SECURITIES MARKET DEVELOPMENT, BANK INDUSTRY PERFORMANCE, GOVERNMENT REGULATIONS AND ECONOMIC GROWTH IN THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA MEMBER STATES

ALLAN EKWENY OMACHAR

A RESEARCH THESIS SUBMITTED IN FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DOCTOR OF PHILOSOPHY (PhD) IN BUSINESS ADMINISTRATION, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI.

July 2022

DECLARATION

I declare that this research thesis is my original work and has not been presented to any other institution of learning for the award of an academic certificate.

Signed…….. Dated: 3rd July, 2022

OMACHAR ALLAN EKWENY
D80/50206/2016
UNIVERSITY OF NAIROBI

DECLARATION BY THE SUPERVISORS:

This final research thesis has been submitted to the university with our approval as university supervisors.

Signed…… Dated: 4th July, 2022

DR. ODHIAMBO OTIENO LUTHER
Department of Finance and Accounting
Faculty of Business and Management Sciences
UNIVERSITY OF NAIROBI.

Signed…… Dated: 4th July, 2022

DR. NIXON OMORO
Department of Finance and Accounting
Faculty of Business and Management Sciences
UNIVERSITY OF NAIROBI

Signed…… Dated July 5, 2022

DR. WINNIE IMINZA NYAMUTE
Department of Finance and Accounting
Faculty of Business and Management Sciences
UNIVERSITY OF NAIROBI

COPYRIGHT

DEDICATION

To my **LORD JESUS CHRIST** for bestowing upon me the inspiration and motivation to pursue knowledge.

To my family especially my parents, wife and children for their moral support, encouragement and drive in the pursuit of doctoral studies.

ACKNOWLEDGEMENTS

Firstly, I thank the almighty God for granting me the courage, capacity and capability to pursue doctoral studies. Through this gruelling academic journey, God renewed my strength and vigour in charging forward. Secondly, I wish to appreciate the moral support and encouragement my family accorded me in the pursuit of my doctoral studies.

My Special thanks go to my supervisors, Dr. Odhiambo Luther Otieno and Dr. Nixon Oluoch Omoro for their unwavering support, encouragement, inspiration, constructive critique, mentorship and professional advice throughout my PhD studies. Much appreciation goes to Dr. Winnie Nyamute for her immense contribution as one of my supervisors, right from the proposal to the final stage of this thesis. I also extend my sincere thanks to the doctoral coursework instructors and the discussants in the doctoral presentations, including Prof. Mbithi, Prof. Vincent Machuki, Dr. Joshua Wanjare Prof. P.O. K'Obonyo and Prof. M. Ogutu, for their insightful suggestions and comments in this study. I am also eternally indebted to my PhD classmates particularly Mr. Stephen Mbaya Kimwele and Muchere Nkirote Purity for their moral and academic support in the course of our coursework and the development of the proposal and thesis. My sincere gratitude also goes to everyone who has encouraged me in undertaking academic advancement up to the doctoral level.

I also wish to thank Mr. Samuel Owino, the Kisumu campus librarian and Ms Polly Rwigi of the Faculty of Business and Management Sciences for the support granted to me at every level of my studies.

TABLE OF CONTENT

LIST OF ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey-fuller
ANOVA	Analysis of Variance
ARDL	Autoregressive Distributed Lag
ASI	All Stock Share Index
ASEAN	Association of South-East Asian Nations
BP	Bank Performance
BIP	Bank Industry Performance
BIPI	Bank Industry Performance Index
BPT	Breusch-Pagan Test
BSD	Bank Sector Development
CPS	Credit to Private Sector
PITR	Public Interest Theory of Regulations
EG	Economic Growth
EMH	Efficient Market Hypothesis
EU-MED	Alliance of seven South European countries: Cyprus, France, Greece, Italy, Malta, Portugal and Spain
FDI	Foreign Direct Investment
FID	Financial Intermediary Development
FIT	Financial Intermediary Theory
FD	Financial Development
FS	Financial Systems
FSD	Financial Sector Development

GDP	Gross Domestic Product
GR	Government Policies
GNP	Gross National Product
HST	Hausman Specification Test
IL	Income Level
LPD	Linear Panel Data
LTA	Log of Total Assets
LM	Langrage Multiplier
LRM	Linear Regression Model
MENA	Middle East and North Africa
MC	Stock Market Capitalization
MES	Macroeconomic Stability
MI	Stock Market Index
MCT	Multicollinearity
NGT	Neoclassical Growth Theory
NDPs	National Development Plans
OLS	Ordinary Least Squares
PDRM	Panel Data Regression Models
PRSs	Poverty Reduction Strategies
PRA	Panel Regression Analysis
PRM	Panel Regression Model
PUR	Panel Unit Roots
RQM	Ratio of Quasi Money

SADC	Southern African Development Community
SE	Standard Error
STO	Stock Turnover Ratio
SEMC	South and Eastern Mediterranean Countries
SMD	Securities Market Development
SMDI	Securities Market Development Index
SYS-GMM	Generalized Method of Moment System Estimation
TVL	Stock Traded Value
SL	Stock Liquidity
VR	Variance of the Residual
WAEMU	West African Economic and Monetary Union
WTA	Woodridge Test for Autocorrelation

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

The Common Market for Eastern and Southern Africa was majorly founded to raise the living standards of citizens of member states by promoting joint development in economic activities to stimulate economic growth. The objective has remained elusive over the years. The infrastructure that promotes economic growth in the trading bloc needed to be understood and managed well. Many scholars have reasoned that securities market development facilitates efficient allocation of resources and investors' access to financial resources that stimulate economic growth. Bank Industry Performance and Government Regulations are important macroeconomic variables that were expected to be conduits that influenced the association between securities markets development and economic growth in terms of how financial resources were accumulated and allocated to various sectors of the economy within COMESA. The purpose of this paper was to investigate the effect of Bank Industry Performance and Government regulations on the relationship between securities market development and economic growth of COMESA member states. The study's design was a longitudinal descriptive design for the period between 2005 and 2020. The study utilized panel data from nine COMESA and an econometric model of four indicators: stock market capitalization, the stock traded value for securities market development, ease of doing business index (score) for government regulations; Credit to Private Sector, Interest earned and size of commercial banks for Bank industry Performance while real GDP growth rate measured economic growth, with fixed effects model and the Pooled Ordinary Least Squares as a discussion estimators. The study found that whereas government regulations positively influenced the association between securities market development and the economic growth of COMESA, Bank industry performance had an insignificant effect on the relationship between the two variables. The study concludes that security market development promotes economic growth and government regulations are strong macroeconomic factors that can be applied to directly determine the level of the relationship between securities market development and economic growth. The study contributes to knowledge by availing evidence about the effects of bank industry performance and government regulations on the link between securities market development and economic growth of COMESA member states where there has been limited empirical literature. The study recommends that COMESA member states should put in place strong and investor-friendly government regulations earmarked at making the securities markets efficient and more attractive to investors to promote economic growth in the trading bloc.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Economic growth (EG) has a critical part to play in people's livelihoods. Scholars have argued that economic growth reduces the poverty levels of households and uplifts their living standards (Olsson & Schuller, 2012). It was necessary to clearly understand some of the macroeconomic factors that promote economic growth. According to Smith (1976), a nation's wealth is determined by land, labour and accumulated capital. Schumpeter (1911), specifically singled out economic growth to be driven by a substantial amount of long-term capital, which can only be obtained from securities markets (SM) based on the presumption that substantial financial resources can be efficiently marshalled through the SM mechanisms. The reasoning of (Demigurc-Kunt & Levine, 1996; Levine & Zervos, 1998) is that securities markets development (SMD) promotes efficient allocation of resources and investors' access to financial resources that stimulates both national and foreign investments. They posit that an efficient securities market represents a vital atmosphere for SM evolution for sustainable EG that makes the national economy attractive to investors. It can therefore, be argued from the scholars' propositions that securities market development (SMD) helps in efficient capital accumulation and allocation to various uses that promote economic growth. If this is the case, then security market development (SMD) is expected to promote economic growth. Bank Industry Performance (BIP) and Government Regulations (GR) are important macroeconomic variables that are expected to influence the association between SMD and EG in terms of how financial resources are accumulated and allocated to the economic sectors. In the opinion of King and Levine, (1993a), the degree of intermediation provided by bank intermediaries in mobilizing savings and linking savers to borrowers at the most reasonable costs, predicts capital accumulation that enhances economic growth. If this argument is assumed to be valid, then the level of BIP is expected to

determine the degree to which information asymmetry is broken in the SM to encourage SMD and improve the efficiency with which economies accumulate and use capital to promote economic growth. Similarly, the role played by GR in removing unnecessary red tape in the SM assists in improving market efficiency that promotes capital accumulation (CA), which is presumed to trigger SMD and economic growth. Levine, Lin and Xie (2016), D'Costa, Garcilazo and Martins (2018) think that investor-friendly government regulations that provide a secure and conducive business environment to market participants encourage securities market development that accelerates economic growth. Theoretical arguments persist as to whether or not greater SM liquidity encourages a shift to more viable investments that promote EG. Some scholars observe that liquidity reduces the burden on shareholders of undertaking the expensive task of supervising and monitoring corporate managers (Shleifer & Vishny, 1986; Bhide, 1993; Cumming, Dannhauser & Johan, 2015). The implication could be that less strong corporate governance hinders market liquidity, efficient resource allocation and slows productivity and growth. Thus, theoretical discussion continues to attract divergent views over the effect of government regulations on the correlation between EG and the functioning of SM as well.

The anchoring theory of this study was the Neoclassical Growth Theory (NCGT) developed by Solow and Swan (1956), which postulates an econometric model of growth that demonstrates the way a steady EG occurs in the context of the forces of capital, labour and technology. The theorists claim that CA in any economy, and how investors utilize it, is critical in predicting the level of EG of nations (Solow & Swan, 1956). Other complementing theories were: The efficient Markets Hypothesis (EMH) by Fama (1965), which presumes that efficient markets encourage capital accumulation and SMD that is expected to promote EG; Financial Intermediation Theory (Gurley & Shaw, 1960), which propagates that services provided by

intermediaries promote efficiency and capital accumulation that is assumed to influence the relationship between the SMD and EG; the Public Interest Theory of Regulation by Pigou (1932) believes regulations exist to serve public interest especially when they are demanded by the public for rectifying inefficient tendencies. Thus, the nature of the relationship between SMD and EG can be viewed to be influenced by how good or bad the existing GR are in terms of promoting market efficiency and stability to augment savings and capital accumulation for investments.

The Common Market for Eastern and Southern Africa (COMESA) was majorly founded to raise the living standards of citizens of member states by promoting joint development in economic activities to stimulate EG. Over the years, member states have put concerted efforts to harmonize financial markets development, banking and regulations that offer a conducive environment for investments to stimulate EG. Despite the efforts, the EG of this trading bloc has remained low and on the declining trend (UNCTAD, 2022). The World Bank (2019) reports that the EG of COMESA member states has lost momentum, and financing conditions have been tightened, dampening financial markets, while government regulations remain intense, leading to financial impediments in the securities market. In this trading bloc, there is bank industry intermediation and GR that seem to be conduits that influence the relationship between SMD and EG. The infrastructure that promotes EG in the trading bloc needs to be understood and managed well. The movement of capital through the securities market to investors might add value or not, in which case it was important to investigate its impact on EG.

1.1.1 Securities Market Development

Securities market development (SMD) has been defined differently by different scholars. Avadhani (2011) defines SMD as the growth of the securities market (SM) in the financial

assets, while Naik and Padhi (2015) define SMD as an expansion of the entire market for securities, both primary and secondary, in terms of expanding into new segments, getting more firms to list and increasing the rate of usage of security markets in raising capital for businesses. On their part, Kemboi and Tarus (2012) define SMD as the growth of a platform where investors transact in buying and selling of securities. The scholars seem to agree that SMD means the growth of wider financial markets (FM), where securities can be traded among the investors of a particular economy on the balance of demand and supply.

Previous studies operationalized SMD using Stock Index (SI), Market Capitalization (MC), Securities Liquidity (SL), Stock Volatility (SV) and Stock Traded value (TVL) (Karim & Chaudhary, 2017; Rashid, Ouyang, Abeid & Pacific, 2016). This study operationalized securities market development based on market capitalization and stock traded value. (Rashid, Ouyang, Abeid & Pacific, 2016; Ananwude & Osakwe, 2017) successfully Measured SMD using stock traded value (STVL) and market capitalization respectively in similar studies.

From the above definitions, one can conclude that SMD influences EG in a country. The SM promotes EG through the services it provides like marshalling of savings from surpluses, liquidity creation, risk spreading and efficient information sharing. It is argued that improved efficiency and effectiveness of SM operations like seamless service delivery, can accelerate EG (Levine & Zervos, 1998; Okereke-Onyiuke, 2000; McKinnon, 1973; Obadan, 1995). Indeed, (Ruwaydah & Ushad, 2015; Adjasi & Biekpe, 2006) established that SMD promotes the growth of economies. Nonetheless, the influence of SMD on EG is subject to many other exogenous factors, among them the bank industry performance and government regulations. According to Schumpeter (1911), bank industry performance plays an important function in rendering services that promote investments, market efficiency and securities market development.

1.1.2 Bank Industry Performance

Posthuma (2013) defines Bank Industry Performance (BIP) as the ability of a bank to carry out its operations effectively and efficiently while generating a sufficient level of profits for the shareholders. Bikker and Bos (2008) explain BIP in terms of competition, concentration, efficiency, productivity and profitability. Buriak (2014) on the other hand, defines BIP as the ability of a bank to make profits for its stakeholders. It can be concluded that BIP is the ability of banks to viably make revenues using available assets while earning profits from the specified income.

The previous studies measured BIP based on return on total assets (ROTA), Credit to Private Sector (CPS), interest income (IE), Net Interest Margin (NIM), bank balances/deposits (BB) and customer growth (CG) (Munyoro, Chimbari & Chirimba, 2017; Guru & Yadav, 2019; Bill, Iftekhar & Ofori, 2015). This study operationalized BIP based on the Size of Commercial Banks, Interest Earned and Credit to the Private Sector (CPS). Guru and Yadav (2019) successfully applied the same measurement in their study on financial development (FD) and EG of Brazil, Russia, India, China and South Africa (BRICS which is similar to the current study. SMD and BIP being part of a financial system (FS) may require government regulations to provide an enabling investor environment for their proper functioning.

From the above definition, it can be deduced that BIP, through its unique ability to create liquidity needed for investment, mobilizes surpluses and makes the funds available to investors to positively influence SMD and EG. (Werner 2014; Schumpeter, 1911) found that the services offered by bank industry intermediaries in mobilizing savings from surpluses and channelling the funds to investors (deficits) in the most cost-effective manner promote securities market development and stimulate economic growth.

1.1.3 Government Regulations

Dye (1972) defines Government Regulation (GR) as a set of alternative courses of action, measures for regulations and the laws that guide given issues, while Stigler (1971) defines GR as a mere product that is generated from the market. According to Rickettes (2005), regulations imply the exercise of authority on the conduct of individuals that differ from full 'control' and the existence of restricted but essential regulatory state mandates is crucial for EG. GR can be summarized in the context of PITR as a law that guides business operations, or all of the laws enacted by a competent authority, relating to the actions of those under the entities' control for the good of the public and investors.

The World Bank (2020) operationalized GR based on 'ease of doing business (EDB) "score/index" and "rank." This study measured GR based on the EDB index. This index demonstrates the economy's score to the best regulatory framework (World Bank, 2005). It is computed annually by the World Bank from an objectively selected cluster of regulations that encourage efficiency and support the freedom to do business in an economy, making it the most appropriate measure of GR. The World Bank has successfully been measuring GR using the ease of doing business score for the last 16 years (World Bank, 2021)

It is clear from the perspective of the definitions that GR may play an enormous role in fostering an enabling environment for financial markets to support the efficient functioning of SMD and EG. The World Bank (2020) underscored the important role played by GR in protecting minority shareholders' rights and providing and promoting efficiency with which finance can be accessed from the SM by the investors to promote EG.

1.1.4 Economic Growth

Osamwonyi (2005) defined economic growth as the rise of national income coupled with the advancement of the people's living standards. Naik and Padhi (2015) define economic growth as the improvement in the welfare of an economy, which is normally derived from the increase of commodities together with services within a given time frame. Whereas Romer (2018) explains economic growth as taking resources and then rearranging them in a more valuable manner, Beckaert, Harvey and Lundblad (2005) defined EG as the growth of the securities market, including all commodities generated in a given time resulting from the utilization of production factors of the citizens of a given country. EG can therefore, be taken to mean an increase in the ability to ensure that dynamic products are supplied to people based on the ever-changing technological world.

Previous studies operationalized EG using indicators like Gross National Product (GNP) and Gross Domestic Product (GDP), per capita GDP and per capita fiscal improvements (Aslam & Awan, 2018; Adusei 2014; World Bank, 2019; Charlot, Malherbet & Terra, 2015; Cumming, Dannhauser & Johan, 2015; Naik & Padhi, 2015; Romer, 2018). This study measured EG based on the GDP growth rate. Ushad (2015) successfully used this measurement in his study on the Southern African Development Community (SADC) which included six COMESA member states of Malawi, Mauritius, Zambia, Zimbabwe, Seychelles and the Kingdom of Eswatini and ten non-COMESA member states consisting of Angola, Bostwana, Comoros, Democratic Republic of Congo, Lesotho, Madagascar, Mozambique, Namibia, South Africa and Tanzania to examine the relationship between SMD and EG.

According to COMESA, the economies of member states have harmonized monetary and financial market regulations to promote economic growth. However, the United Nations

Conference on Trade and Development (UNTAD) reports the EG of COMESA to be underdeveloped and on the decline. Therefore, there is a need to reverse low economic growth in these economies to improve the people's standards of living. The starting point would be to understand the various macroeconomic factors that drive the GDP in these countries.

1.1.5 Common Markets for Eastern and Southern Africa Member States

COMESA is a free trading zone comprising 21 states. Its objectives include shaping sustainability in the growth of economies to uplift the standards of living of their people. The key focus of COMESA member states is to ensure that there are large trading as well as economic blocs that will aid intra-COMESA trade and enhance the EG of economies to improve the livelihoods of individuals and households.

COMESA reports that there are harmonized monetary, banking, financial markets and regulations among the economies of member states. Normally, this scenario is expected to promote securities market development, bank industry performance and overall investments that will spur economic growth. On the contrary, the EG of member states continues to be low and has been on the decline. According to the UNCTAD (2021) report, the real GDP growth rate of COMESA member states has been low and on the declining trend, dropping from 4.85% in 2005 to -3.42% in 2020. The report further reveals that the economic growth in this trading bloc has remained unsteady with no indication of stability. For example, in 2011, the GDP growth rate was at its lowest registering a growth rate of -9.63% while the following 2012, the real GDP growth rate was highest at 13.31% before it drastically dropped to -5.65% in 2013. The reason for this low, declining and unsteady economic growth continues to be a concern to researchers. This study assumes SMD, BIP, and GR to be some of the macroeconomic factors that propel EG of COMESA member states.

1.2 Research Problem

Researchers have tried explaining the drivers of economic growth (EG) of nations and their findings are contentious. One of the highly debated issues in the literature on financial economics is the SMD-EG nexus. There are five schools of thought that have dominated the debate on this topic: The advocates of the first school of thought argued that SMD is imperative for economic growth (Azam, Haseeb, Samsi, & Raji, 2016; Bist, 2018; Enisan & Olufisayo, 2009). They posit that SMD facilitates the channelling of funds from savers to borrowers to promote growth. However, the advocates of the second school of thought, the Neoclassical theorists, opined that SMD was not primarily the source of growth. According to Lucas (1988), the association between SMD and EG has long been overemphasized in the literature. (Popoola, Ejemeyovwi, Omobola and Onabote, 2017; Ayadi, Arbak, Naceur, & De Groen, 2015; Ductor Grechyna,2015) availed arguments and evidence for the reverse association between the SMD and the EG. The third school of thought argues that no relationship exists between SMD and EG. (Ake, & Ognaligui, 2010; Rashid, Ouyang, Abeid & Pacific, 2016) insist that SMD does not influence EG. The fourth school of thought holds the understanding that it is EG that promotes SMD and not the other way round. (Demirguc-Kunt & Levine, 2001; World Bank,2011)) argue that banks and SM develop more when there is growth in the economy and that SM appears to grow faster than banks. The fifth school of thought claimed that there was a two-way causality between the SMD and EG. Kagochi, Al Nasser and Kebede (2013) are assertive that there was two-way causality between SMD and EG. The mainstream argument testable is that SMD is crucial to economic growth. The findings from the literature are inconclusive and contradictory, leaving a conceptual gap. Empirical research has therefore not yet ascertained if the relative demand for FS offered by banks and SM alters EG and if hindrance to changes in the mixture of

banks and SM interfere with EG. The reason for a lack of consensus could be that bank industry performance and government regulations play a role in the interaction between SMD and EG. There was a need to test further these relationships by introducing the moderating variables to assist in resolving the existing controversies.

COMESA member states have put more focus on the sustainable EG of member states to improve the standards of living of their households. But economic growth in COMSEA remains low despite efforts by member states to improve it (UNTAD, 2021). According to the COMESA publication of 2020, securities markets, bank industry and government regulations are more harmonized than in yesteryears in a bid to improve their performance and development. If this is sustained, then EG is expected to grow. But even with all these efforts, the UNCTAD report of 2020, suggests that the EG of COMESA member states is low and on the decline. What is not clear is why this is the case despite the concerted efforts to promote growth. It has been argued that SMD adds value to the economy. If this is so, then one would expect variations in the level of SMD to explain the levels of EG across COMESA member states.

Studies have been undertaken on different variables conceptualized in the studies. Globally, Levine and Zervos (1998) studied SMD and EG in 49 countries. They operationalized SMD based on liquidity, volatility and integration and found that liquidity predicts EG, accumulation of capital and growth while market size, stock volatility but integration are never associated with economic growth. Nyasa and Odhiambo (2015) employed an autoregressive distributed lag (ARDL) bounds test, to investigate the influence of banks and SMD on EG in South Africa (SA), covering 1980 to 2012 years. The results of the study indicated a positive association between bank-based financial development (FD) and EG in SA. However, the results failed to establish any link between market-based FD and EG in South Africa. Guru and Yadav (2019) studied

financial development (FD) and EG of Brazil, Russia, India, China and South Africa (BRICS), by applying the banking sector and SMD indicators. The study adopted a generalized method of moment system estimation (SYS-GMM) to investigate the association between FD and EG. The banking sector development (BSD) measurements adopted by the study were the intermediaries' size, credit to deposit ratio (CDR) and CPS, while the SMD indicators were stock traded value (STVL) and turnover ratio (TR). The results from the SYS-GMM estimates confirmed the turnover ratio in place; all the chosen BSD measurements like intermediaries size, CDR and CPS determined economic growth. Locally, Ushad (2015) used data from countries within the Southern African Development Community (SADC) that included six COMESA member states of Malawi, Mauritius, Zambia, Zimbabwe, Seychelles and the Kingdom of Eswatini and ten non-COMESA member states consisting of Angola, Bostwana, Comoros, Democratic Republic of Congo, Lesotho, Madagascar, Mozambique, Namibia, South Africa and Tanzania to investigate the association between SMD and EG. This study used GDP Growth rate to measure EG whiles the market size and stock liquidity were used to operationalize SMD. The results from the linear regression model established that there was a robust link between SMD and EG. Osamwonyi and Kasimu (2013) examined the correlation between SMD and ED in Ghana, Kenya and Nigeria between1989–2009 employing Johansen Cointegration and Granger causality. The study established no causality between SMD and EG in Nigeria and Ghana, but bidirectional causality existed between SMD and EG in Kenya. Kagochi, Al Nasser, and Kebede (2013) examined the association between FD and EG in seven Sub-Saharan African countries (SSAC) using the Granger causality test between 1991 and 2007. This study established a one-way causality moving from EG to bank development and a two-way causality between SMD and EG.

Previous studies focusing on these variables were done outside COMESA member states. Nyasa and Odhiambo (2015) investigated the influence of banks and SMD on EG in South Africa (SA), covering 1980 to 2012 years. The results of the study indicated a positive association between bank-based financial development (FD) and EG in SA but the results failed to establish any link between market-based FD and EG in South Africa. Guru and Yadav (2019) studied financial development (FD) and EG of Brazil, Russia, India, China and South Africa (BRICS), by applying the banking sector and SMD. The results from the Generalized Method of Moment System Estimation estimates confirmed the turnover ratio in place; all the chosen BSD measurements like intermediaries size, CDR and CPS determined economic growth. Locally, Ushad (2015) used data from countries within the Southern African Development Community (SADC) to examine the link between SMD and EG. The linear regression model established that there was a robust link between SMD and EG. The findings of these studies could not be generalized for COMESA member states as they have different macroeconomic conditions in terms of development, technology, capitalization, liquidity and economic growth compared to developed economies that have highly developed Securities markets, liquidity, capitalization, technology and economic growth, leaving a contextual gap in the COMESA context. Similarly, studies undertaken by Usha (2015) used data from sixteen SADC member states that only included six out of 21 COMESA member states and as such the findings cannot be generalized for COMESA member states for the same reason that member states within the SADC may not be having similar macroeconomic conditions to those in COMESA.

The methodological gap arises because several studies used different methods to analyze data. Some studies assumed linearity relationships, consequently using a linear regression model. Others assumed nonlinear relationships and hence used nonlinear models, while others were

based on the literature review of existing literature. Nyasa and Odhiambo (2015) employed an autoregressive distributed lag (ARDL) bounds test to investigate the influence of banks and SMD on EG in South Africa (SA), covering 1980 to 2012 years. The results of the study indicated a positive association between bank-based financial development (FD) and EG in SA. Guru and Yadav (2019) studied financial development (FD) and EG of Brazil, Russia, India, China and South Africa (BRICS), by applying the Generalized Method of Moment System Estimation estimates. The findings confirmed that the CDR and CPS determined economic growth. Ushad (2015) used data from countries within the Southern African Development Community to investigate the relationship between SMD and EG using the simple linear regression model. This study established that there was a robust link between SMD and EG. The simple regressions carried on a cross-sectional scale are weak because they do not largely reflect on circumstances unique to respective countries, particularly for policy regimes and financial entities (Arestis & Demetriades, 1997). Such a methodological gap was resolved using the panel data regression models. It is through these panel data regression models (PDRM) that both cross-sectional, as well as time-series data, were combined to address this weakness by allowing for heterogeneity/individuality of data.

Differences were also noted in the measurement and operationalization of variables, for SMD, BIP and EG (Levine & Zervos, 1998; Nyasa & Odhiambo, 2014; Guru & Yadav, 2019; Munyoro, Chimbari & Chirimba 2017; Usha, 2015).

It was evident from the reviewed studies that there existed conceptual, contextual and methodological gaps because of different conceptualizations and the fact that the studies were undertaken in different contexts and adopted different methodologies. It is these gaps that the

current study sought to address to answer the research question: what is the influence of BIP and GR on the association between SMD and EG of COMESA member states?

1.3 Research Objectives

The general objective was to determine the influence of bank industry performance and government regulations on the relationship between securities market development and the economic growth of COMESA member states.

The specific objectives were:

i. To ascertain the effect of securities market development on the economic growth of COMESA member states.
ii. To investigate the effect of government regulations on the relationship between securities market development and economic growth of COMESA member states.
iii. To establish the effect of bank industry performance on the relationship between securities market development and economic growth of COMESA member states.
iv. To determine the joint effect of securities markets development, bank industry performance and government regulations on the economic growth of COMESA member states.

1.4 Value of the Study

First, the study helps in theory building to the available theoretical knowledge and literature in areas of EG mechanisms in COMESA member states because it assessed the adequacy of the existing empirical literature, theory and identified conceptual, contextual and methodological gaps that may serve as a future research guide. The study used statistical tests to choose methodologies for operationalizing and testing respective research study variables and

ascertained relationships among variables that may aid researchers in making decisions on how to build on the associations between SMD and EG and give a robust understanding of the behaviour of EG in member states. The study further adds value to methodology and how to operationalize and test the research variables in COMESA member states' context.

Second, the government policymakers will find useful information from this study for decision-making on SMD and EG. The findings demonstrated that SMD promoted EG of member states and this may be an important revelation to policymakers in their endeavour to promote growth. The moderating and intervening variables were introduced to the relationship between the SMD and EG to aid in resolving the differences in the existing study findings and the study found that GR was an important variable in the relationship between SMD and EG. Other stakeholders will also benefit from the recommendations of the study on the key variables that help promote EG to assist them in making appropriate decisions, especially on policies.

And third, the study findings are important to management and practitioners in the securities market in COMESA member states. It assists to address the divergent interests of investors and public companies to boost the much-needed SM efficiency and stability. The findings help in identifying the factors driving EG in the long run.

1.5 Division of Chapters

This thesis follows the sequence outlined below: Chapter one dwells on the study background, Research problem, Study objectives and the value of the study; Chapter two deals with the theoretical anchorage of the study, including a literature review that focuses first on the effect of SMD on EG. Then it focuses on moderating the effects of Bank Industry Performance and Government Regulations on the association between SMD and EG. Finally, the literature review

focused on the joint effect of SMD, BIP and GR on EG. This chapter ends with the presentation of the key concepts and conceptual framework of the study.

Chapter three connects the previous chapters to the remaining study chapters. It bases on earlier chapters to choose the ideal research methods needed in answering research questions, objectives and testing the resultant hypothesis as identified in chapters 1 and 2; its output informed the findings and conclusion of this study as outlined in chapters 4, 5 and 6. Chapter four deals with data analysis and the statistical test such as the diagnostic tests and approaches undertaken to choose the most appropriate models to use the four study hypotheses. Chapter five outlines the hypothesis testing, findings and interpretation. Finally, chapter six presents the discussion of the results of hypothesis testing, conclusions and recommendation.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The previous chapter dealt with the research problem, the study objectives and the value of the study. This chapter dwells on theories that guided and supported the study objectives as investigated by various scholars and researchers in previous studies. Different theories anchor the research study. It is followed by a review of the literature, bringing out connections between and among the various study variables.

2.2 Theoretical Anchorage

The anchoring theory of the study was the Neoclassical Growth Theory. It was complemented by the Efficient Market Hypothesis, Financial Intermediation Theory and Public Interest Theory of Regulation. Neoclassical Growth Theory postulates that savings and capital accumulation stimulate EG. The efficient Market Hypothesis, on the other hand, propagates that SM efficiency promotes securities market development, which is expected to enhance economic growth. Financial Intermediation Theory as a supporter of Neoclassical Growth Theory advocates that the Financial Intermediation Theory in the banking industry exists to cut information asymmetry to promote savings and capital accumulation that is presumed to accelerate SMD and EG. The three theories relate to the Public Interest Theory of Regulation because the types of regulations governing operations of the financial sector are expected to influence the relationship between SMD and EG.

2.2.1 The Neoclassical Growth Theory

This school of thought developed by Solow and Swan (1956), is founded on the basic neoclassical frameworks of long-run growth. It underscores how a steady economic growth rate occurs from a mixture of technology, capital and labour. The theorists emphasize that the

accumulation of capital in an economy, and how investors use it, is critical in predicting EG. It borrows from previous schools of thought, including that of Smith (1976) and Schumpeter (1911) who aver that SMD is necessary for EG. In his argument, Schumpeter states that EG needs substantial long-term capital, which is only be obtained from the SM based on the presumption that substantial financial resources can be efficiently marshalled through the SM. According to the neoclassical growth theory, long-term growth is dependent exogenously on other variables like capital accumulation and technological innovations except for the basic model. The theorists further posit that while there are scarce resources in terms of capital, the technological input to EG is boundless because the production function is built on the diminishing return assumption, which means that failure to incorporate technological advancements while increasing labour through capital expenditure results in redundancy beyond relevant ranges.

Among the supporters of this theorist is Smith (1976), who argues that accumulated capital is an important factor driving economic growth. On his part, Schumpeter (1911) submits that a developed financial system stimulates technological innovation and EG by offering financial resources to investors with the highest chance of successfully undertaking innovative processes. Scholars like Mckinnon and Shaw (1973) validated the suggestion that SMD positively influences EG.

The opponents of this theory believe that excess credit creation in the economy is harmful to the long-term EG (Demirguc-Kunt & Levine, 2001). This theory has further been criticized for some weaknesses, key among them the fact that with the existence of diminishing returns, the neoclassical growth theory cannot sustain growth by capital accumulation alone (Romer, 1986). This theory also refutes the efficiency of intervention in diminishing returns. Some opponents

have also pointed out critical weaknesses because it stresses the failures of state-owned enterprises, leaving out the privately-owned enterprises.

This theorist emphasizes the extended definition of capital stock, which is not limited or controlled by the provisions of diminishing returns (Fry, 1997). It perceives EG to be influenced by forces within and outside the organizational settings, including events at SM and BIP by way of capital accumulation and savings (Romer, 1986). Based on its propositions of savings and capital accumulations being drivers of economic growth, it may be justifiable to expect variations in EG to be explained by SMD, BIP and the type of GR governing the financial sector.

2.2.2 The Efficient Market Hypothesis

The EMH by Fama (1965), postulates that in an efficient market, the price of an asset is matched with the value of that particular asset, such that no market players take advantage of other market players. The theory uses the ability of the market to assimilate new information based on the lapse between the arrival of new information in a market and the reaction in security prices (Fama, 1991). In efficient markets, some investors cannot obtain abnormal profits from their dealings at the capital markets based on their experience and expertise because key information is fully and quickly incorporated in the security prices immediately after it is released. consistent with EMH, Cootner (1964) and Malkiel, (1973) supported this theory through their argument that market prices move according to a random walk and therefore price changes are random and thus cannot be predicted using historical information.

The theory has been criticized by several scholars based on its inherent assumptions. The strongest criticism is from Thaler (1999), who asserts that price fluctuations of assets are triggered by new information and investors' behaviour. The other criticism is found in Kahneman and Tversky (1982), who claim that investors are systematically overconfident in

their expertise to predict future stock prices and corporate earnings. Werner, De Bondt and Thaler (1984) are other opponents of EMH. They argue that investors follow waves of speculation that trigger prices to deviate systematically from their fundamental values and to finally show mean revision.

The EMH presupposes the existence of a big number of rational, profit-maximizing investors that are active participants in the market through analysis, valuation, and trading in securities that promotes long-term capital accumulation required for EG and SMD. This way, investors can only make higher abnormal profits by putting their investments in high-risk investments because they need compensation for the extra risks assumed. Free market participation can be made possible where government regulations guarantee freedom of trading and market efficiency in terms of information flow to support SMD while at the same time maintaining the intermediaries that assist in linking surpluses to the deficits in the most cost-effective manner. The efficient market hypothesis propagated by this theorist is critical in facilitating capital accumulation and allocation to various economic facets to promote EG.

2.2.3 Financial Intermediation Theory

This school of thought formulated by Gurley and Shaw (1960), is founded on the asymmetries in information, and it argues that the existence of Financial Intermediation (FI) is to collect information about the borrowers and savers to enable the exchange to operate at the most reasonable costs. By breaking information asymmetry, FI promotes efficiency in the SM and efficient allocation of capital funds to various uses to support productive investments (Gurley & Shaw, 1960; Fama, 1965; Spence, 1973). Schumpeter (1911), a supporter of FIT, argues that services offered by FI in mobilizing savings, linking savers to borrows at the most reasonable transaction costs, managing risk, and monitoring managers, stimulate technological innovation,

SM efficiency and EG. These services can be said to encourage both investments and the efficiency with which economies use capital. Other supporters of this theorist opine that BI creates liquidity through borrowing short and lending long (Keynes 1964; Gurley & Shaw, 1955; Dewatripont, Rochet & Tirole, 2010).

This theory has been criticized by several scholars due to some of its failures. In some cases, financial intermediation has not lowered the transaction cost and shared risk effectively (Allen & Santomero, 1998; Scholtens & Van Wensveen, 2000). Werner (2014) explained that liquidity and credit creation, if not directed to the productive sector, harms economic growth. Further, this theory is founded on the belief that intermediaries exist to minimize costs and promote information symmetries. When advancements in technology progress, deregulation, deepening of financial markets appear to bring down costs while improving information symmetries. It therefore can be argued that this scenario renders FIT useless in COMESA member states.

By promoting efficiency and mobilizing capital from savers who have surplus funds and linking them to borrowers who need capital for investment, financial intermediaries exert a substantial positive influence on productivity growth, which feeds through to overall GDP growth. Further, intermediaries exist to cut down the cost of moving funds between lenders to borrowers, bringing about the efficient distribution of resources that accelerate economic growth, among other roles. The presumption in this theory is that BIP influences the relationship between SMD and EG.

2.2.4 The Public Interest Theory of Regulations

Pigou (1932) developed the public interest theory of regulations and he believed that the regulations are formulated in the public interest particularly when they are needed by the public for rectifying inefficient tendencies. He posits that regulations are useful to the whole society but not any individual's interest. Stigler (1972) while underscoring the importance of this theory

asserts that regulations are formulated when the public requires efficient resource allocation. He claims that regulations are not socially efficient if applied by players to hinder competitors' entry into the markets. According to Hantke-Domas (2003), where there are markets that are not perfectly competitive, the market power of respective entities and firms must be controlled so that the public interests are protected Some studies have established that GR is meant to support the sharing of resources in a substantive way (Christensen & Laegreid, 2006; Chalmers, Godfrey & Lynch, 2012). Indeed, some studies have asserted that the essence of regulators is to come up with solutions in the market that are regarded as desirable and efficient in social as well as economic dimensions (Stigler, 1971, Peltzman, 1989; Becker, 1983).

This theorist has been supported by Levine and Zervos (1999), who argue that legal reforms that protect creditors' rights enhance FD and propel EG. Another supporter of this theory is the World Bank (2020). According to the global lender's report, regulations are meant to guarantee efficiency, a secure business environment and freedom to do business. Furthermore, a theoretical debate has persisted about whether or not greater stock liquidity encourages more viable projects that promote EG. Because higher liquidity enables investors to sell or buy shares, scholars have argued that higher liquidity reduces the duties of shareholders to perform the expensive job of keeping an eye on managers (Bhide, 1993; Shleifer & Vishny, 1986). Consequently, less effective corporate governance hampers efficient resource allocation and retards EG. On their part, Levine, Lin and Xie (2016) assert that investor-friendly government regulations that provide a secure and conducive business environment to market participants encourage securities market development that accelerates economic growth.

Criticisms of public interest theory include its inability to establish if and when there is a progression in the public interest (Gass & Priest, 1993). Challenges are encountered in ensuring

that lawmakers are acting in the best interest of the public as opposed to meeting their personal goals. With time, however, the key emphasis of the public and the government reverts to other issues, shifting the spotlight from the regulatory activities. This development ensures that the regulator is highly exposed to regulatory capture. This theory might not add value to the economy if regulatory agencies are subverted to pressures, influences and bribes (Ricketts, 2006).

From the discussions, it can be said government regulations are put in place to support stable and efficient operations of SM and encourage EG. If this is valid, then GR is expected to influence the relationship between SMD and economic growth.

2.3 Empirical Literature

This section identifies studies undertaken on the subject of securities market development, bank performance, government regulations and economic growth.

2.3.1 Securities Markets Development and Economic Growth

The reasoning by researchers that SMD influences growth has attracted the attention of many scholars Bist (2018) assessed the link between FD and EG using panel unit root and panel cointegration analysis in 16 selected low-income countries from 1995 to 2014. The long-run link was estimated using time series and dynamic OLS techniques. The study established the existence of a cross-sectional dependence across the countries. The long-run panel estimates indicated that financial development had positively influenced economic growth. This study used specific data from the Nigerian economy, a country that differs from COMESA member states in terms of levels of market capitalization, market size and EG and therefore the findings may not be generalized for the COMESA context. The study also used two nonlinear methodologies,

which gave conflicting results. The nonlinear methodologies do not account for the individuality of the data, making the findings inaccurate and inconclusive.

Ananwude and Osakwe (2017) focused on Nigerian SM from 1981 to 2015 to investigate the link between these two variables using Autoregressive Distributed Lag (ARDL) and Granger causality. Depth of SMD was operationalized through market capitalization and turnover ratios whereas EG was operationalized through real GDP. The findings indicated that SMD correlated with EG, while Granger causality analysis dispelled the adeptness of SM to promote EG. This study used specific data from the Nigerian economy, a country that differs from COMESA member states in terms of levels of market capitalization, market size and EG and therefore the findings may not be generalized for the COMESA context. The study also used two nonlinear methodologies, which gave conflicting results. The nonlinear methodologies do not account for the individuality of the data, making the findings inaccurate and inconclusive.

Karim and Chaudhary (2017) performed a comparative analysis of South Asia and East Asia countries to investigate the link between SMD and EG by comparing the country's GDP rates against SMD. The findings show that SMD was critical in the EG of the countries within the southern region but was insignificant to the ones in the East Asian region. Although this study supported the existing theoretical findings, it limited itself to developing economies whose SMs are advanced compared to SM within COMESA, which are less advanced in terms of technology, structure, and liquidity. It may, therefore, be inaccurate to conclude that similar results can be arrived at using COMESA member states' data. Further, the study used comparative analysis, which is weak because it allows for the individuality of data compared to the panel regression model.

There were also views of the inverse association between SMD and EG. Rashid, Ouyang, Abeid and Pacific (2016) examined the link between the stock exchange on the EG of Mauritius using time series secondary data from 1993 to 2015. Cointegration and Vector Error Correction Model were applied to assess the short and long-term parameters of market capitalization, stock trade value and EG. Results indicate the absence of long-run causality from SMD to EG, although a short-run causality existed for stock turnover. These study findings disagreed with the existing theoretical literature done by previous researchers. The study also used nonlinear models to estimate the relationship among variables. The nonlinear models are considered to be weak because of their inability to account for the heterogeneity of data, and it may be impossible to get similar results when the panel regression model is used.

Popoola, Ejemeyovwi, Omobola and Onabote (2017) studied the possible connection between SMD and EG in Nigeria. By using Ordinary Least Squares (OLS) and Johansen Cointegration tests, OLS results indicated that All Share Index (ASI) had an inverse association with EG; Johansen Co-integration ascertained the existence of the long association between SMD and EG, while the Granger causality test indicated that SM performance did to trigger EG. This study used specific data from the Nigerian economy, which is not at the same level of securities markets development as COMESA states in terms of technology, structure, and liquidity and therefore the findings cannot be generalized to COMESA member states' context. This study used three methodologies that gave conflicting results, making the findings inconclusive.

2.3.2 Securities Markets Development, Bank Industry Performance and Economic Growth

Agyemang, Gatsi and McMillan (2018) investigated the link between institutional structures and the level of financial market development (FMD) in Africa using the ease of access to loans to assess the association between institutional structures and the level of financial markets

development. The study applied a two-step generalized method of moment estimator with corrected standard errors to perform the examination. The study found that a high-quality institutional environment explained the ease of access to loans in Africa. The study findings cannot be generalized to the COMESA context because it was undertaken in a different context with different macroeconomic factors like the level of economic growth, market capitalization, liquidity, market size and technology. The study also used non-linear models which are considered weak because they do not account for the individuality of the data. Finally, the findings are contradictory based on the group of the economy.

Puryan (2017) focused on studying the interaction between EG, banking sector development (BSD) and SMD in the Middle East and North Africa Countries from 1988 to 2012. Through VAR, the findings indicated a one-way relationship existed from SMD, BSD to EG. Although the study confirmed the existing theoretical findings, it was limited to the Middle East and North African countries, whose SM may not be similar to COMESA member states in terms of market size, liquidity, and structure and as such, similar results are unlikely to be arrived at using COMESA member states' data. Further, the study used nonlinear models of estimation, which are considered to be weaker compared to the linear regression model, making the results of the study less accurate.

Umar, Dayyabu, Gambo, Danlam, and Ahmad (2015) did an empirical study to assess the interaction between intermediaries in the financial sector and levels of EG recorded in Nigeria between 1970 and 2013. Observations over a long period indicated that EG affected financial intermediaries' depth. The findings indicate that financial intermediaries showed direct causality with EG in the short term. The short and long-run results of this study are contradictory, and for this reason, the study may be regarded to be inconclusive. This study was limited to data

obtained from the Nigerian economy, which may not be similar to COMESA member states as they are relatively less advanced, particularly in terms of technology, structure and market size. As such, the study findings cannot be generalized to COMESA member states' context. Besides, the study used nonlinear models, which do not account for the individuality of panel data, making the findings less realistic.

Rehman (2018) investigated the level of connections that the banking sector development (BSD) had on EG registered in Saudi Arabia from the year 1985 to 2016 using Vector Auto Regression and Granger causality tests. EG was operationalized through per capita income, while BSD was operationalized through broad money as a percentage of GDP. Results of VAR indicated notable coefficients' values among variables, while Granger causality showed a bi-directional linkage. First, the study findings based on different methodologies are inconsistent. Second, it was limited to data obtained from the Saudi Arabian economy, which may not be similar to COMESA member states, particularly in terms of technology, structure, liquidity and market size; thus similar findings may not be arrived at using COMESA member states' data. And third, the study used nonlinear models, which do not take into consideration the individuality of data in variables.

Yadav (2019) studied FD and EG in emerging economies of BRICS using the BSD and SMD indicators. The study adopted a SYS-GMM to investigate the association between FD and EG. The BSD measurements adopted by the study were the intermediaries' size, credit to deposit ratio (CDR) and CPS, while the SMD indicators were STVL and TR. The results from the Generalized Method of Moment System Estimation estimates confirmed, with the turnover ratio in place, that all the chosen BSD measurements like intermediaries size, CDR and CPS determined economic growth. This study was limited to data obtained from the Chinese

economy, which is a developed economy, hence its findings cannot be generalized to COMESA member states as they are comparatively less developed in terms of technology, structure, liquidity and market size. Further, the study used nonlinear models of estimation that do not account for the individuality of data, making the findings less accurate.

Wang, Li, Hussein and Ntim (2015) conducted a study on the interaction between FSD and China's EG from 1998 to 2013 using OLS. From the findings, FSD harmed EG. The results contradicted existing theoretical literature, which justifies further studies. This study was limited to data obtained from the Chinese economy, which is a developed economy, hence its findings cannot be generalized to COMESA member states. This is because they are comparatively less developed in terms of technology, structure, liquidity and market size. Further, the study used nonlinear models of estimation that do not account for the individuality of data, making the findings less accurate.

2.3.3 Securities Markets Development, Government Regulations and Economic Growth

Zanella, Oyelere and McMillan (2021) investigated the association between economic growth and FD under income level, legal framework, competitiveness level, and entrepreneurship activity using a sample of 108 countries from 1980 to 2017 using the Dumitrescu-Hurlin Granger non-causality test. The study found no statistically significant association between FD and EG in 59 countries in the long run; while statistically significant relationships from EG to FD, and from FD to EG in 20 and 23 countries, respectively. Bicausality between FD and EG in 6 countries. This study's findings cannot be generalized for the COMESA context because it was undertaken in a different context with different macroeconomic factors like the level of economic growth, market capitalization, liquidity, market size and technology. The study also used non-linear

models which are considered weak because they do not account for individuality. Finally, the findings are contradictory based on the group of the economy.

Ehigiamusoe and Lean (2018) examined the tripartite interaction among FD, trade openness and EG in Ghana, Nigeria and South Africa from 1980 to 2014. The study showed a long-run causality between FD, trade openness and EG for Ghana, Nigeria and South Africa. Long-run causality from FD and EG to trade openness was found for Ghana. There was evidence of causality from growth to FD for Ghana in the short run, from trade openness to FD for Nigeria and from EG and FD to trade openness for South Africa. The findings of this study cannot be generalized to the COMESA context because it was undertaken in a different context with different macroeconomic factors like the level of economic growth, market capitalization, liquidity, market size and technology. Also, the findings are contradictory based on the group of the economy.

Khatum (2019) investigated the interaction between financial openness levels and EG among BRICS countries over twenty-two years (1990-2012) using long-run co-integration. The results of the study reveal that overall financial openness exhibited a positive influence on EG in circumstances where bonds and SM were introduced. The findings support the theoretical argument that GR supports the FSD and EG although it used data obtained from developed economies, making the findings not applicable to COMESA member states, which are relatively less advanced, particularly in terms of technology, structure, liquidity and market size. Further, the study used nonlinear models of estimation, which are considered weak because of their inability to account for heteroscedasticity, making the findings less realistic. This study's findings contradict previous theoretical arguments that suggest government regulations aimed at reforming the financial sector positively assisted the sector.

Polat (2019) sought to investigate if the financial sector development plays any part in influencing the effect of trade openness on EG using dynamic panel data of 41 developing countries from 1995 to 2014. Ordinary least squares were used as a model of analysis. The study did not establish any connection between trade openness or FSD on EG. Rather, the study established that the interaction term representing the joint effect of FD and openness has reduced EG. The study also contradicted the existing theoretical findings, making the findings inconclusive. It used nonlinear models of estimation, which are less accurate since the models do not account for the individuality of the data.

Menyah, Nazlioglu, and Wolde-Rufael (2014) investigated the causality between FD, trade openness and EG from a panel of 21 Sub-Saharan African Countries from 1965 to 2008 using the Granger causality test. The study ascertained that efforts aimed at FD and trade liberalization did not significantly affect EG. The findings disagree with previous theoretical findings that suggest government regulations exist to support the functioning of the private sector and promote EG. The study used nonlinear models that do not give realistic findings because these models do not account for the heterogeneity of data.

2.3.4 Securities Markets Development, Bank Industry Performance, Government Regulations and Economic Growth

Iqbal, Khan, Khan and Al-Aali (2021) examined the link between economic growth, FD, and national governance using the Panel Vector Auto-Regressive (PVAR) model on 115 economies around the world from 1996 to 2018. The economies were divided into developed, emerging, and low-income economies. The study findings indicated that FD promoted EG and was more significant for low-income economies than others. National governance remained a more effective instrument for EG in low-income economies. The findings of this study cannot be

generalized to the COMESA context because it was undertaken in a different context with different macroeconomic factors like the levels of economic growth, market capitalization, liquidity, market size and technology. The study also used non-linear models which are considered weak because they do not account for the individuality of the data. Finally, the findings are contradictory based on the group of the economy.

Yang and Fan (2019) applied the World Bank's standard to divide middle-income economies into trapped middle-income economies and graduated middle-income economies, and compared them with high-income economies. The study tested how FD affects EG among the three groups of economies. The study combined models and approaches from (King and Levine, 1993a; Levine and Zervos, 1998; Rousseau and Wachtel, 2000, 2002; Xu, 2000). The study found that one, FD promotes EG; two, there was Granger causality between equity market development and EG for all the three groups of economies; and three, there was a reverse causality between EG and equity market development in high-income economies, which was not present in other economies. The findings of this study could not be generalized to the COMESA context because it was undertaken in a different context with different macroeconomic factors like the level of economic growth, market capitalization, liquidity, market size and technological differences. The study also used non-linear models which are considered weak because they do not account for the individuality of the data. Also, the findings are contradictory based on the group of the economy.

Manasseh, Ogbuabor, Anumudu, Abada, Okolie, and Iri (2018) applied data drawn from Nigeria to study the interaction between SMD, reforms in the financial sector and EG using vector autoregression and vector error correction models to analyze data. It was established that SMD, financial sector reforms, and legal framework promoted EG. This study supports existing

theoretical findings, although it is limited to the Nigerian economy, which differs from that of COMESA economies in terms of technology, structure, capitalization, market size, liquidity and price discovery process, thereby limiting its application to the COMESA member states' context. The study also used nonlinear models of estimation and because of their inability to account for the individuality of data, they are deemed to give less accurate findings.

Pradhan, Arvin, Hall, and Bahamani (2014) looked at the existing link between BSD, SMD, EG and other macroeconomic factors in Association of Southeast African nations (ASEA) countries from 1961 to 2012 by applying VAR for testing causality. The study established both unidirectional and bidirectional causality among the variables. The focus of the study was on ASEAN countries, with developed economies making the findings less relevant to the COMESA context as it has developing economies. The use of nonlinear models, which do not account for heterogeneity, makes the findings less accurate.

Ayadi, Arbak, Naceur and De Groen (2015) studied FD, bank efficiency, and EG in the Southern and Eastern Mediterranean Countries (SEMC) and the Europe Mediterranean (EU-MED) from 1985 to 2009 using various variables that considered the effects of quantity and quality. The study established that FD negatively affected EG, which implied deficiencies in credit distribution, weak financial regulation and supervision. Also, the study found that SMD promoted EG. This study may not be generalized for COMESA because the bloc is not at the same level as SEMC and EU-MED in terms of investments, institutional efficiency and rates of inflation, which are growth factors. The study used nonlinear models of estimation, which do not account for the uniqueness of the individual and therefore are likely to give less accurate findings.

2.3.5 Summary of Empirical Literature and Research Gaps

A review of theories guiding this study reveals diverse perspectives on the connection among the study variables. Based on NGT propositions that accumulation of capital in an economy, and how investors use it, is critical in predicting EG., it may be justifiable to expect variations in EG to be explained by SMD, BIP and the type of GR governing the financial sector. The EMH justifies the existence of SM, and the underpinning fact is that it focuses on the extent to which markets incorporate the information in the prevailing stock prices at any one given moment. The FIT tells us that net borrowers and net lenders have different optimal time horizons, but banks might link borrowers to lenders at low transaction costs. The PITR emphasis is that a regulator seeks solutions to the market challenges and how to gain efficiencies in the economy. The NCGT emphasizes that the accumulation of capital in an economy, and how investors use it, is critical in predicting EG. These results from studies on the correlation between SMD and EG are contentious and therefore, inconclusive.

Table 2. 1: Summary of Research gaps

Scholar	Topic	Methodology	Results	Knowledge gaps	Study proposal on how it will address the gaps
Rashid, et al. (2016)	Stock exchange and EG in Mauritius	Co-integration and VEM	The results showed no long-run causality from SMD to EG, although short-run causality existed for stock turnover.	This study was limited to Mauritius where securities market efficiency and size may not be the same with other member states. The long and short-run findings are contradictory, leaving both contexts conceptual and contextual gaps.	The study will focus on COMESA member states to address the contextual gap and two moderating variables will be introduced to address the conceptual gap. Regression analysis will be used to address the methodological gap associated with nonlinear models like Cointegration and VEM.
Ananwude and Osakwe (2017)	SMD and EG in Nigeria	ARDL and Granger causality	The study findings reveal Nigeria's SMD had a link to EG. The Grander causality analysis failed to dispel the adeptness of the stock market to promote EG.	This study was limited to Nigeria, whose securities market characteristics are unique to the country's economy, leaving a contextual gap for COMESA economies. The two models used in the study gave conflicting results, bringing about methodological and conceptual and contextual gaps.	The study will focus on COMESA member states to address the contextual gap and two moderating variables will be introduced to address the conceptual gap. Regression analysis will be used to address the methodological gap associated with nonlinear models like Granger causality and ARDL

Karim and Chaudhary (2017)	SMD and EG in South Asian and North Asian countries	Comparative analysis	The study established SMD is critical to the EG of the countries within the southern region but insignificant to the ones in the East Asian region.	This study was limited to data collected from Asian countries, where the level of technology and market is different from COMESA member states, leaving a contextual gap. The study also used a comparative analysis which is not scientific, leaving a methodological gap	The study will focus on COMESA member states to address the contextual gap. Regression analysis will be used to address the methodological gap associated with non-scientific analysis like the comparative analysis.
Popola et al. (2017).	Stock Market and EG in Nigeria	Granger causality, ADF, OLS and Johansen co-integration	Findings show a significant and negative relationship between the share index to EG. There was a linkage between SM performance and EG using the Johansen Co-integration test. The stock market performance failed to Grander cause for EG, but in contrast, EG Grander caused stock market development.	This study was limited to Nigeria, which has securities market characteristics like liquidity and capitalization that are unique to the Nigerian economy, leaving a contextual gap for COMESA economies. The four models used in the study gave conflicting results, bringing about methodological and conceptual and contextual gaps.	The study will focus on COMESA member states to address the contextual gap and two moderating variables will be introduced to address the conceptual gap. Regression analysis will be used to address the methodological gap associated with nonlinear models like granger causality, ADF, OLS and Johansen Cointegration models.
Puryan(2017)	SMD, Banking sector	Granger Causality based on	The study found a one-way causal relationship running from banking sector development to	This study focused on the Middle East and North African countries, whose	The study will focus on COMESA member states to address the contextual

	developmen t and EG in the Middle East and N. African Countries	Vector Auto Regression of error correction.	EG, a mutual relationship between SMD and EG and a one-way relationship from BIP to the stock market.	macroeconomic factors differ from those found in the COMESA region, leaving a contextual gap in COMESA. The study used nonlinear models, leaving a methodological gap.	gap and two moderating variables will be introduced to address the conceptual gap. Regression analysis will be used to address the methodological gap associated with nonlinear models like Granger causality and VAR models.
Rehman (2018)	FSD and EG in Saudi Arabia	VAR	Johansen co-integration revealed no co-integration with selected study variables while there are no significant values for co-efficient as per VAR and there is a bi-directional linkage shown by the grander causality tests.	This study was limited to Saudi Arabia, whose securities market characteristics like liquidity and capitalization are unique to the country's economy, leaving a contextual gap for COMESA economies. The three models used in the study gave conflicting results, bringing about methodological and conceptual and contextual gaps.	The study will focus on COMESA member states to address the contextual gap and will introduce two moderating variables to address the conceptual gap. Regression analysis will be used to address the methodological gap associated with nonlinear models like VAR, Granger causality and Johansen co-integration models.
Manasseh et al.(2018)	SMD, Financial Sector Developme nt and EG in	VAR and VECM	The study found a bi-directional causality between SMD, FSD and EG.	The study findings are based in Nigeria only, whose securities market and economic conditions differ from those in the	The study will focus on COMESA member states to address the contextual gap. Regression analysis will be used to address

	Nigeria			COMESA region, leaving a contextual gap in COMESA member states. The study used nonlinear models only leaving a methodological gap.	the methodological gap associated with nonlinear models like VAR, and VECM models.
Khatum (2019)	FD, openness and EG in BRICS	Long-run Cointegration	The result of the study indicates that openness promotes EG	These study findings are based on BRICS, whose securities markets and economies in terms of technology and size are advanced compared to COMESA, leaving a contextual gap in the latter. The study used a nonlinear model, leaving a methodological gap associated with nonlinear models.	The study will focus on COMESA member states to address the contextual gap. Regression analysis will be used to address the methodological gap associated with nonlinear models like VAR, and VECM models.
Polat (2019)	FD, trade openness and EG in developing countries.	OLS	No effect of trade openness or FD on EG model like	This study failed to support the existing theoretical literature, bringing a conceptual gap. It also used a nonlinear model, leaving a methodological gap associated with such models.	The study will focus on COMESA member states to address the contextual gap. Regression analysis will be used to address the methodological gap associated with nonlinear the OLS model.

Source: Researcher (2022)

2.4 Conceptual Framework

The proposition in this framework presents a linkage between securities market development, bank industry performance, government regulations, and economic growth, either directly or indirectly. It can only be justified if BI and GR influence the strength of the relationship between SMD and EG. In this framework, SMD is taken as the predictor variable, while EG is the outcome variable. BIP and GR are the moderating variables that are expected to modify the relationship between SMD and EG. When the BIP is high and stable, then it means more capital funds are accumulated from savers and made available to the investors to access through the SMs to promote EG. BIP will be assumed to influence the relationship between SMD and EG.

GR exists to support stability, efficiency and freedom of trading at the SM for the securities markets to develop. For proper functioning of SM, governments must put in place the relevant regulations to moderate the relationship between SMD and EG by putting in place mechanisms that allow fair access to prices and its formation process, reduction of disruptive effects such as shortages of intermediary components of the market and also making sure that any market players settle all their trading obligations in an organized fashion and at the right time as stipulated (Carvajal & Elliott, 2007). The moderating variables influence the relationship or change the direction of the interaction between the predictor and outcome variables (Barron & Kenny, 1986). It can be suggested that GR that facilitates SM efficiency and freedom to trade influences SMD, which, in turn, is expected to propel EG. There exists an association between a secure business environment and economic freedom on one side and gross domestic product (GDP) growth rate on the other side (World Bank, 2020).

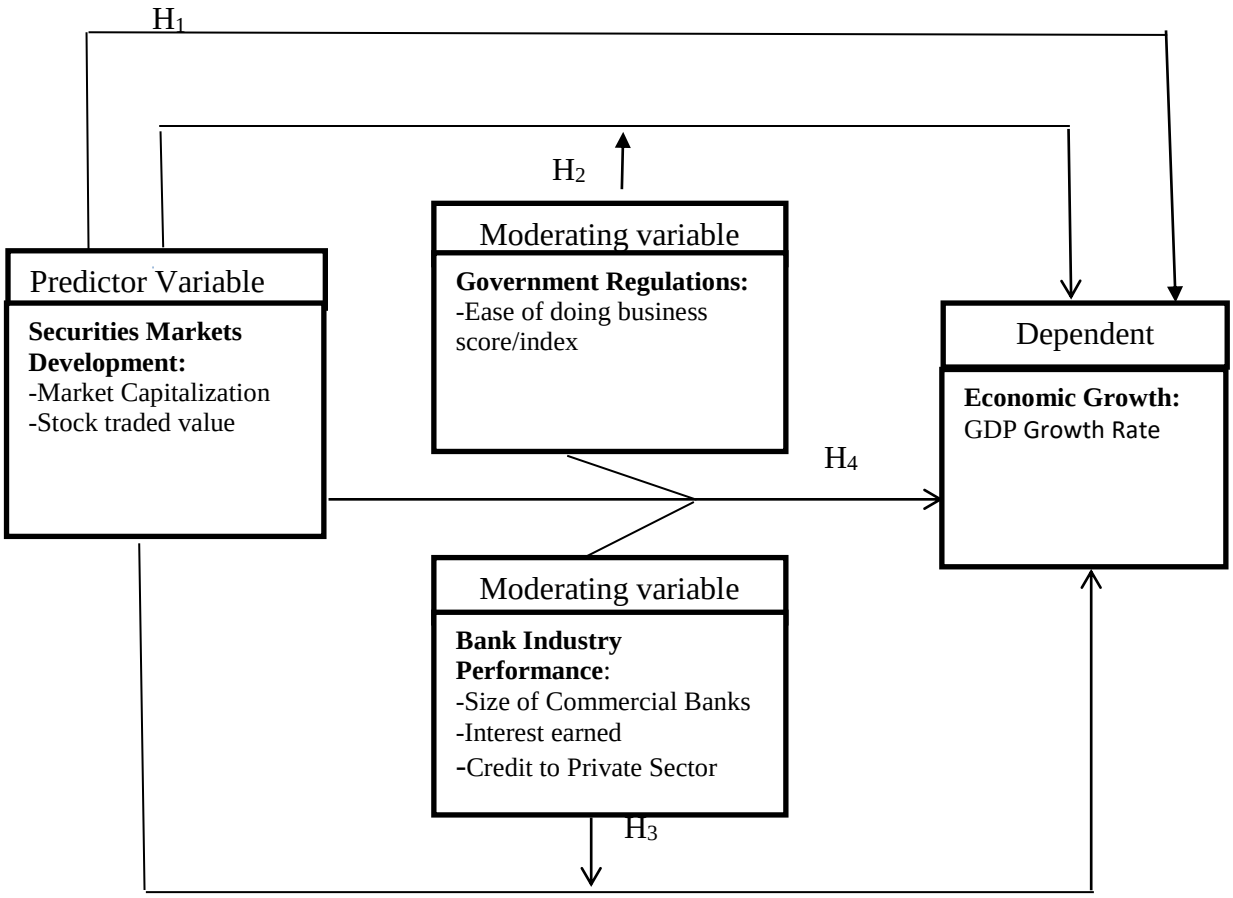

Figure 2.1: Conceptual Model

Source: Researcher (2022)

2.5 Research Hypotheses

The study sought to test the following hypotheses:

H_{01}: There is no significant effect of securities market development on the EG of COMESA member states.

H_{02}: There is no significant moderating effect of government regulations on the relationship between securities market development and economic growth of COMESA member states.

H_{03}: There is no significant moderating effect of bank industry performance on the relationship between securities market development and economic growth of COMESA member states.

H_{04}: There is no significant joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states.

2.6 Chapter Summary

This chapter dwelt on theories that guided and supported the study's objectives as investigated by various scholars and researchers in previous studies. Different theories provided anchorage to the research study. This was followed by a literature review, highlighting associations between and among the various study variables. The chapter ends with a presentation of the key concepts and conceptual framework of the study that resulted in the four hypotheses. The next chapter deals with the research methodology to be applied to test the study's hypotheses.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

Chapter two dwelt on the theoretical anchorage and presentation of the key concepts and conceptual framework of the study that led to the development of the four hypotheses of the study. This chapter entails aspects dealing with research methods that guided the study and comprised of the philosophy, the research design that was used, population, measurement of variables, diagnostic tests, and how data was analysed.

3.2 Research Philosophy

Researchers are always concerned about the nature of reality and how realities are measured. All issues in research are based on ontology and epistemology. Ontology is an examination of the nature of reality, which can exist objectively or subjectively. Epistemology is how to know reality. The reality can be established either objectively or subjectively. The process of knowing reality can be determined either objectively or subjectively. Ontology and epistemology formed the ground on whether the study knowledge was ascertained objectively or subjectively through either positivism or phenomenology. To avail knowledge in form of objective facts is positivism, while the subjective way of knowing facts is phenomenology (Kothari, 2010; Cooper & Schindler, 2003).

The phenomenological paradigm considers current experiences and descriptions of elements. In this case, their interpretation was situational (Veal, 2005). The objective of the researcher is to interpret subjectively the views that others have of the world, and based on this, the researcher comes up with the theory instead of starting with the research theory (Veal, 2005). Positivists argue that there exists an objective reality independent of human behaviour, implying it is not a

creation of human influence. It assumes that the world is guided by consistent laws that determine the relationship between cause and effect among variables based on existing theories. They emphasize that the phenomenon should be measurable, and the researcher remains objective and impartial (Cresswel, 2014). Positivists choose quantitative research design, which relies on a scientific approach that uses deductive reasoning. The scientific approach commences by investigating theories, formulating a hypothesis, and collecting data to approve or disapprove theories.

This study used a positivist philosophy because knowledge was availed objectively, and it employed quantitative techniques to test and measure theory and hypothesis. The hypothesis was developed from theory and formed the research questions, and data was collected and analyzed to test the hypothesis. This philosophy was successfully used in previous similar studies (Okiro, 2014; Nyamute, 2016).

3.3 Research Design

The study used a longitudinal descriptive design because of the nature of the interrogation that was done. The most prominent one was longitudinal because of the period involved, which in this case was 15 years across nine countries. This is so because 2005 was not included in the study because it was used as a base year for computing rate changes in SMD and EG indicators. Longitudinal descriptive research design entails observing variables over time, which can be weeks, months, years or even several decades (Kothari, 2010).

This research design was preferred because researchers can detect behaviour or changes in the characteristics of the target population at the group and the individual levels. It was the most suitable for panel data collection, analysis and interpretation with a higher degree of accuracy

and precision. (Panicos & Kul, 2001; Loayza, Ouazad & Rancière, 2018; Karagiannis & kvedaras, 2016) successfully used this design in previous similar studies.

3.4 Population

This study targeted twenty-one (21) countries drawn from COMESA member states. These are Somalia, Tunisia, Zimbabwe, Uganda, Sudan, Zambia, Kenya, Seychelles, Eritrea, Rwanda, Libya, Kingdom of Eswatini, Comoros, Egypt, Democratic Republic of Congo (DRC), Mauritius, Burundi, Madagascar, Djibouti, Ethiopia and Malawi.

This study used a population of nine (9) COMESA member states, which had established securities markets by 2005 from a total of twenty (21) COMESA member states. The years 2005 and 2010 are the years that the World Bank introduced reports on ease of doing business ranks and scores/indices respectively based on regulations enhancing businesses and those constraining the same across nations (World Bank, 2010) (Appendix i, ii and iii). The data analysis was, therefore, for fifteen years (15) years from 2005 to 2020. The year 2005 was used as a base year for computing rates of changes of SMD and EG and therefore was excluded from the period of the study. Using the criterion technique, the states that met these criteria are Mauritius, Tunisia, Zambia, Kenya, Uganda, Malawi, Zimbabwe, Egypt and Sudan (see appendix i). The unit of analysis for this study was the individual member states.

3.5 Data Collection

The study used secondary panel data acquired from the World Bank database for data on SMD, GR and EG while data on BIP was obtained from the central/federal banks of member states. Secondary data was preferred because was data that was readily available and had been independently verified by external auditors and the World Bank. Panel data was the most

appropriate because it covered data of multiple variables in multiple periods and allowed for the individuality or heterogeneity of data.

On the EG of each member state, the study analyzed data on the annual real GDP growth rate. SMD was measured by stock Market Capitalization (MC) and Stock Traded Value (TVL), while Bank Industry Performance (BIP) was measured by the Size of Commercial Banks (SCB), Credit to Private Sector (CPS) and Interest Earned (IE).

Government Regulations (GR) were measured by the ease of doing business score computed by the World Bank from a cluster of regulations deemed to help in gauging the level of regulatory performance and improvement over time in terms of providing an investor-friendly business environment in an economy. The aspects for business incorporation, obtaining a trading permit, accessing finance, operating in a secure business environment, labour regulations, dealing with day-to-day operations, getting electricity connection, property transfer, credit access, minority investors protection, tax payments, international trade engagement, contracts enforcement, and insolvency resolution went into the formula for determining the ease of doing business score (see Appendix iv and vi) from the year 2010 to 2020.

The World Bank started computing and publishing the ease of doing business scores/indices from 2010 and onwards and therefore this data was not available from its data bank. Consequently, from 2005 to 2009, the scores were calculated based on the best score of the base year, which was 2010 relative to the rank of individual economy yearly rank. (ie 183-p)/183*88.1%) Where; 183 is the entire population of economies ranked in the base year (2010), P is the rank preceding the respective economy's rank and 88.1% is the best score in 2010 attained by Singapore economy (World Bank, 2010).

3.6 Reliability Testing

Since this study employed secondary data, reliability was assessed through reviewing existing information about the data, which included performing a simple analysis on the sample of data and tracing to and from source documents. The data was also verified by comparing it with published reports, such as audited financial statements and central/federal banks' published reports.

3.6 Operational and Measurement of Study Variables

The study's interest was the study variables, which are four in number. The independent variable was securities market development (SMD) measured by stock market capitalization and stock traded value which in this case was the rate of growth. The dependent variable was economic growth (EG), operationalized by GDP growth rate, while GR was the first moderating variable measured by EDB score/index acquired from the World Bank Group's website and the researchers' computed scores/indices. The second moderating variable, Bank Industry Performance (BIP) was measured by Credit to the private sector (CPS), Size of Commercial Banks (SCB) and Interest Earned (IE).

To operationalize EG, the rate of change of real GDP was used as one of the growth measures. SMD was operationalised by a composite index of rates of changes in Stock Market Capitalization (MC) and Stock Traded Value (STVL) while Government regulations (GR) were measured by the ease of doing business score/ index. BIP was operationalized by bank interest revenue, per cent of interest-bearing assets; the log of total assets (LTA) of all commercial banks (SCB) and the ratio of private to public sector credit for interest earned size of commercial banks and credit to private sector respectively. Table 3.1 presents how the study variables were operationalized.

Table 3.1: Operational and Measurement of Study Variables

Variable	Operationalization	Measurement
SECURITIES MARKETS DEVELOPMENT INDEX (INDEPENDENT VARIABLE)		
Securities markets development	Market capitalization	Rate of change of MC
	Stock traded value	Rate of Change of STVL
GOVERNMENT REGULATIONS (MODERATING VARIABLE)		
Government regulations	Ease of doing business	EDB score/index
ECONOMIC GROWTH (DEPENDENT VARIABLE)		
ECONOMIC GROWTH	Gross Domestic Product growth rate	Rate of change of real GDP
BANK PERFORMANCE (MODERATING VARIABLE)		
Banking Industry Performance	Interest earned	Bank interest revenue, per cent of interest-bearing assets
	Size of commercial banks	LTA of all CB
	CPS	The ratio of private to public sector credit

Source: Researcher (2022)

3.7 Diagnostic Tests

The study performed the diagnostic tests presented in Table 3.2

Table 3. 2: Diagnostic Tests Summary Table

Assumption	Description of Test	Test	Interpretation	Treatment
Multi-collinearity	Exists where there is a correlation between independent variables resulting in standard errors that distort regression analysis.	Variance Inflation Factor (VIF) & Tolerance.	Multi-collinearity existed where the VIF>10.	Removed highly correlated predictors from the model.
Heterosced asticity	Establishes if the variance of errors is not similar in all observations.	Breusch-Pagan test.	Heteroscedasticity existed if there is a non-constant variance of the residual (i.e. when $p<0.05$)	Robust Standard Errors Newey–West estimator was used.
Autocorrela tion	Exists when the residuals are not independent of each other (ie the residuals are correlated).	Wooldridge autocorrelation test in panel data was used.	($p<0.05$) shows the presence of autocorrelation	Newey –West estimator was used
Multivariat e Normality Test	Exists if the data set is modelled well by a normal dispersion.	Shapiro-Wilk, Graphically using Histogram and Q-Q Plots.	Normality existed where $p>0.05$.	Variable/Data Transformation, Removed outliers.
Stationarity test	The time series variable is non-stationary.	Panel Unit Roots test.	Stationarity exists if the Inverse normal Z statistic was significant ($p<005$)	The first difference of the variables was used to rectify this violation of the OLS cardinal requirement
Linearity Test	The application of LRM assumes linearity between the outcome and predictor variables.	ANOVA	Non-linearity existed if $p>0.05$.	Application log transformation.

Source: Researcher (2022)

3.8 Data Analysis

The panel regression technique was adopted to investigate the association among the study variables and to test the hypothesized associations. Panel data is analysed through three

approaches, which consisted of the Pooled Ordinary Least Squares (OLS), the Random Effect Model (REM) and the Fixed Effect Model (FEM)/LSDV Model estimation techniques (Zulfikar & Rizka, 2018; Jakšić, Erjavec & Cota, 2021; Kryeziu & Hoxha, 2021). This study applied the Hausman test and the Lagrange Multiplier (LM) to choose the most appropriate model from the three approaches to be used to test the four hypotheses.

3.8.1 Common Effect Model or Pooled Least Square

This model does not consider time and individual dimensions but it presumes that the nature of the unit's data is similar at various times, that is, there is no heterogeneity between and across units (Zulfikar & Rizka, 2018). This method can apply the OLS approach or the least-squares technique to assess the units (Zulfikar & Rizka, 2018; Miniesy & AbdelKarim, 2021).

The form of the panel data regression equation is the same as the OLS. Yaqoob, Omar & Fatima, 2021; Miniesy & AbdelKarim, 2021; Udin, Khan, Khan, & Nilofar, 2021; Karaye & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021; Horobet, Dita, Radulescu & Belascu, 2021) successfully used this model in similar studies.

3.8.2 Fixed Effects Model

The assumption of this model is that differences between individuals (cross-section) can be accommodated from the different intercepts (Miniesy & AbdelKarim, 2021). It means that although each study unit can have different intercept values, such intercepts remain the same over the entire period, that is, the intercepts are time-invariant (Laureti & Leogrande, 2021).

The dummy variable technique is used to estimate the FEM with different intercepts between individuals. (Miniesy & AbdelKarim, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin &

Tekindal, 2021; Qudrat-Ullah, & Nevo, 2021; Karaye, & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021) successfully used this model in similar studies.

3.8.3 Random effects Model

The RE model estimates panel data where interference variables may be linked between time and between units. In the REM, the difference between intercepts is accommodated by the error terms of each unit's data. The REM differs from the CEM and FEM because this model does not apply the canons of OLS but uses the canons of maximum probability or general least square (Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah, & Nevo, 2021; Karaye, & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021) successfully used this model in similar studies.

3.8.4 Approaches for Selecting the Most Appropriate Model for Panel Data Analysis

To select the most appropriate model, several tests can be undertaken. This study used the Hausman Test to select the most suitable model between the FEM and REM. The null hypothesis (H_0) was: that the appropriate model is the REM, while the alternative hypothesis (H_1) was that the FEM is the most appropriate. If result is: H_0: $p > 0.05$, select REM and if H_1: $p < 0.05$, Select FEM (Saragih, Raya & Hendrawan, 2021).

The Lagrange Multiplier Test, (LM) test, is an analysis performed to choose the most appropriate model between the pooled Ordinary Least Squares or random effect. (Zulfikar & Rizka, 2018). In choosing the most appropriate model in this study, the H_0 was: there is no significant heterogeneity across COMESA member states, and the H_1 was: there is significant heterogeneity across COMESA member states.

Where the p-value is insignificant ($p > 0.05$), we accept the H_0 and therefore we choose the pooled OLS as the most appropriate model to be used and conclude that the REM is not the most appropriate, that is, if the Result: H_0: ($p > 0.05$), Select CE and if H_1: ($p < 0.05$). Select REM (Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah & Nevo, 2021; Karaye & Büyükkara 2021; Costantiello, Laureti & Leogrande, 2021) successfully used these approaches in choosing the most appropriate models for testing the hypotheses in similar studies.

3.8.5 Testing the Hypothesized Relationships

Table 3. 3: Summary of Research Objectives, Hypotheses, Analytical Methods, Statistical test and Interpretation

Objectives	**Hypotheses**	**Methods of Analysis**	**Interpretation**
To ascertain the Effect of SMD on EG of COMESA member states	Hypothesis 1: There is no significant effect of SMD on the EG of COMESA member states.	Regression Model $Y_{it} = \beta 0 + \beta 1X1_{it} + \varepsilon_{it}$ Y= EG, β0= intercept, X1=SMD, β1=coefficient=Error term , i= individual country cross-section data, t=time series,	Relationship exists if β1 is Significant (p-value P<0.05). Test of significance for R^2 using the F-statistic - F-Test is stastically significant (p<0.05)
To establish the effect of GR on the relationship between SMD and EG of COMESA Member states	Hypothesis 2: There is no significant moderating effect of GR on the relationship Between SMD and EG of COMESA member states	Regression Models; $Y_{it} = \beta 0+\beta 1X1_{it} +\beta 2X2_{it} + \varepsilon_{it}$ $Y_{it} = \beta 0+\beta 1X1_{it} +\beta 2X2_{it} +\beta 3(SMD*GR) + \varepsilon_{it}$ Where Y=Economic Growth, X1=SMD, X2=GR, (SMD*GR)=Interaction Term and ε_{it} is an error term, i= individual country cross-section data, t=time series	Baron and Kenny's (1986) approach: Relationship between Y and X should be statistically significant. Determine whether or not the moderator alters the robustness of the causal association between X and Y. F-Test should be statistically significant. Determine whether introducing the Interaction Term alters the direction or intensity of the association between two variables. Determine the statistical significance of the interaction term. The moderating effect occurred if the relationship between Y and X is significant, and the interaction term is statistically significant (p<0.05).
To determine the effect of BIP on the relationship between SMD and EG of COMESA member states.	Hypothesis 3: There is no significant moderating effect of BIP on the relationship between SMD and EG of COMESA member states.	Regression Models Regression Models; $Y_{it} = \beta 0+\beta 1X1_{it} +\beta 2X2_{it} + \varepsilon_{it}$ $Y_{it} = \beta 0+\beta 1X1_{it} +\beta 2X2_{it} +\beta 3(SMD*CPS) + \varepsilon_{it}$	Baron and Kenny's (1986) approach: Relationship between Y and X should be statistically significant. Determine whether the moderator altered the robustness of the causal association between X and Y. F-Test should be statistically significant

	BIP was measured using CPS, IE and Size of commercial Banks	$Y_{it} = \beta0+\beta1X1_{it} +\beta2X3_{it} + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} +\beta2X3_{it} +\beta3(SMD*IE) + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} +\beta2X4_{it} + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} +\beta2X4_{it} +\beta3(SMD*SIZE)+ \varepsilon_{it}$ Where Y=Economic Growth, X1=SMD, X2=CPS, X3=IE, X4=Size of commercial banks (SIZE), SMD*GR, SMD*IE and SMD*Size are Interaction Terms and ε_{it} is an error term, i= individual country cross-section data, t=time series	Determine whether introducing the Interaction Term alters the direction or intensity of the association between two variables. Determine the statistical significance of the interaction term. The moderating effect occurred if the relationship between Y and X is significant, and the interaction term is statistically significant ($p<0.05$).
To investigate the joint effect of SMD, BIP and GR on EG of COMESA member states	Hypothesis 4:There is no significant joint effect of SMD, BIP and GR on EG of COMESA member states	Regression Model $Y=\beta0+\beta1X1_{it}+\beta2X2_{it}+\beta2X3_{it}+\beta2X4_{it}+\beta3X5_{it} +\varepsilon_{it}$ Y=EG,β0=intercept,X1=SMD,X2=GR,X3=IE, X4=Size of commercial Banks and X5=CPS β1, β2,β3, β4 andβ5= coefficients, ε= Error term, i= individual country cross-section data, t=time series	A relationship existed if Model regression coefficients β1...β5 were Significant (p-value $P<0.05$). Test of significance for R^2 using the F-statistic - F-Test was statistically significant ($p<0.05$)

Source: Researcher (2022)

3.8.6 Test of Moderation

Hierarchical multiple regression is applied to check the effects of a moderating variable on the association between the outcome variable and the predictor variable. To test moderation, the study particularly, looked at the interaction effect between SMD and moderator and whether or not that effect significantly predicted EG. Confirmation of the third variable making a moderating effect on the association between the two variables SMD and EG, the study showed that the nature of the association changed as the values of the moderators BIP and GR changed. This was, in turn, done by introducing an interaction term in the model and observing to find out if indeed such an interaction was significant and helped to explain the variations. To assess the moderating effect of bank industry performance (BIP) on the association between SMD and EG of COMESA states, Baron's and Kenny's (1986) approach was used as outlined below:

Step 1: The SMD variable is presumed to determine EG and therefore the relationship between SMD and EG should be statistically significant.

Step 2: Center the predictor variable and the moderator variable and multiply the centred predictor by the centred moderator to create an interaction term (SMD*BIP). Determine if the moderator variable (BIP) alters the strength of the causal association between SMD and EG. F-Test should be statistically significant

Step 3: Determine whether introducing the interaction term changes the magnitude or direction of the association between two variables. Determine the magnitude and statistical significance of the R-square change. Determine the significance of the interaction term if the response variable is better than before.

The moderating effect occurs if the Relationship between EG and SMD is significant, and the interaction term is statistically significant ($p<0.05$).

3.9 Chapter Summary

Chapter three outlines the connection between previous chapters and chapters four, five and six. It relies on previous chapters to choose suitable (optimal) research methods required in addressing research questions, objectives and testing resultant hypotheses. Its output informed the findings and conclusion of this study demonstrated in chapters four, five and six. Finally, it outlined the approaches that were followed in chapter four in choosing the most appropriate panel data models for testing the four hypotheses of the study. The models that were to be chosen and subsequently applied in testing the hypotheses in chapter five included the Pooled OLS, the FEM and the REM.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSIONS

4.1 Introduction

Chapter three entailed aspects dealing with research methods that guided the study and included the philosophical direction, the design to be used, target population, operationalization of variables, diagnostic tests, and the approaches adopted to analyse the data. This chapter provides data analysis and interpretation of the results of the statistical tests within the framework of the objectives of the study and hypotheses. The analysis, tests and results interpretation are based on the overall objective of the study, which was to assess the effect of bank industry performance and government regulations on the association between securities markets development (SMD) and economic growth (EG) of COMESA.

The population consists of nine member states of COMESA over 16 years, from 2005 to 2020. The data were converted into excel format for easier arrangements into panels. The study adopted the panel data methodology which involves the pooling of observation into time series and cross-sections (Wooldridge, 2000).

The outcome variable of the study was Economic Growth (EG), which the study operationalized using the annual Gross Domestic (GDP) growth rate. The independent variable was Securities Markets Development (SMD), operationalized by Market Capitalization (MC) and Stock Traded Value (TVL). Government Regulations (GR) (moderator) was measured by the "ease of doing the business score,'' which is computed by the World Bank from a cluster of regulations deemed to help in gauging the level of regulatory performance and improvement over time in terms of providing an investor-friendly business environment in an economy. Bank Industry Performance (BIP) (moderator) was measured by the Size of Commercial Banks (SCB), Credit to the Private Sector (CPS) and Interest Earned (IE). Panel data regression analysis (PRA) was undertaken to

test the hypothesized associations using SPSS and STATA data analysis software. The descriptive statistics for all the study variables were presented in the next section, followed by some diagnostic tests, the hypothesis analysis to choose the most appropriate panel data model for testing each of the study hypotheses and finally the chapter summary.

4.2 Reliability Testing

Reliability was assessed through reviewing existing information about the data, which included performing a simple analysis of the sample of data and tracing to and from source documents. The data was also verified by comparing it with published reports, such as audited financial statements and central/federal banks' published reports.

4.3 Descriptive Statistics

This section presents descriptive statistics for the study variables that include measures of the mean (MN), standard deviations (SD), median (MD), minimum, maximum, standard error (SE) of an estimate, kurtosis and skewness. The MN is a measure of central tendency used to explain the most typical value in a set of values while the MD is the middle number in a sorted, ascending or descending order of numerical and can be more descriptive of the data set than the MN while SD is a measure of deviation from the central tendency (Kothari, 2010). When the SD is greater than the MN, it indicates the data has extreme values (outliers), meaning that the data might not be normal, therefore further analysis to eliminate outliers and to ensure that the data is normal was done to make it suitable for further analysis (Cooper & Schindler, 2003). Skewness is a measure of symmetry, or the lack of asymmetry (Kothari, 2010). Data dispersion is symmetric if it is the same both to the left and to the right of the centre point (Cooper & Schindler, 2003). The SE is a statistical term that tests the accuracy with which a sample

distribution represents a population by applying SD which is the degree to which a sample mean deviation from the actual mean of the population (Kothari, 2010)

According to Cooper and Schindler (2003), a Kurtosis is a measure to ascertain if the data are peaked or flat relative to normal dispersion. The scholars state that a kurtosis that is above the value of 3 means that the dispersion is high-peaked relative to the normal dispersion. Table 4.1 presents a summary of the results of the descriptive statistics of indicators of securities markets development, bank industry performance, government regulations and economic growth for the nine COMESA member states for 15 years from 2006 to 2020. The year 2005 has been excluded because computations of rates of change for markets capitalization and stock traded values (current year values-previous year value divided by the previous year values) required the data for 2004, which this study did not cover, to be used to compute the rate of change in the year 2005.

Table 4. 1: Summary of Descriptive Statistics

	N	Minimum	Maximum	Mean	Median	Std. Deviation	Skewness		Kurtosis	
							Statistic	Std. Error	Statistic	Std. Error
Market Capitalization Rate of Change (MC)	135	-.99	21.75	.2281	.06	1.90	10.96	.209	124.68	.414
Stock Market Value Rate of Change (STV)	135	-1.00	19.79	.54	.08	2.29	5.81	.209	41.13	.414
Ease of doing Business Scores (GR)	135	8.27	81.47	51.72	54.50	16.70	-.660	.209	.198	.414
Log of total assets (Size of Commercial Banks)	135	-.64	2.52	.92	.86	.69	.19	.209	-.279	.414
Ratio of Private Sector to Public Sector Credit (CPS)	135	.29	6.17	2.59	2.18	1.45	.772	.209	-.263	.414
Bank Interest Revenue, Percentage of interest-bearing assets (IE)	135	.07	105.21	10.08	8.16	15.38	4.654	.209	22.64	.414
Economic growth (EG): The rate of change of real GDP	135	-17.67	19.68	4.3676	4.39	4.30	-.999	.209	6.91	.414

Source: Researcher's Computations (2022)

Table 4.1 presents a summary of descriptive statistics of the study variables. The means, SD, maximum, minimum and the number of observations for each of the indicators of the variables are presented. Securities markets development variable was measured by Market Capitalization (MC) and Stock Traded Value (STV), while bank industry performance was operationalized using CPS, Interest Earned (IE) and Size of Commercial Banks (SCB). Government regulations and economic growth were measured by Ease of Doing Business Scores (EDB) and GDP Growth rate respectively.

The statistics in table 4.1 indicate that the maximum and minimum MC rates of change were 21.75 and -.99 respectively (mean=.2281, median=.06, standard deviation=1.90). MC is positively distributed with a skewness of 10.96 (standard error=.209). Positive skewness essentially means the dispersion has a long right tail. Negative skewness means a long left tail distribution. This indicator has a kurtosis that is above the value of 3 (124.68) with a standard error of .414, implying the dispersion is peaked or leptokurtic commensurate to the normal dispersion.

The maximum and minimum STVL rates of change were 19.79 and -1.00 respectively (mean= .54, (Median=.080, SD=2.29). STV rate of change is positively dispersed with skewness of 5.81 (standard error=.209), which implies that the dispersion has a long right tail, while negative skewness indicates a long left tail distribution. The study indicator has a kurtosis that is above the value of 3 (41.13 with a standard error of .414), meaning the dispersion is peaked or leptokurtic relative to the normal dispersion.

The maximum bank interest revenue and percentage of interest-bearing assets was 105.21 and the minimum was 0.07 (mean= 10.079, Median=8.1600, SD= 15.381). The maximum log of total assets (LTA)was 2.52, while the minimum was -.64 (Mean=.92, Median=.86, SD=.69). The maximum ratio of private to public sector credit (CPS) was 6.17, while the minimum was .29 (M=2.59, Median=2.18, SD=1.45). Bank interest revenue, percentage of interest-bearing assets are positively

distributed with a skewness of 4.65 (standard error=.209). LTA and the ratio of private to public sector credit are positively distributed with skewness of .191 (standard error=.209) and .772 (standard error=.209) respectively. The results show that bank interest revenue, percentage of interest-bearing assets have a kurtosis of 22.638 which is above the value of 3 with a standard error of .414, meaning that the dispersion is high-peaked relative to the normal dispersion. Log of total assets and the ratio of private to public Sector credit have a kurtosis of -.279 which is below the value of 3, (standard error=.414) and -.263 (standard error=.414 respectively, implying that the dispersion is low-peaked relative to the normal dispersion.

The maximum ease of doing business score was 81.5%, while the minimum score was 8.27% (mean=51.7169, median=54.500, SD=16.71). The ease of doing business score is negatively distributed with a skewness of -.660 (standard error=.209). Negative skewness indicates a long left tail distribution. The results also indicate that the ease of doing the business score has a kurtosis that is below the value of 3, that is, .198 with a standard error of .414, indicating a low peaked distribution relative to the normal dispersion.

The maximum and minimum rate of change of real GDP was 17.67 and 19.68 respectively (mean = 4.37, median=4.3900, SD = 4.30). GDP is negatively dispersed with skewness of -.999 (standard error=.209). Negative skewness shows a long left tail dispersion. The results also have a kurtosis that is above the value of 3, that is, 6.908 with a standard error of .414. This shows a high-peaked dispersion relative to the normal dispersion.

4.4 Trends Analysis

Trend analysis is a method of time series data analysis that entails comparing the data of a variable over a certain period to highlight its general pattern and project the future direction of that pattern. Figure 4.1 presents the changes in SMD (the composite index of the rates of changes in stock

market capitalization and stock traded value) for nine COMESA member states from 2005 to 2020. The graph indicates an irregular development of SMD. The same trend is witnessed in figures 4.2 and 4.3 for capitalization and stock traded values, which are SMD indicators. This implies that SMD in COMESA is underdeveloped and shaky just like the EG trend.

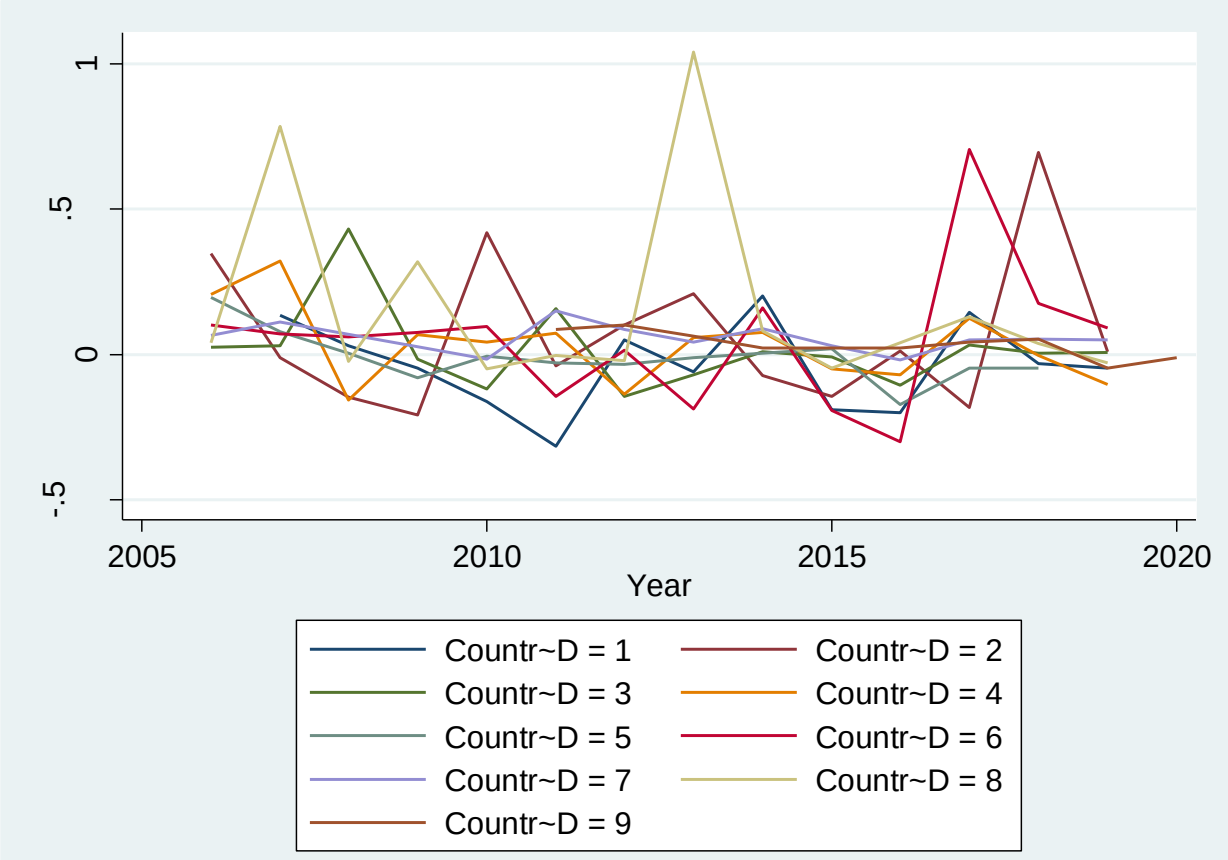

Figure 4.1: Securities Market Development

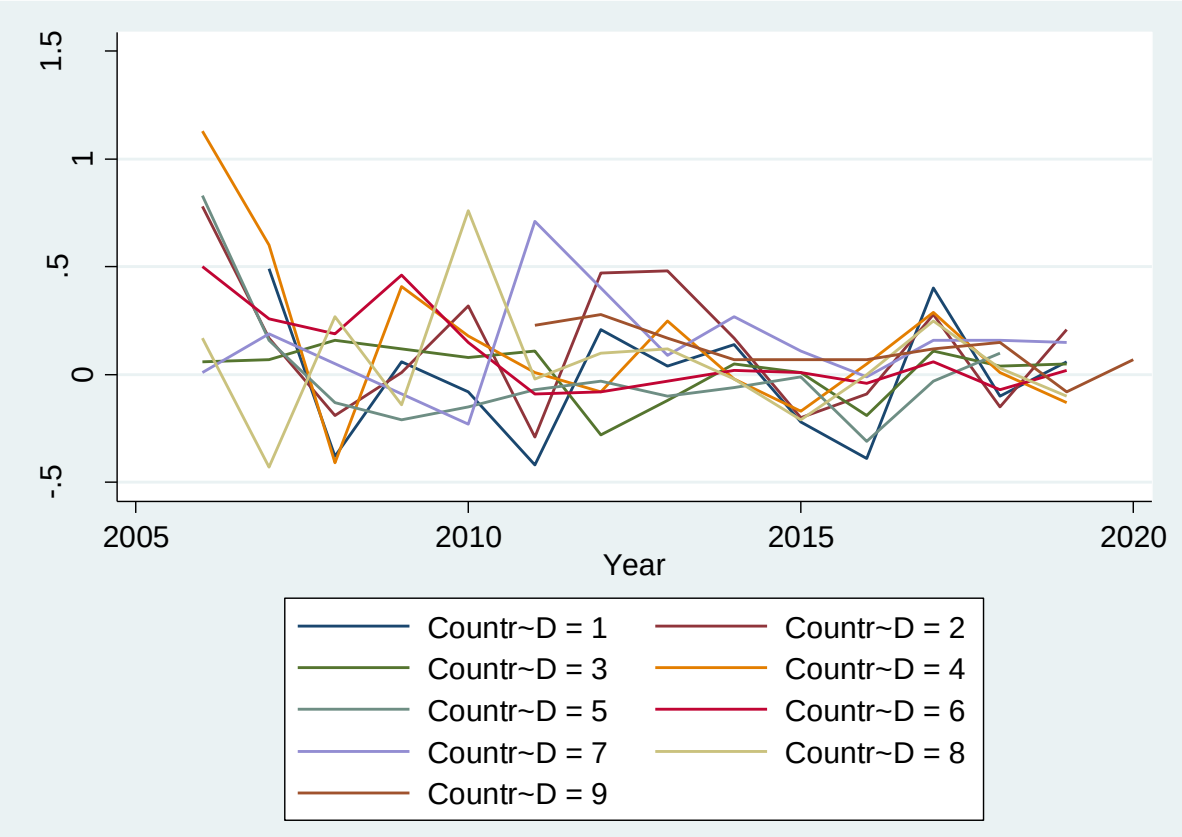

Figure 4.2: Market Capitalization

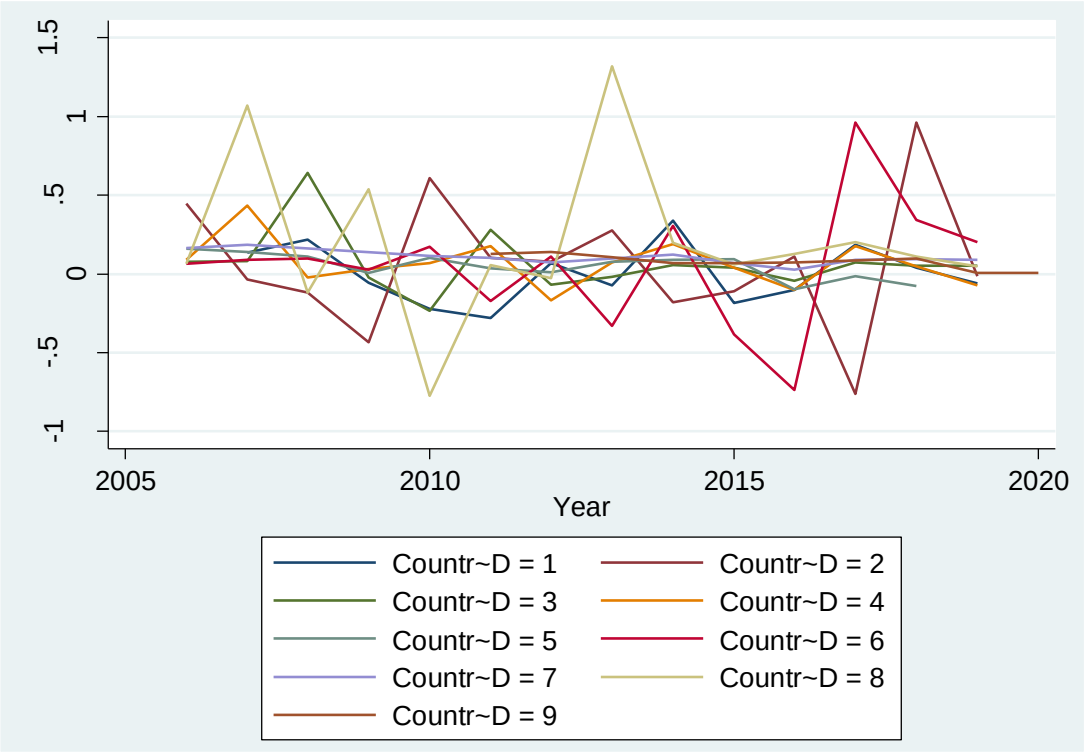

Figure 4.3: Stock Traded Value

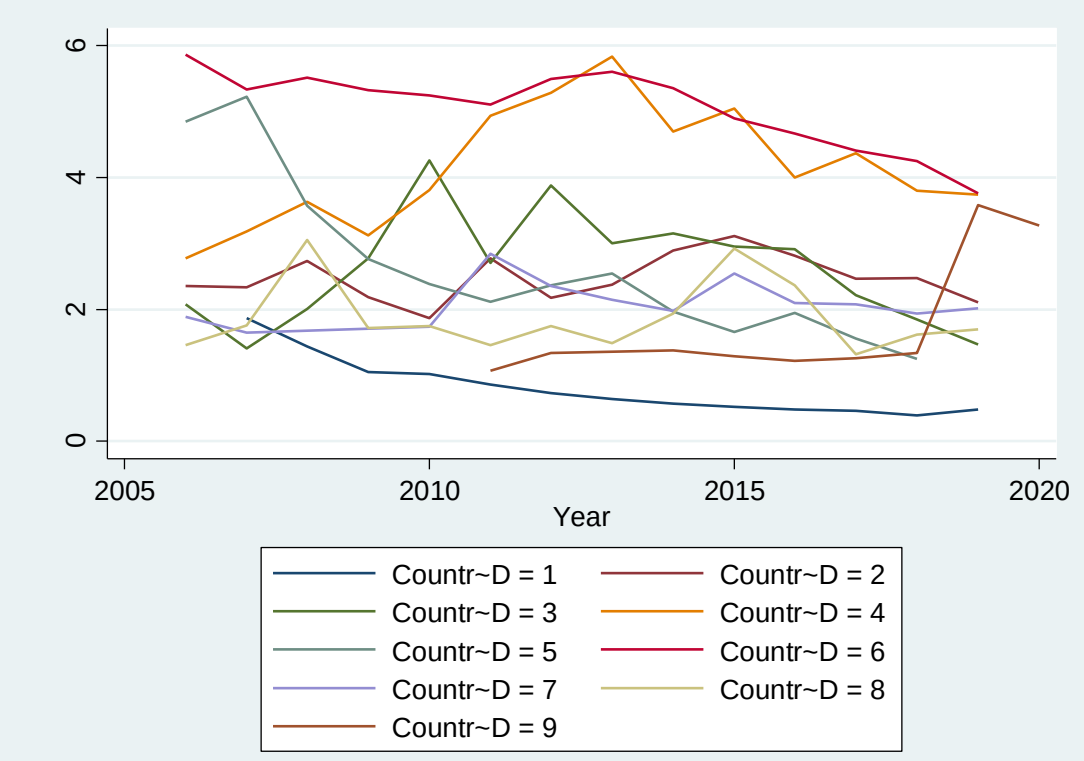

Figure 4.4: Credit Private Sector

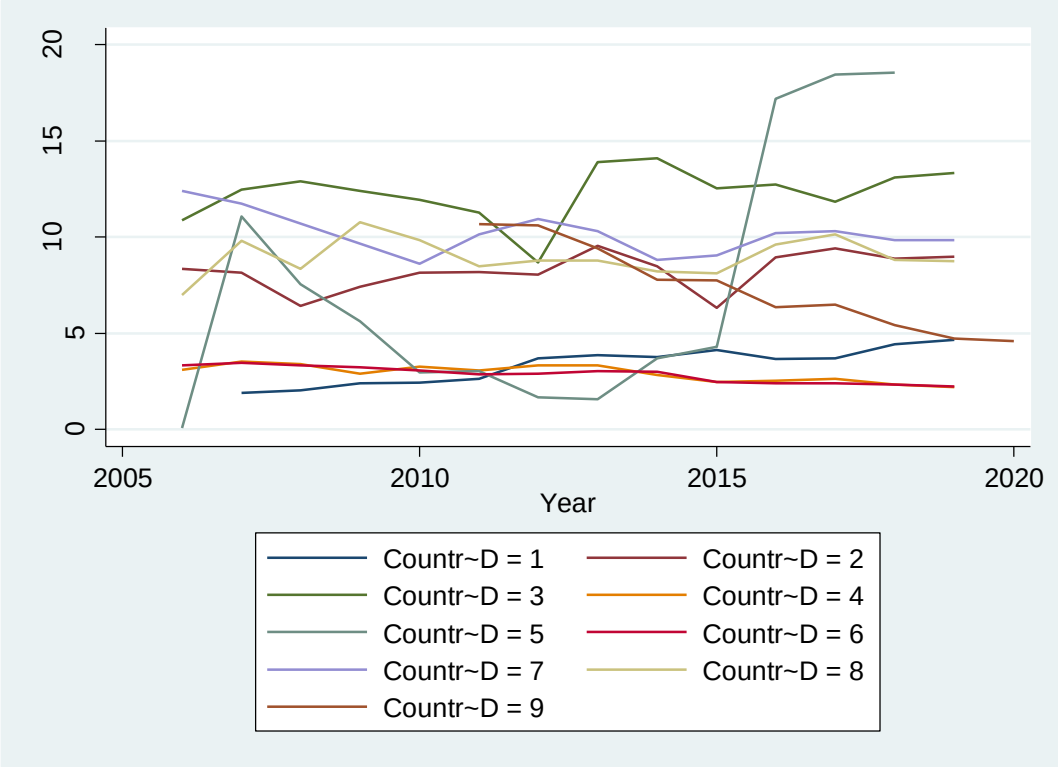

Figure 4.5: Interest Earned

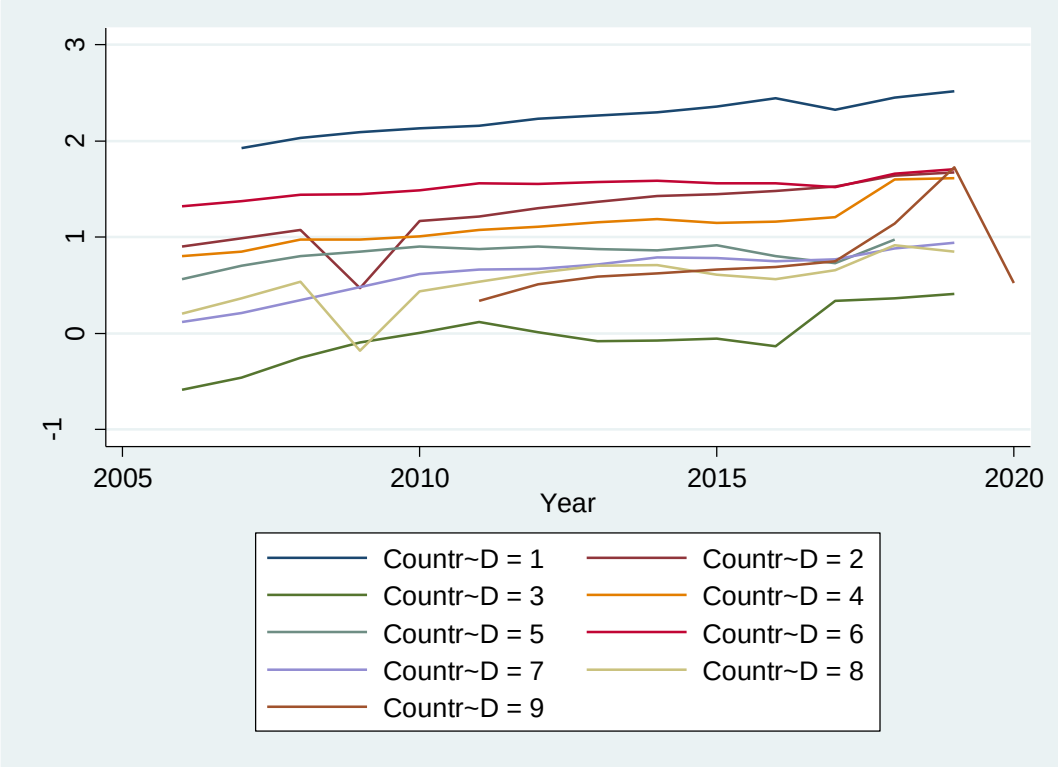

Figure 4.6: Size of Commercial Banks

Figures 4.4 and 4.5 show that both CPS and interest earned have irregular patterns, with CPS having an irregular declining pattern. However, figure 4.6 indicates that the size of commercial banks is growing over time and they tend to move in a similar pattern for all the nine member states. This may suggest that there is increased investment in assets by the commercial banks in COMESA member states.

The performance of member states in terms of ease of doing business score as shown in figure 4.7 below has been rising steadily. This is an indication that member states have been improving the business environments within their countries.

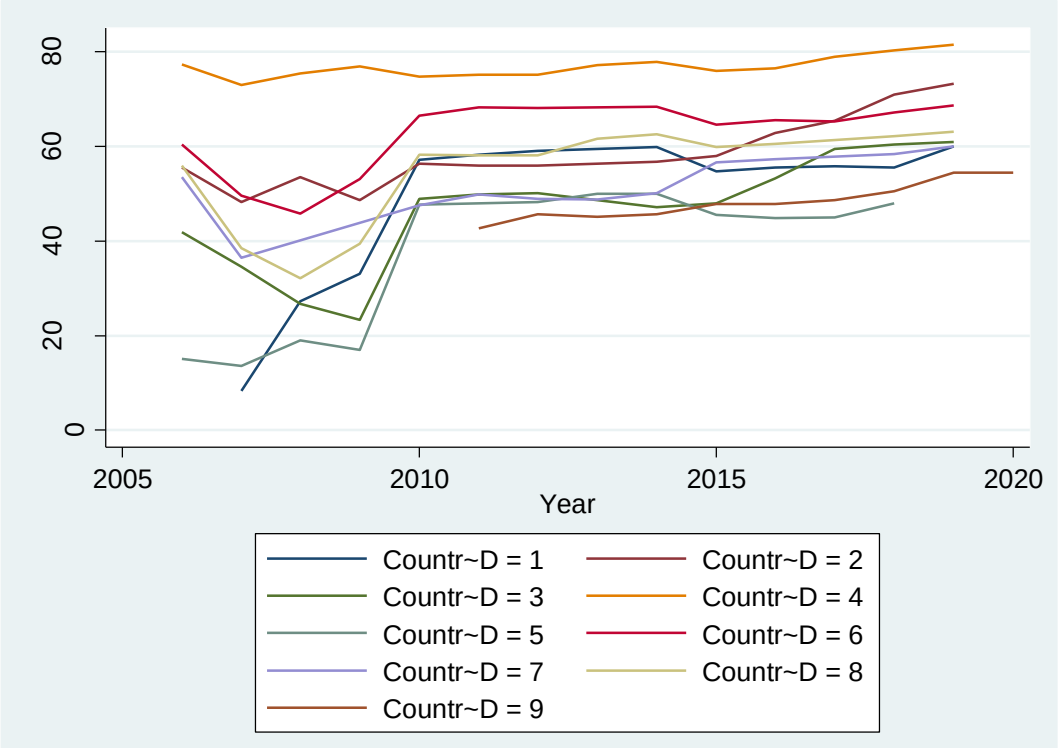

Figure 4.7: Government Regulations

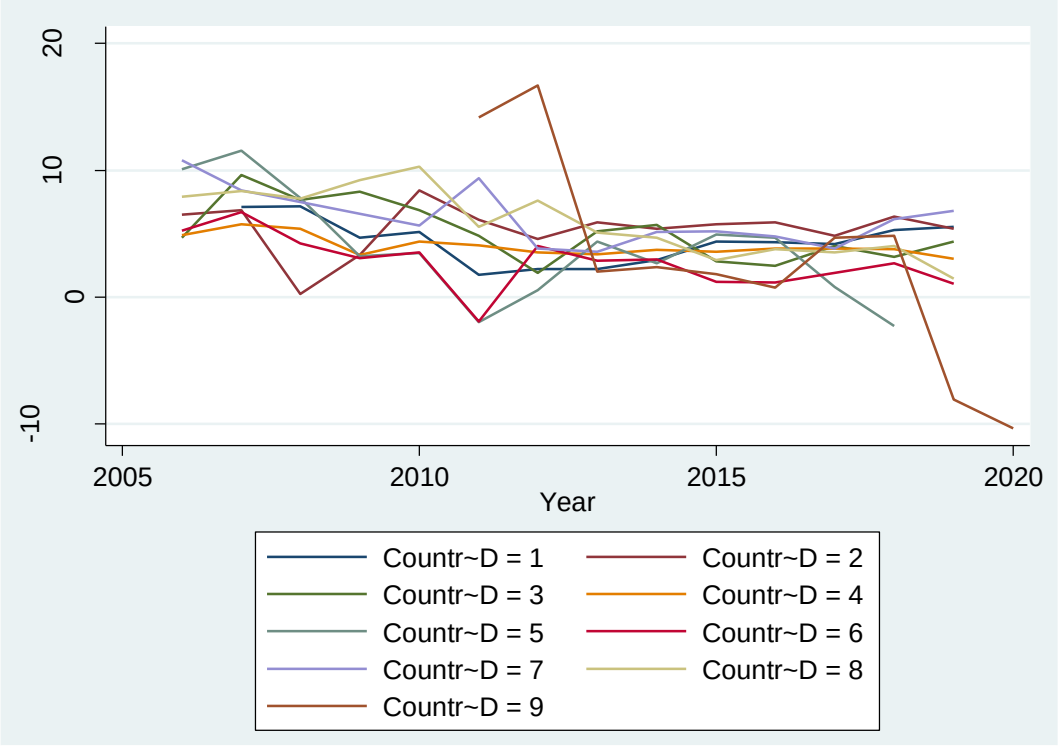

Figure 4.8: Economic Growth

Key

Country ID	*Country*
1	*Egypt*
2	*Kenya*
3	*Malawi*
4	*Mauritius*
5	*Sudan*
6	*Tunisia*
7	*Uganda*
8	*Zambia*
9	*Zimbabwe*

Figure 4.8 indicates that the EG of COMESA is unstable growth over the years, and it has largely been on the decline. This can be attributed to macroeconomic factors like inflation, political instability. Mauritius registered the highest economic shock in 2020. African Development Bank (2021) attributed this economic slump to drastic and fast action by the government to lock down the country due to the outbreak of Corona Virus Disease-2019 (COVID-19).

4.4 Panel Data Diagnostic Tests

In this study, diagnostic tests on panel data were performed before performing statistical analysis to test the hypothesized relationships. The tests were to ascertain if the panel data meet the basic classical linear regression specifications. Stationarity test, normality test, multicollinearity test, heteroscedasticity test and autocorrelation tests were performed. Any violations that were detected were corrected using appropriate statistical measures.

4.4.1 Tests of Normality

The test assists in confirming whether or not the data follows a normal dispersion. The results may not accurately represent the association among the variables if normality is not attained. Consequently, it may result in wrong hypothesis tests because of the overstated test statistics (Pallant, 2005). Graphical and numerical are the two main methods of assessing normality. The Shapiro-Wilk test was adopted as a numerical means of examining normality (Shapiro-Wilk, 1965). A significance level of less than 0.05 implies that the data is not normally dispersed and therefore necessary correction measures were applied.

In table 4.2 tests of normality for EG, MC, government regulations, STVL, MC, the ratio of private to public sector credit and interest earned indicated highly significant values (p-value<0.05), an indication that the data does not fit a normal dispersion. Test of normality for Size of commercial banks indicated a normal dispersion.

Table 4. 2: Tests of Normality

Variables	Shapiro-Wilk		
	Statistic	Df	Sig.
Economic Growth	.906	135	.000
Market Capitalization	.175	135	.000
Government Regulations	.949	135	.000
Size of Commercial Banks	.985	135	.157
Stock Traded Value	.867	135	.000
Market Capitalization	.605	135	.000
Interest Earned	.420	135	.000
Credit to Private Sector	.926	135	0.00

Source: Research Data (2022)

To examine further the dispersion of the scores, graphical displays (histograms) were considered. As shown below, the scores of EG, GR and Size of commercial Banks (Size) did not show extreme departures from the assumption of normality.

Figures 4.9 to 4.15 present the superimposed curve indicating that firm characteristics were normally dispersed because most of the data values were under the bell-shaped curve. Additionally, they indicate that the highest frequency of scores was in the middle, with smaller frequencies towards the extremes, meaning that the characteristics of the indicators were normally dispersed.

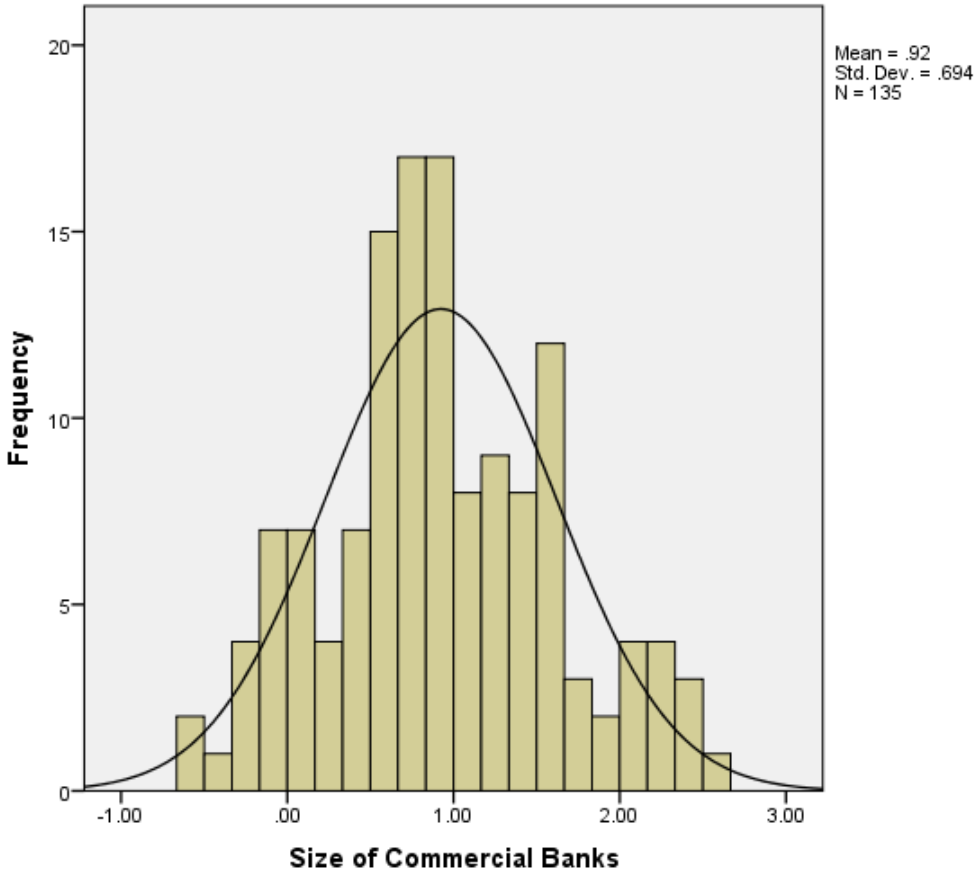

Figure 4.9: Histogram of Size of Commercial Banks

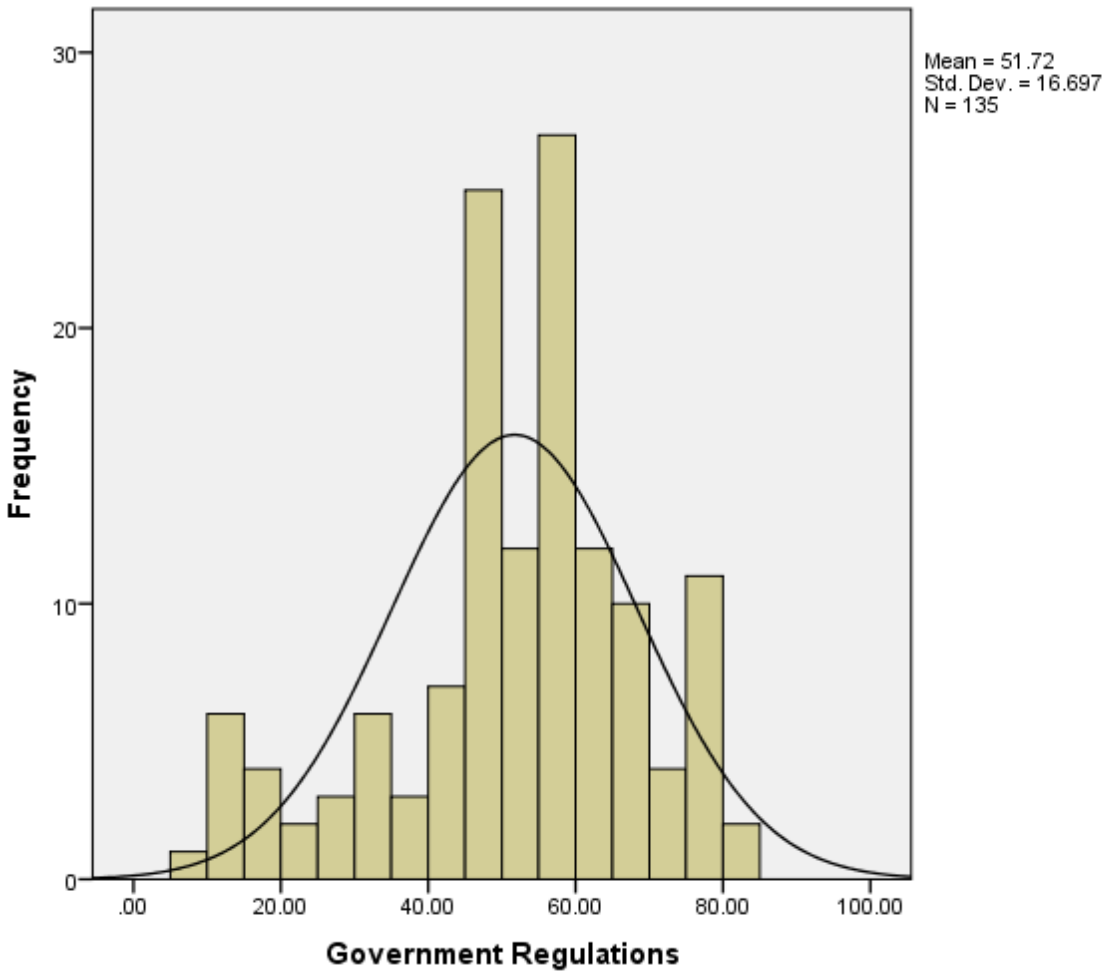

Figure 4.10: Histogram of Government Regulations

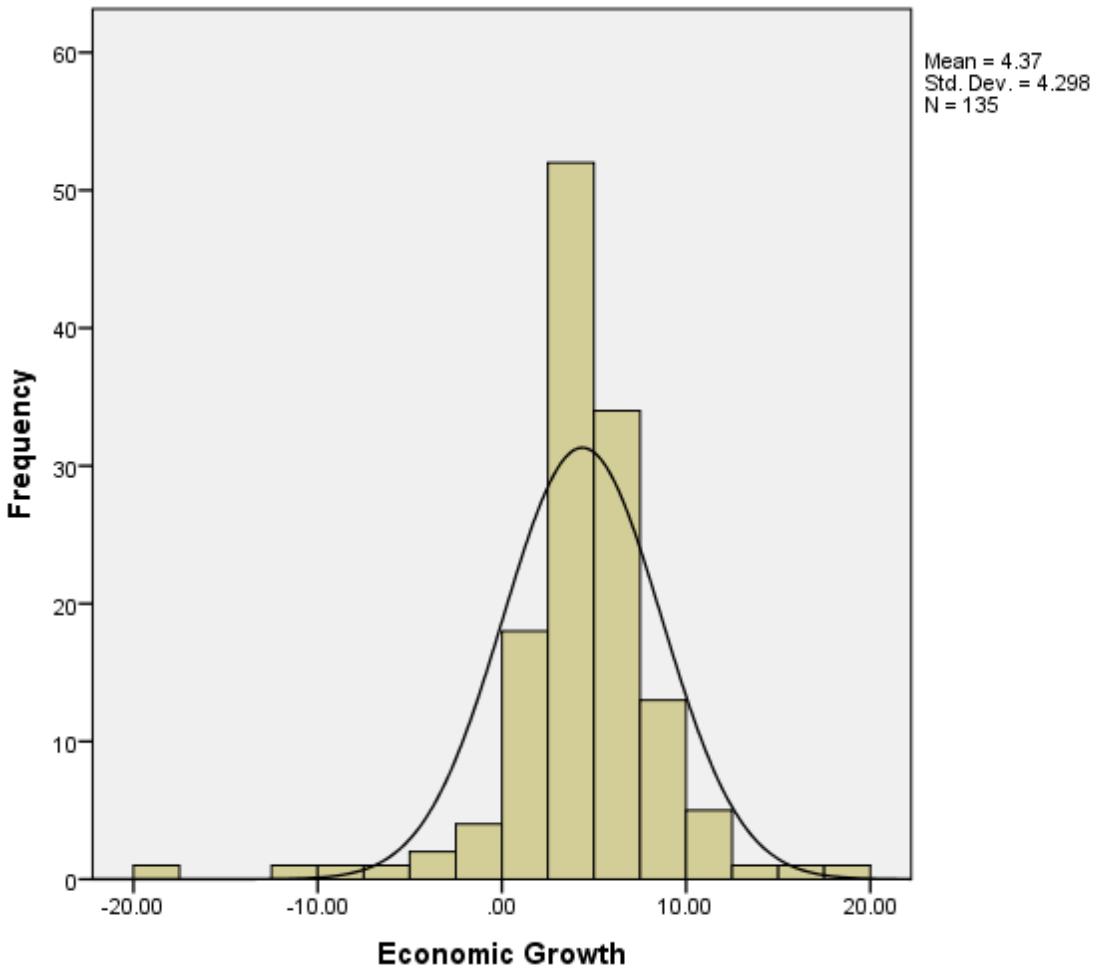

Figure 4.11 Histogram of Economic Growth

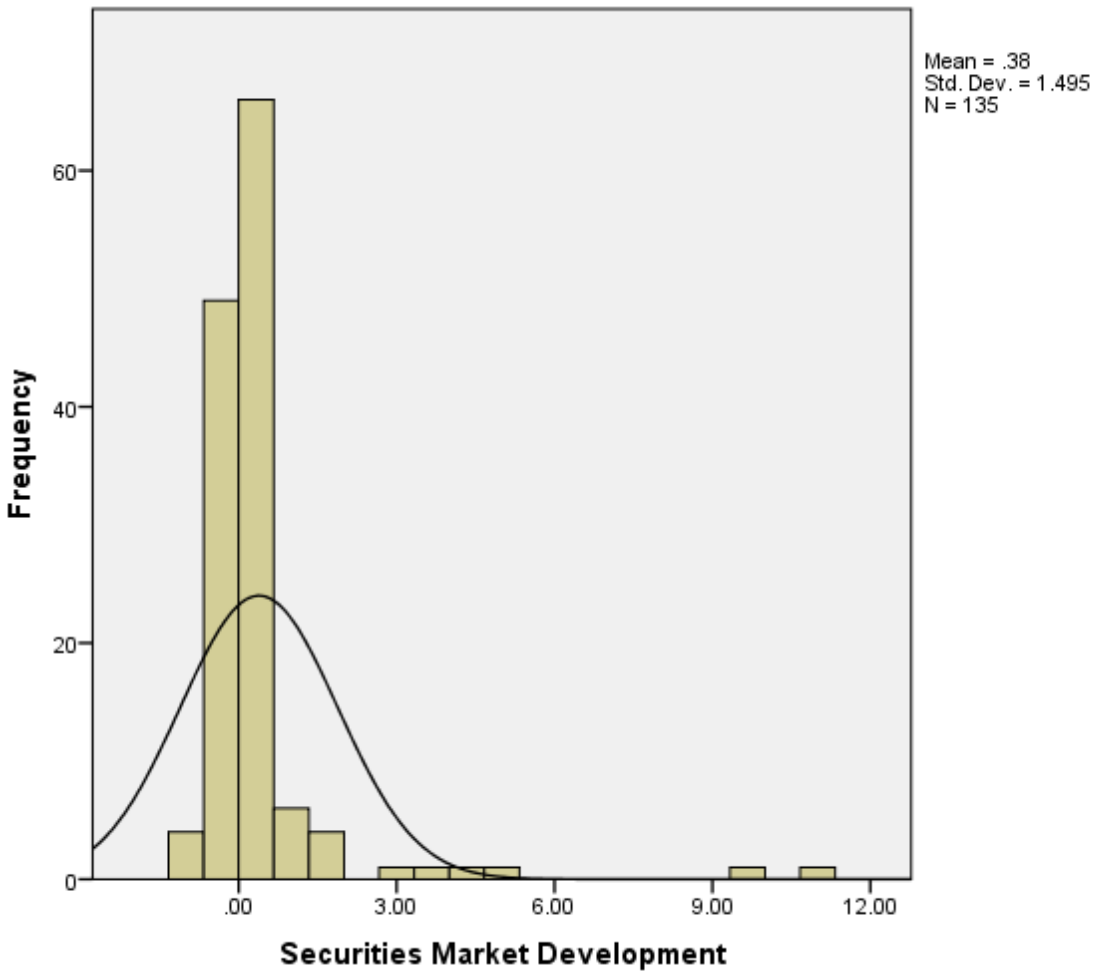

Figure 4.12: Histogram of Securities Market Development

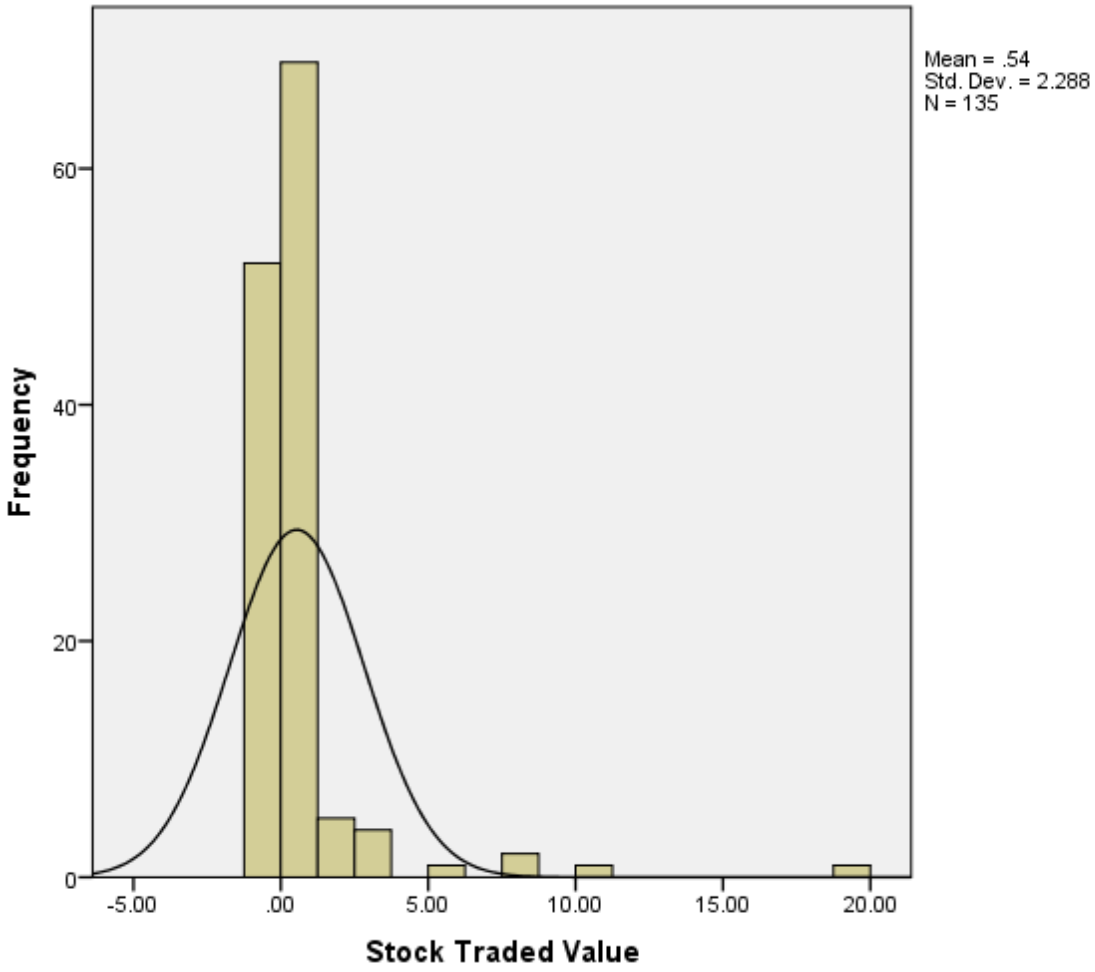

Figure 4.13: Histogram of Stock Traded Value

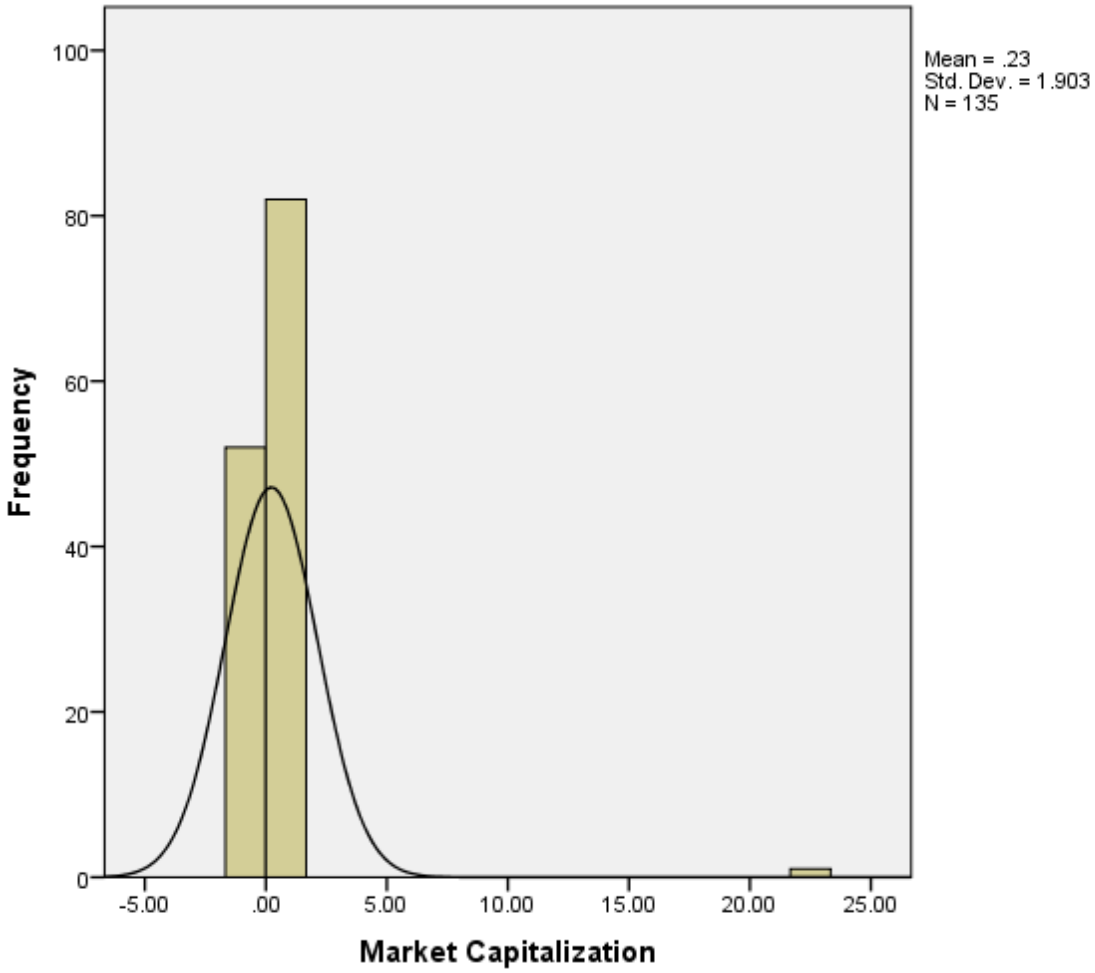

Figure 4.14: Histogram of Market Capitalization

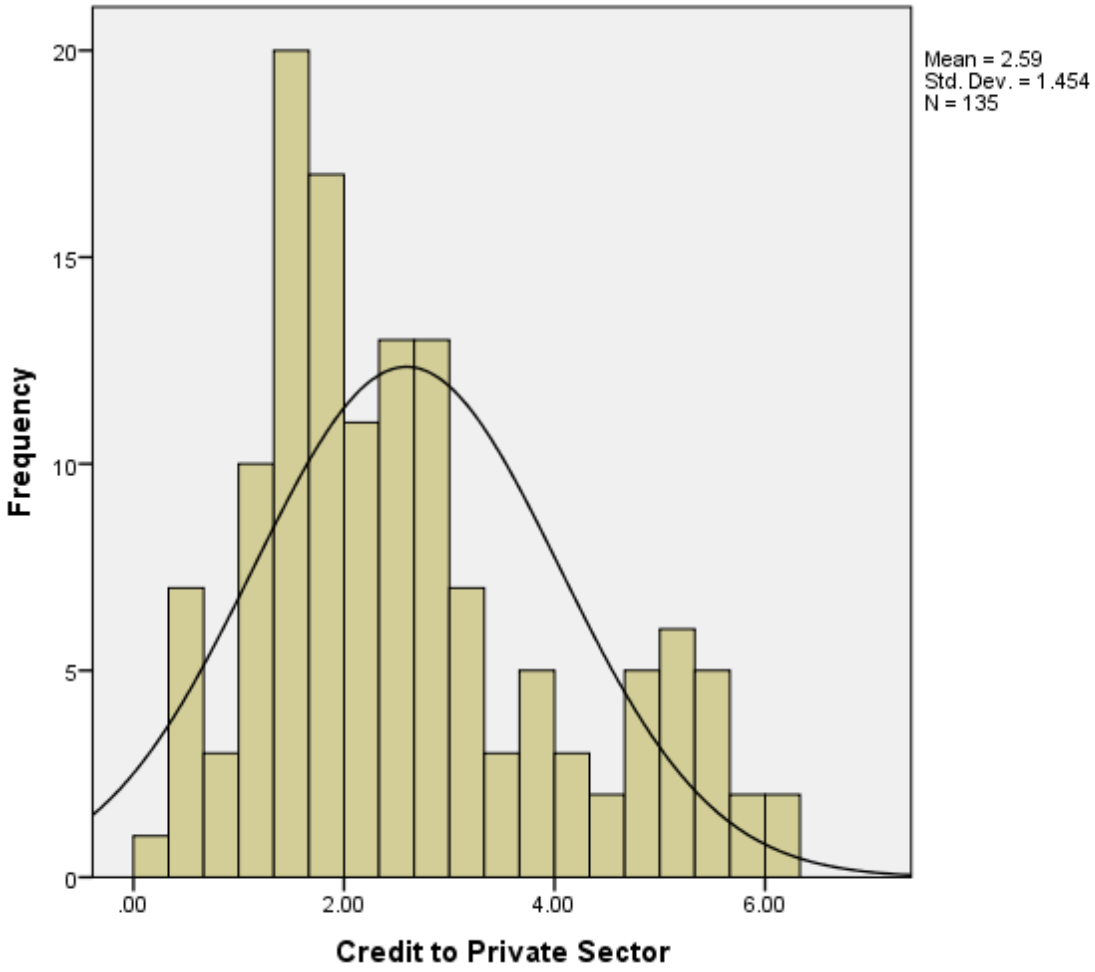

Figure 4.15: Histogram of Ratio of Private to Public sector Credit

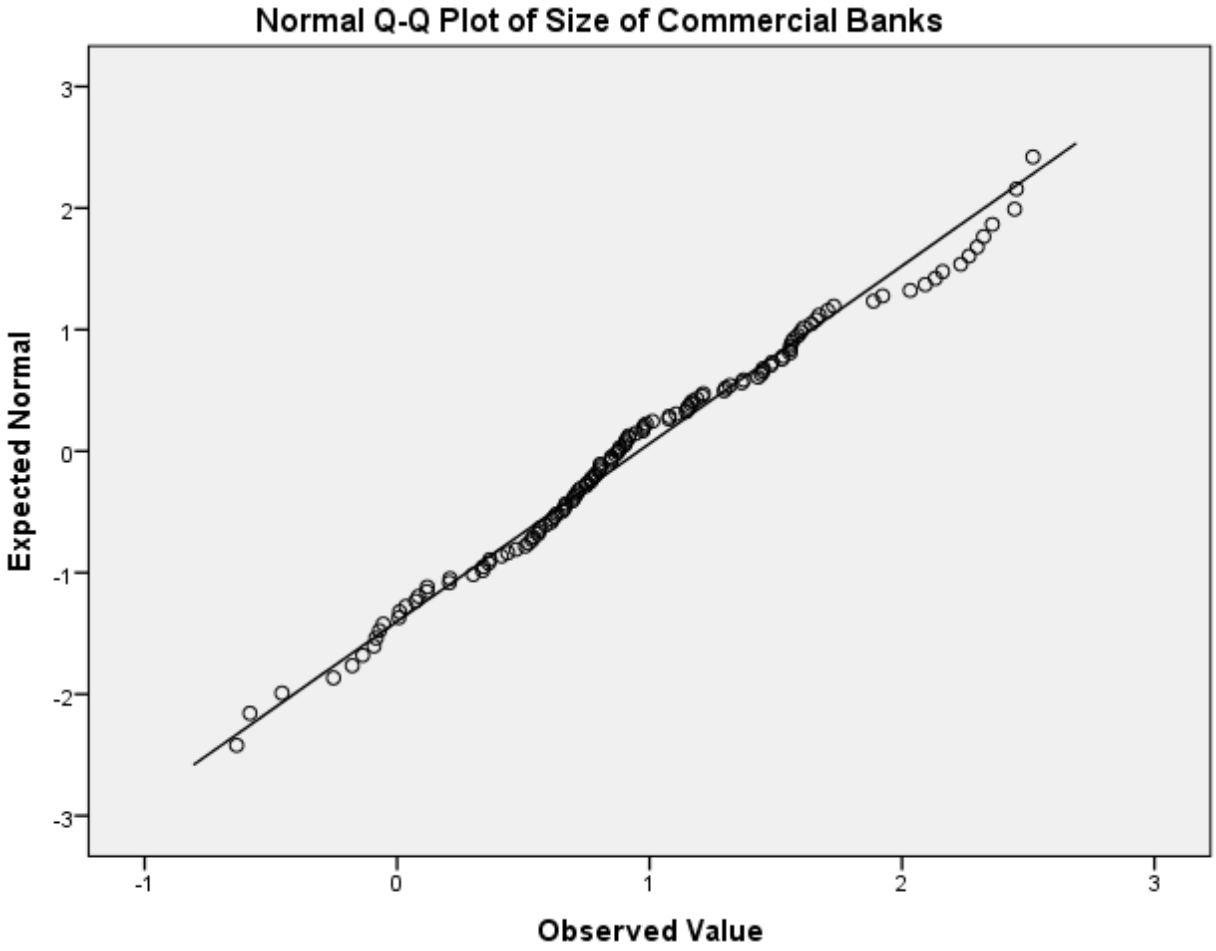

Figure 4.16: Normal Q-Q Plot of Size of Commercial Banks

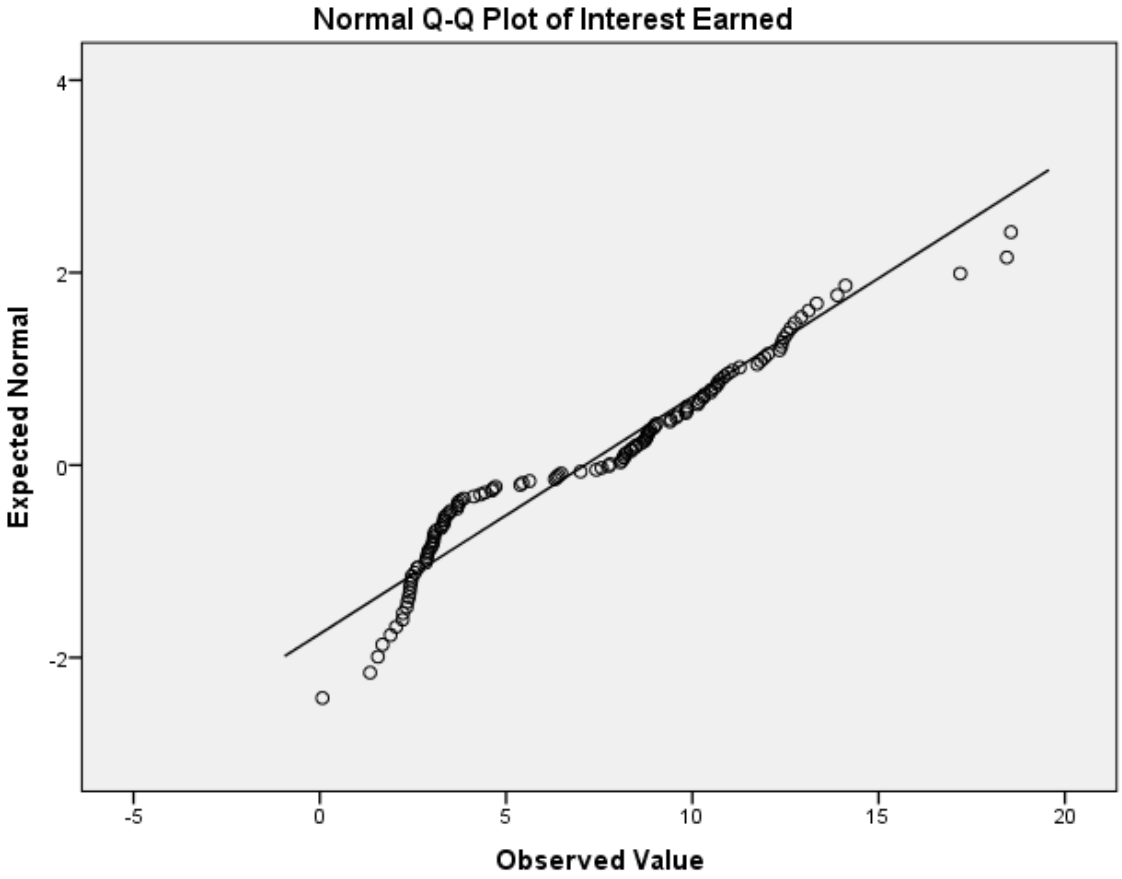

Figure 4.17: Normal Q-Q Plot of Interest Earned

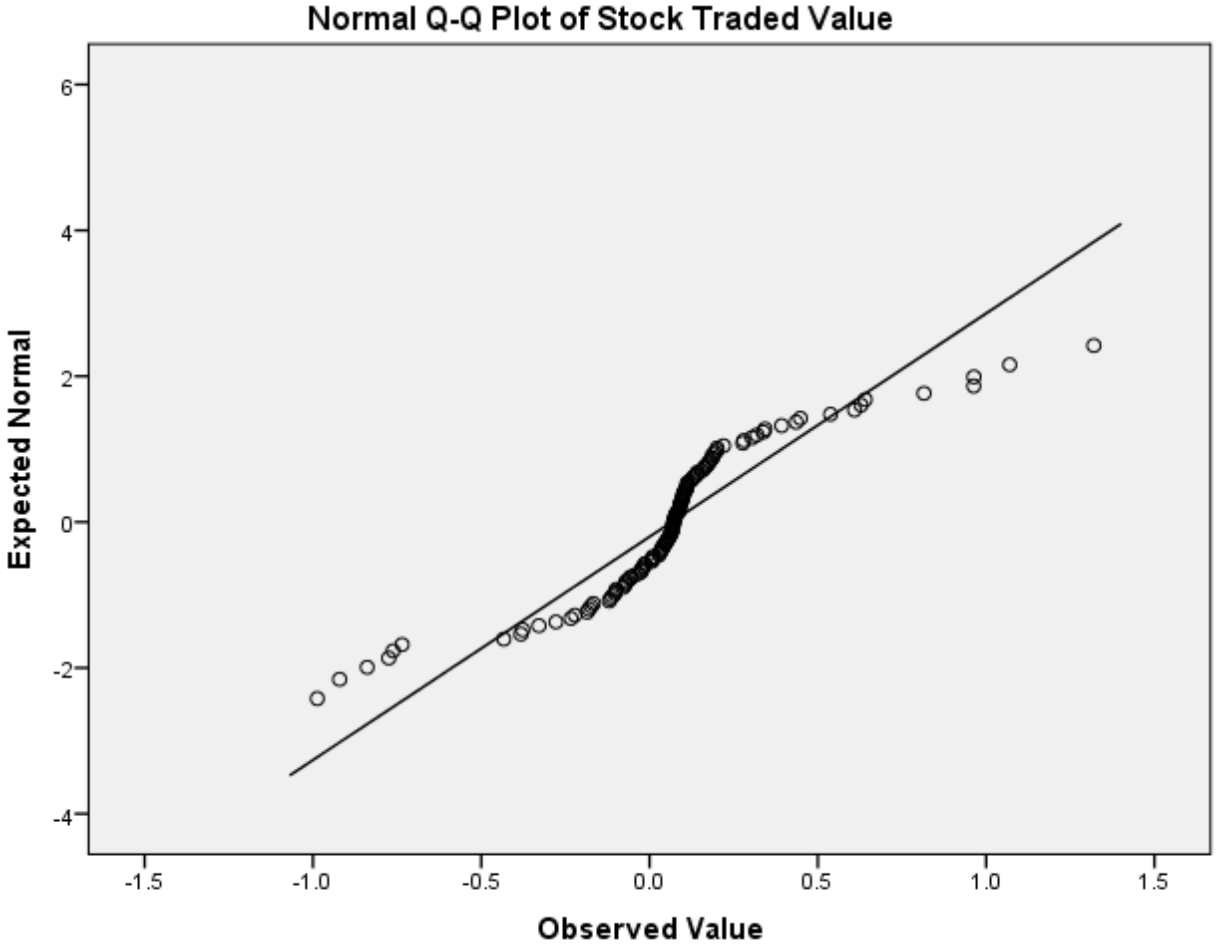

Figure 4.18: Normal Q-Q Plot of Stock Traded Value

4.4.1.1 Non-Normality Tests

According to linear regression specification, the data set should be well modelled with normal dispersion. Shapiro-Wilk, Graphically using Histogram and Q-Q Plots. Normality existed where $p>0.05$ but does not exist where ($p<005$) meaning the data contains extreme values (outliers)

4.4.1.2 Outliers

Extreme values (outliers) can cause serious problems in statistical analysis. Outliers can cause data to be skewed. To address this, outliers were excluded from the data set before further analysis. STATA statistical software was applied to identify extreme data values, eliminating the detected ones. The Shapiro-Wilk normality test was performed once more. Only 118 observations of 9 COMESA Member states were retained for further analysis.

4.4.1.3 Data Transformation

To address non-normality, data were transformed using an appropriate function to fit a normal distribution. STATA for transforming non-normal data were applied to normalize the non-normal data. Table 4.3 presents the results of data transformation.

Table 4. 3: Data Transformation

Variable	**Data Transformation**
SMC	Log Transformation
STV	Log Transformation

Source: Research Data (2022)

4.4.2 Autocorrelation Test

Autocorrelation refers to the connection between values of a random process at different times as a function of the time lag (Moon & Perron, 2004). It can be described as the delayed correlation of a given series. According to the classical linear regression model assumptions, there should be no autocorrelation between any set of variables, that is, the residual in the model should not be correlated because this may create an underestimation of the SE, causing invalid hypothesis testing (Wooldridge, 2000).

Various tests can be undertaken to test for autocorrelation, such as the Durbin Watson statistics mainly used in ordinary least squares models and the Ljung-BoxQ statistics or LM (Lagrange Multiplier) test, which is conducted for models with lagged variables. This study undertook autocorrelation tests using the LM and Wooldridge autocorrelation tests to check if there was autocorrelation among the variables as per each hypothesis. Violation of this assumption was addressed by using the Newey-west estimator.

4.4.3 Heteroscedasticity test

LRM estimated through OLS rest on many presumptions, among them is that the variance of the residual (VR) from the model is constant and unrelated to the predictor variable(s) (Tabachnick & Fidell, 2013). If the variance is constant, we say there is homoscedasticity in the data set, but if there is non-constant variance, we say there is heteroscedasticity (Tabachnick & Fidell, 2013).

According to Tabachnick and Fidell (2007), the residuals (the difference between the obtained variances and the predicted variance scores) and the VR should be the same for all predicted scores

(homoscedasticity). Brusch-Pagan's post-estimation test was used to check for the presence of the problem as per each hypothesis.

4.4.4 Multicollinearity Test

MC refers to a situation where the predictor variables are highly correlated (Keller & Warrack, 2000). VIF and tolerance indices were used to test the presence of MC. A value of VIF >10 shows the presence of multicollinearity and that the assumption is violated (Dawes, 2000). Correlation analyses were also undertaken to detect the presence of multicollinearity

The correlation matrix helps in determining if MC exists among the Predictor variables before undertaking additional analysis using regression. MC exists when predictor variables are highly correlated that is when r=0.9 or above. MCT results in a poor regression model (Keller & Warrack, 2000). Table 4.4 presents the summary of the results of the MC.

Table 4. 4: MC Test Results

Variable	**VIF**	**Tolerance**
SMD	6.61	0.1514
STV	5.97	0.1674
Size	2.16	0.4636
MC	1.7	0.5882
CPS	1.35	0.7398
IE	1.32	0.7555
GR	1.07	0.9380

Mean VIF=2.88

Source: Researcher Data (2022)

The results from table 4.4 show that there was no MCT among the predictor variables.

4.4.5 Linearity Test

Before conducting linear regression, there must be the presence of a linear correlation between the two or more variables (Tabachnick & Fidell, 2013). The ANOVA test of linearity was applied to detect the linearity of the correlations among the predictor and the dependent variables. The researcher calculated the linear and nonlinear components of a pair of variables. Nonlinearity was considered significant if the computed F-value for the nonlinear component was less than 0.05. Table 4.5 presents the results of the linearity test.

Table 4. 5: Test of Linearity - ANOVA Table (Dependent Variable EG)

			Sum of Squares	Df	Mean Square	F	Sig.
Economic Growth*Interest Earned	Between Groups	(Combined)	1351.198	112	12.064	11.838	.005
		Linearity	88.075	1	88.075	86.424	.000
		Variance from Linearity	1263.123	112	11.379	11.166	.006
	Within Groups		5.096	5	1.019		
	Total		1356.293	118			
Economic Growth*Stock Traded Value	Between Groups	(Combined)	1322.033	110	12.018	2.456	.104
		Linearity	40.415	1	40.415	8.257	.024
		Deviation from Linearity	1281.618	110	11.758	2.402	.110
	Within Groups		34.261	7	4.894		
	Total		1356.293	118			
Economic Growth*Market Capitalization	Between Groups	(Combined)	693.794	66	10.512	.809	.792
		Linearity	91.427	1	91.427	7.038	.011
		Deviation from Linearity	602.366	65	9.267	.713	.901
	Within Groups		662.500	52	12.990		
	Total		1356.293	118			
Economic Growth*Government Regulations	Between Groups	(Combined)	1123.562	106	10.600	.501	.964
		Linearity	133.059	1	133.059	6.289	.029
		Deviation from Linearity	990.503	106	9.433	.446	.983
	Within Groups		232.731	11	21.157		
	Total		1356.293	118			
Economic Growth*Securities Market Development	Between Groups	(Combined)	1226.349	113	10.853	.334	.978
		Linearity	25.922	1	25.922	.798	.422
		Deviation from Linearity	1200.427	113	10.718	.330	.980
	Within Groups		129.944	4	32.486		
	Total		1356.293	118			

Source: Researcher Data (2022)

Table 4.5 presents the tests for the linear, nonlinear, and combined relationships among Economic Growth and IE, GR, STV, MC and SMD. The linearity test has a significance value smaller than 0.05 for EG and IE; EG and STV; EG and GR, indicating that there is a linear connection among the variables. The test for deviation from linearity has a non-significant value between EG and STV, EG and MC and EG and GR. The test for linearity between EG and SMD is not significant. Similarly, the deviation from linearity is not significant.

However, the results of scatterplots in figure 4.19 below show that the association between the SMD and EG could be modelled by a straight line, suggesting that the association between the two variables is linear. Similarly, the link between the size of commercial banks (size) and EG is linear as presented in figures 4.19 to 4.21.

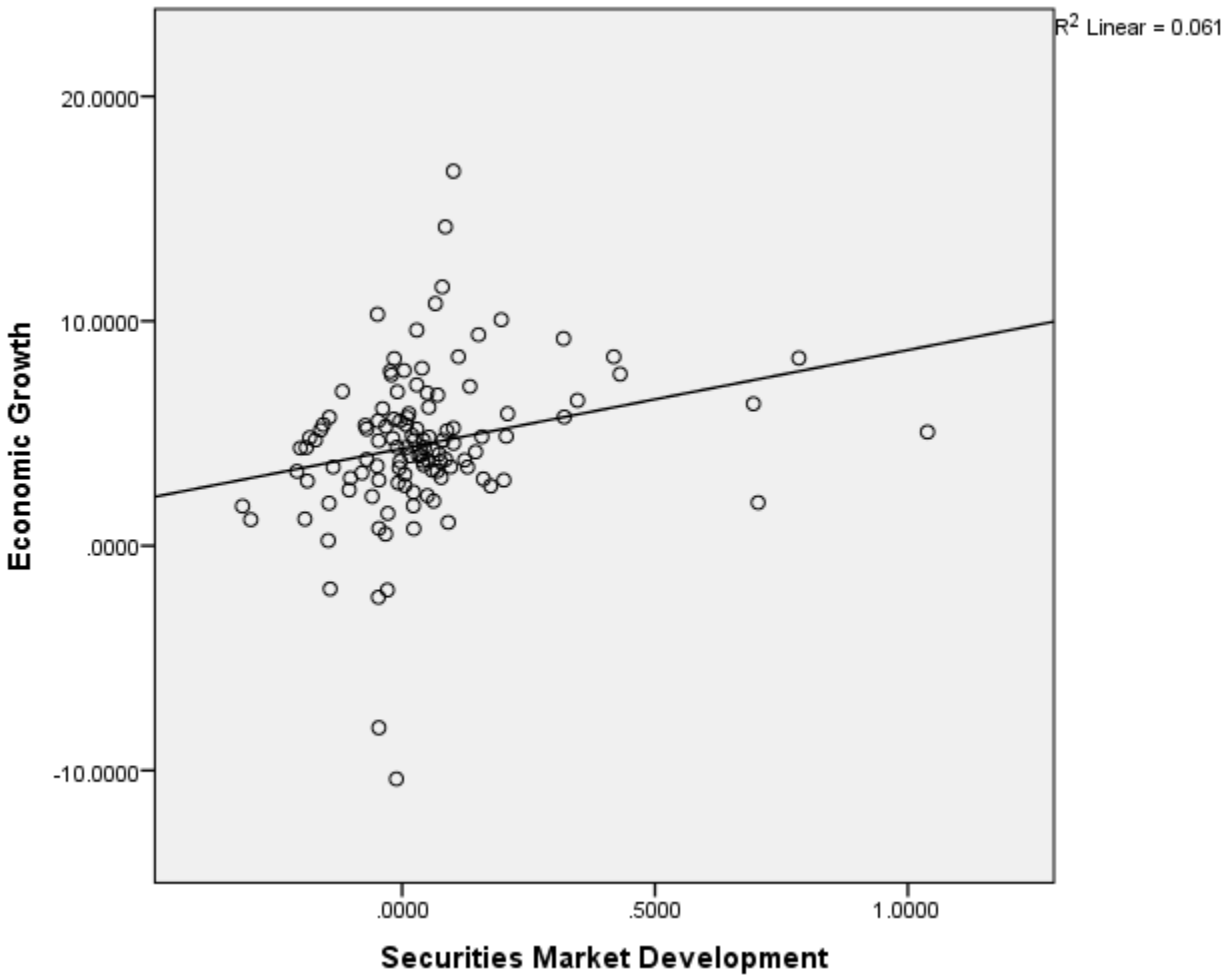

Figure 4.19: Scatterplot for SMD and EG

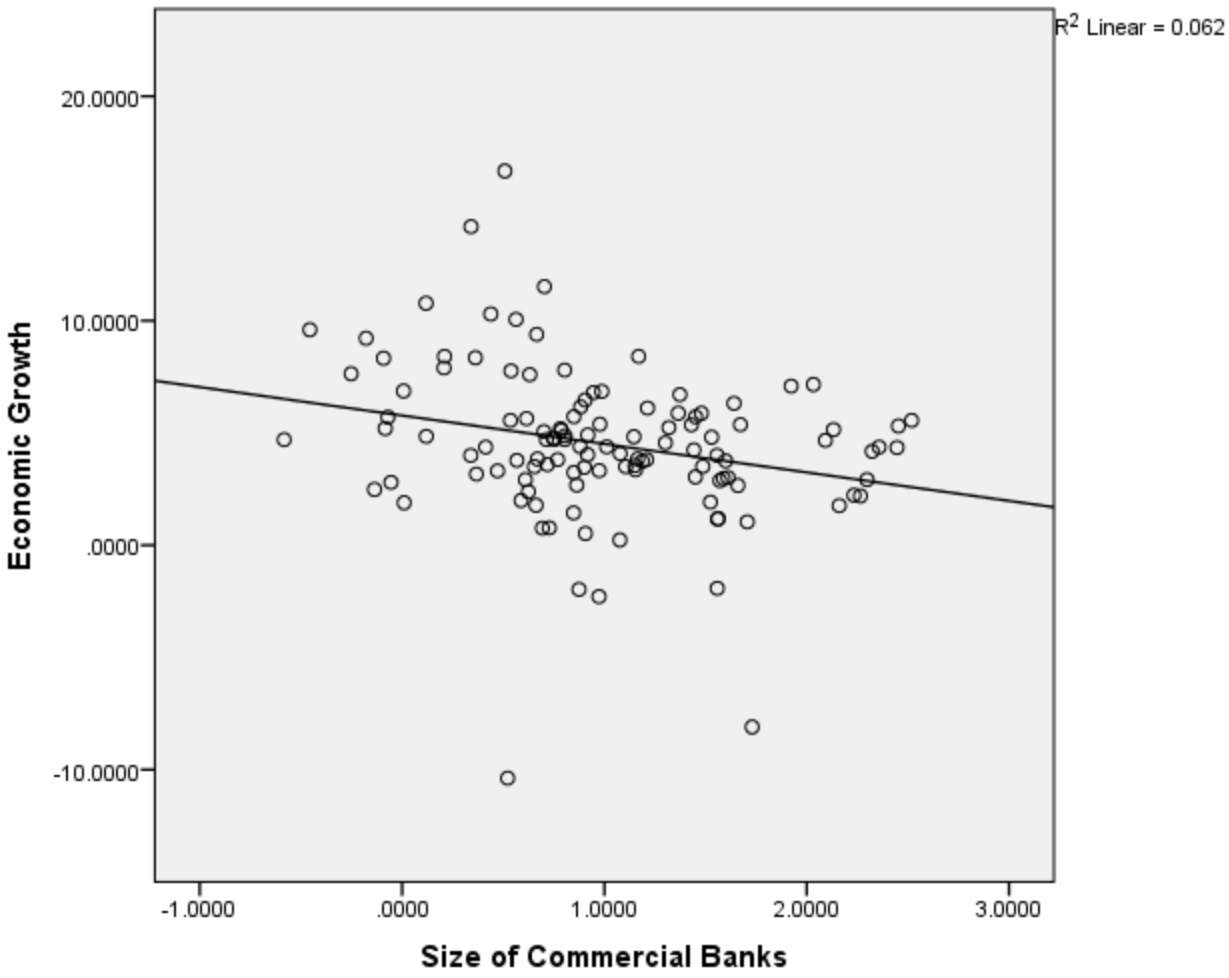

Figure 4.20: Scatterplot for Size of Commercial Banks and EG

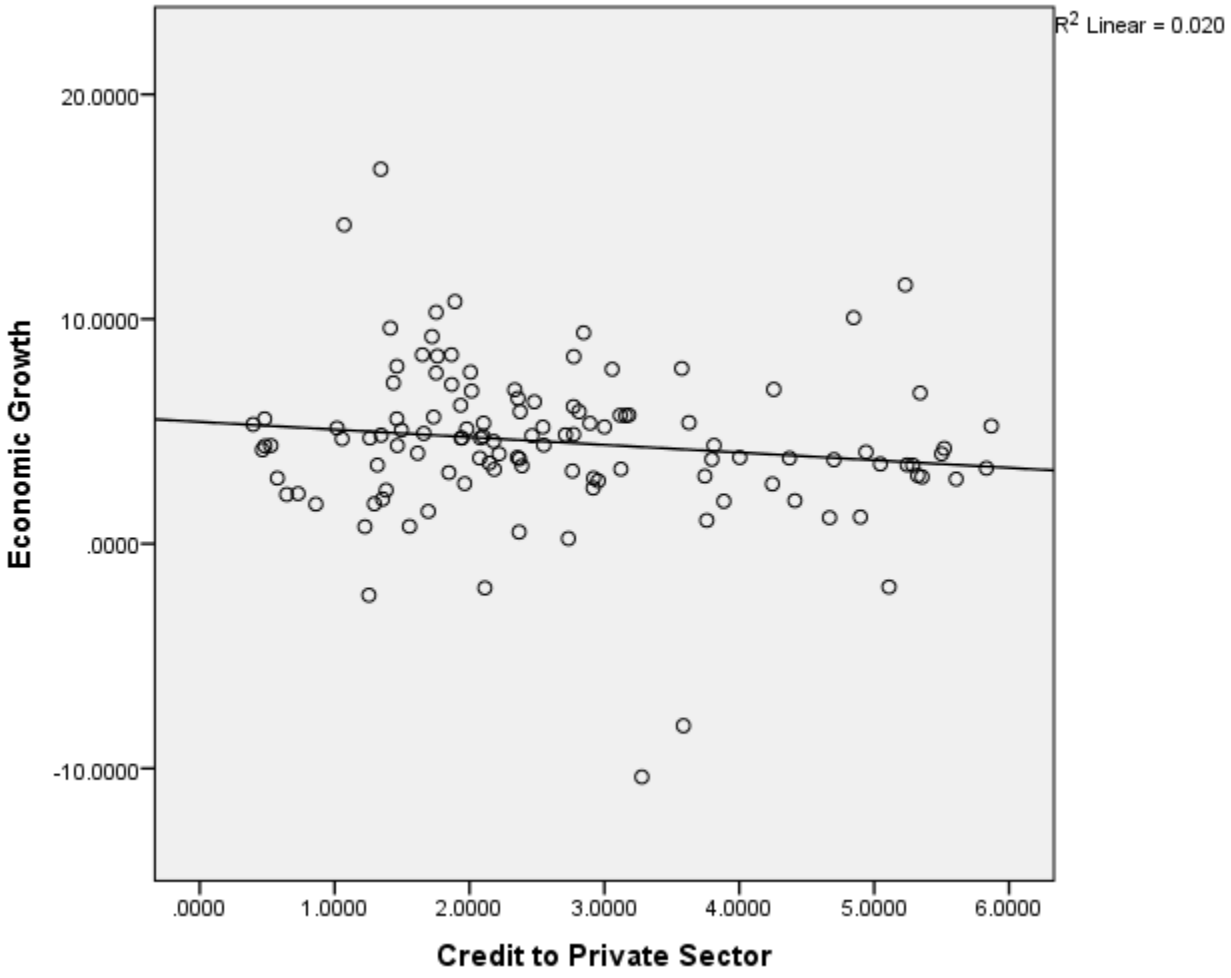

Figure 4.21: Scatterplot for CPS and EG

4.4.6 Stationarity Tests

STATA was applied to check the stationarity of the study variables. According to Moon and Perron (2004), STATA tests whether or not a time series variable is non-stationary and possesses a unit. The test was checked against their corresponding P-values at a 0.05 significance level. The H_0 of the test is that all panels contain a unit root. The H_1 is, that at least one panel is stationary. Table 4.6 presents the Panel Unit Root (PUR) test results.

Table 4.6: The PUR Test Results

Variable	Inverse normal Z statistic (Z)	p-value
EG	-1.0020	0.0026
IE	-0.0235	0.4906
SMD	-5.5866	0.0000
GR	1.9620	0.0151
STV	-3.7751	0.0001
Size	1.1625	0.8775
CPS	-2.2232	0.0131
MC	-6.4959	0.0000

Source: Research Data (2022)

The H_0: All panels contain a unit root

The H_1: At least one panel is stationary

The results of the inverse normal Z-statistic reject the H_0 because the p-values are significant. We accept the H_1 and conclude that the data is stationary for economic growth, security market development, the stock traded value, credit to the private sector, GR and market capitalization study variables at a level. The P-values of IE and size are more than 0.05 and therefore we fail to reject the H_0. We thus conclude that the results of the inverse normal Z-statistic in the table indicate that panels contain unit roots at a level for the study variables IE and size. Therefore, the null hypothesis for the two variables was accepted.

To correct the violation of the OLS cardinal requirement, the first difference of the data was performed on IE and Size as shown in table 4.7.

Table 4.7: PUR Test Results (first difference)

Variable	Inverse normal Z statistic (Z)	p-value
IE^d	-7.0598	0.0000
$Size^d$	-5.9353	0.0000

Source: Research Data (2022)

Stationary at the first difference: The H_0: Series contains a unit root.

The H_1: At least one panel is stationary.

The results from table 4.7 show that under the first difference, the data was found to be stationary.

4.5 Analysis of Correlations

Correlation analysis was used to assess the presence of significant associations among the study variables. Pearson correlation analysis was used to explore associations among the variables, precisely the direction and strength of the link between the variables. Furthermore, the correlation matrix was to help to ascertain if MC exists among the predictor variables before undertaking further analysis. MCT is assumed to exist when predictor variables are highly correlated (r=0.9 and above).

4.5.1 Interpreting the Size of Pearson Correlation Coefficient

Table 4.8 below was used for the interpretation of the strength of the Pearson correlation coefficient during correlation analysis (Cohen, 1988).

Table 4.8: Interpretation of The Strength For The Pearson Correlation Coefficient

Pearson Correlation coefficient	Strength of the correlation
Between 0.9 and 1.00 /-0.9 and -1.00	There is a very High +ve/-ve Correlation
Between 0.70 and 0.90/-0.70 and -0.90	There is a high +ve/-ve Correlation
Between 0.50 and 0.70/-0.50 and -0.70	There is a moderate +ve/-ve Correlation
Between 0.30 and 0.50/-0.30 and -0.50	There is a low +ve/-ve Correlation
Between 0.00 and 0.30/0.00 and -0.30	There is a very Low +ve/-ve Correlation

Source: Research Data (2022)

4.5.2 Bivariate Correlation Between Economic Growth, Interest Earned, Credit to Private Sector, Size of Commercial Banks, Government Regulations and Securities Markets Development

Table 4.9 below presents a summary of the pairwise coefficient of correlation for all the predictor variables, the moderating variables and the dependent variable. The results found a low positive correlation between the EG of COMESA member states and the size of commercial banks ($r = .322$, $p<0.01$). This implies that COMESA member states with higher economic growth are likely to have developed commercial banks in comparison with states with low EG. The relationship between EG and government regulations is negative, low and statistically significant ($r = -.313$, $p<0.01$). Furthermore, the link between economic growth and securities market development is positive and significant ($r = .248$, $p<0.01$). This implies that the growth of SM is associated with the accelerated economic growth of COMESA member states.

Table 4. 9 Pearson Product-Moment Correlation Between Economic Growth, Interest Earned, Credit to Private Sector, Size of Commercial Banks, Government Regulations and Securities Markets Development

Variables	1	2	3	4	5	6
1. Economic Growth	1	.322**	.248**	.106	-.313**	-.142
2. Size of Commercial Banks		1	.111	-.166	-.027	-.065
3. Securities Market Development			1	.015	-.039	-.044
4. Interest Earned				1	-.066	.000
5. Government Regulations					1	.275**
6. Credit to Private Sector						1

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research Data (2022)

There was no correlation between economic growth and CPS because the P-value is statistically insignificant (r = -.142, p>0.01). This is an indication that COMESA member states with high economic growth tend to have less credit from commercial banks going to the private sector.

In addition, there was no correlation between EG and interest earned since the P-value is not significant(r = .106, p>0.01). Similarly, there is no correlation between the size of commercial banks and securities market development because the P-value is not significant (r = .111, p>0.01). Equally, there was no correlation between the size of commercial banks and interest earned (r = -.166, p>0.01). From table 4.9, it is evident that economic growth, interest earned, CPS, size of commercial banks, government regulations and SMD are not highly correlated (r<0.09). Therefore, the variables are suitable for further analysis using multiple regression.

4.5.3 Bivariate Correlation Between Economic Growth, Interest Earned, Credit to Private Sector, Size of Commercial Banks, Government Regulations, The Stock Traded Value and Market Capitalization

Table 4.10 below presents a summary of the pairwise coefficient of correlation for all the predictor variables, the moderating variables and the dependent variable. The results found a low positive correlation between the EG of COMESA member states and the size of commercial banks ($r = .322$, $p<0.01$). This implies that COMESA member states with higher economic growth are likely to have developed commercial banks in comparison with states with low EG. The association between EG and government regulations is negative, low and significant ($r = -.313$, $p<0.01$). Furthermore, the association between EG and MC is positive and significant ($r = .260$, $p<0.01$). It means that the growth of market capitalization is associated with the accelerated economic growth of COMESA member states.

Table 4.10: Pearson Product-Moment Correlation Between Economic Growth, Interest Earned (IE), Credit to Private Sector (CPS), Size of Commercial Banks (SCB), Government Regulations (GR), and Stock Traded Value (STVL) and Market Capitalization (MC)

Variables	1	2	3	4	5	6	7
1. Economic Growth	1	.322**	.106	-.313**	-.142	.173	.260**
2. Size of Commercial Banks		1	-.166	-.027	-.065	.044	.181*
3. Interest Earned			1	-.066	.000	.040	-.125
4. Government Regulations				1	.275**	-.066	-.009
5. Credit to Private Sector					1	-.073	.074
6. Stock Traded Value						1	.030
7. Market Capitalization							1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Research Data (2022)

There was a very low and negative correlation between economic growth, and CPS and was statistically insignificant (r = -.142, p>0.01). This is an indication that COMESA Members states with high economic growth tend to have less credit from commercial banks to the private sector. Furthermore, there was a very weak positive correlation between EG and interest earned (r = .106, p>0.01), which was not statistically significant. The interaction between the SCB and stock traded value was very weak, positive and statistically insignificant (r = .044, p>0.01). The correlation between the size of commercial banks and interest earned was very weak, negative and insignificant, (r = -.166, p>0.05). Since the correlation between economic growth, interest earned,

CPS, size of commercial banks, government regulations and market capitalization is not very high ($r<0.09$), the variables are suitable for further analysis using multiple regression.

4.6 Analysis of Statistical Models for Testing Hypotheses

After conducting diagnostic tests on panel data and taking necessary corrective actions to remedy any violation of the cardinal OLS requirement identified, the researcher went ahead to analyse data per hypothesis. Statistical tests and panel regression analysis were conducted to choose the most appropriate model to test the hypothesized relationships.

The study sought to determine the effect of bank industry performance and government regulations on the connection between SMD and EG of COMESA. The panel dataset is unbalanced and it covers 9 COMESA Member states for the period 2005-2020.

4.6.1 Panel Data Regression Analysis

This section discusses the most frequently used panel data models. These are the FE, RE models and OLS model that does not use panel data information.

It is necessary to note that the pooled OLS model would give inconsistent estimates if inappropriately used when in fact the appropriate model to have been used was either the FEM or the REM (Field, 2001; Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah, & Nevo, 2021; Karaye, & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021).

The REM is more efficient than the FEM it is correct but inconsistent if inappropriately used. When appropriately used, the REM gives the best linear unbiased estimates (Hunter, John & Frank, 2000), while the FEM gives consistent results for the estimates (Hill, Wiliam & Guay, 2012).

The Hausman statistical test is used to select the most appropriate model between the FEM and the REM, while the LM test is used to choose the most appropriate model between a REM regression and a pooled OLS regression model (Raya & Hendrawan, 2021).

4.6.1.1 Hausman Specification Test

This study used the HST to choose the most appropriate model between the FEM and REM for the study dataset. This involved estimating models in a specific sequence, starting with FEM against the H_1. From the HST chi-square and corresponding P-value, the H_0 is accepted or rejected (Raya & Hendrawan, 2021).

The H_0 is that the most appropriate model is RE, while the H_1 is that the most appropriate model is FE (Hill et. al. 2012). Table 4.11 shows model selection criteria following the Hausman specification test.

Table 4.11: Hausman Specification Test for REM or FEM

P-value	**The Most Appropriate Model**
P>0.05	RE Model
P<0.05	FE Model

Source: Researcher (2022)

H_0: The appropriate model is the RE

H_1: The appropriate model is the FE

4.6.1.2 Breusch-Pagan Lagrange Multiplier

The LM test was used to choose the most appropriate model between RE regression and the pooled OLS regression. The H_0 in the LM test is that the OLS is the most appropriate model. This indicates

that the variances across entities are zero, that is, there is an insignificant difference across units, meaning there are no panel effects (Raya & Hendrawan, 2021).

The H_1 is that the most appropriate model is the random effects. This implies that variances across entities are not zero, meaning there are significant differences across units indicating that there are panel effects in the units (Raya & Hendrawan, 2021). Table 4.12 presents the model selection criteria following the LM test.

Table 4.12: LM Test

P-value	**The Most Appropriate Model**
P>0.05	OLS
P<0.05	Random Effect Model

Source: Researcher (2022)

H_0: The appropriate model is the OLS

H_1: The appropriate model is the RE

4.7 Statistical Approaches for Choosing the Most Appropriate Model for Testing Each Hypothesis.

This section deals with the approaches used in choosing the most appropriate models for testing the study hypotheses from among the estimation models used in panel data analysis.

4.7.1 Relationship Between Securities Markets Development and the Economic Growth of COMESA Member States

The first study objective was to ascertain the effect of securities market development on the EG of COMESA member states. The following hypothesis was thus formulated from the objective:

H_{01}: There is no significant effect of SMD on the EG of COMESA member states.

4.7.1.1 Diagnostic Tests

The diagnostic tests undertaken in this section were done to select the most appropriate model to be used in each hypothesis of this study.

4.7.1.1.1 Test of Heteroscedasticity

One of the major assumptions given for any type of ordinary least squares regression is the homoscedasticity in the case of variance of the residuals. If the variance given by the residuals is not a constant, the residual variance is called heteroscedastic. The Breusch-Pagan test for heteroscedasticity was applied to test for homoscedasticity based on the first hypothesis.

The H_0 is that there is homoscedasticity, while the H_1 is that there is heteroscedasticity. If the P-value is $p>0.05$, we accept the H_0, meaning that the dataset is homoscedastic. If the P-value is $p<0.05$, we accept the H_1, implying that the dataset is heteroscedastic. Table 4.13 presents the result of the Breusch-Pagan test (PBT).

Table 4.13: BPT

Statistic	P-value
0.05	0.8314

Source: Research Data (2022)

H_0: There is homoscedasticity (or constant variance).

H_1: There is heteroscedasticity.

Table 4.13 shows the P-value is 0.8314, which is insignificant ($p>0.05$). Therefore, we fail to reject the H_0 but reject the H_1. Hence, the dataset has no heteroscedastic variances, that is, the dataset is homoscedastic.

4.7.1.1.2 Autocorrelation Test

The H_0 is there is no serial correlation in the residual, while the H_1 is there is autocorrelation in the residual. If the P-value is $p>0.05$, we accept the H_0, meaning that the dataset has no serial correlation in the residual. If the P-value is $p<0.05$, we accept the H_1, implying that the dataset has autocorrelation in the residual. Table 4.14 presents the results of the Wooldridge test for autocorrelation (WTA).

Table 4.14: The WTA

Test statistic	**Prob > F**
4.919	0.0574

Source: Research Data (2022)

H_0: There is no autocorrelation in the residual

H_1: There is autocorrelation in the residual

Based on the results of the Wooldridge test in table 4.14, we fail to reject the H_0 because $p> 0.05$. We therefore conclude that there is no problem of autocorrelation in the residual of the dataset.

4.7.1.1.3 Hausman Specification Test

To choose the most appropriate model between FE and RE, the Hausman test was used, where the H_0 was that the appropriate model is random effects, while the H_1 is the fixed effects model is the most appropriate model (Field, 2001).

In the tests, if the P-value is $p>0.05$, we accept the H_0, meaning that the appropriate model is the RE (Field, 2001; Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah & Nevo, 2021; Karaye, & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021). If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the FE (Field, 2001; Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah & Nevo, 2021; Karaye & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021). Table 4.15 below shows the results of the Hausman test.

Table 4.15: Hausman Test to Select FE or RE

Chi-square statistic: chi2(1)	P-Value
0.06	0.8071

Source: Research Data (2022)

H_0: The appropriate model is RE

H_1: The appropriate model is FE

The result from table 4.15 indicates that $p>0.05$. For this reason, we fail to reject the H_0 and, therefore, the random-effects model is chosen to be the most appropriate model.

4.7.1.1.4 The Langrian Multiplier Test for Random Effect

The LM test was used to choose between RE regression and a simple OLS regression. The H_0 was that the appropriate model is the pooled OLS model, while the H_1 was the appropriate model is the RE model is the most appropriate.

If the P-value is $p>0.05$, we accept the H_0, meaning that the appropriate model is the pooled OLS model (Field, 2001; Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah & Nevo, 2021; Karaye & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021). If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the random effect (Field, 2001; Saragih, Raya & Hendrawan, 2021; Li & Leung, 2021; Mat, Arikan, Çevrimli, Akin & Tekindal, 2021; Qudrat-Ullah & Nevo, 2021; Karaye, & Büyükkara, 2021; Costantiello, Laureti & Leogrande, 2021). Table 4.16 shows the summary of the LM test.

Table 4.16: Breusch-Pagan Lagrange Multiplier Test

Chi-square statistic: chi2(1)	P-Value
0.01	0.4608

Source: Research Data (2022)

H_0: The appropriate model is the pooled OLS

H_1: The appropriate model is the RE

The LM test results in table 4.16 show that $p>0.05$. Therefore, we fail to reject the H_0 and decide that the OLS model is the most appropriate. It means that there was no evidence of significant heterogeneity across COMESA member states and hence the pooled OLS regression model is chosen as the most appropriate model for testing hypothesis 1 (H_{01}).

4.7.2 Relationship Between Securities Markets Development, Government Regulations and Economic Growth of COMESA Member States

The second study objective was to establish the effect of GR on the connection between SMD and EG of COMESA Member states. To analyze the hypothesized relationship, the flowing hypothesis was formulated.

H_{02}: There is no significant moderating effect of GR on the relationship between SMD and EG of COMESA member states.

4.7.2.1 Regression Models

The moderating Effect Regression Models of EG (dependent Variable): Securities Market Development (SMD) (Independent Variable) and Government Regulations (moderator) were demonstrated. Table 4.17 presents the moderating effect of government regulations, SMD and economic growth.

Table 4. 6: Moderating Effect Regression Models - Dependent Variable: EG, Independent Variable: Securities Market Development and Government Regulations (moderator)

Model	**Securities market development (Predictor/IV)**	**Government Regulations (Moderator)**	**Interaction Term**
Model 1a	SMD	GR	-
Model 1b	SMD	GR	SMD*GR

Source: Research Data (2022)

4.7.2.2 Diagnostic Tests

The related presumptions of this statistical analysis were tested. In this section, only heteroscedasticity and autocorrelation were tested because the other diagnostic tests had been performed in the previous sections.

4.7.2.1.1 Heteroscedasticity Test

The assumption given for any type of ordinary least squares regression is the homoscedasticity in the case of variance of the residuals. If the variance given by the residuals is not a constant, the residual variance is called heteroscedastic. The Breusch-Pagan test for heteroscedasticity was applied to test for homoscedasticity. The H_0 is that there is homoscedasticity, while the H_1 is that there is heteroscedasticity.

If the P-value is $p>0.05$, we fail to reject the H_0. This means that the dataset is homoscedastic. If the P-value is $p<0.05$, we accept the H_1, implying that the dataset is heteroscedastic (Tabachnick & Fidell, 2013). Table 4.18 shows the results of the Breusch-Pagan test.

Table 4. 7: Breusch-Pagan Test (BPT)

Model	Statistic	p-value
Model 1a	0.99	0.3210
Model 1b	0.77	0.3812

Source: Research Data (2022)

The H_0 is homoscedasticity (or constant variance).

The H_1 is there is heteroscedasticity

The P-value in Table 4.18 is insignificant ($p>0.05$) and, therefore, we fail to reject the H_0. We conclude that the dataset is homoscedastic.

4.7.2.1.2 Autocorrelation

In performing the aforementioned test, the H_0 is there is no autocorrelation. We recall autocorrelation makes the SE of the coefficients to be smaller than they are and higher R-squared. The H_0 is there is no autocorrelation in the residual, while the H_1 is there is autocorrelation in the residual.

If the P-value is $p>0.05$, we fail to reject the H_0, meaning that the dataset has no serial correlation in the residual but if the P-value is $p<0.05$, we accept the H_1, implying that the dataset has a serial correlation in the residual. Table 4.19 presents the results of the Wooldridge test for autocorrelation (WTA).

Table 4.19: The WTA

Model	**Test statistic**	**Prob > F**
Model 1a, F(1, 8)	13.650	0.0061
Model 1b, F(1, 8)	13.940	0.0058

Source: Research Data (2022)

H_0: There is no autocorrelation in the residual

H_1: There is autocorrelation in the residual

Table 4.19 indicates that the P-value is significant. Therefore, we accepted the H_1. This implies that there is a problem with autocorrelation in the dataset. To address the problem of autocorrelation, the Newey–West estimator was used.

4.7.2.1.3 Hausman Specification Test

The test was used to choose the most appropriate model between FEM and REM where the H_0 was that the appropriate model is REM, while the H_1 is the most appropriate model is the fixed effects.

In the tests, if the P-value is $p>0.05$, we fail to reject the H_0, meaning that the appropriate model is the random effect. If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the fixed effect. Table 4.20 below presents the summary results of the HST.

Table 4.20: HST to Choose FE or RE regression model.

Model	Chi-square statistic	P-Value
Model 1a	6.30	0.0429
Model 1b	8.24	0.0412

Source: Research Data (2022)

H_0: The appropriate model is RE

H_1: The appropriate model is FE

Table 4.20 shows that the P-value is significant. The H_1 is therefore accepted. It means that the FE model was chosen as the most appropriate model for testing the hypothesized association in hypothesis two (H_{02}).

4.7.2.2 Test of Moderation Using the Fixed Effects Model

The moderating effect of government regulations on the interaction between SMD and EG of COMESA was computed using three steps method for testing moderation as advocated by Baron and Kenny (1986). The steps were as follows:

Step1: Estimate the relationship among the dependent variable (Economic Growth), moderator variable (Government Regulations) and independent (Securities Market Development) variable (model 1a) using panel regression analysis (PRA) as guided by the HST. The model should be statistically significant.

Step 2: Estimate the relationship among the outcome variable, predictor variable, the moderator and the interaction term (SMD*GR) to ascertain and check whether or not the moderator variable alters the robustness of the causal association.

Step 3: Determine whether introducing the interaction term alters the direction or robustness of the association between two variables. Ascertain the magnitude and statistical significance of the R-square change. Determine if the statistical significance of the interaction term in the response variable is better than before. Moderating effect occurs if the association between the outcome variable (EG) and predictor variable (SMD) is significant and the interaction term is statistically significant ($p<0.05$).

4.7.3 Relationship Between Securities Markets Development, Bank Industry Performance and Economic Growth of COMESA Member States

The third study objective sought to ascertain the effect of bank industry performance on the association between SMD and EG of COMESA member states. The moderating variable (BIP) was measured using CPS, size of commercial banks and interest earned indicators. The following hypothesis was tested:

$H0_3$: There is no significant moderating effect of BIP on the relationship between SMD and EG of COMESA member states.

4.7.3.1 Regression Models

Since the composite index could not be calculated to enable testing hypothesis 3 because all the three indicators were not measured using the same scale. That is, the size of commercial banks was measured by the LTA, while interest earned and credit to the private sector were measured using ratios. The following sub-hypotheses were therefore derived from the third hypothesis and tested:

H_{3a}: There is no significant moderating effect of CPS on the relationship between securities market development and EG of COMESA member states.

H_{3b}: There is no significant moderating effect of the size of commercial banks on the relationship between securities market development and economic growth of COMESA member states.

H_{3c}: There is no significant moderating effect of Interest earned on the relationship between securities market development and economic growth of COMESA member states.

Table 4.21 below presents the moderating effect regression models.

Table 4.21: Moderating Effect Regression Models - Dependent Variable: EG, Independent Variable: Securities Markets Development (SMD), and Bank Industry Performance (moderator)

Model	SMD (Predictor/IV)	BIP (Moderator)	Interaction Term
Model 1a	SMD	CPS	-
Model 1b	SMD	CPS	SMD*CPS
Model 2a	SMD	Size	-
Model 2b	SMD	Size	SMD*Size
Model 3a	SMD	IE	-
Model 3b	SMD	IE	SMD*IE

Source: Research Data (2022)

4.7.3.2.1 Diagnostic Tests for Sub-hypothesis 3a

The relevant presumptions of this statistical analysis were tested as follows:

4.7.3.2.1.1 Heteroscedasticity Test

The assumption given for any type of ordinary least squares regression is the homoscedasticity in the case of variance of the residuals. If the variance given by the residuals is not a constant, the residual variance is called heteroscedastic. The Breusch-Pagan test for heteroscedasticity was applied to test for homoscedasticity. The H_0 was that there is homoscedasticity, while the H_1 is that there is heteroscedasticity.

If the P-value is p>0.05, we fail to reject the H_0. This means that the dataset is homoscedastic. If the P-value is p<0.05, we accept the H_1, implying that the dataset is heteroscedastic (Tabachnick & Fidell, 2013). Table 4.22 presents the results of the Breusch-Pagan test.

Table 4.22: The BPT

Statistic	p-value
0.03	0.8583

Source: Research Data (2022)

H_0: There is homoscedasticity (or constant variance)

H_1: There is heteroscedasticity

The results in table 4.22 show that the P-value is not significant. Therefore, we fail to reject the H_0. This means that the dataset is homoscedastic.

4.7.3.2.1.2 Autocorrelation

We recall that if the P-value is p>0.05, we fail to reject the H_0, meaning that the dataset has no serial correlation in the residual. If the P-value is p<0.05, we accept the H_1, implying that the dataset has autocorrelation in the residual. Table 4.23 presents the results of the WTA.

Table 4.23: The WTA

Model	**Test statistic**	**Prob > F**
F(1, 8)	20.626	0.0019

Source: Research Data (2022)

Null Hypothesis: There is no autocorrelation in the residual

Alternative hypothesis: There is autocorrelation is the residual

The results from table 4.23 indicate that the P-value is significant. The H_1 is thus accepted. This means that there is a problem of autocorrelation. To address the problem of autocorrelation, Newey–West estimator was used.

4.7.3.2.1.3 Hausman Specification Test

We recall that if the P-value is $p>0.05$, we fail to reject the H_0. This means that the appropriate model is the RE. If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the FE. Table 4.24 below shows the results of the Hausman test.

Table 4.24: Hausman Test to Choose FEM or REM regression model

Model	Chi-square statistic	P-Value
Model 1a	chi2(2)=1.89	0.3887
Model 1b	chi2(3)=1.87	0.6004

Source: Research Data (2022)

H_0: The appropriate model is RE

H_1: The appropriate model is FE

The results in table 4.24 show that the P-value is insignificant. We therefore fail to reject the H_0, meaning the RE model is chosen as the most appropriate model to test the hypothesized associations. There was still a need to conduct the LM test to choose the most appropriate model between the RE and the pooled OLS model.

4.7.3.2.1. 4 Langrian Multiplier, Test for Ordinary Least Squares and Random Effect

The LM test was used to choose the appropriate model between the RE model and the pooled OLS regression model. The H_0 was that the appropriate model is the pooled OLS model, while the H_1 is the appropriate model is the RE model.

If the P-value is $p>0.05$, we fail to reject the H_0, meaning that the appropriate model is the pooled OLS model, implying that there is no significant heterogeneity across COMESA member states. If the P-value is $p<0.05$, we accept the H_1. This would imply that the most appropriate model is the RE, meaning there is significant heterogeneity across COMESA member states. Table 4.25 presents the results of the LM test.

Table 4.25: The LM Test

Chi-square statistic: chi2(1)	P-Value
0.02	0.4398

Source: Research Data (2022)

The H_0 is the pooled OLS is an appropriate model

The H_1 is the Random-effects is an appropriate model

From table 4.25, the P-value is not significant (ie $p>0.05$). Therefore, we fail to reject the H_0. We conclude that the pooled OLS model is the most appropriate model for testing the hypothesis. It implies that there is no significant heterogeneity across COMESA member states. Thus, the pooled OLS regression model is chosen as the most appropriate model for testing sub-hypothesis 3a.

4.7.3.2.2 Diagnostic Test for Sub-hypothesis 3b

4.7.3.2.2.1 Heteroscedasticity Test

We recall that if the P-value is $p>0.05$, we fail to reject the H_0. This means that the dataset is homoscedastic. If the P-value is $p<0.05$, we accept the H_1, implying that the dataset is heteroscedastic (Tabachnick & Fidell, 2013). Table 4.26 presents the results of the BPT.

Table 4.26: The BPT

Statistic	p-value
4.42	0.0356

Source: Research Data (2022)

The null hypothesis is there is homoscedasticity (or constant variance)

The alternative hypothesis is there is heteroscedasticity

The results in table 4.26 show that the P-value is significant (ie $p<0.05$). Therefore, we accept the H_1. This implies that the dataset is heteroscedastic. The Newey–West estimator/robust standard errors technique was used to address this problem.

4.7.3.2.2.2 Autocorrelation

We do recall that if the P-value is $p>0.05$, we fail to reject the H_0, meaning that the dataset has no serial correlation in the residual. If the P-value is $p<0.05$, we accept the H_1, implying that the dataset has autocorrelation in the residual. Table 4.27 presents the results of the Wooldridge test for autocorrelation

Table 4. 27: Wooldridge test for autocorrelation

Test statistic	**Prob > F**
F(1, 8)=19.862	0.0021

Source: Research Data (2022)

H_0: There is no autocorrelation in the residual

H_1: There is autocorrelation in the residual

Table 4.27 indicate that the P-value is significant (ie $p<0.05$). For this reason, we accept the H_1 meaning that the problem of autocorrelation exists. To address the problem of autocorrelation, the Newey–West estimator was used.

4.7.3.2.2.3 Hausman Specification Test

We recall that if the P-value is $p>0.05$, we fail to reject the H_0, meaning that the appropriate model is the RE. If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the FE. Table 4.28 presents the results of HST.

Table 4. 28: The HST to Choose FEM or REM Regression Model

Model	Chi-square statistic	P-Value
Model 2	chi2(2)=0.26	0.8761

Source: Research Data (2022)

H_0: The appropriate model is RE

H_1: The appropriate model is FE

The results from table 4.28 show the P-value is insignificant. Therefore, we accept the H_0. The RE is therefore, chosen as the most appropriate model.

The LM test was used to choose the appropriate model between the RE model and a pooled OLS regression model. The H_0 was that the appropriate model is the OLS model, while the H_1 is the appropriate model is the RE model.

If the P-value is $p>0.05$, we fail to reject the H_0, meaning that the appropriate model is the pooled OLS model. It will imply that there is no significant heterogeneity across COMESA member states. If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the RE, meaning that there is significant heterogeneity across COMESA member states. Table 4.29 shows the results of the LM test.

Table 4. 8: The LM Test

Chi-square statistic: chi2(1)	P-Value
0.71	0.1995

Source: Research Data (2022)

H_0: The appropriate model is pooled OLS

H_1: The RE is the appropriate model

From table 4.29, the P-value is not significant. Based on the results, we accept the H_0. We therefore deduce that the RE model is not an appropriate model for testing the hypothesis. The Pooled OLS regression model was therefore chosen as the most appropriate for testing sub-hypothesis 3b.

4.7.3.2.3 Diagnostic Test for Sub-hypothesis 3c

4.7.3.2.3.1 Heteroscedasticity Test

We recall that if the P-value is $p>0.05$, we fail to reject the H_0. This means that the dataset is homoscedastic. If the P-value is $P<0.05$, we accept the H_1, implying that the dataset is heteroscedastic (Tabachnick & Fidell, 2013). Table 4.30 shows the results of the BPT

Table 4. 9: Breusch-Pagan test

Statistic	P-value
0.09	0.7677

Source: Research Data (2022)

The H_0 is there is homoscedasticity (or constant variance)

The H_1 is there is heteroscedasticity

Table 4.30 shows that the P-value is insignificant and therefore, we fail to reject the H_0. This implies that the dataset is homoscedastic, meaning there is no problem of heteroscedasticity in the dataset.

4.7.3.2.3.2 Autocorrelation

We recall that if the P-value is $p>0.05$, we fail to reject the H_0, meaning that the dataset has no autocorrelation in the residual. If the P-value is $P<0.05$, we accept the H_1, implying that the dataset has autocorrelation in the residual. Table 4.31 presents the results of the Wooldridge test for autocorrelation

Table 4. 31: Wooldridge test for autocorrelation

Test statistic	**Prob > F**
F(1, 8)= 11.685	0.0091

Source: Research Data (2022)

H_0: There is no autocorrelation in the residual

H_1: There is autocorrelation in the residual

The results presented in table 4.31 indicate that the P-value is significant and, therefore, we accept the H_1. This means that the problem of autocorrelation exists. To address the problem of autocorrelation, the Newey–West estimator was used.

4.7.3.2.3.3 Hausman Specification Test

The test was adopted to select the appropriate model between FE and RE, where the H_0 is that the most appropriate model is RE, while the H_1 is that the FE model is the most appropriate (Green, 2008). If the P-value is $p>0.05$, we fail to reject the H_0, meaning that the appropriate model is the random effect. If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the fixed effect model. Table 4.32 presents the results of HST.

Table 4. 32: HST to Choose FE or RE Model

Model	Chi-square statistic	P-Value
Model 3	chi2(2)= 0.74	0.8649

Source: Research Data (2022)

H_0: The appropriate model is RE

H_1: The appropriate model is FE

The results presented in Table 4.32 show the P-value is insignificant (ie p-value>0.05). We therefore fail to reject the H_0. The RE model is thus chosen as the most appropriate model.

The LM test was used to select the appropriate model between the RE model and a pooled OLS regression model. The H_0 was that the appropriate model is the pooled OLS model, while the H_1 is the RE is the most appropriate. If the P-value is p>0.05, we fail to reject the H_0, meaning that the appropriate model is the pooled OLS model, implying that there is no significant heterogeneity across COMESA member states. If the P-value is p<0.05, we accept H_1. This would imply that the most appropriate model is the RE, meaning there is significant heterogeneity across COMESA member states. Table 4.33 presents the results of the LM test.

Table 4. 33: The results of the LM test

Chi-square statistic: chi2(1)	P-Value
0.46	0.2493

Source: Research Data (2022)

H_0: The appropriate model is the pooled OLS

H_1: The appropriate model is the random effect

From the results presented in table 4.33, the P-value is insignificant. Therefore, we accept the H_0 and conclude that the OLS model is not the appropriate model for testing the hypothesis. The Pooled OLS regression model was therefore chosen as the most appropriate for testing sub-hypothesis 3c.

4.7.3.3 Test of Moderation Using the Ordinary Least Model

As discussed above, three sub-hypotheses were derived from the third hypothesis (H_{03}) since the composite index could not be calculated because all the indicators were not measured in ratio form. This is so because the size of commercial banks was operationalized by the log of total assets, while CPS and IE were expressed in ratios. The prediction equations will now be:

$$Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{2it} + \varepsilon_{it} \quad \ldots\ldots 1$$

$$Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{2it} +\beta_3(SMD*CPS) + \varepsilon_{it} \quad \ldots\ldots 2$$

$$Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{3it} + \varepsilon_{it} \quad \ldots\ldots 3$$

$$Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{3it} +\beta_3(SMD*IE) + \varepsilon_{it} \quad \ldots\ldots 4$$

$$Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{4it} + \varepsilon_{it} \quad \ldots\ldots 5$$

$$Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{4it} +\beta_3(SMD*SIZE) + \varepsilon_{it} \quad \ldots\ldots 6$$

Where: Y=Economic Growth, X_1=SMD, X_2=CPS, X_3=IE, X_4=Size of Commercial Banks (size), SMD*GR, SMD*IE and SMD*Size are interaction terms and ε_{it} is an error term, i= individual country cross-section data, t=time series. Table 4.34 below presents the moderating effect regression models.

Table 4. 34: Moderating Effect Regression Models - Dependent Variable: EG, Independent Variable: Securities Market Development (SMD), and Bank Industry Performance (moderator)

Model	SMD (Predictor/IV)	BIP (Moderator)	Interaction Term
Model 1a	SMD	CPS	-
Model 1b	SMD	CPS	SMD*CPS
Model 2a	SMD	Size	-
Model 2b	SMD	Size	SMD*Size
Model 3a	SMD	IE	-
Model 3b	SMD	IE	SMD*IE

Source: Research Data (2022)

4.7.3.3.1 The Moderating Effect of CPS on the Relationship Between SMD and EG

The moderating effect of CPS on the relationship between SMD and EG of COMESA Member states was computed using the method advanced by Baron and Kenny (1986) as outlined below:

Step1: Estimate the connection among the outcome variable (EG), moderator (CPS) and predictor variable (model 1a). The model should be statistically significant. The Newey-West estimator was used to estimate the association among SMD, CPS and EG (dependent variable).

Step 2: Estimate the relationship among the outcome variable (EG), predictor variable (SMD), the moderator (CPS) and the interaction term (SMD*CPS) to check and determine whether or not the moderator variable alters the robustness of the causal association (model 1b). In step 1 (model 1a), the Newey–West estimator was adopted to assess the association among SMD, CPS and EG (dependent variable). The Newey–West estimator was necessary to address the problem of autocorrelation.

Step 3: Determine whether introducing the interaction term alters the direction or robustness of the association between two variables. Ascertain the magnitude and statistical significance of the R-square change. Determine if the statistical significance of the interaction term in the response variable is better than before. Moderating effect occurs if the association between Y (EG) and X (SMD) is significant and the interaction term is significant ($p<0.05$).

4.7.3.3.2 The Moderating Effect of the Size of Commercial Banks on the Relationship Between Securities Market Development and Economic Growth

The moderating effect of the SCB on the association between SMD and EG of COMESA member states was calculated using the method advanced by Baron and Kenny (1986) as demonstrated below:

Step1: Estimate the association between the dependent variable (EG), moderator (size) and independent variable (SMD) in model 2a, which should be statistically significant.

Step 2: Investigate the association between the outcome variable (EG), predictor variable (SMD), the moderator (size) and the interaction term (SMD*Size) to ascertain and examine whether or not the moderator variable changes the robustness of the causal association. In step 1 (model 2a), the Newey–West estimator was adopted to assess the association between SMD, Size and EG (dependent variable). The Newey–West estimator was necessary to address the problem of autocorrelation.

Step 3: Determine whether introducing the interaction term alters the direction or extent of the connection between two variables. Ascertain the strength and statistical significance of the R-square change. Determine if the statistical significance of the interaction term in the response variable is better than before. Moderating effect occurs if the relationship between Y (EG) and X (SMD) is significant and the interaction term is statistically significant ($p<0.05$).

4.7.3.3.3 The Moderating Effect of Interest Earned on the Relationship Between Security Market Development and Economic Growth

The moderating effect of interest earned on the connection between SMD and EG of COMESA member states was worked out employing the method advocated by Baron and Kenny (1986) as demonstrated below:

Step1: Estimate the relationship between the dependent variable (EG), moderator (interest earned) and independent variable (SMD) in model 3a, which should be statistically significant.

Step 2: Estimate the association between the outcome variable (EG), predictor variable (SMD), the moderator (interest earned) and the interaction term (SMD*interest earned) to establish and find out if the moderator variable alters the robustness of the causal association. In step 1 (model 3a), the

Newey–West estimator was adopted to assess the relationship between SMD, Size and EG (dependent variable). The Newey–West estimator was necessary to address the problem of autocorrelation and the results are presented in Table 5.7 below.

Step 3: Determine whether introducing the interaction term alters the direction or robustness of the relationship between two variables. Determine the magnitude and statistical significance of the R-square change. Determine if the statistical significance of the interaction term in the response variable is better than before. Moderating effect occurs if the association between Y (EG) and X (SMD) is significant and the interaction term is significant ($p<0.05$).

4.7.4 The Joint Effect of Securities Markets Development, Bank Industry Performance and Government Regulations on the EG of COMESA Member States

The fourth objective of the study was to determine the joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states. Panel regression analysis was used to test the hypothesized association as formulated below:

H_{04}: There is no significant joint effect of securities market development, bank industry performance and government regulations on the EG of COMESA member states.

4.7.4.2 Diagnostic Tests

The related presupposition of this statistical investigation was tried out as follows:

4.7.4.2.1 Heteroscedasticity Test

We recall that if the P-value is $p>0.05$, we fail to reject the H_0. This means that the dataset is homoscedastic. If the P-value is $p<0.05$, we accept the H_1, implying that the dataset is heteroscedastic (Tabachnick & Fidell, 2013). Table 4.35 presents the results of the BPT.

Table 4.35: The BPT

Statistic	P-value
3.54	0.0600

Source: Research Data (2022)

The H_0 is homoscedasticity (or constant variance)

The H_1 is there is heteroscedasticity

Table 4.35 shows that the P-value is insignificant ($p>0.05$). We, fail to reject the H_0. This means that there is no problem of heteroscedasticity in the dataset, that is to say, the dataset is homoscedastic.

4.7.4.2.3 Autocorrelation

We recall that if the P-value is $p>0.05$, we fail to reject H_0, meaning that the dataset has no autocorrelation in the residual. If the P-value is $p<0.05$, we accept the alternative H_1, implying that the dataset has a serial correlation in the residual. Table 4.36 presents the results of the WTA.

Table 4. 10: The WTA

Test statistic	**Prob > F**
20.301	0.0020

Source: Research Data (2022)

H_0: There is no autocorrelation

H_1: There is autocorrelation

Table 4.36 shows that the P-value is significant. The H_1 is therefore accepted. Hence, the result of the Wooldridge test indicates that the problem of autocorrelation exists. To address the problem of autocorrelation, the Newey–West estimator was used.

4.7.4.2.4 Hausman Specification Test

To select the most ideal model between FEM and REM, the HST was used, where the H_0 was that the most appropriate model is RE, while the H_1 was that the most appropriate model is the FE (Green, 2008). If the P-value is $p>0.05$, we fail to reject the H_0, meaning that the appropriate model is the RE. If the P-value is $p<0.05$, we accept the H_1, implying that the most appropriate model is the FE. Table 4.37 below shows the results of HST.

Table 4. 11: The HST

Chi-square statistic	P-Value
16.75	0.0050

Source: Research Data (2022)

H_0: The appropriate model is RE

H_1: FE is appropriate

The results from table 4.37 indicate that the P-value is significant. The H_1 was thus accepted. This means that the FE model was chosen as the most appropriate model for testing hypothesis 4 (H_{04}).

4.8 Chapter Summary

This chapter provided data analysis and interpretation of the results of the statistical tests within the body of the study objectives and hypotheses. The analysis and interpretation of the results of the tests are based on the general and the main objectives of the study, which was to determine the influence of bank industry performance and government regulations on the connection between securities markets development and EG of COMESA member states. The main objective of the study was to ascertain the effect of securities market development on the EG of COMESA member states.

The data description and analysis began with a summary of measures of central tendency, which included the means, medians, skewness, and kurtosis, standard deviation, Standard errors and an analysis of the maximum and the minimum number of observations for each of the indicators of the study variables. The predictor variable of the study is securities market development, while the outcome variable is economic growth. The bank industry performance and government regulations are the moderating variables.

Securities markets development was analysed using a composite index of MC and STVL rates of change, while EG was analysed using the real GDP Growth rate. The maximum stock MC rate of change was 21.75, while the minimum was -.99 (Mean=.2281, median=.06, standard deviation=1.90, standard error =.414). Stock MC is positively dispersed with a skewness of 10.96. Positive skewness means that the dispersion has a long right tail, while negative skewness indicates a dispersion with a long left tail. The indicator has a kurtosis that is greater than 3 (124.68), meaning the data is peaked relative to the normal dispersion.

The maximum and minimum STVL rate of change was 19.79 and -1.00 respectively (mean= .54, (Median=.080, SD=2.29, standard error =.414). STV rate of change is positively dispersed with a skewness of 5.81, which shows that the dispersion has a long right tail, while negative skewness indicates a dispersion with a long left tail. The study indicator has a kurtosis that is above the value of 3 (41.13), implying the dispersion is peaked or leptokurtic relative to the normal dispersion.

The rate of change of real GDP ranged from -17.67 to 19.68 (mean = 4.37, median=4.3900, SD = 4.30, standard error=.414). GDP is negatively dispersed with skewness of -.999. Negative skewness indicates a dispersion with a long left tail. The statistics also show that GDP has a kurtosis that is greater than 3, that is, 6.908 meaning the dispersion is high-peaked relative to the normal dispersion.

The bank industry performance was analysed using interest earned (interest revenue, percentage of interest-bearing assets), size of commercial banks (log of total assets) and CPS. The maximum bank interest revenue, percentage of interest-bearing assets was 105.21, and the minimum was 0.07 (mean= 10.079, median=8.1600, SD= 15.381, standard error =.414). The maximum log of total assets was 2.52, while the minimum was -.64 (mean=.92, median=.86, SD=.69, standard error =.414). The maximum bank interest revenue, percentage of interest-bearing assets was 6.17, while the minimum was .29 (mean=2.59, median=2.18, SD=1.4, standard error =.4145). The bank interest revenue, percentage of interest-bearing assets are positively dispersed with a skewness of 4.65. Log of total assets and the ratio of private to public sector credit are positively dispersed with skewness of .191 and .772 respectively

The results indicate bank interest revenue, percentage of interest-bearing assets have a kurtosis that is greater than 3, that is, 22.638, meaning that the dispersion is high-peaked relative to the normal dispersion. Log of total assets and the ratio of private to public sector credit have a kurtosis that is

less than 3, which is -.279 and -.263 respectively. This implies that the dispersion is low-peaked relative to the normal dispersion.

The government regulations were analysed using the Ease of Doing Business Score (EDB). The maximum ease of doing business score was 81.5%, while the minimum score was 8.27% (mean=51.7169, median=54.500, SD=16.71). The ease of doing business score is negatively dispersed with a skewness of -.660. Negative skewness indicates a dispersion with a long left tail. The statistics also indicate the ease of doing the business score has a kurtosis that is below the value of 3, that is, .198 with a standard error of .414, indicating that the dispersion is low-peaked relative to the normal distribution.

Diagnostic tests were undertaken on the study variables, including the correlation analysis, unit root tests, multicollinearity, linearity tests, stationarity tests, autocorrelation tests and heteroscedasticity tests. The diagnostic checking was undertaken to fully establish the behaviour of the data about the best approach in the modelling approach to be adopted. More specifically, diagnostic testing like Hausman and LM tests aided in establishing the most appropriate panel data models to be adopted in testing the hypotheses of the study in chapter five of this study.

From the results of the statistical tests, the most appropriate model for testing hypotheses one, sub-hypotheses 3a, 3b and 3c was the OLS, whereas the FE model was the most appropriate for testing hypotheses two and four. These models were applied in the next chapter, which entirely dwells on hypothesis testing and discussion.

CHAPTER FIVE: HYPOTHESIS TESTING AND INTERPRETATION OF FINDINGS

5.1 Introduction

Whereas chapter four dwelt on data analysis and statistical tests that were undertaken to choose the most appropriate model for testing each of the study hypotheses, this chapter contains details of hypothesis testing and interpretation of the findings. A discussion of how the findings align with the existing body of knowledge and new insights identified and presented.

5.2 Hypothesis Testing

This study sought to determine the effect of securities Market development (SMD) on Economic Growth; the moderating effects of Bank Industry Performance (BIP) and government regulations on the relationship between SMD and EG and the joint effect of SMD, BIP and GR on the EG of COMESA. Several trials were conducted using simple regression, multiple regression, OLS and FEM. The investigations were conducted at 5% and 10% significance level (a= 0.05, b=0.1). The assessment concentrated on the hypotheses formulated from the study objectives. To test the study hypotheses, sub-hypothesis were formulated for BIP. The outline and the results from the evaluation are discussed below.

5.2.1 Effect of Securities Markets Development on Economic Growth of COMESA Member States

The study examined the effect of securities market development on the economic growth of COMESA member states. Results of the LM test for RE indicated that a simple OLS regression was appropriate. OLS regression established that securities market development could statistically significantly predict economic growth as presented in the next paragraph. The first study objective was to ascertain the effect of SMD on the EG of COMESA member states.

This objective informed hypothesis one, which stated there is no significant effect of SMD on the EG of COMESA member states.

5.2.1.1 Hypothesis 1 (H_{01}): There is no Significant Effect of Securities Markets Development on the Economic Growth of COMESA Member States

The study's first hypothesis was to probe the direct association between SMD and the EG of COMESA member states. Securities markets development was operationalized into market capitalization and stock traded value, while EG of COMESA member states was measured using GDP growth rate. Table 5.1 shows the pooled OLS regression analysis results undertaken to test the effect of SMD on the EG of COMESA.

Table 5. 1: Pooled OLS Regression model, Dependent Variable: Economic Growth, Predictors: SMD

EG	Coefficient.	Std. Err.	t	P>t
SMD	4.386***	1.593	2.75	0.007
_cons	4.326***	0.313	13.83	0.000
Model Summary				
Observations	118			
R-squared	0.061			
F(1, 116)	7.58			
Prob > F	0.0069			

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

Source: Research Data (2022)

From the results presented in table 5.1, the regression model produced $R^2 = 0.061$, $F(1,116) = 7.58$, $p<0.05$. R-squared (R^2) of 0.061 suggests that securities markets development accounted for 6.1% of the variance in the EG of COMESA member states. The F-test is statistically significant, meaning that the regression model is significant, $F(1,116) = 7.58$, $p<0.05$. This is an indication that the model applied can, statistically, significantly predict EG, which is the dependent variable. SMD has a positive and statistically significant connection with EG ($\beta = 4.386$, $p<0.01$). It shows that for each unit increase in SMD, there is a 4.386 unit increase in

economic growth. The T-test for SMD is statistically significant at 2.75, meaning that the regression coefficient for SMD is significantly different from **z**ero**.**

R-squared is 0.061, which shows that 6.1% of the EG of COMESA member states is explained by SMD. We, therefore, reject the H_0 and conclude that SMD promotes the EG of COMESA.

Recalling the prediction equation $Y_{it} = \beta 0 + \beta 1X1_{it} + \varepsilon_{it}$ where; Y= EG, β0= intercept, X1=SMD, β_1=coefficient and ε_{it} =Error term, the regression equation can be rewritten as follows:

Output equation: $EG_{it}= 4.326+ 4.386SMD_{it} + \varepsilon_{it}$.

5.2.2 Government Regulations, Securities Markets Development and Economic Growth of COMESA Member States

The second objective was aimed at investigating the effect of government regulations on the relationship between SMD and the EG of COMESA member states. This objective informed hypothesis two, which stated there is no significant moderating effect of government regulations on the association between securities market development and economic growth of COMESA member states.

5.2.2.1 Hypothesis 2 (H_{02}): There is no Significant Moderating Effect of Government Regulations on The Relationship Between Securities Market Development and Economic Growth of COMESA Member States

The moderating effect of government regulations on the connection linking SMD and EG of COMESA was computed using the three steps method advanced by Baron and Kenny (1986) as discussed in chapter four.

5.2.2.2 The Moderating Effect of GR on The Relationship Between EG and SMD

In step 1 (model 1a), the FEM estimator was utilized to estimate the association among SMD, GR and EG (dependent variable). The Newey-West estimator was used to estimate the correspondence among SMD, GR and EG (dependent variable). The Newey–West estimator was necessary to address the problem of autocorrelation as outlined in chapter four. The PRA results are shown in Table 5.2.

Table 5. 2 FE Test Results, Outcome Variable: EG, Predictors: SMD and GR (Model 1a)

EG	Coefficient	New-West Std. Err.	t	P>t
SMD	2.807*	1.496	1.88	0.063
GR	-0.140***	0.028	-4.96	0.0000
_cons	12.03***	1.575	7.64	0.0000
Model Summary				
Observations	118			
R-squared	0.229			
F(2,115)	15.88			
Prob > F	0.0000			
Number of Country ID	9			

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

Source: Research Data (2022)

From table 5.2, the F-test is statistically significant (F (2,115) = 15.88, p<0.05), which means that the regression model is significant. Furthermore, securities market development (β= 2.807, p<0.1) and government regulations (β= -0.140, p<0.01) are significant predictors of economic

growth (EG). This shows that for every unit increase in SMD, there is a 2.807 unit increase in EG, and for every unit increase in GR, there is a 0.140 unit decrease in EG.

The relationship between GR and EG is negative and significant, while the association between SMD and EG is positive and significant. The t-test for SMD equals 1.88 ($p<0.1$), while the t-test of GR equals -4.96 ($p<0.01$), and both are statistically significant, meaning that the regression coefficients for SMD and GR are significantly different from zero. R-squared (R^2) is 0.229, suggesting that SMD (predictor variable) and GR (moderator) jointly account for 22.9% of the variance in Economic growth (outcome variable) of COMESA member states.

In step 2 (model 1b), the interaction term (SMD*GR) was presented in the fixed effects PRM. The FEM was run to assess the relationship among SMD (independent variable), GR (moderator), interaction term and the dependent variable (EG). The results of PRA are shown in Table 5.3.

Table 5. 3: Panel Fixed Effects Regression Results, Outcome Variable: EG, Predictors: SMD, GR and Interaction Term (SMD*GR) (Model 1b)

EG	Coefficient	Std. Err.	t	P>t
SMD	3.017*	1.554	1.94	0.055
GR	-0.135***	0.030	-4.56	0.0000
SMD*GR	-0.061	0.117	-0.52	0.603
_cons	11.77***	1.661	7.08	0.0000
Model Summary				
Observations	118			
R-squared	0.231			
F(3,106)	10.61			
Prob > F	0.0000			
Number of Country ID	9			

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

Source: Research Data (2022)

From the result in table 5.3, F-test is significant (F (3,106) = 10.61, p<0.05), meaning that the regression model is significant. Securities market development (β= 3.017, p<0.1) and government regulations (β= -0.135, p<0.01) are statistically significant predictors of EG. It indicates that for every unit increase in SMD, there are 3.017 units increase in EG, and for each unit increase in GR, there is a 0.135 unit decrease in EG. From the results, the relationship between GR and EG is negative and statistically significant. On the other hand, the linkage between SMD and EG is positive and significant. The regression coefficient of the interaction term (SMD*GR) was insignificant (β= -0.0612, p>0.05).

The t-test for SMD and GR equals 1.94 ($p<0.1$) and -4.56 ($p<0.01$) respectively, and both are significant. This means that the regression coefficients for the two variables are significantly different from zero. The t-test for the interaction term SMD*GR equals -0.52 ($p>0.05$), which is not insignificant. R-squared (R^2) was 0.231, suggesting that SMD (predictor variable), GR (moderator) and the interaction term (SMD*GR) jointly account for 23.1% of the variance in economic growth (outcome variable). F (3,106) is 10.61 ($p<0.05$), which is significant, meaning the model is strong and the relationship is strong.

Step 3: Since R-squared increased after the introduction of the interaction term (SMD*GR) in the fixed effects model from 0.229 to 0.231 which is statistically significant, it means the model is strong and the relationship is stronger. We conclude that GR has a moderating effect on the interaction between SMD and the EG of COMESA member states. From the results presented in table 5.3, the interaction term altered the strength of the causal relationship between SMD and EG.

Hypothesis two (H_{02}) explored the relationship between SMD, government regulations and EG among COMESA member states by hypothesizing that there is no significant moderating effect of GR on the correlation between SMD and EG of member states. Results of this test show that the strength of the causal relationship among SMD, GR and EG changes after the introduction of the interaction term. This means that GR has a moderating effect on the interaction between SMD and EG. The null hypothesis was (H_{02}), therefore, rejected.

Recalling the prediction equation: $Y_{it} = \beta 0+\beta_1 X_{1\,it} +\beta_2 X_{2it} +\beta_3 (SMD*GR) + \varepsilon_{it}$

Where:

Y=Economic Growth, X_1=SMD, X_2=GR, (SMD*GR) =Interaction Term and ε_{it} is an error term, i= individual country cross-section data, t=time series

Output equation: $EG_{it}= 11.77+ 3.017SMD_{it} -0.135GR_{it} -0.0612SMD*GR +\varepsilon_{it}$

5.2.3: Relationship Among Securities Markets Development, Bank Industry Performance and Economic Growth of COMESA Member States.

The third study objective sought to ascertain the effect of bank industry performance on the link between SMD and EG of COMESA. The moderating variable (BIP) was operationalized by CPS, size of commercial banks and interest earned. The following hypothesis was tested:

H_{03}: There is no significant moderating effect of BIP on the relationship between SMD and EG of COMESA member states.

The moderating effect of BIP on the interaction between SMD and EG of COMESA member states was calculated using the three-step method put forward by Baron and Kenny (1986) as demonstrated in chapter four.

5.2.3.1 Moderating Effect Regression Models

The following three sub-hypotheses were derived from the third hypothesis (H_{03}) since the composite index could not be calculated because all the indicators were not measured in ratio form. This is so because the size of commercial banks was calculated by the log of total assets, while CPS and IE were expressed in ratios. The prediction equations will now be:

$Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{2it} + \varepsilon_{it}$

$Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{2it} +\beta_3(SMD*CPS) + \varepsilon_{it}$

$Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{3it} + \varepsilon_{it}$

$Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{3it} +\beta_3(SMD*IE) + \varepsilon_{it}$

$Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{4it} + \varepsilon_{it}$

$Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{4it} +\beta_3(SMD*SIZE) + \varepsilon_{it}$

Where Y=Economic Growth, X_1=SMD, X_2=CPS, X_3=IE, X_4=Size of Commercial Banks (size), SMD*CPS, SMD*IE and SMD*Size are interaction terms and ε_{it} is an error term, i= individual country cross-section data, t=time series.

The sub-hypotheses were formulated as follows:

H_{03a}: There is no significant moderating effect of CPS on the interaction between securities market development and EG of COMESA member states.

H_{03b}: There is no significant moderating effect of the size of commercial banks on the interaction between securities market development and economic growth of COMESA member states.

H_{03c}: There is no significant moderating effect on the interaction between securities market development and economic growth of COMESA member states. Table 5.4 presents the moderating effect regression models.

Table 5. 4: Moderating Effect Regression Models - Outcome Variable: EG, Predictor Variable: Securities Market Development (SMD), and Bank Industry Performance (moderator)

Model	**SMD (Predictor/IV)**	**BIP (Moderator)**	**Interaction Term**
Model 1a	SMD	CPS	-
Model 1b	SMD	CPS	SMD*CPS
Model 2a	SMD	Size	-
Model 2b	SMD	Size	SMD*Size
Model 3a	SMD	IE	-
Model 3b	SMD	IE	SMD*IE

Source: Research Data (2022)

5.2.3.2 The Moderating Effect of CPS on The Interaction Between SMD and EG

The moderating effect of CPS on the relationship between SMD and EG of COMESA Member states was calculated using the method put forward by Baron and Kenny (1986) as follows:

Step1: Estimate the association among the dependent variable (EG), moderator (CPS) and independent variable (model 1a). The model should be statistically significant. The Newey-West estimator was used to estimate the relationship among SMD, CPS and EG (dependent variable). The Newey–West estimator was necessary to address the problem of autocorrelation. The regression analysis results are shown in Table 5.5.

Table 5. 5: Regression Model, Dependent Variable: EG, Predictors: SMD and CPS (Model 1a)

EG	Coef.	Newey-West Std. Err.	T	P>t
SMD	4.283***	1.434	2.99	0.003
CPS	-0.315	0.196	-1.6	0.111
_cons	5.168***	0.610	8.47	0.000
Model Summary				
Observations	118			
F(2,115)	5.87			
Prob > F	0.0037			

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

Source: Research Data (2022)

From Table 5.5, the F-test is statistically significant (F (2,115) = 5.87, $p<0.05$), which means that the PRM is statistically significant. Securities market development ($\beta= 4.283$, $p<0.01$) is a statistically significant predictor of economic growth (EG). This reveals that for every unit increase in SMD, there is a 4.283 unit increase in EG. The regression coefficient of CPS ($\beta= -0.315$, $p>0.05$) was insignificant and thus, CPS is not a significant determinant of EG. The relationship between CPS and EG was negative but not statistically significant. The t-test for SMD equals 2.99 ($p<0.01$), which is statistically significant, an indication that the regression coefficient of SMD is significantly different from zero. The t-test of CPS equals -1.6 ($p>0.05$), meaning that the regression coefficient for CPS is insignificantly different from zero.

Step 2: Estimate the relationship among the outcome variable (EG), predictor variable (SMD), the moderator (CPS) and the interaction term (SMD*CPS) to check and find out if the moderator variable alters the robustness of the causal link (model 1b). The Newey-West estimator was used to test the relationship among the outcome variable (EG), the predictor variable (SMD), the moderator (CPS) and the interaction term (SMD*CPS). Table 5.6 presents the test results.

Table 5. 6: Regression Model, Dependent Variable: EG, Predictors: SMD, CPS And Interaction Term (SMS*CPS) (model 1b)

EG	Coef.	Newey-West Std. Err.	t	P>t
SMD	4.296***	1.536	2.8	0.006
CPS	-0.314	0.207	-1.51	0.133
SMD*CPS	0.056	1.345	0.04	0.967
_cons	5.165***	0.637	8.11	0.000
Model Summary				
Observations	118			
F(3,114)	3.91			
Prob > F	0.0107			

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

Source: Research Data (2022)

From the results in table 5.6, F-test is significant (F (3,114) = 3.91, $p<0.05$), which means that the regression model is statistically significant. This is an indication that the model applied can statistically significantly predict the dependent variable, EG.

Step 3, based on these results, SMD has a positive and statistically significant association with EG ($\beta = 4.296$, $p<0.01$) as indicated in Table 5.6. It shows that for every unit increase in SMD, there is a 4.296 unit increase in EG. The t-test for SMD equals 2.8, and is statistically significant, meaning that the regression coefficient for SMD is significantly different from zero. The t-test for CPS equals -1.51, and it is not statistically significant, meaning that the regression coefficient for CPS is not significantly different from zero.

Sub-hypothesis H_{03a} explored the relationship among CPS, SMD and EG among member COMESA member states by suggesting that CPS has no significant moderating effect on the link between SMD and EG of COMESA. Results of this test indicate that the regression coefficient of the interaction term was insignificant (β=0.056, $p>0.05$). The test found that credit CPS has no significant moderating effect on the correlation between SMD and the economic growth of COMESA member states. The null hypothesis H_{03a} was therefore accepted.

Recalling the prediction equation: $Y_{it} = \beta_0+\beta_1 X1_{it} +\beta_2 X_{2it} +\beta_3 (SMD*CPS) + \varepsilon_{it}$

Output equation: $EG_{it}= 5.165+ 4.296SMD_{it} -0.314CPS_{it}+0.0561SMD*CPS+\varepsilon_{it}$

5.2.3.3 The Moderating Effect of The Size of Commercial Banks on The Relationship Between SMD and EG

The moderating effect of the size of commercial banks (size) on the connection between SMD and EG of COMESA member states was calculated using the method suggested by Baron and Kenny (1986) as demonstrated below:

Step1: Estimate the correlation between the dependent variable (EG), moderator (size) and independent variable (model 2a), which should be statistically significant. The Newey–West estimator was adopted to estimate the interaction between SMD, Size and EG (dependent variable). The Newey–West estimator was necessary to address the problem of heteroscedasticity and autocorrelation. The results of the regression analysis are presented in Table 5.7.

Table 5. 7: Regression Model, Dependent Variable: EG, Predictors: SMD and Size (model 2a)

EG	Coef.	Newey-West Std. Err.	T	P>t
SMD	3.80**	1.511	2.52	0.013
Size[d]	5.092	3.348	1.52	0.131
_cons	4.082***	0.319	12.81	0.000
Model Summary				
Observations	118			
F(2,115)	7.78			
Prob > F	0.0007			

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

Source: Research Data (2022)

From table 5.7, the F-test is statistically significant ($F(2,115)=7.78$, $p<0.05$), which shows that the regression model is statistically significant. SMD ($\beta=3.8$, $p<0.05$) is a significant predictor of EG. It shows that for every unit increase in SMD, there is a 3.8 units' increase in EG. The regression coefficient of Size ($\beta= 5.092$, $p>0.05$) was insignificant and therefore the size of commercial banks is not a significant predictor of EG.

Step 2: Estimate the correlation between the outcome variable (EG), predictor variable (SMD), the moderator (size) and the interaction term (SMD*Size) to probe and check whether or not the moderator variable alters the robustness of the causal association (model 2b). The Newey-West estimator was used to estimate the interaction between the outcome variable (EG), predictor variable (SMD), the moderator (Size) and the interaction term (SMD*Size). Table 5.8 presents

the test results of the dependent variable (EG), independent variable (SMD), the moderator (size) and the interaction term (SMD*Size).

Table 5.8: Regression Model, Dependent Variable: EG, Predictors: SMD, Size and Interaction Term (SMD*Size) (model 2b)

EG	Coef.	Newey-West Std. Err.	t	P>t
SMD	3.860***	1.549	2.49	0.014
Size[d]	5.159	3.301	1.56	0.121
SMD*Size	-5.020	12.409	-0.4	0.687
_cons	4.097***	0.319	12.89	0.000
Model Summary				
Observations	118			
F(3,114)	5.63			
Prob > F	0.0012			

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

Source: Research Data (2022)

From the results presented in table 5.8, the F-test is significant ($F(3,114) = 5.63$, $p<0.05$), which means that the PRM is significant. This is an indication that the model applied can significantly predict the dependent variable, EG. Based on these results, SMD has a positive and statistically significant connection with EG ($\beta = 3.860$, $p<0.05$). It means that for every unit increase in SMD, there is a 3.86 units' increase in EG.

Step 3: The results of this test indicate that the interaction term (SMD*Size) is insignificant ($\beta=-5.020$, $p>0.05$). Therefore, the finding of the test is that size of commercial banks does not have a

significant moderating effect on the association between SMD and the economic growth of COMESA member states.

Sub-hypothesis H_{03b} explored the relationship among the size of commercial banks, SMD and EG among COMESA member states by postulating that the size of commercial banks has no significant moderating effect on the connection between SMD and EG of COMESA member states. The results of the test indicated that the size of commercial banks has an insignificant moderating effect on the correlation between SMD and the EG of COMESA member states. Consequently, the null hypothesis H_{03b} was accepted.

The prediction equation: $Y_{it} = \beta_0+\beta_1X_{1\,it} +\beta_2X_{4it} +\beta_3 (SMD*SIZE) + \varepsilon_{it}$

Output equation: $EG_{it}= 4.097+ 3.860SMD_{it} +5.159size_{it}-5.020\ SMD*Size+ \varepsilon_{it}$

5.2.3.4: The Moderating Effect Interest Earned on The Relationship Between Security Market Development and Economic Growth

The moderating effect of the size of Interest Earned (IE) on the interaction between SMD and EG of COMESA member states was calculated by using the method propagated by Baron and Kenny (1986) as follows:

Step1: Estimate the connection between the outcome variable (EG), moderator (IE) and predictor variable (model 3a). The model should be statistically significant. The Newey–West estimator was used to estimate the linkage between SMD (Independent variable), IE (moderator) and EG (dependent variable). The Newey–West estimator was necessary to address the problem of autocorrelation. The PRA results are shown in Table 5.9 below.

Table 5. 9: Regression Model, Dependent Variable: EG, Predictors: SMD and IE (model 3a)

EG	Coef.	Newey-West Std. Err.	t	P>t
SMD	4.360***	1.448	3.01	0.003
IE[d]	0.170	0.152	1.12	0.264
_cons	4.322***	0.310	13.94	0.000
Model Summary				
Observations	118			
F(2,115)	5.15			
Prob > F	0.0072			

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

Source: Research Data (2022)

From the results presented in table 5.9, the F-test is statistically significant ($F(2,115)= 5.15$, $p<0.05$), which means that the regression model is statistically significant. This is an indication that the model applied can significantly predict the dependent variable, EG. Securities market development ($\beta=4.360$, $p<0.01$) is a significant predictor of economic growth (EG). It means that for every unit increase in SMD, there is a 4.360 units' increase in EG. The regression coefficient of IE ($\beta= 0.170$, $p>0.05$) was insignificant and, therefore, IE is not a significant predictor of EG.

Step 2: Estimate the relationship among the outcome variable (EG), predictor variable (SMD), the moderator (IE) and the interaction term (SMD*IE) to ascertain and check whether the moderator variable alters the magnitude of the causality. The Newey–West estimator was used to

estimate the interaction between SMD (predictor variable), IE (moderator) and EG (outcome variable) and the interaction term (SMD*IE). The Newey–West estimator was necessary to address the problem of autocorrelation. Table 5.10 presents the PRA results of the interaction between SMD (Independent variable), IE (moderator) and EG (dependent variable) and the interaction term (SMD*IE).

Table 5.10: Regression Model, Dependent Variable: EG, Predictors: SMD, IE and Interaction Term (SMD*IE) (model 3b)

EG	Coef.	Newey-West Std. Err.	t	P>t
SMD	4.245***	1.567	2.71	0.008
IE[d]	0.186	0.180	1.03	0.304
SMD*IE	0.280	0.748	0.37	0.709
_cons	4.325***	0.312	13.87	0.000
Model Summary				
Observations	118			
F(3,114)	3.98			
Prob > F	0.0097			

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

Source: Research Data (2022)

From the results presented in table 5.10, the F-test is significant ($F(3,114) = 3.98$, $p<0.05$), which means that the regression model is statistically significant. Based on these results, SMD has a positive and statistically significant relationship with EG ($\beta = 4.245$, $p<0.05$). This means that for every unit increase in SMD, there is a 4.245s' unit increase in EG.

Step 3: The results of this test indicate that the interaction term (SMD*IE) is insignificant (β= 0.280, p>0.05) and, therefore, IE has no significant moderating effect on the connection between SMD and EG.

Sub-hypothesis H_{03c} explored the link between interest earned, SMD and EG among COMESA by hypothesizing that interest earned has no significant moderating effect on the connection between SMD and EG of COMESA. The test results show that Interest Earned has no significant moderating effect on the link between SMD and growth. For this reason, the null hypothesis H_{03c} was accepted.

The prediction equation: $Y_{it} = \beta_0+\beta_1 X_{1\,it} +\beta_2 X_{2it} +\beta_3 (SMD*IE) + \varepsilon_{it}$

Output equation: $EG_{it}= 4.325+ 4.245SMD_{it} +0.186IE_{it}+0.280SMD*IE+ \varepsilon_{it}$

5.2.4 Securities Market Development, Bank Industry Performance, Government Regulations and Economic Growth of COMESA Member States

The fourth objective of the study was to ascertain the joint effect of SMD, bank industry performance and government regulations on the EG of COMESA. Panel regression analysis was used to test the hypothesized association. The flowing hypothesis was formulated:

5.2.4.1 Hypothesis 4 (H_{04}): There is no Significant Joint Effect of Securities Markets Development, Bank Industry Performance and Government Regulations on The Economic Growth of COMESA Member States

The study examined the joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states. The Newey–West estimator was used to estimate the relationship among SMD (predictor variable), CPS, IE,

Size, and GR (moderators) and EG (outcome variable) and the interaction term. The Newey–West estimator was necessary to address the problem of autocorrelation. Results of the Hausman test indicated that a fixed-effects model was appropriate. The results of panel regression analysis are shown in table 5.11.

Table 5. 11: Fixed Effect Panel Regression Model, Dependent Variable: EG, Predictors: GR, CPS, Sized, IE[d] and SMD)

EG	Coef.	New-West Std. Err.	t	P>t
SMD	3.532652	1.449	2.44	0.016
GR	-0.06763	0.0191	-3.54	0.001
IE[d]	0.226451	0.137	1.65	0.102
Size[d]	5.375234	1.417	3.79	0.0000
CPS	-0.08829	0.203255	-0.43	0.665
_cons	7.763485	1.089	7.13	0.0000
Model Summary				
Observations	118			
Number of Country ID	9			
R-squared	0.361			
F(5,112)	11.73			
Prob > F	0.0000			

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

Superscript *d* denotes first difference

Source: Research Data (2022)

Table 5.11 indicates the F-test is significant, which means that the regression model is statistically significant, $F(5,12) = 11.73$, $p<0.05$. Based on the results, SMD has a positive but insignificant linkage with EG ($\beta = 3.532652$, $p>0.05$). GR ($\beta = -0.06763$, $p>0.05$) has a negative but insignificant association with EG. This means that for every unit increase in GR, there is a 0.06763 unit decrease in EG, which is insignificant.

The relationship between interest earned ($\beta = 0.226451$, $p>0.05$) and EG is positive and insignificant. Similarly, the connection between the size of commercial banks ($\beta = 5.375234$, $p>0.05$) is positive and insignificant. This is an indication that for every unit increase in the size of commercial banks (size), there is a 5.375234 unit increase in EG. The relationship between CPS and EG is not statistically significant ($\beta = -0.08829$, $p>0.05$). R-squared (R^2) is 0.361, which suggests that SMD, IE, Size, CPS and GR jointly account for 36.1% of the variance in the economic performance of COMESA member states and the joint effect is statistically significant ($p<0.05$).

Hypothesis four (H_{04}) examined the joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states. It suggests that there is no significant joint effect of SMD, bank industry performance and government regulations on the EG of COMESA member states.

Results of this test indicate that SMD, GR, IE, Size and CPS jointly account for 36.1% of the variance in the economic performance of COMESA member states, and overall the model was statistically significant. The null hypothesis H_{04} was therefore rejected since the test found that

there was a significant joint effect of securities market development, bank industry performance and government regulations on the EG of COMESA member states.

Recalling the prediction equation: $Y=\beta_0+\beta_1X_{1it}+ \beta_2X_{2it} + \beta_3X_{3it} +\beta_4X_{4it}+\beta_5X_{5it}+\varepsilon_{it}$

Where:

Y=EG, β_0=intercept, X_1=SMD, X_2=GR, X3=IE, X_4=size of commercial banks and X_5=CPS, β1, β2, β3, β_4 and β_5= coefficients, ε= error term, i= individual country cross-section data, t=time series

$EG_{it=}7.763485+3.532652SMD_{it}$ -0.06763GR_{it}+0.226451IE^d +.5.375234$Size^d$-0.08829CPS_{it}+ ε_{it}

5.3 Discussion of The Results of Hypotheses Testing

This section discusses the findings of both the literature and empirical studies to achieve the four objectives that gave rise to the four hypotheses. The results from the study demonstrate that SMD positively affects the EG of COMESA. The four hypotheses of the study were tested using ordinary least square and FEM. The tests were done at 5% and 10% significance level (a = 0.05), b=0.1). From the results, hypotheses one, two and four were rejected, while sub-hypotheses 3a, 3b and 3c were accepted. The interpretations of the results were made using statistical knowledge and the existing body of theoretical and empirical literature. The findings were also compared with relevant empirical studies and conclusions given. Likewise, the interpretation of data and findings was done using statistical knowledge and the existing body of knowledge.

Based on the results of hypothesis one (H_{01}), the study established that SMD predicted the EG of COMESA member states. The study findings are consistent with the findings of Ananwude and Osakwe (2017) and others but contradict those of Rashid, et. al (2016) and Popoola et al. (2017.

The possible reasons for the contradiction may be because the studies were undertaken in different contexts and adopted different methodologies to test the hypotheses.

The study findings support the Neoclassical Growth Theory (Solow & Swan, 1956), which postulates that capital accumulation is crucial for promoting EG. While supporting these theorists, Schumpeter (1911) submitted that SMD is essential for promoting EG.

The second objective aimed to establish whether government regulations moderate the connection between SMD and the economic growth of COMESA member states. Hierarchical regression analysis was conducted in line with hypothesis two (H_{02}). The moderating variable under the study was GR, which was represented by the ease of doing business score. Tests were done to establish if moderation existed. The results were significant, with the interaction term altering the strength of the causal relationship. The results, therefore, rejected the H_0 and accepted the H_1 that GR has a moderating effect on the association between SMD and EG. Thus, objective two was proved by this study. These findings are consistent with the findings from Khatum (2019) but are inconsistent with the findings of Menyah et al. (2014) and Polat (2019). A possible cause of the difference is the statistical models used. While the current study used the linear regression models of estimation, studies by Menyah et al. (2014) and Polat (2019 used nonlinear models.

The study supports the Public Interest Theory of Regulations (Pigou, 1932), which states that the role of regulators is to come up with viable solutions that shape and influence economic growth. Weaker corporate governance hampers effective resource allocation and slows productivity growth. Levine, Lin and Xie (2016) assert that investor-friendly government regulations that provide a secure and conducive business environment to market

participants encourage securities market development that accelerates economic growth. Further, some studies have established that GR is meant to support the sharing of resources in a substantive way to promote economic growth (Christensen & Laegreid, 2006; Chalmers, Godfrey & Lynch, 2012).

The third objective aimed to ascertain the moderating effect of bank industry performance on the interaction between SMD and EG. The moderating variable - bank industry performance (BIP) - was represented by three indicators, namely the size of commercial banks, interest earned and credit to the private sector. The study developed three sub-hypotheses from hypothesis three (H_{03}), which were $H_{03a,}$ H_{03b} and H_{03c} to represent Credit to Private Sector (CPS), size of commercial banks (size) and Interest Earned (IE) respectively. The test of the three sub-hypotheses found that BIP has no moderating effect on the correlation between SMD and EG of COMESA member states and, therefore, the null hypothesis was accepted. The findings of this test were consistent with those of Ayadi et. al. (2015) and Wang et al. (2015). Further, the study findings are in agreement with the critiques of financial intermediary theory (FIT), especially regarding some of its failures. Werner (2014), for example, explained that liquidity and credit creation, if not directed to productive sectors, harm economic growth.

However, the study findings were inconsistent with those of (Guru and Yadav, 2019; Puryan, 2017; Rehman, 2018; Umar et al. 2015). The inconsistency could be due to different methodologies adopted by the studies and different contextualizations. The study findings supported the Financial Intermediation Theory (FIT) (Gurley & Shaw, 1960), a school of thought founded on the asymmetries in information. The theory argued that financial institutions collect

information about borrowers and savers to enable them to carry out transactions at the most reasonable costs. By breaking information asymmetry, financial intermediaries promote efficiency in the securities markets and efficient allocation of capital funds to various uses to support productive investments (Gurley & Shaw, 1960; Farma, 1965; Spence, 1973). Schumpeter (1911), a supporter of FIT, argues that services offered by FI in mobilizing savings, linking savers to borrows at the most reasonable transaction costs, managing risk, and monitoring managers, stimulate technological innovation, SM efficiency and EG.

The contradiction in the findings between the current study and previous studies can be attributed to the fact that the studies used different indicators from the current study to measure variables. They also used non-linear models compared to the current study that used linear regression models.

The final objective of the study sought to establish the joint effect of SMD, BIP and GR on EG of COMESA member states. The results did not support the null hypothesis, with the findings indicating that the joint effect of SMD, BIP and GR on EG is greater than the individual effect of SMD on EG of COMESA member states. This led to the conclusion that there is a significant joint effect of SMD, BIP and GR on EG of COMESA member states. These findings support the argument that SMD adds value to the economy and one would, therefore, expect variations in the level of SMD to explain levels of EG across COMESA member states. The results were consistent with the study findings of Manasseh et. al. (2018) and Pradhan et. al. (2014), who established that SMD, financial sector reforms, and legal framework promoted EG.

5.4 Chapter Summary

This section discusses the findings of both the literature and empirical studies to achieve the four objectives that gave rise to the four hypotheses. The hypotheses of the study were tested using the pooled Ordinary Least Squares (OLS) and the FE panel data models. The findings were also briefly compared with relevant empirical studies and conclusions given.

The first objective of the study was to ascertain the effect of securities market development on the EG of COMESA member states. To ascertain the effects of SMD on EG, the first hypothesis was formulated. It stated that there is no significant effect of SMD on the EG of COMESA member states. The pooled OLS model was used to test this hypothesis. The results from the test demonstrated that SMD positively influences the EG of COMESA member states. Based on the hypothesis, the study ascertained that SMD had a significant effect on the EG of COMESA member states. Therefore, the study validated the first objective.

The study findings are in agreement with those of (Ananwude & Osakwe, 2017; Karim ^& Chaudhary, 2017) but contradict those of (Rashid, et. al., 2016; Popoola et al., 2017). The findings support the Neoclassical Growth Theory (Solow & Swan, 1956), which perceives economic growth to be influenced by forces within and outside the organizational settings, including goings-on in the securities market through the accumulation of capital and savings. The study also supports the basic neoclassical frameworks of long-term growth, with the findings confirming that securities markets are channels through which capital moves from surpluses to deficits to promote EG, as argued by Smith (1976). The theory is supported by the Efficient Market Hypothesis fronted by Farma (1965)

The second study objective was to probe the effect of government regulations on the correlation between SMD and the EG of COMESA member states. To assist in investigating the effects of government regulations on the linkage between SMD and economic growth, the second hypothesis was formulated. It stated that there is no significant moderating effect of government regulations on the interaction between SMD and EG of COMESA.

This hypothesis was tested using the fixed effects model and the moderating effect was calculated using the method advanced by Baron and Kenny (1986). The moderating variable under the study was government regulations, which were represented by the ease of doing business score. Results of tests to establish if moderation existed showed that it was significant. The results thus reject the hypothesis which stated that GR do not have a significant moderating effect on the correlation between SMD and EG of COMESA. The results were interpreted as conclusive since there was sufficient evidence from the study to make conclusions on the hypothesis. Objective two was thus proved by this study.

These findings are consistent with those of Khatum (2019) but are inconsistent with those of Menyah et al. (2014) and Polat (2019). A possible cause of the difference is the statistical models used. While the current study used the linear regression models of estimation, studies by Menyah et al. (2014) and Polat (2019 used nonlinear models.

The study supports the Public Interest Theory of Regulations (Stigler, 1971), which posits that the role of regulators is to come up with viable solutions that shape and influence the EG. Further, some studies have established that GR is meant to support the sharing of

resources in a substantive way to promote economic growth (Christensen & Laegreid, 2006; Chalmers, Godfrey & Lynch, 2012).

The third objective aimed to establish the effect of bank industry performance on the connection between SMD and the EG of COMESA. It gave rise to the third hypothesis, which stated that there is no significant moderating effect of bank industry performance on the interaction between SMD and economic growth of COMESA.

The moderating variable, in this case, the bank Industry Performance (BIP), was represented by three indicators the size of commercial banks, interest earned and credit to the private sector. The study developed three sub-hypotheses from hypothesis three (H03), which were H03a, H03b and H03c to represent CPS, SCB and Interest Earned (IE) respectively. The test of the three sub-hypotheses using the approaches put forward by Baron and Kenny (1986) through the pooled OLS model found that BIP has no significant moderating effect on the interaction between SMD and EG of COMESA member states and, therefore, the null hypothesis was accepted. The results were interpreted as inconclusive since there was not sufficient evidence from the study to make conclusions on the hypothesis. Thus objective three was not proved by this study.

The findings of this test were consistent with the study findings of Ayadi et. al. (2015) and Wang et al. (2015). Further, the study findings are in agreement with the critiques of financial intermediary theory (FIT), especially regarding some of its failures. Werner (2014), for example, explained that liquidity and credit creation, if not directed to the productive sector, harms economic growth. Thus, critics of FIT argue that this theory is useless in COMESA member states.

However, the study findings were inconsistent with those of (Guru and Yadav, 2019; Puryan, 2017; Rehman, 2018; Umar et al. 2015). These study findings supported the Financial Intermediation Theory (FIT) (Gurley & Shaw, 1960), a school of thought founded on the asymmetries in information. It argued that the existence of financial institutions is to collect information about the borrowers and savers to enable transactions at the most reasonable costs. By breaking information asymmetry, financial intermediaries promote efficiency in the securities markets and efficient allocation of capital funds to various areas to support productive investments (Gurley & Shaw, 1960; Farma, 1965; Spence, 1973; Rothschild & Stiglitz, 1976). Schumpeter (1911), a supporter of FIT, argues that services offered by FI in mobilizing savings, linking savers to borrows at the most reasonable transaction costs, managing risk, and monitoring managers, stimulate technological innovation, SM efficiency and EG.

The contradiction in the findings between the current study and existing findings from previous studies can be attributed to the fact that the studies used different indicators from the current study to measure variables and also used non-linear models compared to the current study that used linear regression models.

The final study objective was to explore the joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states. To help explore the joint effect of the three variables on EG, the fourth hypothesis was formulated. It hypothesized that there is no significant joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states. The

hypothesis test results from the fixed effects panel data model indicated that the SMD, BIP and government regulations have a significant joint effect on the EG of COMESA member states.

The results did not support the hypothesis, and it was concluded that the joint effect of securities markets development, bank industry performance and government regulations is greater than the individual effect of SMD on the economic growth of COMESA member states. The fourth objective was thus confirmed by this study. A summary of the hypotheses tested, the sub-hypothesis, its results and the model's significance is shown in table 5.12.

Table 5. 12: Summary of Research Objectives, Hypotheses, Analytical Methods, Estimation Model, Results and Interpretation

Objectives	Hypotheses	Analytical Method	Estimation Model	Results	Interpretation
To ascertain the Effect of SMD on EG of COMESA member states	Hypothesis 1: There is no significant effect of SMD on the EG of COMESA member states.	Regression $Y_{it} = \beta0 + \beta1X1_{it} + \varepsilon_{it}$ Y= EG, β0= intercept, X1=SMD,β1=coefficient=Error term , i= individual country cross-section data, t=time series,	The Pooled Ordinary Least Squares	The null hypothesis was rejected. (Not supported)	Relationship existed because β1 was Significant (p-value P<0.05). Test of significance for R^2 using the F-statistic - F-Test was statistically significant (p<0.05) and therefore the regression model could statistically significantly predict economic growth. R^2 was 0.061 meaning 6.1% of variations of EG is explained by SMD.
To establish the effect of GR on the relationship between SMD and EG of COMESA Member states	Hypothesis 2: There is no significant moderating effect of GR on the relationship Between SMD and EG of COMESA member states	Regression Models; $Y_{it} = \beta0+\beta1X1_{it} + \beta2X2_{it} + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} + \beta2X2_{it} + \beta3(SMD*GR) + \varepsilon_{it}$ Where Y=Economic Growth, X1=SMD, X2=GR, (SMD*GR)=Interaction Term and ε_{it} is an error term, i= individual country cross-section data, t=time series	The Fixed Effects Model	The null hypothesis was rejected. (Not supported)	The moderating effect occurred because the relationship between SMD and EG was significant, and the interaction term was statistically significant (ie p<0.05). R-squared increased after the introduction of the interaction term (SMD*GR) in the fixed effects model from 0.229 to 0.231 which was statistically significant, and it meant the model was strong and the relationship became stronger.
To determine the effect of BIP on the relationship between SMD and EG of COMESA member states.	Hypothesis 3: There is no significant moderating effect of BIP on the relationship between SMD and EG of COMESA member states.	Regression Models Regression Models; $Y_{it} = \beta0+\beta1X1_{it} + \beta2X2_{it} + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} + \beta2X2_{it} + \beta3(SMD*CPS) + \varepsilon_{it}$	The Pooled Ordinary Least Squares	We failed to reject the null Sub-hypothesis	The moderating did not occur because only the Relationship between SMD and EG was significant, but the interaction term was statistically insignificant (p-value was greater than 0.05).

	BIP was measured using CPS, IE and Size of commercial Banks	$Y_{it} = \beta0+\beta1X1_{it} +\beta2X3_{it} + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} +\beta2X3_{it} +\beta3(SMD*IE) + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} +\beta2X4_{it} + \varepsilon_{it}$ $Y_{it} = \beta0+\beta1X1_{it} +\beta2X4_{it} +\beta3(SMD*SIZE)+ \varepsilon_{it}$ Where Y=Economic Growth, X1=SMD, X2=CPS, X3=IE, X4=Size of commercial banks (SIZE), SMD*GR, SMD*IE and SMD*Size are Interaction Terms and ε_{it} is an error term, i= individual country cross-section data, t=time series		3a (Inconclusive) We failed to reject the null Sub-hypothesis 3b (Inconclusive) We failed to reject the null Sub-hypothesis 3b (Inconclusive Overall, we failed to reject Hypothesis 3 (Inconclusive)	
To investigate the joint effect of SMD, BIP and GR on EG of COMESA member states	Hypothesis 4:There is no significant joint effect of SMD, BIP and GR on EG of COMESA member states	Regression Model $Y=\beta0+\beta1X1_{it}+\beta2X2_{it}+\beta2X3_{it}+\beta2X4_{it}+\beta3X5_{it}+\varepsilon_{it}$ Y=EG,β0=intercept,X1=SMD,X2=GR,X3=IE, X4=Size of commercial Banks and X5=CPS β1, β2,β3, β4 andβ5= coefficients, ε= Error term, i= individual country cross-section data, t=time series	The Fixed Effects Model	The null hypothesis was rejected (Not Supported)	The relationship existed because Model regression coefficients β1...β5 were Significant (p-value P<0.05). Test of significance for R^2 using the F-statistic - F-Test was statistically significant (p<0.05) and therefore the regression model could statistically significantly predict economic growth. R^2 was 0.361 meaning 36.1% of variations of EG is explained by the joint effect of the three variables.

Source: Researcher (2022)

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The previous chapter dwelt on the hypothesis testing, interpretation and discussion of the results. This chapter presents a summary of the research findings, the conclusion and recommendations for further research. It highlights an overview of the study's objectives from which the hypotheses were derived and provides the study synopsis, conceptualization, the population of the study and how data collection was undertaken. It also gives a summary of the outcomes of the descriptive of the study variables. The chapter also highlights the four major relationships of the study variables, outlining the major findings from where the conclusions were drawn. Relevant recommendations based on the study's findings have also been outlined and if implemented, they could result in the improved EG of COMESA member states. The last part of this chapter provides a discussion on the implication of the study's findings to theory, policy and management practice. The chapter ends with a discussion of the study limitations and how they were mitigated to ascertain credible results with recommendations for further research based on the study's limitations.

6.2 Summary of Findings

The broad study objective was to ascertain the influence of bank industry performance and government regulations on the interaction between securities markets development and EG of COMESA member states. To attain this objective, three study variables were used: explanatory, moderating, and outcome variables. The explanatory variable was securities market development, which was measured using two dimensions of SMD, namely stock market capitalization and stock traded value. The moderating variables were the Bank Industry Performance (BIP) and Government Regulations (GR). BIP was measured by three indicators: the size of commercial banks, interest earned, and credit to the private

sector, while GR was measured by the Ease of Doing Business Score. These were introduced in the study model as interaction terms. Finally, the dependent variable was economic growth, which was represented by the GDP annual growth rate.

The study was guided by four hypotheses that were formulated from four specific objectives. The hypotheses were in line with the study gaps identified in the theoretical and empirical literature review to contribute to the current literature by filling the existing study gaps that were identified gaps in chapters one and two. Table 2.1 in chapter two presents a summary of the gaps ranging from contextual gaps to methodological gaps.

The major contextual gaps identified in the reviewed studies were the lack of studies on SMD and EG and the lack of similar studies in COMESA member states and developing countries at large. The findings on the moderating effect of bank industry performance and government regulations supported the public interest theory of regulations but did not support the financial intermediation theory. The findings on the joint effects of SMD, BIP, and EG revealed the lack of adequate empirical studies on factors that affect EG. Most empirical studies reviewed were aimed at assessing the effect of SMD on EG in developed economies.

From the theoretical and practical points of view, SMD and GR are very important to the economy and can be achieved by securities market efficiency and reduction of information asymmetry between the securities markets' customers and the market. The availability of vital information can reduce information asymmetry. However, most of the empirical studies reviewed have concentrated on the developed SM, hence not much is given on how SM promoted EG in COMESA member states. This makes the current study unique. The findings of the study, though not comparative, contribute to SMD concerning EG in COMESA member states.

The findings from the study methodology introduce a new approach to examining the effect of SMD on EG. The study revealed that new variables that affect EG can be studied as composite indices instead of a single variable as most studies reviewed indicated. The findings from the hypotheses tests conducted revealed interesting and new outcomes as discussed in chapter 5 and presented in table 5.1.

As stated earlier, the first study objective was to ascertain the effect of SMD on the EG of COMESA member states, which led to the formulation of the null hypothesis which stated that there was no significant effect of securities market development on the economic growth of COMESA member states. The null hypothesis was rejected, while the H_1 that SMD has a significant effect on the EG of COMESA member states was accepted.

The second objective sought to explore the effect of government regulations on the connection between SMD and the EG of COMESA member states. The resultant H_0 stated that there was no significant moderating effect of government regulations on the correlation between securities market development and EG of COMESA member states. The H_0 was rejected and the alternative hypothesis which stated that GR have a significant moderating effect on the relationship between securities markets development and EG of COMESA member states was accepted.

The third objective aimed to establish the effect of bank industry performance on the relationship between SMD and the EG of COMESA member states. The moderating variable, in this case, the bank Industry Performance (BIP), was represented by three indicators of the size of commercial banks, interest earned, and CPS. The study developed three sub-hypotheses from hypothesis three (H03), which were H03a, H03b and H03c to represent CPS, Size of Commercial Banks (Size) and Interest Earned (IE) respectively. The test of the three sub-hypotheses using the approaches proposed by Baron and Kenny (1986) found that BIP has no moderating effect on the interrelation between SMD and EG of COMESA member states and, therefore, we failed to reject the null hypothesis. The final objective

of the study sought to determine the joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states. The results supported the hypothesis, leading to the inference that the joint effect of securities markets development, bank industry performance and government regulations is greater than the individual effect of SMD on the economic growth of COMESA member states.

The findings from the study methodology have introduced a new approach to examining the effect of SMD on EG. This study revealed that new variables that affect EG can be studied as composite indices instead of a single variable as most studies reviewed indicated. The findings from the hypotheses tests conducted revealed interesting and new outcomes as discussed in chapter 5 and presented in table 5.1. The findings show that SMD has a positive effect on the EG of COMESA member states. This was the main study objective.

6.3 Conclusions

The first study objective was to ascertain the effect of securities market development on the EG of COMESA member states The study results suggest that securities market development and economic growth are positively correlated indicating a long-run causal relationship. This means that the development of the COMESA member states' securities market would lead to economic growth.

The second objective was to establish whether the GR moderate the interaction between SMD and EG of COMESA member states. The study established that there was a causality of GR existed in the relationship between SMD and EG. This implies that financial sector reforms, with other macroeconomic factors being constant, lead to sustainable economic growth in COMESA. Therefore, sound policy reforms positively influence growth in the economy as well as other economic activities. The results also show that the business environment and institutional or legal framework plays a significant role in promoting stock market development. Therefore, strong property rights protection

with friendly business environment would increase the confidence level of the market players thereby increasing market activities in the country.

The third objective aimed at establishing whether the bank industry moderates the relationship between SMD and the EG of COMESA member states. The results failed to reject the H_0 meaning that bank industry performance does not have a significant moderating effect on the connection between securities market development and economic growth of COMESA member states. Several questions have been raised on the effect of bank industry performance on economic growth and arguments put forth to support the assumption that borrowed funds from the banking industry can only help economic growth if such borrowing is not excessive and the money is invested in viable economic activities. The results of this study could not establish the moderating role of bank industry performance on the connection between securities market development and economic growth. This calls for further studies on these variables to establish the connection.

The fourth and final objective of the study was to ascertain if the joint effect of securities markets development, bank industry performance and government regulations on the EG of COMESA member states was higher than the individual effect of SMD on the region's economic growth. With the results of the study being significant, it resulted in the rejection of the H_0 and the conclusion that the joint effect of SMD, bank industry performance and government regulations are higher than the individual effect of the said variables on the EG of COMESA member states.

6.4 Contribution to new knowledge

The study will help in theory building to the existing theoretical knowledge and literature on areas of EG mechanisms in COMESA because it assessed the adequacy of existing literature, theory and identified gaps that may guide future research. Theoretically, by developing a Solow–Swan growth

model augmented with financial markets in the tradition of Wu, Hou, and Cheng (2010), we established that capital from securities markets is a long-run determinant of GDP growth rate. In the empirical part, the long-run relationship is estimated for a panel of 9 countries over the period 2005–2020 using the Fixed Effects Model (FEM) and Pooled Ordinary Least Squares (OLS), both of which allow for heterogeneity/individuality of the units. The panel data analyses reveal positive long-run effects on the steady-state level of GDP growth rate, and the contribution of SMD and GR to EG is significant.

Government Policymakers within COMESA member states will find useful information necessary for making decisions on SMD and EG especially the need to make their securities markets more attractive to investors to promote EG in the trading bloc. The findings are important to management and practitioners in the securities market in COMESA because they will assist in addressing the divergent interests of investors.

6.5 Recommendations

As a policy implication, we recommend that authorities in the government should design good policy reforms that could improve the deepening of financial markets, including institutional and legal measures to strengthen investor rights, contract enforcement and enhance the securities market efficiency. Thus, by fostering the development of the member states' securities market, economic growth will be accelerated.

Secondly, the study recommends that securities markets should be addressed alongside other macroeconomic factors and not in isolation when examining their effect on economic growth. This is because the joint effect of securities markets development, bank industry performance and government regulations yielded an increased positive effect on economic growth.

6.6 Limitations of The Study

The study had several shortcomings: First, was on the use of securities markets development and the bank industry. In the background of this study, it was conceptualized that capital moves through securities markets (SM) from surpluses (savers) to deficits to promote EG. From a broad perspective, capital moves from savers to borrowers through a financial system, consisting of several players like the securities market, banking industry, insurance firms, mutual funds and other non-banking institutions, all of which contribute to the economies of COMESA member states. However, this study focused only on SMD and BIP.

The study did not incorporate information on all other financial institutions within the financial system. It means the study findings were not reflective of the real level of economic growth of COMESA member states, especially in terms of capital as a driver of growth of economies.

The second limitation of the study was its context. The study was limited to COMESA member states, meaning it did not cover other key blocs, thereby limiting the finding to the COMESA context only.

6.7 Suggestions for Further Research

The findings on the moderating influence of bank industry performance and government regulations between securities markets development and economic development within member states were the main contribution of this study. Future studies may need to include other factors such as the external environment as a moderator. This would contribute to giving a meaningful link connecting SMD and member states' growth.

The study obtained results, which are useful in the COMESA member states' context. It would be useful for further studies to be carried out in future to confirm or refute the relationships among the variables. The moderating effect of bank industry performance on organizational performance may also be investigated in subsequent research

REFERENCES

Adjasi, C. K., & Biekpe, N. B. (2006). Stock market development and economic growth: The case of selected African countries. *African Development Review, 18*(1), 144-161.

Ahuja R. (2010). Research Methodology, New Delhi: *Rawat Publication*

Ake, B., & Ognaligui, R.W. (2010). Financial stock market and economic growth in developing countries: The case of Douala Stock Exchange in Cameroon. *International Journal of Business and Management, 5(5), 82-88.*

Akinwande, M.O., Dikko, H.G. and Samson, A. (2015) Variance Inflation Factor: As a Condition for the Inclusion of Suppressor Variable(s) in Regression Analysis. Open Journal of Statistics, 5, 754-767.

Alkhuzaim, W. (2014). Degree of financial development and economic growth in Qatar: Cointegration and causality analysis. *International Journal of economics and finance, 6*(6)

Adusei M. (2014). Does stock market development promote economic growth in Ghana?

International Journal of Economics and Finance; Vol. 6, No. 6; 2014 ISSN 1916-971X

African Development Bank (2021). Mauritius Economic Outlook. Building today, a better Africa tomorrow (afdb.org)

Agyemang, O. S., Gatsi, J. G., & Ansong, A. McMillan, D. (2018). Institutional structures and financial market development in Africa. *Cogent Economics & Finance, 6(1), 1488342.* https://doi.org/10.1080/23322039.2018.1488342 [Taylor & Francis Online], [Web of Science ®]

Allen, F. & Santomero, A. (1998). The Theory of Financial Intermediation. *Journal of Banking and Finance, 21, 1461-1485.*

Avadhani,V.A. (2011). *Investment Analysis and Portfolio Management*. *Himalaya Pub* (2011)

Ananwude, A. C., & Osakwe, C. I. (2017). Stock Market Development and Economic Growth in Nigeria: *A Camaraderie Reconnaissance. Research Journal of Economics, 1(3), 1-6.*

Arestis, P. & Demetriades, P. (1997) Financial Development and Economic Growth: Assessing the Evidence. *The Economic Journal,* 107, 783-799.

Aslam, M. & Awan A. (2018). Impact of monetary policy on economic growth- evidence from Pakistan. *Global journal of management. Social sciences and humanities* 89. 89-109.

Awan A, G., & Ahmad, W. (2014). Role of policies in economic growth: a case study of China's economic growth. *Global Journal of Arts Humanities and Social Sciences*, 2(8)45-64

Azam, M., Haseeb, M., Samsi, A. B., & Raji, J. O. (2016). Stock Market Development and Economic Growth: Evidence from Asia-4 Countries. *International Journal of Economics and Financial Issues*, *6*(3) 54-87

Bagehot, W., Smith, A., & Economy'in, O. M. (1973). Economic Studies. 1888. *Reprint, Cliften: Augustus M. Kelley*.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, (51), 1173-1182

Beck T. & Levine R. (2002). Industry growth and capital allocation: Does having a market- or bank-based system matter? *Working Paper 8982*

Beckaert, G.; Harvey, C.; Lundblad, C. (2005) Does financial liberalization spur growth? *Journal of Financial Economics, 77, pp.3-55*

Bhide, A. (1993)"The Hidden Costs of Stock Market Liquidity." *Journal of Financial Economics 34(2), pp. 31- 5 1*

Bikker, J., & Bos, J. W. (2008). *Bank Performance: A theoretical and empirical framework for the analysis of profitability, competition and efficiency*. Routledge.

Bill B. F., Iftekhar H. & Ofori E. 2015. "Investor Protections, Capital Markets, and Economic Growth: The African Experience," Advances in Financial Economics, in Kose John & Anil K. Makhija & Stephen P. Ferris (ed.), *International Corporate Governance, volume 18 239-272, Emerald Publishing Ltd*

Bist, J.P.(2018), "Financial development and economic growth: evidence from a panel of 16 African and non-African low-income countries", *Cogent Economics & Finance*, Vol. 6 No. 1, doi: 10.1080/ 23322039.2018.1449780.

Buriak, A. (2014). Performance in Banking: Theory and Practice Peculiarities. *Central European Journal for Science and Research, Forthcoming.* Available at SSRN: https://ssrn.com/abstract=2534818

Chalmers, K., Godfrey J. M. & Lynch, B. (2012). Regulatory theory insights into the past, present and future of general-purpose water accounting standard-setting, *Accounting, auditing and accountability journal*, vol. 25, no. 6, pp. 1001-1024.

Charlot, O., Malherbet, F. & Terra, C. (2015). Informality in Developing Economies: Regulation and Fiscal Policies. *Journal of Economic Dynamics and Control*, 51, pp. 1-27.

Carvajal A. & Elliott J. (2007). Strengths and Weaknesses in Securities Market Regulation: A

Global Analysis. *IMF Working Paper*

Choi. (2001). Unit Root Tests for Panel Data. Journal of International Money and Finance. 20. 249-272.

Cohen, J. (1988) Statistical Power Analysis for the Behavioral Sciences, 2nd ed. Hillsdale, NJ: Erlbaum.

Cooper, D.R. & Schindler, P.S. (2003) *Business Research Methods*. 8th Edition, McGraw-Hill Irwin, Boston.

Cootner, P.H. (1964). The Random Character of Stock Market Prices. *MIT Press, Cambridge*.

Costantiello, A., Laureti, L. & Leogrande, A. (2021). Estimation and Machine Learning Prediction of Imports of Goods in European Countries in the Period 2010-2019. 10.13140/RG.2.2.24739.37920.

Christensen, T. & Lægreid, P. (2006). 'Agencification and regulatory reform', in T.Christensen and P.Lægreid, eds, *Autonomy and Regulation. Coping with agencies in the modern state*. Cheltenham: Edward Elgar.

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed.).* Thousand Oaks, CA: Sage. English Language Teaching. 12. 40. 10.5539/elt.v12n5p40.

Cumming, D. Dannhauser, S. A. & Johan, S. A. (2015). Exchange trading rules and stock market liquidity, *Journal of Finance and Economics 99*(3):651-671

Dawes, J. (2000). Market orientation and company profitability: Further evidence incorporating longitudinal data. *Australian Journal of Management, 25*(2), 173- 199.

D'Costa S., Garcilazo J., E., & Martins J., O., (2018) Impact of macro-structural reforms on the productivity growth of regions: Distance to the frontier matters, *University of Westminster, London, UK*

Demirguc-Kunt, A. & Levine, R. (2001). Financial Structures and Economic Growth: A Cross Country Comparison of Banks, Markets, and Development. *MIT Press, Cambridge, MA.*

Demirguc-Kunt, A. & Levine, R. (1996) Stock Market Development and Financial Intermediaries: Stylized Facts. *The World Bank Economic Review, 10, 291-321.*

Dewatripont, M., Rochet, J. C., & Tirole, J. M. P. (2010). Balancing the Banks: Global lessons from the financial crisis. *Princeton University Press.*

Dye T. R (1972) Understanding Public Policy. *Englewood Cliffs, NJ: Prentice-Hall, pp. xii, 305.*

Enisan, A. A., & Olufisayo, A.O. (2009). Stock market development and economic growth: Evidence from seven Sub-Sahara African countries. *Journal of Economics and Business, 61, 162-171.*

Ehigiamusoe, K. U., & Lean, H. H. (2018). Tripartite Analysis of Financial Development, Trade Openness and Economic Growth: Evidence from Ghana, Nigeria and South Africa. *Contemporary Economics*, *12*(2),

Fama, E.F., (1965). The Behavior of Stock-Market Prices. *The journal of Business*, 38(1), pp.34-105.

Fama, E.F., (1965). Efficient Capital Markets: II. *The journal of finance * vol. Xlvi, no. 5*

Field, A., P. (2001). “Meta-Analysis of Correlation Coefficients: A Monte Carlo Comparison of Fixed- and Random-Effects Methods.” *Psychological Methods* 6 (2001): 161-180.

Goldsmith, R. W. (1969). *Financial structure and development*. New Haven: Yale University Press.

Gurley, J.G. & Shaw, E.S. (1960). Financial aspects of economic development. *American Economic Review,* 45 (4), 515-538.

Greene, W. (2003). *Econometric Analysis Fifth Edition.*

Guru, B.K. & Yadav, I.S. (2019). "Financial development and economic growth: panel evidence from BRICS". *Journal of Economics, Finance and Administrative Science*, Vol. 24 No. 47, 113-126

Hantke-Domas, M. (2003). The public interest theory of regulation: non-existence or misinterpretation? *European Journal of Law and Economics*, *15*(2), 165-194.

Hartono, P., Sari, W., Tinungki, G. Maria J., & Hartono, A. (2021). The Determinants of Dividend Policy: An Empirical Study of Inconsistent Distribution of Dividends Using Balanced Panel Data Analysis. *Media Ekonomi dan Manajemen.* 36. 89-106. 10.24856/mem.v36i2.2023

Haque, M. E. (2013). Impact of stock market development on economic growth: An evidence from SAARC Countries. *International Journal of Research in Commerce, Economics & Management, 3(1), 15-20.*

Ho, S., & Odhiambo, N. (2012). Stock market development and economic growth in Hong Kong: An empirical investigation. *International Business & Economics Research Journal, 11(7), 795-808*

Horobet, A., Dita, S., Radulescu, M. & Belascu, L. (2021). Risk and Financial Management Article Determinants of Bank Profitability in CEE Countries: Evidence from GMM Panel Data

Estimates Determinants of Bank Profitability in CEE Countries: Evidence from GMM Panel Data Estimates. *Journal of Risk and Financial Management*. 14. 122.10.3390/jrfm14070307

Hunter, John E. & Frank L., S. (2000). "Fixed Effects vs. Random Effects Meta-Analysis Models: Implications for Cumulative Research Knowledge." *International Journal of Selection andAssessment* 8 (2000): 275-292.

Hill., R., William E., G. & Guay C., L.(2012). Principles of Econometrics, *Fourth Edition.New York: John Wiley & Sons, 2012*

https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx.

https://www.comesa.int

https://www.doingbusiness.org/en/data/doing-business-score

https://www.worldbank.data.org

https://www.afdb.org/en/news-and-events

Ikikii, S. M., & Nzomoi, J. N. (2013). An analysis of the effects of stock market development on economic growth in Kenya. *International Journal of Economics and Finance*, *5*(11), 145.

Iqbal S., Khan A.Q., Khan M.Y., Al-Aali L. (2021). The Dynamics of Financial Development, Government Quality, and Economic Growth in Different Groups of Economies. *Sustainability*, *13*, 7573. https://doi.org/10.3390/su13147573

Kagochi, J.M., Al Nasser, O.M., & Kebede, E. (2013). Does financial development hold the key to economic growth? The case of Sub-Saharan Africa. *Journal of Developing Areas, 47(2), 61-79.*

Jakšić, S., Erjavec, N. & Cota, B. (2021). Impact of regulatory trade barriers and controls of the movement of capital and people on international trade of selected Central, Eastern and Southeastern European economies. *Central European Journal of Operations Research.* 29. 10.1007/s10100-021-00743-8.

Keller G. & Warrack B. (2000). *Statistics for management and economics.* 5th edition

Karaye, A. B. & Büyükkara, G. (June, 2021). The Impact of Corporate Governance on Financial Performance of Companies in Southern Africa. *Journal of Business Research - Turk.* 13. 1817-1834. 10.20491/isarder.2021.1231

Karagiannis S., & Kvedaras V. (2016). Financial development and economic growth. A European perspective. JRC Science for Policy Report.

Karim, S., & Chaudhary, G. M. (2017). Effect of Stock Market Development on Economic Growth of Major South Asian and East Asian Economies: A Comparative Analysis. *Journal of Business Studies Quarterly*, *8*(3), 81

Kemboi, J. K., & Tarus, D. K., (2012), Macroeconomic Determinants of Securities Market Development in Emerging Markets: Evidence from Kenya. *Research Journal of Accounting and Finance,* 3 (2) 57-68.

Levine, R. E. & Zervos S. (1999). Stock Market Development and Long-Run Growth. Available at SSRN: https://ssrn.com/abstract=614946

Levine, R. & Zeros S. (1996): "Stock Market Development and Long-run Economic Growth" *The World Bank Review 10(2)*

Kahneman D. & Tversky A. (1982). "Intuitive Prediction: Biases and Corrective Procedures." In D. Kahneman, P. Slovic, and A. Tversky, (eds.), Judgment under Uncertainty: Heuristics and Biases. *London: Cambridge University Press.*

Keynes J.M. (1964). The General Theory of Employment, Interest and Money. *London: Harcourt Brace Jovanovich, 1964 (reprint of the 1936 edition).*

King .G. & Levine R, (1993a). Finance and growth: Schumpeter might be right. Quarterly Journal of Economics 108, 717}738.

Khatun R. (2019). Financial development, openness in financial services trade and economic growth. A panel data analysis in BRICS economies. *International Trade, Politics and Development* Vol. 3 No. 2, 2019 pp. 42-65 *Emerald Publishing Limited* 2586-3932 DOI 10.1108/ITPD-05-2019-0002

Kothari, C. (2010). *Research Methodology: Methods and Techniques,* Mumbai: New Age International publishers.

Kryeziu, Nexhat & Hoxha, Egzon. (2021). Fiscal Deficit and its Effects on Economic Growth: Empirical evidence. *International Journal of Finance & Banking Studies* (2147-4486). 2021. 10.20525

Kumar, S., & Chauhan, S. (2015). Impact of Commercial Deposit in Banks with GDP in context with Pradhan Mantri Jan Dhan Yojna. *BVIMSR's J Manage Res*, *7*(1), 53-59.

Levine, R. & Zervos, S. (1998). Stock Markets, Banks, and Economic Growth, *American Economic Review* 88:537-558.

Levine R., Lin C., & Xie W. (2016). "Spare Tire? Stock Markets, Banking Crises, and Economic Recoveries." *Journal of Financial Economics* 120 (1): 81–101.

Loayza, N., Ouazad, A. & Rancière, R., (2018). Financial development, growth, and crisis: is there a trade-off. *Working Paper 24474* http://www.nber.org/papers/w24474

Li, R. & Leung, G. (2021). The relationship between energy prices, economic growth and renewable energy consumption: Evidence from Europe. *Energy Reports.* 7. 1712-1719. 10.1016/j.egyr.2021.03.030

Liu, X., & Sinclair, P. (2008). Does the linkage between stock market performance and economic growth vary across Greater China? *Applied Economic Letters, 15, 505–508. http://dx.doi.org/10.1080/13504850500426277*

Maksimovic, V., Beck, T. & Demirgüç-Kunt A. (2002) Financial and Legal Constraints to Firm Growth: Does Size Matter? *Available at SSRN: https://ssrn.com/abstract=634403*

Malkiel B.G. (1973). *A Random Walk Down Wall Street.*

Mat, B., Arikan, M., Çevrimli, M., Akin, A. & Tekindal, M. (2021). Factors affecting the price of raw milk in Turkey using panel data analysis. *Ciência Rural*. 51. 10.1590/0103-8478cr20200937

Miniesy, R., AbdelKarim, M. (2021). Generalized Trust and Economic Growth: The Nexus in MENA Countries. *Economies.* 9. 39. 10.3390/economies9010039

Montano, D. (2021). Socioeconomic status, well-being and mortality: a comprehensive life-course analysis of panel data, Germany, 1984-2016. *Archives of Public Health*. 79. 10.1186/s13690-021-00559-7

Moon, H.R. & Perron B. (2004a), "Testing for a Unit Root in Panel with Dynamic Factors", *Journal of Econometrics, 122, 81-126.*

Menyah, K., Nazlioglu, S. & Wolde-Rufael, Y. (2014). Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach. Economic Modeling, 37, 386-394.

Mckinnon, R. (1973*). Money and capital in economic development*. Brookings Institution: World Bank, Washington, D.C

Manasseh C., Ogbuabor J., Anumudu C., Abada A., Okolie M., & Iri, E. (2018). The Causal Effect of Stock Market Development, Financial Sector Reforms and Economic Growth: The Application of Vector Autoregressive and Error Correction Model. *International Journal of Economics and Financial Issues.* 8. 357-369.

Mugenda O. & Mugenda A. G. (2004). *Research Methods – Quantitative & Qualitative Approaches*

Munyoro, G., Moyo, L., Chigunha, B. R. & Chipoyera, N. (2018). The Significance of Microfinance to the Development of Smallholder Cattle Farming Sector in Zimbabwe: A Case Study of Smallholder Cattle Farming Sector in Beitbridge District, Matebeleland South province.

ADRRI Journal of Arts and Social Sciences, Ghana: Vol. 15, No.12 (3). 20-52, E-ISSN: 2343-6891

Naik, P. K., & Padhi, P. (2015). On the linkage between stock market development and economic growth in emerging market economies: dynamic panel evidence. *Review of Accounting and Finance, 14*(4), 363-381.

Nachmias F. C. & Nachmias, D. (2008) Research Methods in the Social Sciences. *7th Edition, Worth, New York.*

Nyamute, W. I. (2016). Investor behaviour, investor demographic characteristics, investment style and individual investor portfolio performance at the Nairobi Securities Exchange. *Jomo Kenyatta University of Agriculture and Technology*

Nyasha, S., & Odhiambo, N. M. (2015). The Impact of Banks and Stock Market Development on Economic Growth in South Africa: An ARDL-Bounds Testing Approach. *Contemporary Economics, 9, 93-108*.

Obadan, M. I. (1998): Presidential Address presented on the " Capital Market and Nigeria's Economic Development" at a one-day seminar organized by Nigeria Economic Society at the Institute of International Affairs, Lagos 21st January 1998.

Odabasi, S. (2021). The economics of crime and immigration: A panel data analysis. *Pamukkale University Journal of Social Sciences Institute*. 10.30794/pausbed.778218

Okiro, O. K. (2014). Corporate governance, capital structure, regulatory compliance and performance of firms listed at the East African community securities exchange. The *University of Nairobi.*

Okereke-Onyiuke N. (2000): "Stock Market Financing Options for Public Projects in Nigeria" *The Nigerian Stock Exchange Factbook 2000*

Olsson, M. & Schuller, B.-J. (2012). Living standard, quality of life, globalization and competitiveness in the EU and the neighbour countries: an empirical analysis. *Acta Scientiarum Polonorum - Oeconomia, 11(1), 5-21*

Osamwonyi, I.O., & Kasimu, A. (2013). Stock market and economic growth in Ghana, Kenya and Nigeria. *International Journal of Financial Research, 4(2), 83-98.*

Osamwonyi, I. O. (2005), Capital Market Imperfections and Community Economic Development in Nigeria, *A paper presented at the Academy of Management Nigeria on the 23rd of November, Abuja.*

Panicos D. & Kul L. (2001). "Financial Restraints in the South Korean Miracle."

Journal of Development Economics 64 (2): 459–79.

Pigou, A. C. (1932). The Economics of Welfare. London: *Macmillan and Co.*

Pradhan R. P., Arvin M., Hall J.H., & Bahmani S. (2014). Causal nexus between economic growth,

banking sector development, stock market development, and other macroeconomic variables:

The case of ASEAN countries. *Review of Financial Economics*, vol. 23, issue 4, 155-173

Pallant, J. (2005). *SPSS survıval manual*: A step-by-step guide to data analysis using SPSS for wındows. Australia: Australian copyright.

Gass, M. A. & Priest, S. (1993). Using metaphors and isomorphs to transfer learning in adventure education. *Journal of Adventure Education and Outdoor Learning*, 10 (4), 18-23.

Polat, B. (2019). The Linkage between Economic Growth and Openness: Does Financial Development Matter? *Journal of Business Research-Turk,* 11 (1), 120-128.

Popoola O. R., Ejemeyovwi O. J, Alege O. P. Omobola, A. and Onabote A. (2017). Stock Market and Economic Growth in Nigeria, *International Journal of English Literature and Social Sciences*, 2(6), 98-106.

Posthuma, R. A. (2013). The effect of capital market deepening on economic growth in Kenya. *Journal of Applied Finance and Banking*, 4(1), 141.

Puryan, V. (2017). The causal relationship between economic growth, banking sector development and stock market development in selected middle-East and North African Countries. *International Journal of Economics and Financial Issues*, 7(3), 575-580.

Rashid S., J., Ouyang H, Abeid, A., R. & Pacific ., Y., K., T. (2016). The impact of the stock exchange on economic growth, *Journal of economics and finance*. ISSN: 2321- 5933

Rehman, M., Z. (2018). Banking sector development, stock market development and economic growth evidence from Saudi Arabia, *Academy of Accounting and Financial Studies Journal* Volume 22, Issue 4.

Ricketts M. (2006). *Economic regulation principles, history and methods.* International Handbook on Economic Regulation (pp.34-62). Edward Elgar.

Romer, P. (2018). Economic Integration and Endogenous Growth, *Quarterly Journal of Economics, 106*(2), 531-555.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of political economy*, *94*(5)

Ruwaydah, A., & Ushad, S. A. (2015). Effects of Stock Market Development on Economic Growth: The Case of SADC Countries. *Proceedings of the Third Middle East Conference on Global Business, Economics, Finance and Banking.*

Saragih, A., Raya, M., Hendrawan, A. (2021). The Moderating Role of Firm Size on the Association between Managerial Ability and Tax Avoidance. *Jurnal ASET (Akuntansi Riset).* 13. 39-049. 10.17509/jaset.v13i1.30783

Shahbaz M., Hye Q.M.A., Tiwari A.V., Leitao N.C., (2013b), "Economic growth, energy consumption, financial development, international trade and CO2 emissions in Indonesia", *Renewable and Sustainable Energy Reviews*, vol.25, pp.109-121.

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika,* 52 (3–4), 591–611

Shaw, E. S. (1973). *Financial deepening in economic development*. New York: Oxford University Press.

Shleifer, A. & VisHny, R., W. (1986) "'Large Shareholders and Corporate Control." *Journal of Political Economy (3),pp 461-88.*

Stevans, L., Neelankavil, J., Mendoza, R. & Shankar, S. (2012). The Economic Competitiveness of Countries: A Principal Factors Approach. *International Journal of Economics and Finance*. 4. 10.5539/ijef.v4n12p76

Schumpeter, J. (1911). (1934). *The Theory of Economic Development.* Cambridge. MA: Harvard University Press.

Solow, R.M. & Swan, T.W. (1956) Economic Growth and Capital Accumulation. *Economic Record, 32, 334-361.*

Pigou, A. C. (1932). *The Economics of Welfare*. London: Macmillan and Co.

Peltzman S. (1989). "The Economic Theory of Regulation after a Decade of Deregulation," Brookings Papers on Economic Activity, Economic Studies Program, *The Brookings Institution.* 20 (1989 Micr), 1-59.

Saunders, A., & Allen, L. (2002). Credit Risk Measurement: New Approaches to Value at Risk and other Paradigms. *New York: Wiley.*

Scholtens B. & Van Wensveen D. (2000). A critique on the theory of financial intermediation. *Journal of Banking & Finance 24 1243-1251*

Spence, M. (1973). Job market signalling. *Quarterly Journal of Economics, 87, 355-374.*

Smith, A. (1976). *An inquiry into the nature and causes of the wealth of nations* (ed. RH Campbell, AS Skinner, and WB Todd).

Stigler, G. (1971). 'The Theory of Economic Regulation', *Bell Journal of Economics and Management*, 2: 3-21.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). New York: Allyn and Bacon.

Tang, C.F. (2013). The linkage between stock price and economic growth in Australia: A chicken-and-egg paradox? *Economic Research, 26(2), 99-116.*

Thaler R.H. (1999). Mental Accounting Matters. *Journal of Behavioral Decision Making J. Behav.. Dec. Making, 12: 183~206*

Udin, S., Khan, M., Y., Khan, M., & Nilofar, M. (2021). Nexus Between Sustainable Development, Adjusted Net Saving, Economic Growth, and Financial Development in South Asian Emerging Economies. *Journal of the Knowledge Economy*. 1-14. 10.1007/s13132-021-00818-6.

Umar, M., Dayyabu, S., Gambo, A., Danlami, M., and Ahmad, A., 2015. An empirical study on the relationship between financial intermediaries and economic growth in Nigeria: A cointegration and causality analysis. *Journal of Economics and Finance. Volume 6, Issue 4.*

Usha A., S. (2015). Effects of Stock Market Development on Economic Growth: The Case of SADC Countries. *Proceedings of the Third Middle East Conference on Global Business, Economics, Finance and Banking (ME15Dubai October Conference),* ISBN - 978-1-63102-286-9 16-18 October, 2015. Paper ID: DF501

Ushad, A. S. & Ruwaydah A. (2015). Effects of Stock Market Development on Economic Growth: *The Case of SADC Countries. Proceedings of the Third Middle East Conference on Global Business, Economics, Finance and Banking (ME15Dubai October Conference), ISBN - 978-1-63102-286-9 16-18 October, 2015.*

Veal A. J. (2005). *Business research methods: a managerial approach*. South Melbourne : Pearson Addison Wesley.

Wang Y., Li X., Hussein A., & Ntim G.C. (2015). Financial development and economic growth in China. *Investment Management and Financial Innovations, Volume 12, Issue 3.*

Werner A.R., De Bondt . F. M & Thaler R. (1984). Does the Stock Market Overreact? *The Journal of Finance, Vol. 40, No. 3, Papers and Proceedings of the Forty-Third Annual Meeting American Finance Association, Dallas, Texas, December 28-30, 1984. (Jul., 1985), pp. 793-805.*

Werner A. R. (2014). Can banks individually create money out of nothing? — The theories and the empirical evidence*. International Review of Financial Analysis 36 1-19*

Wooldridge J. M. (2002) Econometric Analysis of Cross Section and Panel Data. *The MIT Press Cambridge, Massachusetts London, Englan*

World Bank (2019). The World Bank Annual Report 2019: Ending Poverty, Investing in Opportunity.*Washington,DC:World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/32333 License: CC BY-NC-ND 3.0 IGO."*

World Bank (2020). Doing Business 2020. *World Bank Group Flagship Report: 17th* ED

World Bank (2019). Doing Business 2019. *World Bank Group Flagship Report*: 16th ED

World Bank (2011). Doing Business 2011. *World Bank Group Flagship Report*: 8th ED

World Bank (2005). Doing Business 2005. *World Bank Group Flagship Report*: 2nd ED.

World Bank (2004). Doing Business 2004. *World Bank Group Flagship Report*: 1st ED.

Yang & Fan, 2019. "The impact of financial development on economic growth in middle-income countries," Journal of International Financial Markets, Institutions and Money, Elsevier, vol. 59(C), pages 74-89

Yaqoob, T., Omar, Z., Fatima, S. (2021). Understanding the effects of banking profitability in Pakistan. *International Journal of Financial Engineering*. 8. 2150003. 10.1142/S2424786321500031.

Zanella F., Oyelere P. & McMillan D. (2021) Is financial development crucial for all economies?. *Cogent Economics & Finance 9:1*.

Zhu, X., Zuo, X. & Li H. (2021). The dual effects of heterogeneous environmental regulation on the technological innovation of Chinese steel enterprises—Based on a high-dimensional fixed effects model. *Ecological Economics*. 188. 107113. 10.1016/j.ecolecon.2021.107113.

Zulfikar & Rizka. (2018). Estimation Model and Selection Method of Panel Data Regression: An Overview of Common Effect, Fixed Effect, and Random Effect Model. 10.31227/osf.io/9qe2b

Appendix i: COMESA Member States

Country	Year of Establishing Stock Market	Year of joining COMESA
1. Mauritius	1988	1981
2. Tunisia	1969	2018
3. Zambia	1994	1981
4. Kenya	1954	1981
5. Uganda	1997	1981
6. Malawi	1995	1981
7. Zimbabwe	1993	1981
8. Egypt	1883	1999
9. Sudan	1992	1981
10. Eritrea	none	1994
11. Rwanda	2012	1981
12. Burundi	none	1981
13. Madagascar	none	1981
14. DR Congo	none	1981
15. Ethiopia	none	1981
16. Somalia	2015	2018
17. Comoros	none	1981
18. Libya	2007	2005
19. Djibouti	none	1981
20. Seychelles	2013	2001
21. Eswathi	none	1981

Source: COMESA website

Appendix ii: COMESA Member States With Established Stock Exchange by 2005

	Countries	Year of est.	Ranking
1.	Mauritius	1988	23
2.	Tunisia	1969	58
3.	Zambia	1994	67
4.	Kenya	1954	68
5.	Uganda	1997	72
6.	Malawi	1995	96
7.	Zimbabwe	1993	126
8.	Egypt	1883	141
9.	Sudan	1992	151
10.	Libya	2007	

Appendix iii: Ease of doing business score/index for the year 2018: Sample extracted from the World Bank (2019)

DB2019 Ease of Doing Business Report-12.pdf

Appendix iv: What goes into ease of doing business score/index in the year 2018: Sample extracted from the World Bank (2019)

DB2019-report_web-version-9 (Measure).pdf

Appendix v: Ease of doing business score/indices and rankings for the year 2019: Sample extracted from the World Bank (2020)

extracted_Doing-Business-2020-Comparing-Business-Regulation-in-190-Economies.pdf

Appendix vi: What goes into doing business score/index and rank for the year 2019: Sample extracted from the World Bank (2020)

Doing-Business-2020-Comparing-Business-Regulation-in-190- Economies- Measure15.pdf

Appendix vii: Data Capture Form: Mauritius

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		1	1.13	0.6	-0.41	0.41	0.18	0.01	-0.08	0.25	-0.02	-0.17	0.05	0.29	0.01	-0.13
Stock Traded Value		5.44	0.12	1.63	-0.15	-0.02	0.07	0.40	-0.419	0.08	0.44	-0.01	-0.31	0.408	0.013	-0.25
Size of Commercial Banks	0.80	0.81	0.85	0.98	0.97	1.01	1.08	1.11	1.15	1.19	1.15	1.16	1.21	1.60	1.61	1.43
Credit Private Sector	2.55	2.77	3.18	3.63	3.12	3.81	4.94	5.29	5.83	4.70	5.05	4.00	4.37	3.80	3.74	4.99
Interest earned	3.08	3.12	3.52	3.41	2.91	3.27	3.06	3.34	3.35	2.84	2.46	2.55	2.63	2.35	2.22	2.12
Ease of Doing Business Score	76.42	77.39	73.01	75.44	76.9	74.7	75.1	75.1	77.2	77.8	76.03	76.49	78.90	80.34	81.47	81.5
GDP Growth Rate	1.78	4.87	5.73	5.39	3.32	4.38	4.08	3.5	3.36	3.74	3.55	3.84	3.81	3.76	3.01	-15.8

Appendix viii: Data Capture Form: Tunisia

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		1.59	0.5	0.26	0.19	0.46	0.15	-0.09	-0.08	-0.03	0.02	0.01	-0.04	0.06	-0.07	0.02
Stock Traded Value		0.06	0.07	0.13	0.15	-0.03	0.39	-0.43	0.19	-0.63	0.92	-0.69	-0.92	8.10	1.10	0.49
Size of Commercial Banks	1.30	1.32	1.37	1.44	1.45	1.49	1.56	1.56	1.57	1.59	1.56	1.56	1.52	1.66	1.71	1.55
Credit to Private Sector	6.05	5.87	5.34	5.52	5.32	5.24	5.11	5.5	5.61	5.35	4.90	4.67	4.41	4.25	3.76	5.29
Interest earned	2.88	3.34	3.48	3.33	3.25	3.06	2.86	2.9	3.04	3.01	2.47	2.41	2.42	2.33	2.23	2.28
Ease of Doing Business Score	55.98	60.36	49.65	45.75	53.05	66.5	68.3	68.1	68.3	68.4	64.57	65.54	65.30	67.22	68.66	68.7
GDP Growth Rate	3.49	5.24	6.71	4.24	3.04	3.51	-1.92	4	2.88	2.97	1.19	1.16	1.92	2.66	1.04	-4

Appendix ix: Data Capture Form: Zambia

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		-0.87	0.17	-0.43	0.27	-0.14	0.76	-0.02	0.1	0.12	-0.02	-0.21	0	0.25	0.03	-0.1
Stock Traded Value		-0.997	0.06	10.648	-0.334	2.35	-0.932	0.042	-0.155	19.79	0.469	0.049	0.237	0.485	0.188	0.014
Size of Commercial Banks	0.04	0.21	0.36	0.54	-0.18	0.44	0.54	0.63	0.70	0.71	0.61	0.57	0.65	0.92	0.85	0.41
Credit to Private Sector	1.08	1.46	1.76	3.06	1.72	1.75	1.46	1.75	1.49	1.94	2.92	2.37	1.32	1.62	1.69	1.75
Interest earned	12.03	7	9.82	8.35	10.77	9.85	8.49	8.78	8.77	8.23	8.11	9.6	10.14	8.81	8.74	10.84
Ease of Doing Business Score	41.37	55.98	38.45	32.12	39.43	58.2	58.1	58.1	61.6	62.6	59.88	60.51	61.32	62.23	63.05	66.9
GDP Growth Rate	7.24	7.9	8.35	7.77	9.22	10.3	5.56	7.6	5.06	4.7	2.92	3.78	3.5	4.03	1.44	-4.83

Appendix x: Data Capture Form: Kenya

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		-0.86	0.78	0.17	-0.19	0.01	0.32	-0.29	0.47	0.48	0.17	-0.2	-0.09	0.28	-0.15	0.21
Stock Traded Value		-0.955	1.705	-0.173	-0.341	-0.731	2.962	0.16	0.097	0.793	-0.439	-0.324	0.192	-0.927	8.085	-0.13
Size of Commercial Banks	0.77	0.90	0.99	1.08	0.47	1.17	1.21	1.30	1.36	1.43	1.45	1.48	1.53	1.64	1.67	1.52
Credit to Private Sector	2.86	2.36	2.34	2.73	2.18	1.87	2.77	2.18	2.37	2.90	3.12	2.81	2.46	2.48	2.10	2.46
Interest earned	10.49	8.36	8.16	6.41	7.42	8.16	8.18	8.07	9.56	8.47	6.31	8.96	9.42	8.87	8.99	8.46
Ease of Doing Business Score	42.83	55.49	48.19	53.54	48.67	56.3	55.9	56	56.3	56.7	58.01	62.79	65.40	70.979	73.216	73.2
GDP Growth Rate	5.91 5.37	6.47	6.85	0.23	3.31	8.41	6.11	4.56	5.88	5.36	5.72	5.88	4.81	6.32	5.37	-0.13

Appendix xi: Data Capture Form: Uganda

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		-0.99	0.01	0.19	21.75	0.53	-0.23	0.71	0.4	0.09	0.27	0.11	-0.01	0.16	0.16	0.15
Stock Traded Value		-0.68	0.357	0.435	0.419	0.984	0.196	0.162	0.079	0.156	0.223	0.07	-0.033	0.129	0.138	0.132
Size of Commercial Banks	0.09	0.12	0.21	0.32	0.56	0.61	0.67	0.67	0.72	0.79	0.78	0.75	0.77	0.88	0.95	0.57
Credit to Private Sector	1.46	1.89	1.65	2.64	1.64	1.73	2.85	2.36	2.15	1.98	2.54	2.10	2.08	1.93	2.01	2.83
Interest earned	12.34	12.39	11.74	9.01	10.5	8.61	10.16	10.96	10.32	8.83	9.04	10.23	10.3	9.86	9.85	9.66
Ease of Doing Business Score	31.64	53.54	36.51	31.15	34.56	47.5	49.8	48.9	48.8	50.1	56.63	57.29	57.88	58.39	59.98	60
GDP Growth Rate	6.33	10.78	8.41	8.71	6.8	5.64	9.39	3.84	3.59	5.11	5.19	4.78	3.81	6.16	6.8	-0.29

Appendix xii: Data Capture Form: Malawi

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		-0.96	0.06	0.07	0.16	0.12	0.08	0.11	-0.28	-0.12	0.05	0.01	-0.19	0.11	0.04	0.05
Stock Traded Value		-0.98	0.093	0.108	3.275	-0.15	-0.516	0.806	-0.246	-0.137	0.038	-0.006	-0.198	0.087	0.024	0.028
Size of Commercial Banks	-0.64	-0.58	-0.46	-0.25	-0.09	0.01	0.12	0.01	-0.08	-0.07	-0.05	-0.14	0.34	0.37	0.41	0.35
Credit to Private Sector	1.38	2.08	1.41	2.01	2.77	4.26	2.71	3.89	3	3.16	2.95	2.92	2.22	1.85	1.46	1.84
Interest earned	12.64	10.86	12.46	12.92	12.41	11.93	11.27	8.7	13.89	14.11	12.55	12.75	11.83	13.118	13.34	12.15
Ease of Doing Business Score	23.85	41.86	34.56	26.77	23.36	48.9	49.8	50.1	48.7	47.1	47.91	53.22	59.52	60.36	60.94	60.9
GDP Growth Rate	3.27	4.7	9.6	7.64	8.33	6.87	4.85	1.89	5.2	5.7	2.8	2.48	4	3.17	4.37	0.6

Appendix xiii: Data Capture Form: Zimbabwe

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		-0.77	-0.12	0.2	-0.15	1.32	0.32	0.23	0.28	0.17	0.07	0.07	0.07	0.12	0.15	-0.08
Stock Traded Value		-0.501	3.33	-0.664	-0.1	1.346	0.329	0.245	0.285	0.178	0.076	0.075	0.079	0.122	0.151	-0.081
Size of Commercial Banks	1.21	-0.23	-0.17	-0.10	-0.09	0.07	0.34	0.51	0.59	0.62	0.66	0.69	0.75	1.15	1.73	0.52
Credit to Private Sector	1.68	1.66	1.65	1.63	0.29	0.67	1.07	1.34	1.36	1.38	1.29	1.22	1.26	1.34	3.59	3.28
Interest earned	84.37	60.37	77.98v	91.60	105.21	10.67	10.69	10.61	9.4	7.79	7.76	6.36	6.48	5.44	4.72	4.61
Ease of Doing Business Score	12.17	27.26	14.12	14.6	11.68	43	42.7	45.7	45.1	45.7	47.80	47.79	48.59	50.51	54.47	54.5
GDP Growth Rate	-5.71	-3.46	-3.65	-17.67	12.02	19.68	14.19	16.67	2.38	1.99	1.78	0.76	4.7	4.83	-8.1	-10.38

Appendix xiv: Data Capture Form: Egypt

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		0.29	0.49	-0.38	0.06	-0.08	-0.42	0.21	0.04	0.14	-0.22	-0.39	0.4	-0.1	0.06	
Stock Traded Value		3.15	0.27	0.56	-0.22	-0.5	-0.57	0.07	-0.255	1.08	-0.45	-0.31	0.44	-0.00	-0.22	
Size of Commercial Banks	1.84	1.89	1.92	2.03	2.09	2.13	2.16	2.23	2.27	2.30	2.36	2.45	2.32	2.45	2.52	2.43
Credit to Private Sector	1.64	1.83	1.87	1.44	1.06	1.02	0.86	0.73	0.64	0.57	0.53	0.48	0.46	0.39	0.49	0.64
Interest earned	1.74	1.35	1.9	2.05	2.39	2.44	2.63	3.7	3.86	3.77	4.13	3.68	3.71	4.44	4.65	4.55
Ease of Doing Business Score	29.69	19.96	8.27	27.26	33.1	57.2	58.2	59	59.4	59.9	54.70	55.47	55.80	55.51	60.05	60.1
GDP Growth Rate	4.47	6.84	7.09	7.16	4.67	5.15	1.76	2.23	2.19	2.92	4.37	4.35	4.18	5.31	5.56	

Appendix xv: Data Capture Form: Sudan

Year/Indicator	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Market Capitalization		-0.78	0.83	0.16	-0.13	-0.21	-0.15	-0.07	-0.03	-0.1	-0.06	-0.01	-0.31	-0.03	0.1	-0.16
Stock Traded Value		1.37	0.35	0.28	0.19	-0.08	0.16	-0.02	-0.075	0.09	0.13	0.14	-0.30	-0.13	-0.26	-0.08
Size of Commercial Banks	0.30	0.56	0.70	0.80	0.85	0.90	0.87	0.91	0.88	0.86	0.92	0.80	0.73	0.97	1.17	1.03
Credit to Private Sector	6.17	4.85	5.23	3.57	2.76	2.39	2.11	2.37	2.55	1.96	1.66	1.94	1.55	1.25	1.16	1.95
Interest earned	5.38	0.07	11.08	7.56	5.63	2.97	3.05	1.68	1.56	3.7	4.31	17.19	18.44	18.52	21.41	17.42
Ease of Doing Business Score	14.6	15.09	13.63	18.98	17.03	47.7	48.3	47.9	50	50	45.52	44.83	45.00	48.02	44.83	44.8
GDP Growth Rate	7.49	10.06	11.52	7.8	3.24	3.47	-1.97	0.52	4.39	2.68	4.91	4.7	0.77	-2.29	-2.5	-8.38