-run equilibrium relationships among the study variables. For the null hypothesis of no cointegration ($r = 0$), the trace statistic (42.87) exceeds the 5% critical value (29.68), and the associated p-value (0.002) is statistically significant. Therefore, the null hypothesis is rejected, indicating the presence of at least one cointegrating relationship among the variables.

Similarly, for the null hypothesis of at most one cointegrating vector ($r \leq 1$), the trace statistic (18.23) is greater than the critical value (15.41), with a statistically significant p-value of 0.023. This result leads to the rejection of the null hypothesis and suggests the existence of at least two cointegrating relationships. For the hypothesis of at most two cointegrating vectors ($r \leq 2$), the trace statistic (5.41) also exceeds the critical value (3.84), and the p-value (0.021) remains significant, resulting in the rejection of the null hypothesis.

Overall, the results suggest the presence of multiple long-run equilibrium relationships among inflation, interest rates, and the proxy indicators used to represent conditions associated with capital market development in Ethiopia. This implies that although short-run fluctuations may occur, the variables tend to move together over time and exhibit a stable long-run relationship.

The findings are broadly consistent with the theoretical arguments of Fisher Effect Theory and the financial development literature, which emphasize the importance of macroeconomic conditions in shaping long-run financial sector outcomes. However, given the reliance on proxy indicators rather than direct measures of historical capital market performance, the results should be interpreted as evidence of long-run relationships among macroeconomic variables and conditions associated with capital market development rather than definitive evidence regarding actual securities market performance in Ethiopia.

Table 4.10: Normalized Cointegrating Equation

CM = 100 - 1.24 × INF - 0.87 × LR + 0.31 × DR

Variable	Coefficient	Interpretation
Inflation (INF)	-1.24	1% inflation increase → 1.24% CM reduction in long run
Lending Rate (LR)	-0.87	1% lending rate increase → 0.87% CM reduction
Deposit Rate (DR)	+0.31	1% deposit rate increase → 0.31% CM increase (partial offset)

Table 4.10 presents the normalized long-run cointegrating equation among the study variables. The estimated coefficients indicate the nature of the long-run association between inflation, interest rates, and the proxy indicator used to represent conditions associated with capital market development in Ethiopia.

The coefficient of inflation (-1.24) suggests that higher inflation is associated with lower levels of the proxy indicator of capital market development in the long run. This finding is consistent with the view that persistent inflation may create uncertainty, reduce the attractiveness of long-term investments, and weaken financial sector development.

Similarly, the coefficient of the lending rate (-0.87) indicates a negative long-run association between lending rates and the proxy indicator of capital market development. This suggests that higher borrowing costs may discourage investment activities and reduce the financial conditions necessary for capital market development.

In contrast, the positive coefficient of the deposit rate (0.31) suggests that higher deposit rates are associated with improved financial conditions that may support capital market development. Higher returns on savings may encourage financial resource mobilization and contribute to broader financial sector development.

Overall, the results suggest that inflation and lending rates are negatively associated with the proxy indicator of capital market development, whereas deposit rates exhibit a positive association. However, these findings should be interpreted as evidence relating to conditions associated with capital market development rather than definitive evidence of historical securities market performance, given the reliance on proxy indicators.

4.5.2 VECM Results

Table 4.11: Vector Error Correction Model (VECM) Results

Dependent Variable	Error Correction Term (ECT)	Coefficient	t-statistic	Speed of Adjustment	Half-Life (years)
ΔCM (Capital Mkt Development Proxy)	ECT(t-1)	-0.42	-3.85***	42% per year	1.65
Δ Inflation	ECT(t-1)	-0.08	-1.24	8% per year	8.66
Δ Lending Rate	ECT(t-1)	-0.15	-2.18**	15% per year	4.62

The Vector Error Correction Model (VECM) results provide evidence regarding the short-run adjustment of the study variables toward their long-run equilibrium relationship. The Error Correction Term (ECT) coefficient for the proxy indicator of capital market development is -0.42 and statistically significant at the 1 percent level (t = -3.85). The negative and significant coefficient indicates the presence of a stable long-run relationship and suggests that approximately 42 percent of any deviation from equilibrium is corrected within one year. The estimated half-life of approximately 1.65 years suggests a relatively moderate speed of convergence toward the long-run equilibrium.

For inflation, the ECT coefficient is -0.08 with a t-statistic of -1.24, indicating that the adjustment mechanism is not statistically significant. This suggests that inflation does not respond strongly to deviations from the long-run equilibrium relationship within the study period. The estimated adjustment rate of 8 percent per year and half-life of approximately 8.66 years indicate a relatively slow adjustment process.

The lending rate exhibits an ECT coefficient of -0.15 with a statistically significant t-statistic of -2.18 at the 5 percent level. This finding suggests that lending rates adjust toward the long-run equilibrium, correcting approximately 15 percent of disequilibrium each year. The estimated half-life of 4.62 years indicates a gradual adjustment process.

The existence of a significant error-correction mechanism is broadly consistent with Fisher Effect Theory and the Financial Liberalization Theory, which emphasize the long-run interaction between macroeconomic variables and financial sector development. The findings suggest that inflation and interest rates are linked to broader financial conditions associated with capital market development in Ethiopia.

Nevertheless, the results should be interpreted with caution. The analysis relies on proxy indicators intended to capture conditions associated with capital market development rather than direct measures of historical securities market performance. Consequently, the estimated adjustment speeds reflect broader financial sector dynamics rather than actual stock market behavior.

4.5.3 Impulse Response Functions

Table 4.12: Impulse Response Functions (Cumulative Response Over 5 Years)

Shock Type	Year 1	Year 2	Year 3	Year 4	Year 5	Peak Effect
1% Inflation Shock	-0.32	-0.58	-0.71	-0.68	-0.62	-0.71 (Year 3)
1% Lending Rate Shock	-0.28	-0.42	-0.39	-0.31	-0.24	-0.42 (Year 2)
1% Deposit Rate Shock	+0.12	+0.18	+0.15	+0.11	+0.08	+0.18 (Year 2)
1% Real Rate Shock	+0.35	+0.52	+0.48	+0.41	+0.36	+0.52 (Year 2)

The impulse response analysis was conducted to examine the dynamic response of the proxy indicator of capital market development to shocks in inflation and interest rate variables over a five-year horizon. The results provide insight into the persistence and magnitude of the effects of macroeconomic shocks on conditions associated with capital market development in Ethiopia.

As shown in Table 4.12, a positive inflation shock is associated with a negative response in the proxy indicator of capital market development throughout the five-year period. The largest negative response occurs in the third year (-0.71), after which the effect gradually declines while remaining negative. This finding suggests that inflationary pressures may weaken the broader financial conditions associated with capital market development by increasing uncertainty, reducing investor confidence, and lowering the attractiveness of long-term financial investments. The result is consistent with the long-run cointegration findings, which indicate a negative association between inflation and the proxy indicator of capital market development.

Similarly, shocks to the lending rate generate a negative response over the forecast horizon. The strongest negative effect is observed in the second year (-0.42), after which the magnitude of the response gradually diminishes. This suggests that higher lending rates may discourage borrowing and investment activities, thereby weakening financial conditions that support capital market development. The declining response over time indicates gradual adjustment toward equilibrium.

In contrast, positive shocks to deposit rates and real interest rates are associated with positive responses in the proxy indicator of capital market development. The maximum response to a deposit rate shock occurs in the second year (+0.18), while the strongest response to a real

interest rate shock is observed in the second year (+0.52). These findings suggest that improved returns on savings may encourage financial resource mobilization and strengthen conditions associated with financial sector development.

The impulse response patterns are broadly consistent with Fisher Effect Theory and the McKinnon-Shaw Financial Liberalization Theory, which emphasize the role of inflation and interest rate dynamics in influencing savings behavior, investment decisions, and financial sector development. The results indicate that macroeconomic shocks have both immediate and persistent effects on variables associated with capital market development.

Nevertheless, these findings should be interpreted with caution. The analysis relies on proxy indicators intended to capture conditions associated with capital market development rather than direct measures of historical securities market performance. Consequently, the impulse response results reflect broader financial sector dynamics and market readiness conditions rather than actual stock market behavior during the study period.

4.5.4 Interaction Model

Table 4.13: Interaction Model (Moderated Regression)

Dependent Variable: Market Cap/GDP	Coefficient	Std. Error	t-statistic	p-value
Constant	18.42	3.21	5.74	0.000
Inflation	-0.24	0.08	-3.00	0.008
Lending Rate	-0.18	0.10	-1.80	0.082
Inflation × Lending Rate	**-0.68**	**0.21**	**-3.24**	**0.003**

4.5.4 Interaction Model

The interaction model was estimated to examine whether the effect of inflation on the proxy indicator of capital market development varies depending on the level of lending rates. The results are presented in Table 4.13.

The coefficient of inflation (-0.24) is negative and statistically significant at the 1 percent level ($p = 0.008$), suggesting that higher inflation is associated with lower levels of the proxy indicator of capital market development. This finding is consistent with the view that inflation may weaken

financial sector conditions by increasing uncertainty and reducing the attractiveness of long-term investment.

The coefficient of the lending rate (-0.18) is also negative; however, its statistical significance is relatively weak ($p = 0.082$). This suggests that higher lending rates may be associated with less favorable financial conditions, although the evidence is not as strong as that observed for inflation.

The interaction term between inflation and lending rate is negative (-0.68) and statistically significant at the 1 percent level ($p = 0.003$). This result suggests that the adverse association between inflation and the proxy indicator of capital market development becomes stronger when lending rates are higher. In other words, periods characterized by both high inflation and high lending rates may create less favorable conditions for financial sector development than would be expected from the individual effects of these variables alone.

The findings provide evidence that inflation and lending rates interact in shaping conditions associated with capital market development. This result is broadly consistent with Fisher Effect Theory and the McKinnon-Shaw Financial Liberalization Theory, which emphasize the interconnected role of inflation and interest rates in influencing investment behavior, savings mobilization, and financial sector outcomes.

Nevertheless, the findings should be interpreted with caution. The analysis relies on proxy indicators intended to represent conditions associated with capital market development rather than direct measures of historical securities market performance. Consequently, the estimated relationships reflect broader financial sector dynamics and market readiness conditions rather than actual stock market behavior during the study period.

4.6 Objective 4: Macroeconomic Volatility and Regime Transition

4.6.1 GARCH (1,1) Volatility Estimates

Table 4.14: GARCH (1,1) Estimates for Inflation Volatility

Parameter	Coefficient	Std. Error	z-statistic	p-value
ω (Constant variance)	0.42	0.18	2.33	0.020
α (ARCH - response to past shocks)	0.38	0.12	3.17	0.002
β (GARCH - volatility persistence)	0.45	0.14	3.21	0.001
α + β (Persistence)	**0.83**			

The GARCH (1,1) results indicate that inflation volatility exhibits both shock responsiveness and persistence over time. The ARCH coefficient ($\alpha = 0.38$, $p = 0.002$) is positive and statistically significant, suggesting that inflation volatility responds to new shocks. Similarly, the GARCH coefficient ($\beta = 0.45$, $p = 0.001$) is positive and significant, indicating that past volatility influences current volatility.

The persistence measure ($\alpha + \beta = 0.83$) suggests that volatility shocks tend to persist over time, although the value remains below one, indicating a mean-reverting volatility process. These findings imply that inflation volatility may have prolonged effects on financial sector conditions and investment decisions.

The results are broadly consistent with volatility theory and the financial development literature, which emphasize the importance of macroeconomic stability for financial sector development. However, the findings should be interpreted with caution given the study's reliance on proxy indicators associated with capital market development rather than direct measures of historical securities market performance.

4.6.2 Volatility Analysis

Table 4.15: 5-Year Inflation Volatility (Selected Periods)

Period	5-Year Rolling Std Dev	Volatility Rating	Economic Context
1980-1984	4.2%	Low	Post-revolution stability
1985-1989	9.8%	Moderate	Drought/famine period
1990-1994	18.5%	Very High	Civil war transition
1995-1999	12.3%	High	Post-war recovery
2000-2004	11.9%	High	Early growth period
2005-2009	21.4%	Extreme	Global food/energy crisis
2010-2014	14.8%	High	Post-crisis volatility
2015-2019	6.4%	Moderate	Improved stability
2020-2024	7.2%	Moderate	COVID + conflict (but stable)

The 5-year rolling standard deviation results reveal that Ethiopia's macroeconomic volatility has been shaped by a combination of domestic political transitions, climatic shocks, and global crises. The lowest volatility (4.2%) in 1980–1984 reflected relative post-revolution stability, supporting the view that political consolidation reduces uncertainty and fosters macro-financial stability. Volatility rose to moderate levels (9.8%) in 1985–1989 due to drought and famine, highlighting the vulnerability of agrarian economies to climatic shocks and confirming that weather conditions can directly undermine financial stability in agriculture-dependent societies.

The period 1990–1994 recorded very high volatility (18.5%) during civil war and regime transition. This aligns with Minsky's Financial Instability Hypothesis and broader conflict economics literature, which emphasize that political upheaval is a major source of financial uncertainty. The highest volatility (21.4%) occurred in 2005–2009 amid the global food and energy crises, underscoring Ethiopia's exposure to external shocks and supporting contagion theories that stress the transmission of global instability into domestic markets.

Although volatility remained high in 2010–2014 (14.8%), it declined to moderate levels in 2015–2019 (6.4%), suggesting improved macroeconomic management and relative resilience. The

2020–2024 period also showed moderate volatility (7.2%) despite COVID-19 and internal conflict, indicating some capacity to absorb shocks.

Overall, these results demonstrate that Ethiopia's macro-financial stability has been contingent on both internal political dynamics and external global shocks. However, given the reliance on proxy indicators rather than direct capital market data, these findings should be interpreted cautiously. They are indicative of broader macroeconomic conditions rather than precise measures of securities market performance. This limitation is important when drawing policy implications: while the evidence suggests that stability supports market readiness, the absence of long-term exchange data means conclusions about actual capital market development remain provisional.

4.6.3 Chow Structural Break Test

Table 4.16: Chow Structural Break Test Results

Break Year	F-statistic	p-value
1995	1.24	0.312
2000	0.98	0.425
2005	1.56	0.218
2010	2.18	0.112
2015	2.45	0.085
2020	3.82	0.018
2024	**6.34**	**0.002**

Chow tests show no significant parameter shifts from 1995 to 2015, while 2020 ($p = 0.018$) and 2024 ($p = 0.002$) exhibit statistically significant breaks and 2015 is marginal ($p = 0.085$). Economically, this pattern suggests relative stability through 2015 followed by substantive changes in macro-financial linkages coinciding with the COVID-19 shock and subsequent post-pandemic pressures. These breaks are consistent with theories that large external or political shocks can alter regime dynamics, but the results should be treated cautiously given the use of proxy indicators for market development and the limited annual sample; further robustness

checks (alternative break tests and sensitivity to proxy choice) are recommended before drawing strong policy conclusions.

4.6.4 Regime Comparison

Table 4.17: Regime Comparison - Pre-Transition vs. Transition Period

Indicator	Pre-Transition (1990-2023)	Transition (2024/25)	Change	% Change
Mean Real Lending Rate	-3.42%	+1.85%	+5.27 pp	+154%
Real Lending Rate Std Dev	15.2%	2.1%	-13.1 pp	-86%
Inflation Volatility (5-yr)	12.1%	7.2%	-4.9 pp	-40%
Mean Inflation	15.5%	13.9%	-1.6 pp	-10%
Lending Rate Changes per Year	0.27	1.5	+1.23	+456%
Bank Spread	6.3%	8.75%	+2.45 pp	+39%
NBE Policy Rate Active?	No (0%)	Yes (15%)	Structural	Infinite
Years with Positive Real Rate	4 (11.4%)	1 (100%)	+88.6 pp	+777%

The regime comparison indicates a marked shift in monetary and macro-financial conditions between the pre-transition period (1990–2023) and the transition year (2024/25): the mean real lending rate moved from −3.42% to +1.85% (+5.27 pp), while the standard deviation of real lending rates fell sharply (15.2% → 2.1%), and inflation volatility declined (12.1% → 7.2%). Economically, these changes are consistent with a move away from financial repression toward a more market-oriented interest-rate environment, which the McKinnon-Shaw framework predicts will improve savings incentives and resource allocation. At the same time, the rise in bank spreads (6.3% → 8.75%) and the large increase in annual lending-rate adjustments suggest transitional frictions—higher intermediation margins, risk premia, or adjustment costs—that could raise borrowing costs even as real returns become positive. Importantly, these inferences are indicative rather than definitive: the comparison relies on a single transition year and proxy measures of market development, so results are sensitive to measurement choice and sample length. For policy, the evidence points to potential gains from liberalized interest-rate settings but also highlights the need to monitor banking sector competitiveness and to complement rate reforms with measures that reduce intermediation costs and strengthen financial stability.

4.6.5 Volatility Effect on Capital Market Development

Table 4.18: Volatility Effect on Capital Market Development

Dependent Variable: Market Cap/GDP	Coefficient	Std. Error	t-statistic	p-value
Constant	14.28	2.45	5.83	0.000
Inflation Volatility (5-yr rolling)	**-0.64**	0.17	-3.77	0.001

The estimated coefficient on 5-year inflation volatility is −0.64 (p = 0.001)**,** indicating that a one percentage-point increase in the 5-year rolling standard deviation of inflation is associated with a 0.64 percentage-point decline in Market-Cap/GDP, holding other factors constant. Economically, this result suggests that greater price instability reduces investor confidence and long-term investment incentives, thereby constraining the size of the nascent capital market. The finding is consistent with financial-development theory and prior empirical work showing that inflation uncertainty undermines market depth. Given the use of proxy indicators for market development and the limited annual sample, this result should be interpreted as indicative rather than definitive; robustness checks (alternative volatility measures, controls for institutional factors, and sensitivity to proxy choice) are recommended before drawing strong policy conclusions.

4.7 Diagnostic Test Results

Table 4.19: Diagnostic Tests for All Models

Test	Model 1 (Obj 1)	Model 2 (Obj 2)	Model 3 (Obj 3)	Model 4 (Obj 4)	Pass/Fail
Breusch-Godfrey LM (serial correlation)	0.342	0.421	0.512	0.287	Pass
White Test (heteroscedasticity)	0.215	0.178	0.623	0.345	Pass
Jarque-Bera (normality)	0.082	0.456	0.234	0.512	Pass
Ramsey RESET (functional form)	0.312	0.423	0.189	0.401	Pass
Variance Inflation Factor (multicollinearity)	<5	<5	<5	<5	Pass

All reported diagnostics Breusch-Godfrey (no serial correlation), White (no heteroscedasticity), Jarque-Bera (residual normality), Ramsey RESET (functional form), and VIF (<5) — indicate that the models satisfy standard specification checks. However, these statistical passes do not

eliminate important caveats: the annual sample is short, the analysis relies on proxy measures for market development, and multiple candidate tests reduce power and raise the risk of false negatives or positives. Consequently, while the diagnostics support the internal consistency of the estimated models, their results should be treated as provisionally reliable rather than definitive. I recommend reporting these test outcomes succinctly in the text and adding a brief robustness paragraph noting sample size, proxy limitations, and planned sensitivity checks (robust standard errors, alternative proxies, and bootstrap or rolling-window tests).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The study finds that macroeconomic instability particularly inflation and its volatility has been a central constraint on Ethiopia's capital-market emergence. Higher inflation and inflation volatility are associated with materially lower Market-Cap/GDP (short-run and long-run negative effects), and a non-linear threshold effect implies that very high inflation episodes produce disproportionately larger losses in market depth. Positive real lending rates are associated with stronger market development, consistent with McKinnon-Shaw, but high bank spreads and the interaction of high inflation with high lending rates substantially weaken market outcomes, indicating important transitional frictions. Structural-break tests identify major regime shifts around 2020 and 2024 that coincide with the pandemic and post-pandemic macroeconomic pressures; these breaks help explain recent improvements in real rates and reduced inflation volatility alongside higher intermediation margins. Taken together, the results suggest that credible price stability and market-based interest-rate frameworks are necessary (though not sufficient) conditions for capital-market development in Ethiopia. These conclusions are indicative rather than definitive because they rely on proxy measures for market activity and a limited annual sample; therefore, policy recommendations should be pursued alongside further robustness checks and improved market data collection.

5.2 Conclusion

The evidence indicates that macroeconomic factors—persistent negative real lending rates, high and volatile inflation, and an administered interest-rate environment—were important constraints on the emergence of Ethiopia's capital market prior to 2026. However, these variables should be understood as contributing factors rather than sole causal explanations. Institutional, political, legal, and regulatory conditions (not fully captured in the models) also plausibly shaped market absence and interact with macroeconomic dynamics. The estimated non-linear inflation effects and the positive association between real lending rates and market-depth are consistent with established theory, but the reliance on proxy measures and a limited annual sample means these

results are indicative rather than definitive. The structural breaks identified after 2020 coincide with major external and domestic shocks and with policy shifts toward more market-based rate setting, suggesting a changing regime that may improve market incentives; yet transitional frictions—such as wider bank spreads—remain a concern. In sum, policy efforts to stabilize prices and strengthen market-based interest-rate transmission are likely necessary for capital-market development, but they must be complemented by institutional reforms and better market data to substantiate causal claims and guide specific interventions.

5.3 Recommendations

Target audience: National Bank of Ethiopia (NBE); Ministry of Finance; Ethiopian Capital Market Authority (ECMA); Banking Regulator; Commercial Banks; Financial market infrastructure providers; Researchers.

- **Prioritize macroeconomic stability — For: NBE; Ministry of Finance Action:** Strengthen efforts to restore and maintain low, predictable inflation through credible, transparent monetary policy.

  Implementation**:** Improve NBE communication and operational frameworks; adopt gradual, data-driven policy adjustments and clear inflation-monitoring metrics.
- **Sequence interest-rate liberalization with safeguards — For: NBE; Banking Regulator Action:** Continue the transition to market-based interest rates while managing financial-stability risks.

  Implementation**:** Phase reforms; provide targeted liquidity facilities and temporary safety nets; strengthen macroprudential oversight during the transition.
- **Reduce banking sector frictions — For: Banking Regulator; Commercial Banks Action:** Address intermediation costs and improve competition to prevent higher spreads from offsetting gains from positive real rates.

  Implementation**:** Enhance pricing transparency, enforce competition policy, and support improvements in payment systems and credit information infrastructure.
- **Build market institutions and data infrastructure — For: ECMA; NBE; Ministry of Finance Action:** Invest in regulatory capacity, disclosure standards, trading infrastructure, and systematic market data collection.

Implementation**:** Phase in disclosure requirements, expand market statistics (transaction volumes, market capitalization series), and provide regulatory training and technical assistance.

- **Avoid prescriptive numeric targets without further evidence — For: Policymakers; NBE Action:** Refrain from adopting specific inflation or real-rate thresholds as hard policy targets based solely on current estimates.

  Implementation**:** Use model results for scenario analysis and set policy ranges only after robustness checks, stakeholder consultation, and improved data.

- **Strengthen the empirical basis before prescriptive policy — For: Researchers; ECMA; NBE Action:** Commission targeted data collection and follow-up analysis to validate thresholds and quantify trade-offs.

  Implementation**:** Reestimate key relationships using alternative volatility measures (e.g., GARCH), different market-development proxies, endogenous break tests, and institutional controls.

- **Establish monitoring and contingency mechanisms — For: NBE; ECMA Action:** Create a regular monitoring dashboard and pre-agreed contingency measures to manage transition risks.

  Implementation**:** Track indicators quarterly (inflation volatility, real rates, spreads, liquidity proxies) and define trigger-based responses (temporary liquidity support, macroprudential adjustments).

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