MACROECONOMIC FACTORS, FOREIGN PORTFOLIO INVESTMENT, MARKET CAPITALIZATION AND STOCK RETURN OF FIRMS LISTED AT THE SECURITIES EXCHANGES IN EAST AFRICA

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION OF THE UNIVERSITY OF EMBU

AUGUST, 2022

DECLARATION

This thesis is my original work and has not been presented elsewhere for a degree or any other award.

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DEDICATION

I dedicate this work to my family, Wambui, Nyambura, Nyakio and Waithera for their love, support and encouragement during the entire duration of the course.

ACKNOWLEDGEMENT

I thank the Almighty God for His guidance and providence which enabled me to undertake this study which was too involving in terms of time and resources. The undertaking and completion of this research work was made possible by a number of people, to whom I am profoundly grateful. I am particularly indebted to my supervisors Dr. Peter Kariuki and Dr. Kirema Nkanata Mburugu for their guidance and encouragement in the course of the research. Appreciation goes to all my lecturers for their contribution towards my academic development and all those who played a major role during my studies.

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ABBREVIATIONS AND ACRONYMS

ADF	Augmented Dickey Fuller
APT	Arbitrage Pricing Theory
ASEA	African Securities Exchanges Association
ASEAN	Association of South East Asian Nations
BSE:	Bucharest Stock Exchange
CAPM:	Capital Asset Pricing Model
CBN:	Central Bank of Nigeria
CMA:	Capital Market Authority
CNC	Cash N Carry
CNX	Credit Rating Information Services of India Limited
CPI	Consumer Price Index
DSE	Dar-es-Saalam Stock Exchange
EA	East Africa
EAC	East African Community
EASEA	East African Securities Exchanges Association
ECM	Error Correction Model
EXR	Exchange Rate
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
FTSE	Financial Times Stock Exchange
GDP	Gross Domestic Product
HPR	Holding Period Return
IFR	Inflation Rate
ITR	Interest Rate
NSE	Nairobi Securities Exchange
NYSE	New York Securities Exchange
OLS	Ordinary Least Square
R&D	Research and Development
RBI	Reserve Bank of India
RSE	Rwanda Stock Exchange
SAARC	South Asian Association for Regional Cooperation
SHPR	Security Holding Period Return

SP	Security Prices
UK	United Kingdom
US	United States
USE	Uganda Securities Exchange
VAR	Vector Autoregressive model
VECM	Vector Error Correction Model

DEFINITION OF TERMS

Exchange rate	The price of one country's currency expressed in another country's currency. In other words, the rate at which one currency can be exchanged for another.
Foreign portfolio investment	The stock held by foreign investors.
Inflation	A sustained increase in the aggregate or general price levels in an economy.
Inflation rate	Percentage change in consumer price index.
Macroeconomic factors	Economic factors that affect the economy as a whole and no single industry or firm has control over them.
Macroeconomics	The branch of economics that studies the behavior and performance of an economy as a whole. It focuses on the aggregate changes in the economy such as unemployment, growth rate, gross domestic product and inflation.
Market capitalization	The aggregate value of a company's stock. It is obtained by multiplying the price per share by the number of shares outstanding.
Security Exchange	Market in which securities are issued and traded either through exchanges or over-the-counter markets. It is also known as the equity market.
Security holding period return	The total return from security appreciation over a period of time expressed as a percentage. The security holding period return (SHPR) formula is: = ((Income + (end of period value - original value)) / original value)

Security	A tradable financial asset. Securities are broadly categorized into debt, equity and derivative securities. It represents an ownership position in a publicly traded corporation.
Stock Return	The returns investors generate out of the stock market. They could be in form of capital gains (due to price appreciation) or in form of dividends.
Volatility	The relative rate at which the price of a security moves up and down within a very short period of time.

ABSTRACT

Securities exchange play a vital role in the growth of an economy by encouraging savings and investment, as well as helping local and international investors to access cost-effective capital. Despite the benefits of the sector, investors are faced with high volatility of stock returns which poses greater risk to their investment. This study thus investigated the effect of macroeconomic factors, foreign portfolio investment and market capitalization on stock returns of firms listed in the East Africa Securities Exchanges. The study adopted arbitrage pricing theory, the neoclassical theory of investments and efficient market hypothesis. The study was guided by positivist research philosophy and longitudinal research design. The target population comprised of all the ninety-six listed companies in the Securities Exchanges in East Africa which have traded for five consecutive years as at 31st December 2020. The study used secondary data for five years ranging from 2016 to 2020. The study found that macro-economic factors significantly affect stock returns. Specifically, foreign exchange rate negatively and significantly affects stock returns. Gross domestic product positively and significantly affects stock returns. Inflation rate negatively and significantly affects stock returns. Similarly, interest rate negatively and significantly affects stock returns. The study also found that macro-economic variables significantly affect foreign portfolio investment. Specifically, foreign exchange rate positively and significantly affects foreign portfolio investment. Gross domestic product on the other hand negatively and significantly affects foreign portfolio investments. Inflation rate negatively and significantly affects foreign portfolio investment. Interest rate positively and significantly affects foreign portfolio investment. The study also found that foreign portfolio investment positively and significantly affects stock returns and intervene the relationship between macroeconomic factors and stock returns. Market capitalization also significantly affect stock returns and moderates the relationship between macroeconomic factors and stock return. The study concluded that macro-economic variables significantly affect stock returns. The study also concluded that foreign portfolio investment intervenes the relationship between macro-economic economic factors and stock returns. Similarly, market capitalisation positively and significantly affected stock performance of the listed firms and moderates the relationship between macroeconomic factors and stock returns. The study recommends that governments and other stakeholders should put in place macro prudential policies in order to encourage investments and boost stock returns. The regulators should come up with policies that will stabilize inflation, reduce or stabilize interest rates, stabilize or reduce exchange rates and also ensure growth in GDP. Directors of various firms and investors in the stock exchange should also scan the nature of macro environment and come up with strategies that will counter the negative effects and capitalise on the opportunities. The study suggested that future research may focus on data from other firms operating in different stock exchanges to compare and contrast the effect of macro prudential policies adopted in the various countries and its effects on foreign portfolio investment and stock returns.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Security market is a crucial institution in an economy as it greatly determines and indicates the performance of an economy. The market plays a key role in the mobilization of capital in a country, leading to the growth of industry and commerce (Ho, 2019). The securities market thus acts as a link between borrowers and savers by mobilizing savings from a pool of small investors and channel the funds into rewarding investments (Buyuksalvarcu & Hassan, 2010). A well-functioning stock market enables a country to achieve sustainable growth and development by enabling accumulation of savings, attracting local and foreign investment portfolios and channel resources into optimal investments (Olokoyo, & Babajide, 2020).

Despite the vital role played by the securities market in economic development, uncertainty in stock return has been a major concern in the financial sector globally. In the United States (US), the New York Stock Exchange (NYSE) composite index indicates that the stock returns have been fluctuating. In the year 2016, the returns were 9%, 14.5% in year 2017, -11.2% in year 2018, 22.32% in year 2019 and 4.4% in the year 2020 (NYSE, 2021). In the United Kingdom (UK), the Financial Times Stock Exchange (FTSE) report indicates that the stock returns for all listed companies were 13.85% in the year 2016, 7.63% in the year 2017, 12.48% in the year 2018, 12.1% in the year 2019 and -14.34% in the year 2020 (FTSE, 2021).

In Africa, a report by Nigeria Securities Exchange indicates that the stock return in Nigeria recorded mixed results. During the year 2015 the return was -17.42% which improved slightly to -6.17% in the year 2016. In the year 2017 the return improved significantly to 41% before declining to -17% in the year 2018 (NSE, 2019). Similarly, a report by Capital Market Authority (CMA) indicates that in Kenya, the NSE all-share index registered positive and negative growth. During the year 2015 the NSE index was -10.40% which improved slightly to -8.48% in the year 2016. In the year 2017 the index registered a positive performance of 28.00% but declined to -17.97 in the year 2018 (CMA, 2019). This indicates that the stock performance is highly volatile and thus this may deter investors from investing in various stock due to the uncertainty of returns.

Many countries thus established macro prudential policies aimed at mitigating volatility of macroeconomic factors and ensure stability. In the USA, the Federal Reserve established policies that include monetary policies to ensure stable prices, maximum economic growth and moderate long term interest rates (Federal Reserve, 2021). In the UK, the monetary policy was established to stabilize inflation, interest rates and support other economic aims for growth (BOE, 2021). Countries in Africa have also established the monetary policies aimed at stabilizing inflation, interest rates and facilitating economic growth which are implemented by the Central Banks of the respective countries (CBK, 2021)

Despite the implementation of the macro prudential policies by the various countries, stock market volatility still persists. This has motivated studies to determine the effectiveness of the macro prudential guidelines adopted by the various countries. The results of the studies are however inconclusive and give mixed results. Some of the studies for instance Ajaz, Nain, Kamaiah and Sharma (2017), Chang and Rajput (2018) indicated that the macroeconomic factors negatively and significantly affect stock performance. A study by lee and Brahmasrene, (2018) also indicated that macroeconomic factors do not affect stock market performance while other studies by Mutuku and Ng'eny, (2014); Tiryaki, Ceylan and Erdoğan (2019) indicated that macroeconomic factors enhance stock performance

1.1.1 Macro Economic Factors

Macroeconomic factors are those economic fundamentals which have the potential of affecting the performance of the country's economy. Akers and Mbiti (2010) define macroeconomics as a branch of economics dealing with the performance, structure, behaviour and decision-making of an economy as a whole, rather than individual markets. This includes national, regional and global economies. The macroeconomics factors include Gross Domestic Product (GDP), foreign exchange rate, interest rate and inflation rate (Banda, 2018). In portfolio risk analysis, Macroeconomic factors constitute the component of systematic risks since they are not firm specific; hence they cannot be diversified by combining a number of investment securities in a portfolio (Kitatia, Zablonb & Maithya, 2015).

Interest rate is one of the important macroeconomic factors directly related to economic growth. Generally, interest rate is considered as a measure of the cost of capital. John (2019) asserted that the influence of long-term interest rate on stock prices and by extension stock return stems directly from the present value model. In the model, interest rate was used as a discount rate for future income streams of an asset in determining the value of the asset. Jawad and Ulhaq (2012) indicated that interest rate has a more direct effect on financial market. An increase in interest rate causes investors to make a change in the structure of their investment generally from capital market to fixed income securities.

Inflation is a sustained increase in the general price level of goods and services in an economy over a period of time. When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation reflects a reduction in the purchasing power per unit of money (Macharia, 2018). Inflation affects economies in various positive and negative ways. The negative effects of inflation include an increase in the opportunity cost of holding money, uncertainty over future inflation which may discourage investment and savings, and if inflation were rapid enough, shortages of goods as consumers begin hoarding out of concern that prices will increase in future. Positive effects include reducing unemployment due to nominal wage rigidity, allowing the central bank more leeway in carrying out monetary policy, encouraging loans and investment instead of money hoarding, and avoiding the inefficiencies associated with deflation (Nidhiprabha, 2018).

The loss of purchasing power impacts the general cost of living for the common public which ultimately leads to a deceleration in economic growth. A high inflation rate raises the cost of living and results to a shift of resources from investments to consumption (Khan, 2019). Gross domestic product is the aggregate market value of goods and services produced during a particular period by a Country (Verma & Bansal, 2021). The most popular measure of real economic activity is the GDP. There is a general consensus that an increase in GDP causes stock returns to increase (Tiryaki et al., 2019).

During periods of high economic growth, there is confidence within the economy and this would stimulate demand for products and services. Accordingly, growth in GDP is expected to have a positive influence on the excess returns for stocks. On the contrary, in periods of economic downturn accompanied by high economic volatilities, investors' confidence on the prospect of the economy may be dampened and as a consequence, associated with a lower expected excess returns on investments (Makan, Ahuja, & Chauhan, 2012)).

Foreign exchange rate is the price of one countries currency in relation to another (Khan, 2019). Investments in stock markets have become global thus enabling investors invest across different nationalities (Cornelius, 2011). The exchange rate movement is thus critical because when a currency depreciates fast, a country may not be attractive to foreign investors who play a major role in the stock market. Capital flight to other attractive markets may also be experienced thus negatively affecting performance of the stock market and result in reduction of wealth in a nation (Vejzagic & Zarafat, 2013). Adverse changes in exchange rates negatively impacts firm competitiveness leading in changes in firms' equity and profits, which in turn result to price adjustment in the stock market (Al-shami & Ibrahim,2013).

1.1.2 Foreign Portfolio Investment

Foreign portfolio investment (FPI) consists of securities and other fiscal resources inactively held by alien investors (Eita, 2012). FPI does not provide the investor with direct ownership of financial assets, and thus no direct management of a company. This kind of investment is relatively liquid, depending on the volatility of the market invested in as is usually used by investors who do not want to manage a firm abroad (Mutuku & Ng'eny, 2014). FPI is an important source of investment inflows to an economy. FPI investors usually make short-term investments in domestic security of foreign country with expectation of earning return on it after weighing the expected risk (Rashid & Khalid, 2017). Foreign portfolio investment is considered as one of the important segment of growth enhancing strategies, particularly in less developed and emerging countries. It is a vital source of fund to finance investments in countries having large saving-investment disparities (Gathenya, 2015).

Foreign portfolio investment escalates the liquidity of firms, facilitates better foreign reserves and increases the value of portfolio. It also encourages the existing business firms to enlarge their business by issuance of new securities. Indeed, the enhancement of efficiency due to internationalization leads to lower costs of capital in the host economy which may in turn influence security returns (Yartey, 2010).

1.1.3 Market Capitalization

Market capitalization refers to the aggregate value of stock. It is obtained by multiplying the price per share by the outstanding number of shares. From a market perspective, market capitalization encompasses the sum of individual outstanding shares by their prices for all companies listed in a given stock market. Market capitalization can be classified as follows; large-cap ranging from $10 –$100 billion; mid-cap ($1 – $10billion); small-cap ($100 million – $1 billion) (Musebe, 2015). Market capitalization is the value the stock market places on the entire company, or simply, market estimate of a company's value, based on perceived future prospects, economic and monetary condition (Newell & Marzuki, 2018). Market capitalization thus remains a critical part of any stock valuation as it represents the total market value of all the company's outstanding shares.

In Kenya, the NSE recorded mixed performance in terms of market capitalization. In the year 2013 the market capitalization was $19 billion which increased to $23 billion in the year 2014. The market capitalization reduced to $20 billion in the year 2015 which further declined to $19 billion in the year 2016. In the year 2017 the market capitalization increased to $25 billion before declining to $21 billion in the year 2018 (NSE, 2019). This implies that the market capitalization has been varying year after year and this may affect the stock valuation.

1.1.4 Stock Returns

Stock returns is the returns that investors generate out of stock market. This return could be in form of profit through trading or in the form of dividends given by the company to its shareholders from time to time. Mun, Siong and Thing (2018), described stock return as a measurement used to quantify profits from an investment during a period of ownership of stocks. It can either be capital gains or dividends earned by the investors in the stock market.

Stock return as the driving force and the main reward in the investment process. Investors use it to compare the alternative investments options that they can undertake. Stock return has two components being the basic component of periodic cash receipts on investments and change in the price of the asset invested. Stock returns are also not homogeneous and may change from investor-to-investor (Macharia, 2018). The Nairobi all share index indicates that the returns has been fluctuating year after year for instance the NSE market recorded an index of 163 in the year 2014 which reduced to 146 in the year 2015 and to 133 in the year 2016. In the year 2017 the index increased to 170 but declined to 140 in the year 2018. This therefore means that the stock return is not guaranteed due to fluctuations each year.

1.1.5 Securities Exchanges in East Africa

The role of security exchange is to mobilize capital to support productive investment programs by firms, diversifying investors' risks, improving the allocation of funds and improve the management of firms through corporate governance standards (Shaukat & Raisi, 2017). Securities markets in East Africa have so far not attracted a significant proportion of the global capital inflows due to challenges like political instability exposure and weak capital base (Mwangi, 2016).

East Africa has four operational stock exchanges; the Nairobi Securities Exchange (NSE) in Kenya, Rwanda Securities Exchange (RSE) in Rwanda, Dare salaam Securities Exchange (DSE) in Tanzania and Uganda Securities Exchange (USE) in Uganda. A total of 116 companies are listed on the four exchanges; 64 on the NSE, 7 on the RSE, 28 on the DSE and 17 on the USE. The East African Securities Exchanges Association (EASEA) came into being in 2004, following the signing of a Memorandum of Understanding between the DSE, the USE and the NSE (African Securities Exchanges Association (ASEA), 2009). The key objective of EASEA is to oversee the creation of single or integrated and efficient market infrastructure, from the current disenfranchised markets, compatible with other markets globally. Securities exchange play a vital role in the growth of an economy by encouraging savings and investment, as well as helping local and international investor’s access cost-effective capital.

Despite the benefits of the sector, investors are faced with high volatility of stock return which poses greater risk to their investments. During the year between 2014 to the year 2018 the NSE all-share index registered positive and negative growth. In the year 2014 the index increased by 24.51% but declined by 10.40% in the year 2015. The index further declined by 8.48% in the year 2016 and increased by 28.00% in the year 2017 before declining by 17.97% in the year 2018 (NSE, 2019).

In Uganda, the USE all share index also registered positive and negative performance. In the Year 2014 the USE index increased by 9% and also increased by 22% in the year 2015. However, the index declined by 2% in the year 2016 and further declined by 24% in the year 2017. In the year 2018, the index registered positive growth and increased by 55% (USE, 2019). In Tanzania, the DSE all-share index recorded positive and negative performance between the years 2014 to 2018. In the Year 2014, the DSE all-share index increased by 39% before declining by 14% in the year 2015. The index declined further by 7% in the year 2016 before increasing by 10% in the year 2017 and declining by 9% in the year 2018 (DSE, 2019). Due to this volatility, investors are likely to avoid the market due to unpredictable nature of the expected returns. This may negatively impact the performance of the market and may adversely affect the economy in general. Trading volumes will also be affected drastically if investors avoid securities deemed to be highly volatile. In view of this volatility, the governments in East Africa introduced macro prudential measures to ensure sustained macroeconomic stability which in turn stabilize the securities market and attract investors.

In Kenya for instance, a law capping interest rates was enacted in the year 2016 to check on high cost of credit and interest rate fluctuation. All the countries in East Africa have also put in place monetary policies to ensure stability of prices, foreign exchange, interest rates and foster economic growth (CBK, 2019). Despite the introduction of the measures, the volatility of the securities market still persists. This then raises the question of whether macroeconomic factors contribute to the volatility of the stock market. This study thus attempts to determine the effect of macroeconomic factors on stock performance in East Africa Security Exchanges.

1.2 Statement of the Problem

Securities exchange play a vital role in the growth of an economy by encouraging savings and investment, as well as helping local and international investor's access cost-effective capital. Despite the benefits of the sector, investors are faced with high volatility of stock return which poses greater risk to their investments. During the year between 2014 to the year 2018 the NSE all-share index registered positive and negative growth. In the year 2014 the index increased by 24.51% but reduced by 10.40% in the year 2015. The index further reduced by 8.48% in the year 2016 and increased by 28.00% in the year 2017 before reducing by 17.97% in the year 2018 (NSE, 2019). In Uganda, the USE all share index also registered positive and negative performance. In the Year 2014 the USE index increased by 9% which also increased by 22% in the year 2015. The index reduced by 2% in the year 2016 which further declined by 24% in the year 2017 and increased by 55% in the year 2018 (USE, 2019). In Tanzania, the DSE all-share index recorded positive and negative performance between the years 2014 to 2018. In the Year 2014, the DSE all-share index increased by 39% before reducing by 14% in the year 2015. The index reduced further by 7% in the year 2016 before increasing by 10% in the year 2017 and declining by 9% in the year 2018 (DSE, 2019). In Rwanda, the RSE all-share index reduced by 4% in the year 2016 and increased by 5% in the year 2017. The index reduced further by 5% in the year 2018 before increasing by 7% and 13% in the year 2019 and 2020 respectively (RSE, 2020)

Due to this volatility, investors are likely to avoid the market due to unpredictable nature of the expected returns. This may negatively impact the performance of the market and may adversely affect the economy in general. Trading volumes will also be affected drastically if investors avoid securities deemed to be highly volatile. Several studies have attempted to explain the relationship between macro-economic factors and stock return. However, some of the studies give mixed results. A study by Barasa (2014) concluded that there is a weak positive relationship between macro-economic factors and stock market performance. Studies by Mumo (2017), Ouma and Muriu (2014) however found that a negative relationship exists between macro-economic factors and stock prices. Gatuhi (2015) on the other hand found that the relationship between the macroeconomic factors and stock market performance were either positive or negative depending on the sector the firm operates.

Thus, this study filled these gaps by investigating the effect macroeconomic factors, foreign portfolio investment and market capitalization on stock return of firms listed in the East Africa Securities Exchanges.

1.3 General Objective

The general objective of the study was to assess the effect of macroeconomic factors, foreign portfolio investment, market capitalization and stock return of firms listed at the Securities Exchanges in East Africa.

1.3.1 Specific Objectives

i. To determine the effect of macroeconomic factors on stock return of firms listed at the Securities Exchanges in East Africa.
ii. To evaluate the intervening effect of foreign portfolio investment on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa.
iii. To assess the moderating effect of market capitalisation on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa.
iv. To assess the joint effect of macroeconomic factors, foreign portfolio investment, market capitalization on stock return of firms listed at the Securities Exchanges in East Africa.

1.4 Research Hypotheses

This study was guided by the following research hypotheses which were based on the study objectives;

$H_0$1: Macroeconomic factors have no significant effect on stock return of firms listed at the Securities Exchanges in East Africa.

$H_0$2: Foreign portfolio investment has no significant intervening effect on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa.

$H_0$3: Market capitalisation has no significant moderating effect on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa.

$H_0$4: Macroeconomic factors, foreign portfolio investment, market capitalization have no significant effect on stock return of firms listed at the Securities Exchanges in East Africa.

1.5 Scope of the Study

This study focused on the relationship among macro-economic factors, foreign portfolio investment, market capitalization and stock return of companies that had traded for at least five consecutive years at the NSE, RSE, DSE and USE for the period between January 2016 and December 2020.

As at 31st December 2020 there were 56 listed firms at the NSE (NSE, 2020), 16 listed firms at USE (USE, 2020), 21 listed firms at DSE (DSE, 2020) and 3 listed firms at RSE (RSE, 2020), making a total of 96 which had traded for five years consecutively from the year 2016 to 2020 as shown in appendix IX. The macro-economic factors that were examined were Gross Domestic Product (GDP), foreign exchange rate, interest rate and inflation rate. FPI was measured using percentage of shares turnover to foreign investors. Market capitalization was measured using total value of shares in the market. Stock return was measured through holding period return (HPR).

1.6 Significance of the Study

This study is of importance to various securities market stake holders, among them the corporate investors, individual investors and government policy makers. The study enables corporate and individual stock investors to make informed decisions while investing in securities. The study also enables CBK, NSE and CMA to formulate macroeconomic policies that will enhance economic growth and stability. The study also enables scholars and academia to understand how macro-economic factors, foreign portfolio investment and market capitalization affect stock return.

1.7 Limitations of the Study

The study focused on the effect of macro-economic factors on stock return of firms listed at the Securities Exchanges in East Africa. The study also explored the moderating effect of market capitalization and intervening effect of foreign portfolio investment.

The study made a number of findings which form part of the recommendation to policy makers and industry. However, the study investigated four macro-economic variables out of the many macroeconomic variables proposed by finance theory, to be predictors of stock market return. It is possible that many macro-economic variables not selected in this study have higher predictive powers than those investigated in this study. Findings in this study would therefore be limited to macro-economic factors investigated by the study. A number of methods were available to the study for the measurement of stock market performance. The study employed stock holding period as a measure of stock market return. This left out other methods which could give different outcomes.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviewed literature on macro-economic factors, foreign portfolio investment, market capitalization and stock return. The section covers theoretical review, empirical studies, conceptual framework, summary of literature and research gaps.

2.2 Theoretical Review

This study adopted two theories and one hypothesis namely: arbitrage pricing theory, the neoclassical theory of investments and efficient market hypothesis.

2.2.1 Arbitrage Pricing Theory

The arbitrage pricing theory was advance by Ross (1976). The theory asserts that the expected return of a financial asset can be modelled as a linear relationship of various macroeconomic factors. The model derived was used to obtain the price or value of the security correctly. The theory is a multi-factor asset pricing model based on the idea that an asset's returns can be predicted using the linear relationship between the asset's expected return and a number of macroeconomic variables that capture systematic risk. The security value should equal the expected end of period value discounted at the rate implied by the model. If the security value changes, arbitrage should bring it back to the line. Huberman and Wang (2005) formalized Ross' (1976) heuristic argument by defining arbitrage as the existence of zero-cost portfolios. Based on this, APT can be proven to hold in the limit for well-diversified portfolios. The theory in general, demonstrates how securities are priced given the associated risks. Extant literature indicates that several studies have adopted this theory to determine the effect of Macro-economic factors on stock performance (Pilinkus & Boguslauskas, 2009; Subburayan & Srinivasan, 2014; Ibrahim & Musah, 2014). The theory is useful in the study since it explains the relationship between macro-economic factors and stock return in line with the following APT formula developed by Ross (1976).

$$E(ri) = rf + \beta i1 * \text{RP1} + \beta i2 * \text{RP2} + \ldots + \beta kn * \text{RPn} \quad \ldots\ldots\ldots\ldots\ldots\ldots 2.1$$

Where

E(ri) is expected return**, rf** is the risk-free rate of return, **β** is the sensitivity of the portfolio to the specific factor (Inflation, GDP, Interest rate and foreign exchange rate), **RP** is the risk premium of the specified factor

2.2.2 The Neoclassical Theory of Investments

The theory was advanced by Cockcroft and Riddell, (1991) and asserts that the future investments flows are directly related to the package of incentives, which influence the expected rate of return; the security of the investments; the scope and speed with which companies are able to disinvest. The tax regime; investments code or guidelines; and overall macroeconomic policies are all elements affecting foreign portfolio investment (FPI).

The theory also explains that FPI influences income growth by increasing the amount of capital per person. It spurs long-run growth through such variables as research and development (R&D) and human capital. Through technology transfer to their affiliates and technological spill overs to unaffiliated firms in the host economy, investors can speed up the development of new intermediate product varieties, raise product quality, facilitate international collaboration on R&D, and introduce new forms of human capital (Abimbola & Dele, 2015). This theory is relevant to this study as it explains how macro-economic factors influence foreign investors when making investment decisions and how FPI inflow spurs growth in an economy and stock return.

2.2.3 Efficient Market Hypothesis

The Efficient Market Hypothesis was advanced by Fama (1970). The hypothesis asserts that asset prices include all information available. The hypothesis presupposes that current information is immediately included in prices of shares such that no extra profits can be made using the information. Pilbeam (2010), asserted that an efficient market is one in which prices always fully reflect available information. As per the theory a market that is efficient is both internally and externally efficient; thus, the price of an asset at any point include all information on the asset, expected future cash flows and the uncertainty involved in investing in that security (Mgbame & Ikhatua, 2013).

The hypothesis was relevant to this study by explaining how efficiency of the capital market affects the price of securities which is reflected by change in market capitalization and in turn affects the stock returns.

2.3 Empirical Studies

This section reviewed the literature on the relationship between macro-economic factors, foreign portfolio investment, market capitalization, and stock return.

2.3.1 Macro-economic Factors and Stock Return

Macroeconomic factors which include interest rate, foreign exchange rate, inflation rate and gross domestic product influence the stock returns of a firm. However, various studies found conflicting results as to the effect of the macro-economic factors on the performance of stock return. Barasa (2014) found that there is a weak positive relationship between macro-economic factors (inflation, money supply and GDP) and stock market performance. This study contradicted another study by Mumo, (2017) which found that a negative relationship exists between money supply and stock prices whereas a positive relationship exists between exchange rates, interest rates and stock prices. A study by Hassan and El Gezery (2010) which showed that the stock market index responded positively to inflation but the coefficient was insignificant. The findings are supported by another study by Kirui, Wawire and Onono (2014) which found that GDP, Inflation and the Treasury bill rate has insignificant relationships.

However, these findings were contradicted by a study by Ouma and Muriu (2014) which found that money supply and inflation are significant determinants of the returns at NSE. The study investigated the impact of the macroeconomic variables on stock returns in Kenya during the period 2003- 2013, using the Arbitrage Pricing Theory (APT) and Capital Asset Pricing Model (CAPM) framework for monthly data. The Ordinary Least Square (OLS) technique was applied to test the validity of the model and the relative importance of different variables which may have an impact on the stock returns. The empirical analysis found that with the exception of interest rates, there exists a significant relation between stock market returns and macroeconomic variables. The findings of the study indicated that money supply, exchange rates and inflation significantly affect the stock market returns in Kenya.

The relationship between the macroeconomic factors and stock market performance were also found to be either positive or negative depending on the sector the firm operates (Gatuhi, 2015). A study by Subburayan and Srinivasan (2014) explored the effects of macroeconomic variables on stock return of the CNX Bank index in Indian Stock Market. The key active economic variables namely exchange rate, interest rate and inflation rate were considered for analysis. Monthly time series data were collected from RBI handbook and Nifty bank. The statistical model adopted was ADF, Regression, Cointegration test and Granger causality test. The major findings from the analysis were that the macroeconomic variables had a significant effect on bank stock returns. The results also indicated that exchange rate and Interest rate reflected positively on bank stock returns but there was no causal linkage between CNC Bankex and Inflation.

The effects of macroeconomic variables on stock market returns was investigated by Ibrahim and Musah (2014) by employing the Johansen multivariate cointegration approach and vector error correction model (VECM). The results of the Granger causality test however could not establish causality from any direction between macroeconomic variables and stock prices. Results from both the impulse response functions and variance decomposition also showed that among the macroeconomic variables, shocks to inflation, money supply and exchange rate do not only explain a significant proportion of the variance error of stock returns but their effects persist over a long period.

A study to examine whether macroeconomic variables have a symmetric or asymmetric effect on security prices (SP) of Karachi Stock Exchange 100 index was conducted by Chang and Rajput (2018). The study also examined whether the asymmetric impact of macroeconomic variables on SP has been affected by tail events such as the global financial crisis. The study used linear and nonlinear autoregressive distributed lag models. The findings suggested that the relationship between macroeconomic variables and stock price was asymmetric in the short run whereas this effect was symmetric in the long run when the whole sample period is selected. However, when pre- and post-crisis periods are selected this effect becomes asymmetric in the long run as well; that is, positive and negative shocks in macroeconomic variables do not affect the stock price in the same way.

The short-run and long-run dynamic relationship between selected macroeconomic variables and stock prices in the Korea Stock Exchange was evaluated by Lee and Brahmasrene (2018). The data was retrieved from the Economic Statistics System database sponsored by the Bank of Korea. The study employed unit root test, cointegration test, vector error correction estimates, impulse response test, and structural break test. The results indicated that at least three cointegrating equations exist at the 0.05 level in the model, confirming that there was a long-run equilibrium relationship between stock prices and macroeconomic variables in Korea. The results of vector error correction model (VECM) estimates indicated that money supply and short-term interest rate did not influence stock prices in the short-run. However, exchange rate was positively influenced stock prices while the industrial production index and inflation negatively influenced stock prices in the short-run.

The impact of some selected macroeconomic variables on stock market performance in the Nigerian Stock Exchange (NSE) was examined by Etale and Eze (2019). The study adopted all share index (ASI) as proxy for stock market performance and the dependent variable, while the selected macroeconomic variables included broad money supply (BMS), interest rate (ITR), inflation rate (IFR), and exchange rate (EXR) used as the independent variables. Secondary data for the variables was sourced from Central Bank of Nigeria (CBN) Statistical Bulletins covering the period 1985 to 2017. The study employed multiple regression technique, Augmented Dickey-Fuller unit root test, Johansen co-integration test and Error Correction Model (ECM) as methods of data analysis. The analysis of data revealed that a long-run equilibrium and short-run dynamic relationships existed between the selected macroeconomic variables and stock market performance in the Nigerian Stock Exchange. Overall, the empirical results showed that all the independent variables had significant influence on stock market performance. The impact of the individual macroeconomic variables indicated that broad money supply and exchange rate had significant positive effect on all share-index, while interest rate and inflation rate exhibited an inverse relationship with all-share index.

The macroeconomic determinants of stock market development in Ghana were evaluated by Owiredu, Oppong and Asomaning (2016). The study utilized annual secondary data from Bank of Ghana Quarterly Economic Bulletins, Ghana Statistical Service, Ghana Stock Exchange Market Statistics, the World Bank and IMF's International Financial Statistics. The macroeconomic indicators evaluated were the real income (GDP per capita income), domestic saving, stock market liquidity, financial intermediary growth, macroeconomic stability (inflation) and private capital flows with stock market capitalization used as a proxy for the study were collected and used for the analysis. The regression analysis found that stock market liquidity was statistically significant to stock market developments as opposed to the other determinants such as macroeconomic stability (inflation) real income and domestic savings and private capital flows) which were found to be non-significant. This result suggested that macroeconomic stability (inflation), real income, domestic savings and private capital flows did not have any significant impact on stock market development, since their regression coefficients were not statistically significant at the 5% level of significance.

A study on the impact of macroeconomic variables on stock market performance in Africa from the period of 2000 to 2015 was evaluated by Worlu and Omodero (2017). Four major African countries investigated were: Ghana, Kenya, South Africa and Nigeria. The specific objectives were to establish the extent to which GDP, inflation rate and real exchange rate affect the stock market performance represented by share price index. Time series data were employed and analysed using multiple regression and t-test for hypotheses testing. The result revealed negative impact of GDP, inflation and real exchange rate on SPI in Nigeria. Insignificant relationship of all the variables was also observed. The result for South Africa's stock market showed that GDP and inflation had a negative impact on stock market and real exchange rate has no impact on the stock market. The impact of GDP on Ghana's stock market was negative while the others had no impact. Real exchange rate had negative impact on Kenyan stock market, but GDP and inflation had no impact. It was therefore evident from this study finding that macroeconomic variables have to be checked by the government of the African countries to avoid the scenario of negative effects since they are major determinant of the success of the stock markets in every economy.

The long-term equilibrium relationship between the Botswana stock market price and selected domestic and global macroeconomic variables was examined by Sikalao-Lekobane (2014). The selected macroeconomic variables included Gross Domestic Product (GDP), long and short-term interest rates, money supply, foreign reserves, inflation, diamond price index, exchange rate, US share price index and 10 Year US government bond yield. The study employed VECM framework following Johansen cointegration technique. The analysis revealed that macroeconomic variables and the stock market price are cointegrated, hence, a long-run equilibrium relationship existed between them. The results also showed that in the long run, real GDP, short-term interest rates, inflation and diamond index are positively related with stock market price. However, long-term real interest rate, money supply, foreign reserves, exchange rate, US share price index and US government bond yield are negatively related with stock market price in the long run.

The relationship between local and global macroeconomic factors and stock market indices in Romania was evaluated by Kralik (2012) using the framework of the macroeconomic APT model. The study adopted the stepwise analysis method and found some evidence of the effects of exchange rates, interest rates (global), gold price, global stock indices and oil prices on stock returns of the Bucharest Stock Exchange (BSE). The study also investigated the effects of macroeconomic factors on the investment firm`s indices. The results of a Vector Autoregressive model (VAR) and Vector Error Correction Model (VECM) indicated the short and long run linkages between macroeconomic variables and BSE indices. A study by Radha and Gopinathan. (2019) examined the impact of macroeconomic determinants on Nifty and banking sector stocks from May 2009 to July 2018. The paper also analysed the granger cause between macroeconomic variables and Nifty; macroeconomic variables and Indian banking sector stocks. Johansen's co-integration and granger causality tests were applied for this research work. The results of Johansen's co-integration indicated that there is a long run relation between selected macroeconomic factors, i.e. bank rate, repo rate, and reverse repo rate, and Indian stock market and also on banking sector share price. Specifically, the study found that a positive significant relationship exists between macroeconomic determinants and Indian stock market.

The interaction between the sustainable stock market index and macroeconomic variables in emerging market in India was evaluated by Kaur and Chaudhary (2022) using monthly time series data from January 2013 to September 2020. The S&P BSE Carbonex index represented the sustainable market index, while for macroeconomics variables, proxies are Consumer Price Index, the exchange rate (USD/INR), foreign exchange reserves, and interest rate. The methodology used in this study was cointegration analysis, Vector Error Correction Model, and Variance Decomposition analysis. The findings indicated a cointegration among the variables, which implies the long-run equilibrium linkage of macroeconomic variables with sustainable stock prices. Considering the short run, only interest rate created a considerable impact on stock prices while other variables did not drive the sustainable stock market. Another study by Tiryaki, Ceylan and Erdoğan (2019) examined the asymmetric effects of industrial production, money supply and RER on stock returns in Turkey by using the non-linear autoregressive distributed lag (NARDL) model. The study found that the effects of the changes in industrial production, money supply and RER on stock returns are asymmetric. The empirical results further showed that tight monetary policies appear to retard the stock returns more than easy monetary policies that stimulate them.

The relationship between macroeconomic variables and long-term stock market performance was investigated by Humpe and McMillan (2020). The study utilised a pooled mean group estimator for panel ARDL cointegration to estimate the long-run relationship between G7 stock prices and macroeconomic variables over the last 40 years. The study found a positive long-run relation between stock prices, industrial production and consumer prices as well as a negative relationship with real 10-year interest rates. A study by Singh, Mehta and Varsha (2011) examined the casual relationship between index returns and certain crucial macroeconomic variable namely employment rate, exchange rate, GDP, inflation and money supply in Taiwan. The analysis was based on stock portfolios rather than single stocks. In portfolio construction, four criteria was used: market capitalization, price/earnings ratio (P/E ratio), PBR and yield. Empirical findings revealed that exchange rate and GDP seem to affect returns of all portfolios, while inflation rate, exchange rate, and money supply had a negative relationship with returns for portfolios of big and medium companies.

The causality relationships among real stock returns, basic interest rates, GDP, inflation and the market expectation of future behaviour of these macroeconomic variables in Brazil was examined by Linck, and Frota (2016). The method used to find the correlation among the variables studied was the Stepwise Multiple Regression. The results showed that basic interest rates and GDP affect the stock returns. However, inflation and market expectation of future behaviour of these macroeconomic variables affect stock returns insignificantly.

An investigation of the effect of macroeconomic variables on stock return in Amman financial markets by Abdo, Al-Qudah, Al-Qudah and Qudah (2021) focused on the effect of the interest rate, inflation, and bank interest rate on the floatation of stock. The data were analysed for the period between the years 2005–2018. Multiple regression models and descriptive statistics tools were used through SPSS. The variable of macroeconomics that was taken for research was GDP, inflation, bank interest rates of deposits. The results indicated that the return of stock was tending to be more fluctuating with the change in every variable. The study also found that GDP had a significant direct relationship with returns of stock while inflation had an inverse relationship with stock returns.

A study to identify the determinants of share prices for the listed commercial banks in Karachi stock exchange by Arshad, Arshaad, Yousaf and Jamil (2015) adopted linear multiple regression analysis to determine whether the selected independent variables had influence on share prices or not. The results indicated that earning per share had more influence on share prices and the relationship was positive and significant. Book to market value ratio and interest rate also had significant but negative relation with share prices while other variables (gross domestic product, price earnings ratio, dividend per share, leverage) had no relationship with share prices. Another study by Ratih and Candradewi (2020) sought to determine the effect of exchange rates, inflation, Gross Domestic Product, Return on Assets, and Debt to Equity Ratio on stock returns. The study uses secondary data in a period of 4 years from 2015-2018 in companies that listed in LQ45 Index. The result indicated that exchange rate and inflation had a negative and significant effect on stock returns, GDP and Debt to Equity Ratio had a negative and not significant effect on stock returns while ROA had a positive and not significant effect on stock returns.

The impact of Inflation, Interest rate and Real Gross Domestic Product on stock prices of quoted companies on the Nigerian Stock Exchange (NSE) was investigated by Ifionu and Ibe (2015). Times series data was used and the stationary properties of the data were tested using Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root tests. The Johansen Multivariate Cointegration test indicated the existence of long-run equilibrium relationship among the variables in the model. There results also indicated that there were no causal relationships between the variables based on the Granger Causality test result. Specifically, the findings suggested that inflation was the most important variable influencing stock prices in Nigeria.

A study to determine the impact of macroeconomic factors on the stock market performance in Sri Lanka by Badullahewage and Jayewardenepura (2018) focused on all the factors which had a direct impact on the working of the emerging stock market which included the relationship between the pivotal factors such as inflation, gross domestic product, interest rates and exchange rates. The results of the analysis revealed that all these factors had an inseparable impact over the performance of the stock market and Sri Lankan stock market performance had eventually over gone through many ups and downs because of the factors as well. The results further indicated that among all the factors analysed, inflation and exchange rates had comparatively higher effects on the stock market performance. The fluctuation in stock performance was thus experienced because of the unpredictable nature of these factors.

The impact of macroeconomic factors, namely the price of gold, the gross domestic product (GDP) and the money supply, on stock returns in the property sector listed on the Indonesian Stock Exchange was evaluated by Garnia, Rizal, Tahmat, and Lebeharia (2022). The data used were monthly data from 10 property stocks for the period 2013-2019. Panel data regression was used. The results indicated that the price of gold had a positive impact on returns, GDP had no impact on returns, and the money supply had a negative impact on returns. When considered together, the price of gold, GDP and money supply had an impact on stock returns in the property sector. A study to examine the importance of macroeconomic factors on performance in stock market by Tangjitprom (2011) showed that macroeconomic variables can explain stock return significantly after adjusting for lags of data availability. Specifically, the variance decomposition technique revealed that interest rate was the most important macroeconomic variable to explain the variance in stock return.

In order to derive the factors which determine the performance of stock market in India, Kumar (2013) used the data reduction technique-factor analysis. The Principal Component Technique after using orthogonal rotation extracted three factors labelled intuitively as Macro Environment, Industrial Performance and Policy Rates. The study established that industrial performance play significant role in influencing the stock market. The study also indicated that though some impact of policy rates cannot be denied but it does not seem sustainable. Market rely more on optimistic macroeconomic environment call for state's prudent efforts to maintain macro stability. Besides, stock market responds to performance of the firm specific factors and unforeseen events in the economy.

A study to explore which macroeconomic factors affect the volatility of the automakers stock prices by Vychytilová, Pavelková, Pham, and Urbánek (2019) employed a multifactor model. The study utilised quarterly panel data of 39 automakers quoted on the stock exchanges in the 11 countries and focused on the effects of 19 macroeconomic variables from January 2000 to December 2017. The study adopted the mixed-effect model constructed based on employing genetic algorithm and AIC criterion. The findings showed that there was positive relationship between automaker's stock return volatility and explanatory variables such as stock market development, GDP and unemployment. Conversely, an inverse relationship between the dependent variable and money supply and IPI was found. A study by Ilahi, Ali and Jamil (2015) investigated the linkage between macroeconomic variables (inflation rate, exchange rate and interest rate) on stock market returns in Pakistan. The study used the Pakistan Karachi stock exchange 100 index as a proxy to represent the stock market returns and the interest rate, inflation rate, and exchange rate were used as the macroeconomic variables. Secondary data was collected from the listed firms for a period of five years. The findings showed that there was weak relationship between macroeconomic variables and stock market returns.

The impact of macroeconomic variables on stock returns of listed banks in the Nairobi Securities Exchange (NSE) was evaluated by Okech and Mugambi (2016). The key economic variables considered for analysis were exchange rate, interest rate, inflation and GDP. Secondary data which constituted quarterly time series data from the Central Bank of Kenya, Bloomberg databases and the Kenya National Bureau of Statistics (KNBS) over the study period from 2000 to 2015 was used in this study.

Correlation analysis and Unit Root test were carried out to check for multicollinearity and stationarity respectively. A linear regression model using Ordinary Least Squares (OLS) under Fixed Effects model was used to compute the regression coefficients between bank stock returns and the various macroeconomic factors affecting the same. Empirical results showed that interest rate, exchange rate and inflation have significant impact on bank stock return, while GDP had an insignificant impact at 5% level of significance.

The connections between stock prices and key macroeconomic indicators: inflation, industrial production, interest rates, money supply and select interactions between the latter groups of variables was determined by Camilleri, Scicluna, and Bai (2019). The links were evaluated through vector-autoregressions (VARs) on monthly data spanning over the period 1999–2017, for Belgium, France, Germany, Netherlands and Portugal. The study found different contemporaneous and lead-lag relationships between stock prices and the selected variables, although there are variations across countries. VAR models indicated that stock prices significantly lead inflation across all countries during the sample period and in most cases this relationship was positive. In addition, stock prices significantly lead industrial production in four of the sampled countries and these relationships were positive as well. Contrary to long-established finance theories, the study did not find numerous significant links between interest rates and stock indices; however the interaction between interest rates and money supply was a leading indicator of stock prices in France, Germany and Portugal. Basci and Karaca, (2013) examined the impact of gold prices, exchange rate, imports and exports on market capitalization in Turkey. Their results revealed that imports and exchange rate have significant impact on market capitalization

A study to examine the relationship between the stock market and exchange rate in South Africa for the period from 1980 to 2020 by Javangwe and Takawira (2022) utilised quarterly data was used employing the Autoregressive Distributed Lag (ARDL) model given the order of integration of the variables. The empirical results revealed that there is a long-term relationship between the variables of interest. The results also revealed that there is a negative relationship between the stock market and exchange rate movement. The results also show that there is a negative relationship between the stock market and the interest rate as well as inflation as measured by CPI.

The relationship between five independent variables namely inflation, exchange rate, gross domestic product, gold prices and T-bills rate and market capitalization was empirically investigated by Kabeer, Iqbal, Najaf and Najaf (2016). The study employed regression and Pearson correlation method and found out that market capitalization negatively co-related with all independent variables; insignificant positive relationship between exchange rate and stock return, the relationship between inflation rate and stock return was negative insignificant, T-bills rate was insignificant and negatively co-related with stock return, gold prices was negatively insignificant and gross domestic product has positively insignificant relation with stock return in Pakistan.

A study to assess the effects of currency volatility on the Johannesburg Stock Exchange by Mlambo, Maredza and Sibanda (2013) utilized the Generalised Autoregressive Conditional Heteroskedascity (1.1) (GARCH) model to establish the relationship between exchange rate volatility and stock market performance. The study findings indicated that a very weak relationship exist between currency volatility and the stock market returns. The findings also indicated that prime overdraft rate and total mining production had a negative impact on Market capitalisation. Surprisingly, US interest rates were found to have a positive impact on Market capitalisation.

The relationship between macroeconomic variables and stock market indices for China and India was evaluated by Hosseini, Ahmad and Lai (2011). Results from the multivariate cointegration and vector error correction model (VECM) showed that both short and long-run relationship between stock returns and macroeconomic variables for the two countries and the impact of the latter on the former varies from country to country. While the long-run effect of crude oil price and money supply on China's stock returns was positive, the impact of these macroeconomic indicators on India's stock prices was however negative. Their results also revealed opposing impacts of industrial production on stock returns. The findings indicated that changes in industrial production positively affect stock returns in India while exerting a negative effect on China's stock returns. The findings however showed the positive impact of inflation on stock returns for both countries.

A study to examine the relationship between macroeconomic variables and stock prices by Sbeiti and Hadadd (2011) focused in four Golf Cooperation Council (GCC) countries. Results from the multivariate cointegration test presented evidence of long-run relationship between stock prices and the selected macroeconomic variables. The findings however showed varying impacts on stock returns. The findings revealed that oil prices do not significantly affect stock prices in Kuwait but has positive and significant impact on Saudi Arabia's stock prices while exerting negative and significant effect on Bahrain's and Oman's stock prices. Further assessments revealed the significance of oil prices in accounting for a greater proportion of variations in stock returns in Kuwait, Saudi Arabia and Oman. The findings also showed that short-term interest rate had negative and significant effect on stock prices in Kuwait while positively impacting on stock returns in Saudi Arabia, Bahrain and Oman. However, its impact is insignificant in Saudi Arabia owing to the Islamic Sharia which abhors charging interest rate. The study further found that domestic credit had positive and significant long-run impact in Kuwait, Saudi Arabia and Bahrain while negatively influencing stock prices in Oman. Results from the causality test showed unidirectional causality from oil prices to stock prices in Kuwait, Saudi Arabia and Oman.

A study to investigate the determinants of stock market performance by Maku and Atanda (2010) employed the Engle–Granger cointegration test. The findings revealed long-run relationship between the series. In particular, inflation, exchange rate, broad money supply and real output consistently determined stock market performance and in the long-run, investors should pay attention to these indicators instead of interest rate. A study by Hajilee and Al Nasser (2014) examined the linkage between exchange rates and stock market development in twelve emerging economies. The results showed that in only six economies, significant long-run relationships are observed. According to the findings, exchange rate volatility negatively affected stock market development in China, Mexico, Pakistan and Venezuela, while positive impacts were observed in the Philippines and South Africa. The interaction between independent variables namely inflation, industrial production, money supply, exchange rate and interest rate and the dependent variable (stock price) was explored by Alam and Rashid (2014) in firms listed in the Karachi Stock Exchange 100 index.

The study employed secondary data and the findings indicated that there was a strong impact of macroeconomic indicators on the Karachi stock market returns; while consumer price index, money supply, exchange rates and interest rates negatively connected with the stock returns, industrial production index positively connected with the stock returns. All the variables were significantly connected to stock market returns except inflation in Pakistan. A study to examine the relationship between five independent variables namely gross domestic product, inflation proxy by wholesale price index, interest rate, and balance of payment and exchange rate by Nijam, Ismail and Musthafa (2015) focused on firms listed in Colombo stock market and used market development as the dependent variable. The study applied correlation and multiple regression techniques in analysing the data. The outcome of the study showed that stock market development significantly positively related to gross domestic product, exchange rate and interest rate, while it negatively related to inflation. However, the study found that balance of payment had an insignificant impact on market capitalization in Sri Lanka.

The effect of five independent variables namely industrial production index, wholesale price index (inflation), money supply, T-bills rate and exchange rates on market capitalization of firms listed in the Bombay Stock Exchange (BSE) was examined by Naik and Padhi (2012). The study collected monthly data for a period of six years. The results analysed by using Johansen cointegration test and Vector Error Correction model indicated that the Indian stock market index formed significant long-run relationship with three out of the five macroeconomic variables adopted. The findings indicated that in the long run, the market capitalization was positively related to money supply and GDP represented by industrial production index. Inflation was found to be negatively related to stock price index in the short run; interest rate represented by 90-day T-bills rate and real effective exchange rate are not significant determinants of market capitalization in India. A study on the short-term association between the independent variables (such as money supply, industrial production, exchange rate, interest rates and foreign reserves) and the dependent variable (Malaysia stock market returns) by Kabeer et al. (2016) utilised monthly data for 27 years. The study found that foreign reserves, real exchange rate and industrial production exhibited the significant response to the changes in stock prices in the short run, while money supply and interest rates did not indicate any significant responses to stock prices.

The nature of causal relationship between market capitalization and industrial development analysed by Jiranyakul, (2013) utilized relevant data in Thai economy. The empirical results found that market capitalization is a predictor of industrial development. Ouma and Muriu (2014) investigated the impact of macro-economic variables on market capitalization in Kenya. The study employed three independent variables namely money supply, exchange rates and inflation to predict stock market returns in the Nairobi Stock Exchange 20 index. The study used monthly data from January 2003 to January 2013. The study employed the classical regression model, best linear unbiased estimates (BLUE), Augment Dickey-Fuller (ADF) unit root test for data analysis; and the results showed that there was significant relationships between stock returns and the selected macroeconomic variables in Kenya.

The causal relationship between macroeconomic variables and market capitalization in Kenya was evaluated by Wasseja, Njoroge and Mwenda (2015). The study adopted Augmented-Dickey Fuller Unit Root Test, Johansen co-integration test, regression analysis, Granger causality test and Vector Autoregressive (VAR) model for data analysis. Five independent variables, namely: T-bill rate, inflation rate, money supply, real exchange rate and gross domestic product were used to predict stock market returns on the NSE 20 index. The study used secondary time series data for the period covering 32 years. The results showed that T-bills rate, money supply and GDP had no significant effect on market capitalization, while inflation and exchange rates had significant effect on market capitalization in Kenya.

The association between five independent variables (exchange rate, consumer price index (inflation), T-bill rate, money supply and Foreign Direct Investment (FDI)) and stock market returns in the Ghana Stock Exchange (as dependent variable) was investigated by Issahaku, Ustarz and Domanban (2013). The study used monthly data for five years. The study employed unit root test, cointegration test and Granger causality test for the analysis of data. The findings indicated that in the longrun, a significant relationship existed among stock returns and inflation, money supply and FDI; but there was an insignificant relationship between stock market returns and FDI in the short-run in Ghana. Alajekwu and Achugbu (2012) probed the impact of economic growth and trade openness on market capitalization in Nigeria. Their analysis reported that trade openness and economic growth do not contribute to market capitalization.

The relationship between two independent variables namely per capita income and inflation with dependent variable (stock market returns in the Nigerian Stock Exchange was examined by Ahmad, Abdullah, Abdullahi and Muhammad (2015). The study which used annual data from 1970 to 2013 employed Zivot-Andrews unit root test, F-bounds co-integration and Toda and Yamamoto causality tests for the analysis of data. The results showed that the variables were non-stationary at certain levels but were stationary after first differencing. Co-integration established the existent of co-integration amongst all the variables. There was significant positive impact of gross per capital income and inflation on stock market returns in both short-run and the long-run. Gross per capita income was found to be a key determinant of stock market returns in Nigeria.

A study to examine the relationship between two independent variables; gross domestic product, broad money supply and stock market returns (dependent variable) in Nigerian was evaluated by Nkechukwu, Onyeagba and Okoh (2013). The study used time series annual data and employed statistical tools such as Augmented-Dickey Fuller unit root test, Co-integration test, Normalized Co-integrating Vectors test, Vector Error Correction model (VECM), and Granger causality test for the analysis of data. The findings indicated that gross domestic product had long-run negative effect on stock market prices contrary to the a priori expectation; while money supply has long-run positive effect on stock market prices. A study by Khodaparasti (2014) examined how exchange rates, inflation, industrial index and narrow money supply as independent variables related to Tehran Stock Index (TSI) as the dependent variables. The study used annual secondary data. Pearson correlation and ANOVA methods were used for T analysis of data and the findings indicated that exchange rates and industrial production index have more effect on the stock returns than inflation and narrow money supply in Iran

2.3.2 Macro-economic factors, Foreign Portfolio Investment and Stock Return

Macroeconomic factors play a crucial role in attracting foreign investment to a country. A study by Tripathi, Seth and Bhandari (2015) found that macroeconomic factors except exchange rate significantly affect FPI inflows. Thus, less volatility in international portfolio flows is associated with high interest rate, currency depreciation, lower inflation, and higher GDP growth rate of the host country. These findings suggest that foreign investors focus on stable macroeconomic environment.

The flow of foreign investment may occur through various ways which include investment in stock market which in turn influence the stock returns. A study by Malik and Amjad (2013) found that FPI had a positive impact on the Pakistani stock market. Another study by Sekhri and Haque (2015), found a strong positive correlation between FPI stock market of India.

A study to determine the macroeconomic variables that affect the stock market performance of developed and emerging economies by Verma and Bansal (2021) indicated that gross domestic product (GDP), FDI (Foreign Direct Investment) and FII (Foreign Institutional Investment) have a positive effect on both emerging and developed economies' stock market while gold price has a negative effect. Interest rates had a negative impact on both economies except for a few developing countries. The relationship with oil prices was positive for oil exporting countries while negative for oil importing countries. Inflation, money supply and GDP are the macroeconomic variables that have the same effect on sectorial indices as they do on broad market indices. The impact was sector-specific for the remaining variables.

The association between foreign capital inflows to Nigeria and real growth rate of gross domestic product, domestic credit to the private sector, rate of inflation, perceived level of corruption and market capitalization was investigated by Asien and Oriavwote (2013). The data covering were analysed using econometric models of cointegration technique with its implied error correction model (ECM). Results indicated that high rate of inflation has a negative impact on foreign capital inflow to Nigeria. The short-run dynamic results suggested that domestic credit to the private sector, real growth rate of gross domestic product and market capitalization have been beneficial to foreign capital inflows to Nigeria.

An investigation on the relationship between macroeconomic factors and foreign portfolio investment volatility in South Asian countries by Waqas, Hashmi and Nazir (2015) utilized monthly data collected for four Asian countries (China, India, Pakistan and Sri Lanka). Monthly data was deemed ideal for measuring portfolio investment volatility. For measuring volatility in foreign portfolio investment, GARCH model was used because shocks are responded quickly by this model. The results revealed that there exists significant relationship between macroeconomic factors and foreign portfolio investment volatility.

The study further indicated that less volatility in international portfolio flows was associated with high interest rate, currency depreciation, foreign direct investment, lower inflation, and higher GDP growth rate of the host country. The findings of the study implied that foreign portfolio investors focus on stable macroeconomic environment of country.

A study to determine whether greater foreign investment reduces real exchange rate volatility by Al-Abri and Baghestani (2015), focused on eight emerging Asian countries. As a noteworthy aspect, detailed measures of foreign investment, including foreign direct investment, foreign portfolio equity, and foreign debt were analysed. The findings from both time-series and panel data indicated that greater stocks of foreign liabilities reduced real exchange rate volatility for China, India, Malaysia, Singapore, and South Korea but increased real exchange rate volatility for Indonesia, the Philippines, and Thailand. A study by Erdogan and Unver, (2015) examined the determinants of foreign direct investment (FDI) for 88 countries, using a static and dynamic panel data analysis. The results showed that urbanization rate, the ratio of population over the age of 65, social security spending and health spending have a negative and statistically significant impact on FDI, while per capita GDP, GDP growth, market size, inflation rate, unemployment rate, labour force growth, credit to private sector, market capitalization and control of corruption have a statistically significant positive impact on FDI inflows.

The determinants of foreign direct investment (FDI) was investigated by Ullah, and Khan (2017) focusing on institutional and economic factors among South Asian Association for Regional Cooperation (SAARC), Association of South East Asian Nations (ASEAN) as well as Central Asian countries. Generalized method of moment technique was employed for analysing the impact of institutional quality on FDI inflow by controlling for the effect of market size, domestic investment and labour force. The findings indicated large variations in terms of the impact of institutional and economic variables in regards to FDI in the SAARC, Central Asian and ASEAN regions. The results revealed that real GDP, domestic investment and economic freedom index have a positive and significant effect on FDI inflows in the SAARC region, while governance index and labor force have a negative impact on FDI inflows.

In Central Asia, the real GDP, domestic investment and governance index were positively associated with FDI inflows, whereas the effect of economic freedom index on FDI was negative as well as insignificant. Apart from the GDP, other variables such as labour force, domestic investment, governance and economic freedom indices influence FDI positively in the ASEAN region. Domestic investment produces positive effect on FDI inflows in all the regions.

The impact of stock market returns on foreign portfolio investment in Nigeria evaluated by Anayochukwu (2012) sought to identify the relationship between foreign portfolio investment and stock market return, inflation rate and stock market returns and to determine the direction of causality between foreign portfolio investment and stock market returns in Nigeria. The data were collected from Central Bank of Nigeria (CBN) statistical bulletin. The data were consequentially analysed using E-views statistical package. The methodology used was multiple linear regression analysis to capture the impact of foreign portfolio investment and inflation rate on stock market returns, as well as Granger causality tests to determine the direction of causality between the variables. The results showed that foreign portfolio investment has a positive and significant impact on stock market returns while inflation rate has positive but insignificant impact on stock market returns. In the case of causality test, evidence of the result showed that there is a unidirectional causality running from stock market returns to foreign portfolio investment in the economy, which in turn will foster stock market returns in Nigeria.

A study to investigate the impact of stock market performance and inflation on foreign portfolio investment in China by Haider, Khan, Saddique and Hashmi (2017) utilized quarterly time-series data from 2007 to 2015. The authors show that there is a significant positive impact on stock market performance on foreign portfolio investment. In contrast, inflation is found to be negatively associated with foreign portfolio investment. They conclude that the stock market should be regulated and the abrupt fluctuation in the stock market should be controlled. A study by Akinmulegun (2018) examined the effect of capital market development on foreign portfolio investment in Nigeria over the period 1985 to 2016. Its finding reveals that market capitalisation has a negative and significant effect on foreign portfolio investment in the country. In contrast, stock market returns have a positive relationship with foreign portfolio investment.

A study by Kacperczyk, Sundaresan and Wang (2018) assessed the impact of foreign institutional investors on global capital allocation. The findings showed that investment flows impact on efficiency is most likely due to real efficiency gains, as opposed to changes in firm information disclosure. The study also revealed that the impact of foreign investors is more significant for stocks with higher active ownership. A study on the effect of foreign portfolio equity outflows on stock returns by Koskei (2017) focused on listed financial institutions in Kenya. The results indicated that foreign portfolio equity outflows do not affect stock returns of listed financial institutions in the country. The findings concur with a study by Shanab (2017) which evaluated the effect of foreign portfolio investment on the market capitalisation in the Amman Stock Exchange for the period 2005-2016. The study revealed that purchases and sales by foreign investors have a statistically significant effect on market capitalisation. The study also found no statistically significant impact between inflation and market capitalisation.

A study to examine the linkages between foreign equity flows and stock market returns of Bursa Malaysia by Sapian and Auzairy (2015) showed that there was a positive causal relationship between domestic equity returns and foreign institutional fund flows. The findings contradict a study by Adebisi and Arikpo (2015) which investigated the relationship between financial market performance and foreign portfolio investment in Nigeria for the period 1984 to 2015. Using Autoregressive Distributive Lag (ARDL) technique, the authors show that financial market performance has no long-run causal relationship with foreign portfolio investment. The findings also revealed that stock market performance and stock market liquidity have no short-run causal relationship with foreign portfolio investment.

The impact of foreign portfolio investment inflows on stock market growth in Nigeria from 1986 to 2014 was assessed by Onyeisi, Odo and Anoke (2016). The study found a significant long-run impact of foreign portfolio investment on stock market growth. It also showed no causality between foreign portfolio investment and stock market growth in the country. These results imply that foreign portfolio investment (FPI) inflows may not contribute positively to the increase in the stock market when there is no conducive business environment for foreign investments. A study by Hsu (2013) examined the effect of foreign investment portfolios on the domestic stock market of host countries by categorising investor favoured and the un-favoured groups.

The findings showed that there was evidence of market participants herding on the foreign investors favoured stock group. In contrast, evidence of herding existed only for the unflavoured group that have shown keen interest in bear markets. A study to investigate the impact of foreign portfolio investment on the stock market by Oyerinde (2019) focused on the period of 1980 and 2014. The data for the study were sourced from the statistical bulletins published by the Central Bank of Nigeria. A model that captures the fundamental drivers of stock market development was built while the time series properties of the variables were examined using Augmented Dickey Fuller and Johansen co-integration tests. In view of the results of the pre-estimation tests, the Error Correction Modeling approach was used to estimate and examine the relationship between foreign portfolio investment, stock market development and other variables such as economic growth, exchange rate and inflation rate. The results showed that there was a significant positive long run relationship between foreign portfolio investment and stock market development. It was also found that the level of domestic economic activities, exchange rate and inflation rate were other key fundamentals dictating the momentum of investment flow and direction of stock market development in Nigeria. The lagged error correction term indicated that the speed and time to full adjustment from short run shock to long run stability was low.

The relationship between foreign portfolio investments and macroeconomic factors for the period between 2006 and 2012 was analysed by Gumus et al (2013). Using variance decomposition, the findings revealed that variation in Istanbul stock exchange price index and variation in exchange rates emanated from foreign portfolio investments. Haider et al (2017) investigated the impact of stock market performance and inflation on foreign portfolio investment (FPI) in China. For this purpose, time series quarterly data from 2007 to 2015 was used. On the basis of stationarity results, ARDL model was used to examine the impact of the stock market prices and inflation on FPI. The results showed that there is significant positive impact of stock market performance on the FPI, whereas inflation was found to be negatively associated with the FPI. The study also revealed that some historical events like Asian financial crisis of 2008, and the Shanghai Composite Stock Index crash of 2015, significantly affected the foreign portfolio investment in China

The impact of foreign portfolio investment inflows on stock market growth in Nigeria from 1986 to 2014 was evaluated by Onyeisi et al (2016). The study used co-integration, vector error correction model and Granger Causality econometric tools. The results obtained indicated that the trace statistics was one (1) co-integrating equation at 5% level of significance. The vector error correction model indicated long-run significant impact of foreign portfolio investment on stock market growth in Nigeria, and the Granger Causality showed that there was no causality between foreign portfolio investment and stock market growth in the Nigerian economy. The implication of the results was that foreign portfolio investment (FPI) inflows may not contribute positively to the increase in stock market when there is no conducive business environment for foreign investments to thrive in Nigeria.

The long run determinants of foreign portfolio investment (FPI) in Nigeria were investigated by Ekeocha (2012). The variables considered by the study were, market capitalization, real exchange rate, real interest, real gross domestic product and trade openness. The study applied time series analysis specifically the finite distributed lag model. The results indicated that FPI has a positive long-run relationship with market capitalization, and trade openness in Nigeria. A study by Ozurumba (2012) investigated the impact of stock market returns on foreign portfolio investment in Nigerian. The objectives of this research were: to identify the relationship between foreign portfolio investment and stock market return, inflation rate and stock market returns and to determine the direction of causality between foreign portfolio investment and stock market returns in Nigeria. The data were collected from Central Bank of Nigeria (CBN) statistical bulletin. The data were consequentially analysed using E-views statistical package. The methodology used by the work was multiple linear regression analysis to capture the impact of foreign portfolio investment and inflation rate on stock market returns, as well as Granger causality tests to determine the direction of causality between the variables. The results showed that foreign portfolio investment had a positive and significant impact on stock market returns while inflation rate has positive but insignificant impact on stock market returns. In the case of causality test, evidence of the result showed that there is a unidirectional causality running from stock market returns to foreign portfolio investment in the economy which foster stock returns in Nigeria.

A study on the impact of globalization on the performance of the Nigerian Stock market by Raymond and Enerst (2013) sought to establish the existence of a linking mechanism between globalization through trade openness, net inflow of capital, participation in international capital market and financial development on Stock Market performance over the period of 1981 to 2011. The methodology adopted examined the stochastic characteristics of each time series by testing their stationarity using the Im, Pesaran and Shin W-stat test. The weighted least squares regression method was employed to ascertain the different level of impacts on the above subject matter. The findings were reinforced by the presence of a long-term equilibrium relationship, as evidenced by the cointegrating equation of the VECM. The Model ascertained that globalization variables actually positively impacted on stock market performance. However, the findings revealed that while net capital inflows and participation in international capital market have greater impact on the Nigerian Stock market performance during the period under review.

The effect of information asymmetries on macroeconomic volatility and FPI volatility in Nigeria was evaluated by Karimo and Tobi (2013). The study adopted the AR (k)-EGARCH (p,q) model. The study also evaluated the nexus between macroeconomic uncertainty and FPI volatility in Nigeria using the LA-VAR Granger Causality test. The study used Quarterly time series data drawn from the Central Bank of Nigeria Statistical Bulletin, 2011 spanning through 1986Q1 to 2011Q4. The study found that all the included variables were highly volatile and responded asymmetrically to information shocks. The results also predicted that a stable macroeconomic environment is necessary for steady FPI inflow and steady FPI inflow is also needed for some levels of macroeconomic stability. A study by David et al (2016) examined the volatility of the naira exchange rate vis-a-vis four other currencies: dollar, pounds, euro and yen. The GARCH model and its asymmetric variants were used to investigate the volatility of naira. The results confirmed the assumed persistence in the exchange rate of the Nigerian currency, as such the need for proactive measures such as reduction in the number of holidays and sustainable monetary policy to cushion the effect of a volatile currency on both the nation's economy and the citizenry.

A study on the determinants of stock market development, the long run and short run relationship between the variables by Ayunku and Etale (2014) utilised ex-post facto research design and Johansen Co-integration and Error Correction Model (ECM) approach. The empirical result indicated that market capitalization, credit to private sector and exchange rates are all important determinants of stock market development both in the long run and short run in Nigeria as these variables have positive effect and thus stimulate economic growth in Nigeria while inflation and saving rate had negative impact on stock market development in Nigeria. A study by Omorokunwa and Ikponmwosa (2014) investigated the dynamic relationship between exchange rate volatility and foreign private investment in Nigeria. The rational for this study was the realization that a viable exchange rate regime that was stable and predictable presents rich vista for inflow of foreign investment. The study employed the Error Correction Model (ECM) after a battery of preliminary investigations which include the Augmented Dickey Fuller (ADF) test for stationarity and the Engle and Granger two-step co integration procedure. The finding indicated that exchange rate volatility has a very weak effect on the inflow of Foreign Direct Investment (FDI) to Nigeria, both in the long run and in the short run and that exchange rate volatility has a weak effect on foreign portfolio investment in the short run but a strong positive effect in the long run.

The impact of foreign portfolio investment (FPI) on capital market growth was investigated by Eniekezimene (2013). The study evaluated the growth of FPI in the market as well as the transmission channels through which changes in FPI affect growth of the market. The study employed the flow theory of capital movement and Ordinary Least Squares (OLS) methodology with a Parsimonious Error Correction Model Specification. After testing for the stationary status (unit root) and long run relationship (co-integration) of the variables, the result showed that foreign portfolio investment has a positive impact on capital market growth with the speed of adjustment from short run to long run as indicated by the ECM-1 having a relatively high value of 66% in absolute terms. A detailed study on the effect of exchange rate volatility on foreign private flows in Zambia was evaluated by Funyina (2015). Using the Johansen Cointegration Method, the results showed that exchange rate volatility has a negative and significant effect on foreign portfolio flows to Zambia and that there is an overall negative effect of the kwacha exchange rate volatility on private capital flows to the country, particularly by depressing its inflows.

A study on the determinants of FPI in China between the 1997 and 2014 by Khan et al., (2016) showed that Gross Domestic Product (GDP) and External Debts are major determinants of FPI. Also, the findings indicated that exchange rate and population have a significant and direct impact on the FPI. This result was derived from the use of multiple regression models on E-views. A study conducted by Munene, (2016) in Kenya for the period 2006–2015 also showed a strong positive relationship between the foreign capital inflows and exchange rate. The interactive effects of exchange rate volatility and foreign capital inflows on economic growth in Nigeria was investigated by Ajayi et al (2016). The study aimed at evaluating the interaction of financial development with exchange rate volatility on one hand and of financial development with capital inflows on the other hand. The findings indicated that exchange rate volatility has a positive but insignificant effect on foreign investment.

The effect of foreign portfolio equity investment on stock market performance in Nigeria was evaluated by Iriobe et al (2018). The study employed ex-post facto research method using monthly time series data from 2007 to 2017. Using Kruskal-Wallis non-parametric test and the Autoregressive Distributed Lag (ARDL) model, the results revealed that there is a significant difference in the sectorial distribution of FPI inflows to the Nigerian economy. The findings also indicated that foreign portfolio equity investment has a significant positive influence on the Nigerian stock market performance. It was therefore evident that foreign portfolio equity investment significantly predict stock market performance in Nigeria, and therefore regulatory authorities should deepen the equity stocks of the market and encourage more firms to get listed on the Nigerian Stock Exchange.

A study to examine the impact of macroeconomic variables had on FPI in Nigeria by Onuorah and Akinjobi (2013) sought to investigate the long-run and short-run macroeconomic variables influencing Foreign Portfolio using the OLS model of estimation. The findings showed that foreign investment in the country is driven primary by the size of the country's interest and exchange rates. The results also indicated that the interest, inflation and exchange rates directly impact FPI, while GDP and money supply negatively affect the FPI in the country. In order to examine the direction of causality between FDI, FPI and exchange rate using Granger causality, it was revealed that there was no causal link between the two phenomena.

A study to empirically investigate the effect of exchange-rate volatility (EXRV) on foreign portfolio investment (FPI) in Pakistan by Rashid and Khalid (2017) examined whether the lagged exchange rate (EXR) and lagged EXRV have any significant effect on FPI. To mitigate the problem of endogeneity, the robust two-step system-GMM estimator was applied. The results revealed that both EXR and EXRV had a negative and significant impact on FPI. Further, the results suggested that the variable had long-lasting effects on FPI. These findings imply that increased EXR and its volatility are detrimental for FPI in Pakistan. The results showed that sector size, profitability, liquidity, and the level of leverage were also significant in attracting FPI in Pakistan. On the other hand, the dividend pay-out ratio, sector growth, and retention in business have negative effects on FPI. The results suggested that in order to attract FPI in Pakistan, it is necessary to effectively control unwanted variations in EXR.

An investigation on the effects of exchange risk on equity and bond flows by Caporale et al (2015) focused on several developed countries including the Euro area. The findings indicated that the impact of exchange rate volatility on equity flows was positive in Australia and negative in the United Kingdom, Sweden, and the European countries. The findings further showed that the effect of EXRV on foreign investment in bonds was negative for all the countries included in the sample except Canada, where it was positive and significant. The inter-links between exchange rate and FPI was investigated by Kodongo and Ojah (2012) using time-series data covering the period 1997-2009. The empirical analysis covered four countries, namely Egypt, Morocco, Nigeria, and South Africa. The empirical results revealed that the linkages between exchange rate and portfolio flows are both country dependent and time-varying in nature.

A study by Aranyarat (2011) examined the association between exchange rate risks and FPI for Thai firms. The study covered the period 2005-2009. The findings indicated that there is a negative relationship between exchange rate volatility and FPI. That is, increasing exchange rate risk will depress firm-specific FPI in Thailand. The relationship between foreign exchange rates and foreign equity portfolio investment in Argentina, Mexico, India, China, Brazil, and Russia evaluated by Sirr, Garvey and Gallagher (2011) compared exchange-rate risk of these countries with the portfolio risk in the USA.

The study used monthly data covering the period 2003-2010. The findings showed that foreign exchange-rate risk was significant in Brazil and Mexico, but it was less significant in China and Russia as compared to USA equity portfolios. Argentina and India had the same level of foreign exchange risk as of the USA. In the equity portfolio investment, exchange rate instability and the association between exchange rate return and foreign equity portfolio return were the significant contributing factors in foreign exchange risk.

A study to determine the impact of foreign exchange risk on international well-diversified portfolio of assets by Stancu (2010) utilized the relative value-at-risk (RVaR) model. The empirical results supported the fact that the assets presented in the portfolio are not constant over time and the instability in foreign exchange rate works as a fourth asset, because its movement contributes approximately one fourth to the RVaR of the portfolio. Thus, exchange rate volatility makes financial instruments more risky. Further, the results indicated that the contribution of exchange rate risk into the value-at-risk portfolio was about 26.91%, on average. A study by Nielsen (2012) examined the effect of exchange rate volatility on FPI for several sub-Saharan African markets. The empirical analysis was carried out using time-series data covering the period 1996-2010. The findings indicated that countries with stable exchange rate policies had higher levels of FPI.

2.3.3 Macro-economic factors, Market capitalization and Stock Return

Market capitalization refers to the total market value of a company's shares. Investors use market capitalization to determine the size and characteristics of a company which in turn influence their investment decisions. Nazir, et al (2010) revealed that economic growth can be attained by increasing the market capitalization in an emerging market like Pakistan. This study showed a positive relationship between market capitalization and economic growth. The causal relationship between stock market development and economic growth in Kenya was evaluated by Nyamakanga (2013). The study sought to find the relationship between stock market capitalization, turnover and economic growth. The results showed a strong positive relationship between stock market development and economic growth stemming from a one sided causal relation from market capitalization to economic growth while market liquidity (stock market turnover ratio) showed a no causal effect to economic growth.

A study to determine the effect of selected macroeconomic variables on market capitalization in Nigeria by Etale and Tabowei (2019) adopted Nigerian stock market capitalization as the dependent variable, while macroeconomic variables such as gross domestic product, interest rate, inflation and exchange rate were used as the independent variables. Time series secondary data on the study variables were obtained for evaluation from the Central Bank of Nigeria Statistical Bulletin and the Nigerian Stock Exchange fact book for the period 2001 to 2018. The study employed descriptive statistics and multiple regression analysis based on E-views 10 computer software as the techniques for analysis. The results showed that gross domestic product has significant positive effect on market capitalization; exchange rate has significant negative effect on market capitalization; while interest rate and inflation have insignificant negative association with market capitalization in Nigeria. The study concluded that increasing national output in the economy of Nigeria would ultimately lead to an increase in market capitalization, which is good for developing economy like Nigeria, as it is likely to enhance economic growth and foster rapid development.

A study on the perceived macroeconomic factors and stock market capitalization from the Nigerian economy perspective by Igoni et al (2020) evaluated the prevailing interrelationships between Nigerian Stock Market Performance and the Perceived Macroeconomic factors of Exchange rate, External reserves, Gross Domestic Product, Inflation rate and Interest rate. The data information was sourced from Central Bank of Nigeria statistical bulletin between 1985 and 2014. The Augmented Dickey Fuller, Johansen Co-integration, and the Error Correction Models were employed. The results of the ADF revealed that all variables were stationery at first level differences. The results in Johansen Co-integration indicated a significant long run relationship between three studied variables that relate with the Nigeria Stock Market performance. Further, ECM results reported that GDP remains significant variable that respond to stock market performance positively, while inflation responded negatively, interest rate and external reserves are shown to be responding and adjusting to trends in Stock Market Capitalization. Market capitalization and exchange rate were operating independent of each other. The findings implied that GDP and inflation rate constitute the significant policy variables of interest to manage and promote the desired performance of Nigerian stock market.

The effect of Macro Economic Variables on Market Capitalization of Firms Listed in NSE was examined by Gathogo et al (2017). The target population of this study comprised of Sixty-five listed companies at the NSE. The study used secondary data covering a five-year period from 2010 to 2015. The study used mixed research design encompassing both descriptive and correlational research techniques. The study found that Exchange rate had a positive influence on the market capitalization in Agricultural, Industrial allied sectors and a negative influence on Finance and investment sectors and commercial and services sectors. Inflation had a positive influence on the stock market Performance in investment sector and a negative influence on all the other sectors. Interest rate had a positive influence on the market capitalization in Agricultural and Commercial sectors and a negative influence on Investment sectors. The findings showed that the type of sector characteristics had a moderating effect on the relationship between macroeconomic variables and the market capitalization at the NSE.

A study to evaluate the relationship between stock market development and economic growth in Pakistan by Nazir et al (2010) focused on two major measures of stock market development, namely: size of the market and liquidity prevalent in the market in terms of market capitalization. The results revealed that economic growth can be attained by increasing the size of the stock markets of a country as well as the market capitalization in an emerging market like Pakistan. Another study by Shahbaz et al (2013) investigated Macroeconomic Determinants of Stock Market Capitalization in Pakistan. The study applied Zivot-Andrews unit root test for integrating properties of the variables and the ARDL bounds testing for cointegration. The direction of causality between the variables is investigated by applying the VECM Granger causality approach. The results revealed that variables are cointegrated for long run relationship. Economic growth, inflation, financial development and investment increase stock market development but trade openness declines it. The causality analysis confirms that stock market development is a Granger cause of economic growth, inflation, financial development, investment and trade openness. The study to determine causal relationships between the stock market performance and select macroeconomic variables in India by Tripathi and Seth (2014) adopted factor analysis, ADF and PP Unit root tests, Regression, ARCH model, Granger causality and Johansen Co-integration test for data analysis.

The study found a significant correlation among stock market indicators and macroeconomic factors. The study identified three principal factors through Factor analysis viz Inflation, Interest rate and Exchange rate. The overall explanatory power of the regression model was 23.8%, 23.3% and 16.9% respectively for Sensex, Market capitalization and Market Turnover. There was unidirectional causality from stock market to real economy. The study also found five co-integrating relationships between stock market and macro-economic variables. These results suggested that the stock prices movement is not only the result of behaviour of key macroeconomic variables but it is also one of the important reasons of movement in other macro dimension in the economy.

An investigation on the role of economic indicators in determining the capital market performance in Nigeria by Omodero (2020) utilized secondary data covering a period from 1998 to 2018. The data was sourced from the World Bank Development Indicators, International Monetary Fund and CBN Statistical Bulletin, 2018 edition. The results from the regression analysis indicated that exchange rate and inflation rate have immaterial undesirable consequence on capital market capitalization (CMC) while the interest rate exerts a weighty harmful effect on CMC. The study also provided evidence that the gross domestic product (GDP) had a substantial positive impact on CMC. The study results suggested that the growth of the economy should be sustained in order to keep boosting the capital market. However, the economic indicators such as inflation, interest rate and exchange rate should be kept under strict control by the relevant authorities in the country.

The effect of macroeconomic variables for 29 emerging economies for the 1994–2006 period was analysed by Soumaré and Tchana Tchana (2015). The findings obtained from the panel data analyses suggested that FDI inflows positively affect both the stock market and banking sector development in these countries. The findings implied that policies on inducing FDI inflows accompany market-friendly regulations, which finally result in better governance and a more developed financial system. A study by Korsa and Fosu (2016) examined the relationship between exchange rates movements and stock market capitalisation in Ghana using Johansen cointegration technique and vector error correction model with quarterly time series data covering the period of 1990 to 2013.

The study found a negative and significant relationship between exchange rates and stock market capitalisation both in the long-run and in the short run suggesting that a depreciation of the Ghana cedi against the US dollar is inimical to the performance of the Ghana Stock Exchange (GSE) Market. In order to increase stock market capitalisation, the study recommended that the Central Bank of Ghana, the Ministry of Finance and the Ministry of Agriculture should adopt policies that will boost the real side of the economy such as increasing agricultural productivity to ensure increase in foreign exchange earnings in the country and hence preventing the cedi from depreciating.

A study on the relationship between stock market capitalisation and financial growth nexus of Western European countries from 1989 to 2018 by Alshubiri (2021) sought to understand the interactive relationship between the stock market and the economy and to identify the specific financial market channels through which economic growth is managed. The pooled least square findings identified positive significant relationships between stock market capitalisation, foreign direct investment and stocks traded and financial growth, while negative and significant relationships were found between GDP per capita growth and inflation and financial growth. The fixed effect, random effect and pooled mean group models yielded the same results, indicating positive significant relationships between stock market capitalisation and stocks traded and financial growth, while the effect of foreign direct investment on financial growth was positive and insignificant. Finally, there were negative and significant relationships between GDP per capita growth and inflation and financial growth. The results from the quantile regression indicated that there were positive relationships between stock market capitalisation and stocks traded and financial growth for all percentiles, while there were negative relationships between GDP per capita growth and inflation and financial growth. Foreign direct investment also had a negative relationship to financial growth. Most variables were significant at a 1% significance level. The findings implied that countries should minimise any regulatory obstacles to financial markets and protect the rights of shareholders. Furthermore, advanced financial systems should reduce the obstacles faced by companies in terms of external financing.

2.3.4 Macro-economic factors, Foreign Portfolio Investment, Market Capitalization and Stock Return

The stock return may depend on the prevailing macro-environment, foreign portfolio investment and market capitalization. A study by Oyerinde, (2019) examined the impact of foreign portfolio investment (FPI) on stock market development. The study found that foreign direct investment has positive and statistically insignificant effect on stock market development. The study also found that exchange rate and gross domestic savings exert positive and statistically significant impact on stock market development, while inflation rate has insignificant negative influence on stock market development.

The relationship between stock market development and economic growth in Nigeria was analysed by Umar et al (2015). The results indicated that economic growth has positive and no significant impact on market capitalization ratio and turnover ratio of the Nigerian stock exchange but had a negative on the Nigerian stock market value traded ratio. Arikpo and Ogar (2018) applied Johansen Co-integration and Error Correction Mechanism (ECM) in investigating the relations among stock market development, FPI and macroeconomic stability. The findings revealed that there is a long run association among the variables. The study further shows that FPI has positive and statistically insignificant impact on stock market.

The long-run impact of macroeconomic indicators such as interest rate, foreign capital flows, exchange rate, GDP growth, inflation and trade on stock market performance (market capitalization) in Nigeria was investigated by Olokoyo et al. (2020). Using data drawn from the World Development Indicators (WDI, 2018) and the Central Bank of Nigeria (CBN) Statistical Bulletin 2018, the study employed the VECM analysis. The results found suggested that macroeconomic variables and stock market performance are cointegrated and thus linked in the long run. In addition, interest rate, inflation and trade bear a negative relationship with stock market performance while exchange rate, GDP growth rate and foreign capital flows are positively related to stock market performance. A study to determine how macroeconomic variables impact on stock market performance in Pakistan by Umer (2016) examined the impact of 11 macroeconomic variables on stock market performance in short and long run. The Johansen's Co-integration test, Granger Causality test and Correlations test are used for empirical purposes.

The results indicated that a positive long run relationship between Stock Index and CPI, Money supply and oil prices. The negative long run relationship was found between stock returns and Exchange Rate, Foreign exchange reserve, Gold prices and Interest rate. However the results of Foreign Direct Investment, Index of industrial production, Imports and Exports were insignificant for Johansen's Co-integration. The Granger causality results indicated that causality runs from exchange rate to Index to FDI, Foreign exchange reserve, interest rate and exports. The only bidirectional causality is found between Crude oil prices and Index.

The relationship between the Indian stock market performance (BSE Sensex) and five macroeconomic variables, namely, index of industrial production, wholesale price index, gold price, foreign institutional investment and real effective exchange rate over the period April 2010- June 2014 using monthly data was investigated by Venkatraja (2014). Necessary data were collected from secondary sources. Multiple regression technique was employed and the model summary endorsed a very strong combined influence of independent variables on the Sensex. Wholesale price index, index of industrial production, foreign institutional investment and real effective exchange rate had a high degree of positive influence on Sensex. The findings also indicated that Sensex is inversely influenced by changes in gold price. Further, of the five variables, the coefficients of all the variables except index of industrial production were statistically significant. It was therefore evident that inflation, inflow of foreign institutional investment, exchange rate and gold price significantly impact the Indian stock market performance.

A study to analyse the impacts of macroeconomic factors on the Turkish Stock Market index, BIST-100 (Borsa Istanbul-100) by Demir (2019) sought focused on the impact of some selected macroeconomic factors on BIST-100 index over the 2003Q1–2017Q4 period. The findings obtained from the quarterly data via the ARDL Bounds Test suggested that economic growth, relative value of the domestic currency, portfolio investments and foreign direct investments positively impacted the stock market index while interest rate and crude oil prices negatively affected it. The results briefly revealed that the Istanbul Stock Exchange Market needs stronger domestic currency, higher international capital inflows, and lower energy and investment costs.

A study on the effect of macroeconomic indicators on stock prices in Ghana by Mireku et al (2013) utilised cointegration and VECM and the results showed that in the long-term, interest rate and exchange rate negatively affects stock prices while inflation positively influences it. Findings from their innovation accounting analysis however showed a weak ability of the macroeconomic variables in explaining variations in stock returns. The link between exchange rate volatility and foreign portfolio in Nigeria was investigated by Ogundipe et al (2019) using data covering the period of ten years. The theoretical framework used is the return and creditworthiness model, which is based on the push and pull factors theory. In achieving the objective, the study adopted the vector autoregressive model in ascertaining the dynamics between exchange rate volatility and foreign portfolio investment in Nigeria. Also, the study examined the impact of exchange rate innovations (shocks) on foreign portfolio investment and equally assessed how induced variations in foreign portfolio investment are decomposed among the variables in the model. It was also found that exchange rate volatility and market capitalization significantly and largely explain the variations in foreign portfolio investment. The impulse response analysis shows that foreign portfolio investment was more responsive to standard deviation shocks in market capitalization and exchange rate, implying that these variables were more responsible for the dynamism in FPI. As the horizons expand, shocks to market capitalization and exchange rate increased foreign portfolio investment, whereas shocks to GDP and inflation made foreign portfolio investment to dwindle. In the same manner, in decomposing the induced variation in foreign portfolio investment, forecast error shocks in market capitalization, exchange rate and GDP explained more of the variation in foreign portfolio investment.

A study on the impacts of foreign portfolio investment on stock prices and exchange rate in Thailand by Rujiravanich (2013) focused on the period after the Asian financial crisis. The monthly data used in this study are the net foreign portfolio investment and exchange rate of baht per US dollar issued by the Bank of Thailand. SET index data were from the Stock Exchange of Thailand. The study period covered five years. The methods employed to investigate the relationship and impacts of foreign portfolio investment include: least square, correlation coefficient, VAR models, cointegration and error correction mechanism, impulse response analysis and variance decomposition.

The results of the present study showed that the stock prices had a long-run positive relationship with the net foreign portfolio investment, while the exchange rate had a long-run negative relationship with the net foreign portfolio investment. In addition, the high market return was a factor that influenced foreign equity securities investment in the stock market. An investigation on the determinants of foreign portfolio investment in Jordan by Al-Smadi (2018) utilised series of data covering the period from 2000 to 2016. Eight independent variables were employed. They were: aggregate economic activity, inflation, interest rate differentiation, stock market performance, risk diversification, country creditworthiness, governance, and corruption. The regression results showed that good and stable macroeconomic environment attracts foreign investors. In addition, foreign investors preferred to invest in the capital market which provides an opportunity of risk diversification. A country that has enough liquidity to meet its obligation and has well-governed environment thus can attract more portfolio investment. The results of the study provide empirical evidence about the factors that have a significant impact on the flow of foreign portfolio investment to Jordan. These factors can be utilized when formulating polices by the specialized authorities who are seeking to attract more portfolio investment.

The long run and short run effects of stock market volatility and exchange rate volatility on FDI in Nigeria was analysed by Omolola and Adefemi (2018) using the panel ARDL estimation technique and a time-series data which ranged (1990-2016). The ARCH/GARCH estimation technique was used to estimate the exchange rate volatility and stock market volatility values in which GARCH (1, 1) was employed. The pairwise granger causality test was used to check for the direction of relationship between FDI and (stock market volatility, exchange rate volatility). The result of the FDI ARDL equation revealed that there was a negative significant relationship between foreign direct investment (FDI) and exchange rate volatility (EXCHV) both short run and long run in Nigeria, and a positive insignificant relationship between stock market volatility (STMV) and foreign direct investment (FDI) of Nigeria in the long run but a positive significant relationship between stock market volatility (STMV) and foreign direct investment (FDI) of Nigeria in the short run. Gatsimbazi et al. (2018) expanded the investigation in Rwanda utilizing month to month time arrangement information which spread over for a time of 6 years.

The discoveries uncovered that GDP, swelling and conversion standard had huge negative impacts on financial exchange execution while loan fee applied an irrelevant negative effect on securities exchange execution in Rwanda. The relationship between financial development and economic growth in Ghana was evaluated by Adu et al (2013). The findings indicated a negative relationship between exchange rate and GSE index. The negative relationship between exchange rate and stock market index implied that a depreciation of the Ghanaian cedi had negative effects on the performance of the stock market. Further results showed that money supply, inflation and interest rate were all positively related to the stock market index (a proxy for stock market performance). This positive relationship between inflation and stock market suggested that stock prices are significantly affected by macroeconomic indicators and oil price shocks albeit weakly. The study findings also implied that macroeconomic variables significantly affect the performance and growth of GSE. Their study however found no causality between stock market returns and any of the macroeconomic variables.

The effect of exchange rate and inflation on stock market returns in Ghana was examined by Kwofie and Ansah (2018) using monthly inflation and exchange rate data obtained from the Bank of Ghana and monthly market returns computed from the GSE all-share index. The autoregressive distributed lag (ARDL) cointegration technique and the error correction parametization of the ARDL model were used for examining this effect. The ARDL and its corresponding error correction model were used in establishing the long- and short-run relationship between the Ghana Stock Exchange (GSE) market returns, inflation, and exchange rate. The result of the study showed that there exists a significant long-run relationship between GSE market returns and inflation. However, no significant short-run relationship between them existed. The result also showed a significant long- and short-run relationship between GSE market returns and exchange rate. The variables were tested for long memory and it was observed that such property did exist in these variables, making it a desirable feature of which investors can take advantage of. This is due to the establishment of long-run effect of inflation and exchange rate on stock market returns. A study by Sukruoglu and Nalin (2014) investigated the role and effects of macroeconomic variables on stock market development in selected European countries using panel data from 1995 to 2011.

The study found evidence that monetization and inflation had negative effects on stock market development while income, liquidity ratio, saving rate exerted positive influence on stock market development. The effect of macroeconomic factors on financial exchange execution in Nigeria from 1986 to 2015 was analysed by Oke and Olaniyan (2018) utilizing Autoregressive Distributed Lag (ARDL) limits method. The investigation discovered proof that Gross local item (GDP) and cash supply affected financial exchange execution in Nigeria. The examination likewise settled the presence of a long run connection between macroeconomic essentials and securities exchange execution. Azeez and Obalade (2019) applied ARDL bound testing technique to examine the long and short term association between stock market development and macroeconomic determinants which include GDP, banking sector development, stock market liquidity, foreign direct investment, inflation rate and savings rate. The study found that all the macroeconomic variables were significant in determining the stock market development except the savings rate which was not significant in explaining the stock market development in Nigeria.

The impact of macroeconomic factors on the financial exchange execution in Iran was evaluated by Khodaparasti (2014). The result of the examination demonstrated that swapping scale and mechanical file had huge positive effect on the financial exchange while expansion applied an irrelevant effect on the securities exchange execution. A study by Nopphon (2012) was an absolute logical inconsistency and deviation from the general conviction that macroeconomic factors influence securities exchange execution. Utilizing Thailand as a contextual analysis, the investigation covered a period from 2001 to 2010 and found that stock return was a superior monetary pointer that could anticipate the conduct of macroeconomic factors. The study findings implied that macroeconomic factors were insufficient in deciding securities exchange execution in Thailand.

The impact of macroeconomic factors on the stock market in Estonia was investigated by Hsing (2014). The study found that the stock market index of Estonia was favourably affected by the macroeconomic variables which included real GDP. On the contrary, there was an existence of a negative correlation between the Estonia stock market index and exchange rate, domestic interest rate, expected inflation rate and the Euro area government bond yield.

The relationship between macroeconomic factors and stock market development in Cameroon was examined by Zhou et al (2015) using the Calderon-Rosell model. The findings of the study showed that stock market liquidity and financial openness were substantial in determining capital market development in Cameroon. Nijam et al. (2015) utilized conventional least square (OLS) technique to explore the effect of macroeconomic factors on financial exchange execution in Sri Lanka from 1980 to 2012. The findings indicated that financial exchange file and macroeconomic factors in Sri Lanka had solid relationship. The investigation likewise settled that GDP, conversion scale and financing cost had huge effect on all offer value record while the parity of instalment did not apply any impact. Barakat et al (2016) considered the effect of macroeconomic factors on securities exchanges of Egypt and Tunisia from 1998 to 2014. The macroeconomic factor researched include: shopper value file, swapping scale, cash supply and loan fee. The findings indicated that market record had a causal association with shopper value file, conversion scale, cash supply and loan cost in Egypt while in Tunisia, it was just customer value file that did not have causal association with the securities exchange list.

The effect of macroeconomic factors on financial exchange execution in Ghana from 2000 to 2013 was evaluated by Barno (2014) utilizing normal least squares (OLS) estimation method. The findings indicated that loan fees and cash supply had a critical negative effect on financial exchange returns while conversion standard had a huge constructive outcome on securities exchange returns, however swelling rate had no impact on financial exchange returns. A study by Arnes (2014) researched Istanbul Stock Exchange in Turkey, the G20 economy from 1994 to 2013 utilizing stock records as intermediary for securities exchange execution. The findings indicated that mechanical generation had a negative and immaterial effect, hence indicating help for proficient market speculation which proposes that all data about the business is in the open area for speculators to settle on an educated venture choice. The aftereffect of the examination likewise uncovered that between banks loaning rate had a noteworthy negative association with market returns while the outcome for the remainder of different factors were conflicting inside the period considered.

The effect of the macroeconomic factors on stock returns in Kenya was analysed by Ouma and Muriu (2014) utilizing the conventional least square (OLS) method. The findings indicated that cash supply and expansion had huge positive effect on financial exchange returns, while swapping scale affected securities exchange returns. In any case, financing cost did not apply any impact on securities exchange returns. Gurioveleen and Bhatai (2015) completed an examination on the effect of macroeconomic factors on Indian Stock Market utilizing assembling firms as contextual investigation. A few factual test were run utilizing different monetary markers, be that as it may, remote institutional speculators and swapping scale were discovered critical however with no association with normal shutting costs of assembling firms. The investigation likewise uncovered the presence of powerless type of proficient theory in Indian Stock Market because of the way that the securities exchange file did not have any association with the factors tried for the period secured by the examination.

The study on effect of macroeconomic factors on stock costs of the Stockholm Stock Exchange by Tella (2013) utilized customary least squares (OLS) system. The examination discovered proof that swelling and cash devaluation had huge negative effect on stock costs while loan cost had an immaterial negative effect on stock costs. However cash supply applied an inconsequential positive impact on stock costs. A study by Su et al (2016) applied a panel data of 36 unindustrialized countries using two-way General Method of Moments (GMM) to assess the determinants of capital market development. The results specified that the negative determinant was the money supply while economic growth, domestic credit and stock market liquidity showed positive effects on stock market development of the 36 emerging nations. Winful et al (2016) explored the effect of macroeconomic factors on financial exchange execution of 41 developing economies utilizing board information from 1996 to 2011. The investigation utilized four systems which include: common least squares (OLS) technique, dynamic standard least squares (DOLS), Newey-West and completely changed conventional least squares (FMOLS) estimators. The outcomes demonstrated that conversion scale deterioration and decline in customer value list e affected financial exchange execution. The investigation additionally settled that expansion in cash supply did not have positive effect on financial exchange execution.

The long run and short run relationship between macroeconomic factors and the stock costs in India was investigate by Giri and Joshi (2017) utilizing the Auto Regressive Distributed Lag (ARDL) procedure and Vector Error Correction Model (VECM). The investigation found a long run relationship among the factors and set up that expansion, swapping scale and financial development had noteworthy positive effect on stock costs while raw petroleum value influenced stock costs adversely. Golam et al. (2017) utilized normal least squares numerous relapse model to analyse the impact of macroeconomic factors on securities exchange execution of South Asian Association for Regional Cooperation (SAARC) nations. The examination discovered that swapping scale, financing cost and remote cash save were all factually noteworthy in impacting securities exchange execution of the SAARC nations while swelling and cash supply did not apply huge effect on the financial exchange returns. Matadeen (2017) used panel vector error correction model to investigate the macroeconomic determinants of stock market development in the Sub-Saharan African Countries. The results showed that economic growth, banking development, stock market liquidity, investment and macroeconomic stability were the major determinants of the stock market development

A study on the impact of macro-economic determinants on market capitalization in Pakistan by Muhammad et al. (2017) established the existence of a robust relationship between capital market capitalization, money supply oil prices and foreign direct investment in Pakistan. In a bid to extend the study, Khan and Khan (2018) assessed the effect of macroeconomic factors on stock costs in Pakistan utilizing Karachi Stock Exchange as a contextual investigation. The study found that the stock costs of Karachi Stock Exchange were fundamentally affected by cash supply, swapping scale and loan cost over the long haul while for the time being, every one of the factors did not have impact but rather a negative effect was found with the conversion standard. Epaphra and Salema (2018) utilized month to month board information of 10 organizations listed on the Dar es Salaam Stock Exchange to look at the effect of macroeconomic factors on stock costs. The result demonstrated that cash supply and conversion scale positively affected stock costs while Treasury bill rate applied a negative effect on stock costs. The examination affirmed that swelling rate did not have any effect on the stock costs.

The effect of monetary policy and inflation on the exchange rate in Ghana was investigated by Precious (2020) investigated. The study used the Autoregressive Distributed Lag (ARDL) and Bounds test of cointegration and the Toda and Yamamoto (1995) Augmented Granger Causality test to determine the long and short-run dynamics of the impact of monetary policy and inflation on exchange rates in Ghana, using data ranging from 1970 to 2017. The study found a short-run depreciation effect of contractionary monetary policy on the exchange rate, reflecting the exchange rate puzzle. The long-run results however showed an appreciating effect. Inflation is also found to depreciate the currency both in the short and long-run. The causality tests also revealed a bi-directional relationship between the exchange rate and the inflation rate, while a unidirectional causal relationship exists between monetary policy and the exchange rate. The findings implied that inflation stabilization policies should be prioritized in Ghana, as a means to curb the rising exchange rates. Improvement in terms of trade through export value promotion should also be given the needed attention as the findings indicated that it enables appreciation of the currency in the long-run.

A study to establish the determinants of financial markets development in Tanzania by Kamazima and Omurwa (2018) utilized secondary data obtained from Dar es Salaam Stock Exchange from 2007 to 2016. The study employed vector autoregressive (VAR) model and came up with the finding that stock market volatility, stock market liquidity and economic growth impacted positively and significantly on financial market development. The result of the study also revealed that inflation rates had an insignificant negative effect on financial market development in Tanzania. Kunofiwa (2018) examined the determinants of stock market development in emerging market development in the Europe, Latin America and Africa. The study employed secondary data from 1994 to 2014 and made use of pooled ordinary least squares (OLS) method. The findings revealed that FDI, savings, economic growth, trade openness, exchange rates, banking sector development and stock market liquidity affected the development of the emerging nations' stock market positively and substantially.

The relationship between macro environment and performance of multinational agricultural enterprises in Nigeria was investigated by Kowo et al (2018). The objectives of the study were to determine if macroeconomic environment has a significant effect on performance of multinational agricultural enterprises and also to examine if there was a significant relationship between macroeconomic variables and multinational agricultural enterprises profitability. The study adopted survey method, the Yamane formula and Cronbach Alpha for test retest reliability. 114 copies of questionnaire were administered to employees of AGRIC International Technology and Trade Ltd Lagos Nigeria to get primary data. The study found out that macroeconomic environment has a significant effect on Multinational agricultural enterprises performance and there exists a significant relationship between macroeconomic variables and multinational agricultural enterprises profitability. The results of regression analysis revealed that variance in multinational agricultural enterprise performance can be explained by service macroeconomic environment and that there exist a significant relationship between macroeconomic variables and multinational agricultural enterprise profitability.

An investigation on the effect of interest rates on exchange rate volatilities in Ghana by A study by Mohammed et al (2021) utilized the Quarterly Time Series dataset spanning 2000 Quarter 1 to 2017 Quarter 2 and the Autoregressive Distributed Lag model as well as the Vector Error Correction Model to investigate the long-run and short-run relationships between the variables. The results showed that in the long-run model, exchange rate volatility was seen to be influenced by money supply, inflation, Central Bank's policy rate, and the Ghana Stock Exchange composite index. However, in the short-run model, exchange rate volatility was found to be significantly influenced by its past values and the Central Bank's policy rate. In a similar study, Megaravalli and Sampagnaro (2018) inspected the long run and short run effect of macroeconomic pointers on financial exchanges in ASIAN 3 economies which include: China, India and Japan utilizing month to month time arrangement information from 2008 to 2016. The examination discovered proof that swapping scale had a huge positive effect on the securities exchanges over the long haul while swelling had an immaterial negative effect on the financial exchanges. The factors did not have any measurably critical effect on the securities exchanges in the short run.

The relationship between exchange rates and key macroeconomic variables in Ghana was examined by Kwakye (2015). The study employed Autoregressive Distributed Lag (ARDL) technique for cointegration and found that there is cointegration relationship between the variables, indicating the existence of a long-run equilibrium relationship between them. Further, the study established a significant effect of exchange rate lag (past exchange rate) on current exchange rate. Another study by Nchor and Darkwah (2015) investigated the impact of exchange rate movement and the nominal interest rate on inflation in Ghana. The study examined the presence of Fisher Effect and International Fisher Effect scenarios. They made use of an autoregressive distributed lag model and an unrestricted error correction model (UECM). Ordinary Least-Squares regression methods were also employed to determine the presence of the Fisher Effect and the International Fisher Effect. The results showed that, in the short run, there exists a positive relationship between exchange rate and inflation while the relationship between interest rate and inflation in the short run is negative. The study further established the presence of both the partial Fisher Effect and the full International Fisher Effect.

The causality and the dynamic links between exchange rates and stock market indices in Brazil, Russia, India, China, and South-Africa (BRICS) was evaluated by Mroua and Trabelsi (2020). Daily closing prices from January 2008 to February 2018 are used for the analysis. By applying the dynamic panel Generalized Method of Moments (GMM) model and the ARDL method, results show that exchange rate changes have a significant effect on past and the current volatility of the BRICS stock indices. Besides, ARDL estimations revealed that exchange rate movements have a significant effect on short- and long-term stocks market indices of all BRICS countries. A study by Tang and Yao (2018) investigated the impact of the domestic financing structure, considered as a key means of interaction between stock markets and foreign exchange markets, on the relationship between stock prices and exchange rates of eleven emerging countries. Using Granger's co-integration method and multivariate causality tests, the results showed that the internal financing structure, which reflects the share of direct and indirect financing, plays an important role in the relation between the exchange rate and share price.

A study to empirically analyse the evidence of intra-spillovers and inter-spillovers between foreign exchange and stock markets by Morales-Zumaquero and Sosvilla-Rivero (2018) focused in the seven economies which constitute the majority of foreign exchange transactions (the United Kingdom, the United States, the Euro area, Australia, Switzerland, Canada, and Japan) for the period from 1990 to 2015. Using the C-GARCH methodology and the SVAR framework, results suggested that the long-run volatility relationships are stronger than the short-run volatility linkages with reinforcement during the post-global financial crisis period. The findings also indicated that the stock markets play a dominant role in the transmission of long-run and short-run volatility in all samples, except for the period after the global financial crisis, where the foreign exchange markets are the main long-run volatility triggers. In addition, "the characteristics of the stock markets, the behavior of investors and the economic policies of BRICS countries were different from those of developed countries and other emerging countries.

The spill over effects of exchange rates and share prices of BRICS countries after the global financial crisis of 2007-2008, was examined by Sui and Sun (2016) and focused at dynamic, long-term and short-term relationships. By applying autoregressive vector models and vector error correction models, the results showed a significant effect of stock prices on exchange rate movements in the case of Brazil and Russia, and insignificant effect for the case of India, China, and South-Africa. Ho and Huang (2015) investigate the relationship between the stock market indices and exchange rates of the BRIC countries (with the exception of South Africa) using the Lagrange multiplier principle (LM), during the period from February 2002 to December 2013 and showed that the causal relationship of the exchange rate to the stock index differ according to the market states. During the period 2006-2015, Naresh et al. (2018) sought to identify the long-run spill over effect of US dollar on major stock indices of BRICS nations by applying individual and Panel Generalized Method of Moments (GMM). The results indicate that the appreciation in the value of BRICS currencies against dollars has increased the value of the respective nation’s stock indices.

The dynamic links between exchange rates and stock returns in BRICS countries was evaluated by Dahir et al. (2018) and the findings revealed that the relationships between exchange rates and stock returns are positive in the medium and long term. The results also revealed that exchange rates lead stock returns in Brazil and Russia, negative in India and seem to be more bidirectional causality in China.

2.4 Conceptual Framework

The conceptual framework model in Figure 1 hypothesizes the relationship between independent variables and dependent variable.

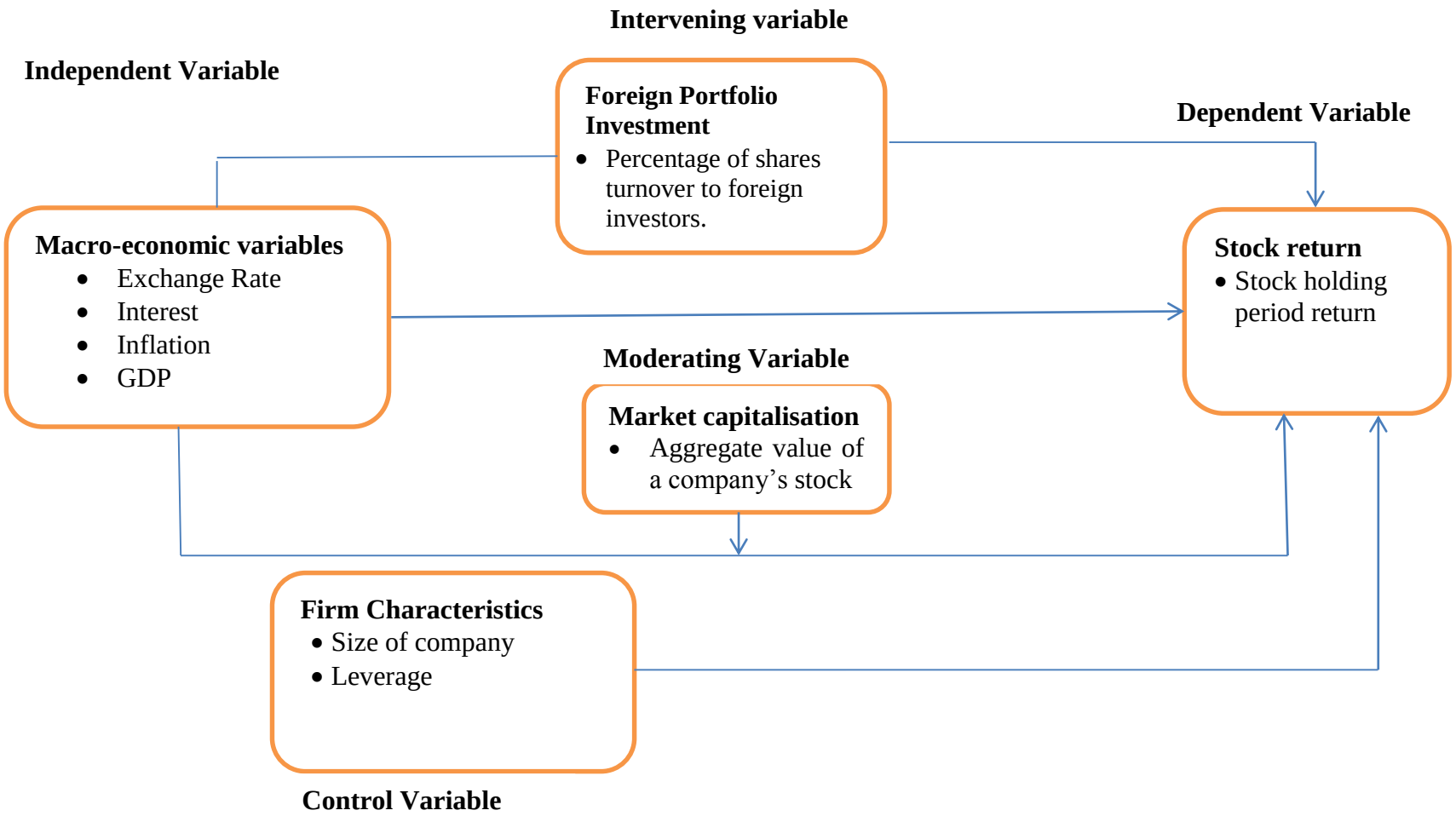

Figure 2. 1: Conceptual Framework

2.4.1 Macro-Economic Factors

The independent variable was macro-economic variables which affect the economy as a whole and no single industry or firm has control over them. The macroeconomic variables were operationalized through foreign exchange rate, interest rate, inflation rate and gross domestic product (GDP).

2.4.2 Foreign Portfolio Investment

The intervening variable was foreign portfolio investment which is the stock held by foreign investors. The study evaluated the intervening effect of foreign portfolio investment on the relationship between macro-economic factors and stock returns. The intervening variable was measured through percentage of shares turnover to foreign investors

2.4.3 Market capitalisation

The moderating variable was market capitalization which is the aggregate value of a company's stock. The moderating variable was measured through total value of shares in the market obtained by multiplying the price per share by the number of shares outstanding.

2.4.5 Firm Characteristics

Firm characteristics were the control variables. The variables were operationalized by size of the firm and leverage.

2.4.6 Stock Return

Stock return was the dependent variable and was operationalized by the returns investors generate out of the stock market in form of capital gains (due to price appreciation) or in form of dividends. The stock return was operationalized by summing the dividend per share and capital gain.

2.5 Summary of the Literature Review

The literature review in this study comprised of the theoretical framework, empirical review and conceptual framework. Arbitrage pricing theory explained how the expected stock return of an investment can be influenced by various macroeconomic variables. The neoclassical theory of investments explained how FPI inflow spurs growth in an economy and stock return. Efficient capital market hypothesis explained how efficiency of the capital market affects the price of securities as reflected by change in market capitalization and in turn affects the stock returns. The empirical studies explain the relationship between macro-economic factors, FPI, market capitalization and stock return. However, the studies give conflicting results whereby some indicates negative relationship whereas others indicate a positive or insignificant relationship. A study by Barasa (2014) concluded that there is a weak positive relationship between macro-economic factors and stock market performance. However, Mumo (2017), Ouma and Muriu (2014) found that a negative relationship exists between macro-economic factors and stock prices. Kirui et al. (2014) on the other hand indicated that macro-economic factors had a significant relationship with stock returns. Gatuhi (2015) found that the relationship between the macroeconomic factors and stock market performance were either positive or negative depending on the sector the firm operates. This indicates that the studies did not give a clear conclusive relationship between macro-economic factors, FPI, market capitalization and stock return.

2.6 Research Gaps

The empirical studies have attempted to explain the relationship between macro-economic factors, FPI, market capitalization and stock return. However, the results are contradicting and inconclusive. Some of the studies found positive relationship while others found negative relationship between the variables. The research gaps are summarized in Appendix I. This study weighs in on these gaps and tries to answer: What effect do foreign exchange rate, interest rate, inflation rate and economic growth have on stock return of firms listed in the East Africa Securities Exchanges using market capitalisation as a moderating factor.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented a description of the methodology used in this study. It comprises sections on research design, population and sampling technique, data collection procedure, pilot testing, data processing and operationalization of variables.

3.2 Research Philosophy

The study was guided by positivist research philosophy. This was suitable because the study intended to assess the effect of Macro-economic factors, foreign portfolio investment and market capitalization on stock return of firms listed in the East Africa Securities Exchanges. The study appreciates the philosophy which assumes that there is no absolute truth; research is the process of making claims and then refining or abandoning some of them for other claims (Creswell, 2012). The research therefore followed the positivist approach, which provides that a research begins with theory then data is collected to either support or refute the theory (Odhiambo, 2014).

3.3 Research Design

The study adopted longitudinal research design. This design was appropriate because it allowed collection and analysis of data over several individuals and periods of time. Similar studies by Civilize (2015) and Banda (2018) adopted this research design successfully.

3.4 Target Population

The target population comprised of all the ninety-six (96) listed companies in the NSE, RSE, DSE and USE which had traded for five consecutive years as at 31st December 2020. A census of all the companies which had traded in the East Africa Security Exchange in the year 2016 to 2020 as shown in appendix IX was carried out.

3.5 Data Collection Instruments

The study used secondary data for five years ranging from year 2016 up to 2020. The data was collected using the data collection form as in Appendix II.

3.6 Data Collection Procedure

The data was obtained from reports published by the Central Banks and Capital Market Authorities of the respective countries under the study. To enable the collection of data, a research permit was obtained from the National Commission for Science, Technology and Innovation.

3.7 Operationalization and Measurement of Study Variables.

The study variables were grouped into four categories which include dependent, independent, intervening and mediating variable. The details of how the study variables were translated into measurable factors and their operationalization is presented in Table 3.1

Table 3.1: Operationalization and Measurement of Study Variables

Variable	Type of variables	Indicators	Measurement
Stock Return	Dependent	Holding period return	$\frac{\text{Dividend}+(P_1-P_0)}{P_0}$
Foreign Exchange Rate	Independent	Prevailing exchange rate at the end of the year	X to US dollar rate
Interest Rate	Independent	91 day Treasury bill (T bill) rate	Annual average of 91 day Treasury bill (T bill) rate
Inflation Rate	Independent	Consumer Price Index	$\frac{CPI_1-CPI_0}{CPI_0}*100$
GDP	Independent	GDP growth rate	$\frac{GDP_1-GDP_0}{GDP_0}$
Market capitalization	Moderating	Rate of change in value of a company's security	$\frac{V_1-V_0}{V_o}*100$
Foreign portfolio investment	Intervening	Percentage of shares turnover to foreign investors.	Shares turnover to foreign investors / Total shares turnover
Size of company	Control	Value of total assets	Log of total assets
Leverage	Control	Debt equity ratio	Long term debt *100 / Equity
Political environment	Dummy	Election period	Add one to the model in the year preceding election, during election and the year succeeding the year of election.

Where

P_1 – is the price of share at the end of the year
P_0 – is the price of share at the beginning of the year
X – Is the currency of the respective Country
CPI_1 – is consumer price index at the end of the year
CPI_1 – is consumer price index at the beginning of the year
GDP_1 – Is the gross domestic product at the end of the year
GDP_0 – Is the gross domestic product at the beginning of the year
V_1 – Is the No. of shares * price as at the end of the year
V_0 - Is the No. of shares * price as at the beginning of the year

3.8 Pretesting of Research Instruments

The study used secondary data that was collected by means of pre-designed instrument specified under Appendix II. The opinions of experts and lecturers in economics was sought in order to facilitate the necessary modification and revision of the research instruments. This ensured that the instrument captures all the necessary information to determine the required data. Once the instrument was reviewed and its adequacy agreed by the experts, no further piloting was conducted on the instrument prior to data collection

3.9 Data Processing and Analysis

Data was analysed using both descriptive statistics (frequencies distributions, means, and standard deviations) and inferential statistics (correlation analysis, analysis of variances and regression). Karl Pearson's correlation helped in measuring the degree of association between different variables under consideration. Multiple regression analysis was used to estimate the relationship among the variables.

The first objective was to evaluate the relationship between macroeconomic factors and stock returns. The model for the first objective of the study was specified as shown in equation 3.1

Model:

$$SR_{it} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 PE_{it} + \varepsilon \ldots\ldots 3.1$$

Where:

SR is Stock Return, t = 1….,5 years, j = 1, ……, 5 countries, firms, i = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_7 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, LEV is leverage and SIZE is the Size of company, PE is political environment while ε is the Error term. The results were interpreted that a relationship existed if at least one of $\beta_1 - \beta_7$ was significant.

The second objective was to evaluate the intervening effect of FPI behaviour on the relationship between macroeconomic variables and stock return of companies listed at the Securities Exchanges in East Africa. A four step linear regression analysis was done as proposed by Barron and Kenny (1986). The first step was to assess the relationship between the dependent and independent variables as per equation 3.2.

$$SR_{it} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \varepsilon_{it} \quad \ldots\ldots 3.2$$

Where:

SR is Stock Return, t = 1….,5 years, *i* = 1, …...,4 countries, *i* = 1, ……...,96 firms, β_0 is regression constant, β_1 …. β_4 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate while ε is the Error term

The second step was to assess the relationship between intervening variable and independent variable as per equation 3.3.

$$FPI_{jt} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \varepsilon_{it} \quad \ldots\ldots 3.3$$

Where:

FPI is foreign portfolio investment, t = 1….5 years, *j* = 1….4 countries, i = 1……. 96 firms, β_0 is regression constant, β_1 …. B_4 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate while ε is the Error term

Step three was to assess the relationship between the intervening variable and the dependent variable as per equation 3.4.

$$SR_{it} = \beta_0 + \beta_1 FPI_{jt} + \varepsilon_{it} \quad \ldots\ldots 3.4$$

Where

SR_{it} = is the Stock return, t = 1….5 years, *j* = 1….4 countries, *i* = 1……. 96 firms, FPI is foreign portfolio investment, β_1 is the coefficient and β_0 is the constant

Step four was to assess the relationship between dependent variable, intervening variable and independent variable as per equation 3.5.

$$FPI_{jt} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 FPI_{jt} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots 3.5$$

Where:

FPI is foreign portfolio investment, t = 1….5 years, *j* = 1….4 countries, *i* = 1……. 96 firms, β_0 is regression constant, β_1 …. B_5 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, FPI is foreign portfolio investment while ε is the Error term

Intervention was deemed to occur if macro-economic factors predicts stock returns in step one, macro-economic factors predict foreign portfolio investment in step two, foreign portfolio investment predicts stock performance in step three and still macro-economic factors predicts stock performance when foreign portfolio investment is in the model in step four.

The third objective was to assess the moderating effect of market capitalisation on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa. A three step process proposed by Barron and Kenny (1986) was adopted to test the null hypothesis that market capitalisation has no significant moderating effect on the relationship between macroeconomic factors and stock return of companies listed at the securities exchanges in East Africa.

In the first step, the relationship between market capitalisation and stock return of companies listed at the Securities Exchanges in East Africa was evaluated using the following regression model:

$$SR_{it} = \beta_0 + \beta_1 MC_{ijt} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots 3.6$$

Where:

SR was stock return, β_0 was the regression constant, *j* = 1….4 countries, *i* was 1…… 96 firms, t was 1, …., 6 years, β_1 was coefficients estimated, MC is market capitalisation and ε was the error term.

In the second step, the relationship between the independent variable, moderating variable and the dependent variable were assessed using the following multiple regression model:

$$SR_{it} = \beta_0 + \beta_1 \text{FER}_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 MC_{ijt} + \varepsilon \text{ ……..}3.7$$

Where:

SR is Stock Return, t = 1…., 5 years, *j* = 1….4 countries, *i* = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_5 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, MC is market capitalisation while ε is the Error term

In the third step, the relationship between the macroeconomic variables (independent variable), market capitalisation (moderating variable), interaction of the independent variable with the moderating variable (macroeconomic factors* market capitalisation) and the stock returns (dependent variable) were analysed using the following multiple regression model:

$$SR_{it} = \beta_0 + \beta_1 \text{FER}_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 MC_{ijt} + \beta_6 M * MC_{ijt} + \varepsilon \text{ ….}3.8$$

Where:

SR is Stock Return, t = 1…., 5 years, *j* = 1….4 countries, *i* = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_6 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, MC is market capitalisation, M*MC is the interaction of macroeconomic factors (geometric mean of macroeconomic factors) and market capitalisation while ε is the Error term. Market capitalisation qualified as a moderating variable if **β_6** was statistically significant.

The fourth objective was to assess the joint effect of Macroeconomic Factors, Foreign Portfolio Investment, Market Capitalisation on Stock Returns of the firms listed in East Africa Securities Exchange. The null hypothesis that Macroeconomic factors, foreign portfolio investment, market capitalization have no significant effect on stock return of firms listed at the East Africa Securities Exchanges was tested using the following multiple linear regression model:

$$SR_{it} = \beta_0 + \beta_1 \text{FER}_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 FPI_{jt} + \beta_6 MC_{ijt} + \beta_7 LEV_{it} + \beta_8 SIZE_{it} + \varepsilon \text{ ……..}3.9$$

Where:

SR is Stock Return, t = 1…., 5 years, *j* = 1….4 countries, i = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_8 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, FPI is foreign portfolio investment, MC is market capitalisation, LEV is leverage and SIZE is the Size of company while ε is the Error term.

Relationship between the dependent and independent variables existed if at least one of β_1 – β_8 was significant.

3.10 Panel Model Specification

To determine the nature of the panel data and determine the best model for analysis, diagnostic test for heteroscedasticity, serial correlation, multicollinearity, fixed effects and normality was carried out. A summary of these models is presented in the following Table 3.2

Table 3.2: Model Specification Tests

Test	Test to be used	Conclusion
Use of pooled or random effects model	Breusch Pagan LM test	If P value >0.05, use pooled effects model.
Random or fixed effects	Hausman test	If p value>0.05, use random effects model.
Autocorrelation Test	Durbin –Watson statistic	There is no first order linear auto-correlation in the multiple linear regression data if P value is 1.5<d<2.5
Normality	Histogram normality test	If Jarque-Bera statistic P>0.05 then this implies normality
Multi-collinearity Test	VIF (Tolerance) test	No multi-collinearity in the multiple linear regression model if all the variables meet the Tolerance threshold of 0.1<VIF< 10.
Heteroskedasticity	Breusch-Pagan-Godfrey (BPG)	If P value is <0.05, presence of Heteroscedasticity

CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This study assessed the relationship between macroeconomic factors, foreign portfolio investment, market capitalization and stock return of firms listed at the Securities Exchanges in East Africa. The findings and discussion of the study are outlined in this chapter.

4.2 Success Rate

The target population was all the 96 firms that had traded for at least five consecutive years for the period between January 2016 and December 2020. The data required was obtained from all the 96 firms thus translating to 100% success rate.

4.3 Descriptive statistics of the variables

This section presents the descriptive statistics of the variables.

4.3.1 Descriptive Results of the Dependent and independent Variable

The dependent variable was stock return while the independent variables were foreign exchange rate, gross domestic product, inflation rate and interest rate. The moderating variable was market capitalization while the intervening variable was foreign portfolio investment. The control variables were leverage and size of the firm. The descriptive results are presented in Table 4.1.

Table 4.1: Descriptive Statistics

Indicator	Statistic	Overall	Kenya	Uganda	Tanzania	Rwanda
Stock Return	Mean	3.06	2.74	2.78	3.87	4.7
	Maximum	7.37	5.6	6.4	7.37	6.36
	Minimum	-8.28	-0.38	-8.28	-3.2	-0.25
	Std. Dev.	1.90	1.38	2.88	1.79	2.23
Foreign Exchange Rate	Mean	1185	102	3537	2229	845
	Maximum	3713	103	3713	2298	923
	Minimum	101	101	3234	2149	747
	Std. Dev.	1363	0.63	185	62	63
Gross Domestic Product	Mean	5.21	5.48	4.86	6.94	7.8
	Maximum	8.7	5.9	5.8	7.1	8.7
	Minimum	4.7	4.7	5.3	6.8	6
	Std. Dev.	0.016	0.41	1.32	0.12	1.34
Inflation Rate	Mean	0.26	0.17	0.31	0.46	0.29
	Maximum	1.28	0.39	0.74	1.28	0.77
	Minimum	0.01	0.02	0.01	0.07	0.09
	Std. Dev.	0.29	0.14	0.28	0.44	0.25
Interest Rate	Mean	9.32	9.62	7.21	6.52	12.56
	Maximum	20	10.24	9.00	9.2	20
	Minimum	4.0	8.33	5.90	4.00	8.60
	Std. Dev.	2.80	0.33	1.32	2.06	4.16
Foreign Portfolio investment	Mean	0.76	0.65	0.8	0.78	0.71
	Maximum	0.88	0.67	0.83	0.88	0.73
	Minimum	0.62	0.62	0.76	0.67	0.68
	Std. Dev.	0.08	0.01	0.03	0.07	0.02
Market Capitalization	Mean	0. 12	0.15	0.18	0.11	0.26
	Maximum	0.37	0.37	0.29	0.31	0.31
	Minimum	-0.26	-0.13	-0.09	-0.26	-0.04
	Std. Dev.	0.53	0.1	0.27	0.19	0.16
Leverage	Mean	1.8	1.72	1.31	1.57	2.5
	Maximum	12.2	4.75	5.38	7.91	12.2
	Minimum	0.01	0.01	0.05	0.04	0.02
	Std. Dev.	1.66	1.42	1.85	1.38	2.43
Size	Mean	5.83	3.89	8.63	8.54	8.26
	Maximum	8.99	6.06	8.98	8.99	8.56
	Minimum	2.71	2.71	7.71	7.22	5.05
	Std. Dev.	2.31	0.55	0.50	0.37	0.74

The results in Table 4.1 indicate that the stock return was between -8.28 and 7.37 with a mean of 3.06. The results suggest that some of the firms listed in the East Africa Security Exchanges registered positive returns whereas some registered negative returns during the period under study. Foreign exchange rate was between 101 and 3713 with a mean of 1185. This implied that there have been different exchange rates and thus foreign exchange rate volatility is experienced in East Africa. The results also indicate that gross domestic product was between 0.10 and 8.70 with an average of 5.21. The results also confirm the GDP has been fluctuating. The Inflation rate was between 0.01 and 1.28 with an average of 0.26. This implied that the countries experience cases of inflation and the rate also fluctuates.

The results also indicate that interest rate was between 4 and 20 with a mean of 9.30. This suggested that the countries experience changes in rate of interest from as low as 4 to as high as 20. Foreign portfolio investment ranged between 0.62 and 0.88 with a mean of 0.76. This implies that the countries attract foreign investment and the amount is more than the investment made by the local investors. Market capitalisation was between 0.37 and -0.26 with a mean of 0.12. The results imply that some of the companies experienced growth in the value of securities while others experienced negative growth. Leverage was between 0.01 and 12.2 with a mean of 1.8. This suggested that the all the companies utilized long term debts to finance their operations. The results indicated that size ranged between 2.71 and 8.99 with a mean of 5.83 implying that the firms were of varying size in terms of assets.

4.4 Correlation Analysis of the Variables

Correlation analysis was done to determine the strength of association between the variables. The results are presented in Table 4.2.

Table 4.2: Pearson Correlation Results

Indicator	SR	FER	GDP	INR	IR	FPI	MC	SIZE	LEV
Stock Return (SR)	1.000000								

Foreign Exchange	-0.1144**	1.000000							
Rate (FER)	0.0121	-----							
Gross Domestic	0.1579**	0.039864	1.000000						
Product (GDP)	0.0005	0.3835	-----						
Inflation Rate (INR)	-0.070958	0.2854**	-0.1330**	1.000000					
	0.1205	0.0000	0.0035	-----					
Interest Rate (IR)	-0.2788**	0.086685	0.3075**	0.014027	1.000000				
	0.0000	0.0577	0.0000	0.7592	-----				
Foreign Portfolio	0.2135**	0.0836**	-0.3032**	0.0955*	-0.1352**	1.000000			
Investment (FPI)	0.0000	0.0000	0.0000	0.0364	0.0030	-----			
Market	0.0731**	0.1727**	-0.1576**	0.010243	-0.2632**	0.2218**	1.000000		
Capitalisation (MC)	0.0000	0.0001	0.0005	0.8229	0.0000	0.0000	-----		
Firm Size (SIZE)	0.3254**	0.0881**	-0.3397**	0.3542**	-0.1821**	0.0858**	0.3412**	1.000000	
	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	-----	
Leverage	-0.0826**	0.10913*	0.1216**	0.058686	0.1255**	0.031234	-0.5607**	-0.041498	1.000000
(LEV)	0.0000	0.0168	0.0076	0.1993	0.0059	0.4948	0.0000	0.3643	-----

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

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

The correlation results in Table 4.2 shows that the correlation between stock returns and foreign exchange rate is negative and significant (r = -0.1141, p-value < 0.01). The results imply that an increase in foreign exchange rate is associated with decrease in stock returns. The findings also show that the correlation between stock returns and gross domestic product is positive and significant (r = 0.1579, p-value < 0.01). The findings suggest that an increase in gross domestic product is associated with an increase in stock returns.

The correlation between stock return and inflation rate is negative but not significant (r = -0.0709, p-value > 0.01). The finding implies that an increase in inflation rate is associated to a decrease in stock returns. The findings also show that the correlation between interest rate and stock return is negative and significant (r = -2788, p-value < 0.01). The results imply that an increase in interest rate is associated with a decrease in stock returns. The correlation between foreign portfolio investment and stock returns is positive and significant (r = 0.2135, p-value < 0.01). This implies that an increase in foreign investment is associated to an increase in stock returns. The correlation between stock return and market capitalisation is positive and significant (r = 0.0731, p-value < 0.01). The findings suggest that an increase in market capitalisation is accompanied with an increase in stock returns increase

The correlation between stock return and size of the firm is positive and significant (r = 0.325, p-value < 0.01). The findings suggest that an increase in the size of a firm is associated with an increase in stock returns. The correlation between stock returns and leverage was negative and significant (r = -0.082, p-value < 0.01). The findings imply that increasing the level of leverage of a firm is accompanied with decrease in stock returns. The results of the correlation matrix also indicate that the correlation between the variables were below 0.80. The results suggest that there was no multi-collinearity problem. When the correlation between variables exceeds 0.80, then there may be a problem of multi-collinearity (Gujarati, 1995).

4.5 Testing of Hypotheses

The study adopted multiple linear regression analysis to test the hypotheses. Exploratory and diagnostic tests were carried out to determine the suitable analysis model. The results of the tests and the analysis of the four hypotheses that were examined are presented in this section.

4.5.1 Exploratory tests

Exploratory tests were carried out in order to determine the nature of data used and chose the suitable analysis model. The test provides a visual impression of the panel data through a trend and overlay graph. Trend graph of each firm was generated using the stock return plots covering the period under investigation. The results presented in Figure 4.1 indicate that stock returns fluctuated year after year in many of the firms.

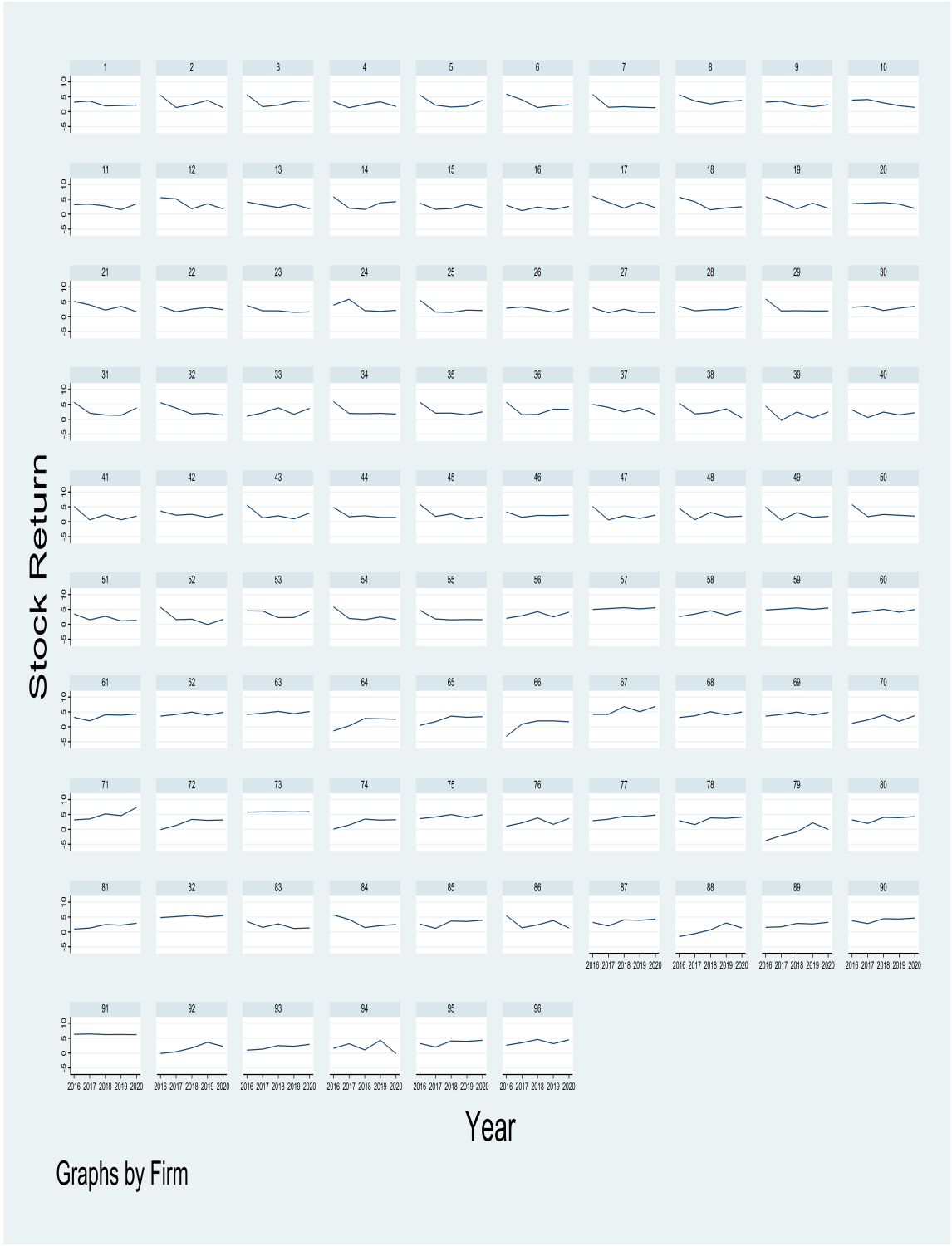

Figure 4.1: Trend Graph for Stock Return

Overlay graph was also generated indicating the pictorial presentation of stock returns and macroeconomic variables for all the firms over the period under investigation. The results are shown in Figure 4.2, 4.3, 4.4, 4.5 and 4.6.

The findings indicated by the overlay graphs showed that the intercept for each of the firms was different but there was no significant difference between the slopes for the various firms. The results implied that there is absence of time effects thus the appropriate model may be fixed effects model.

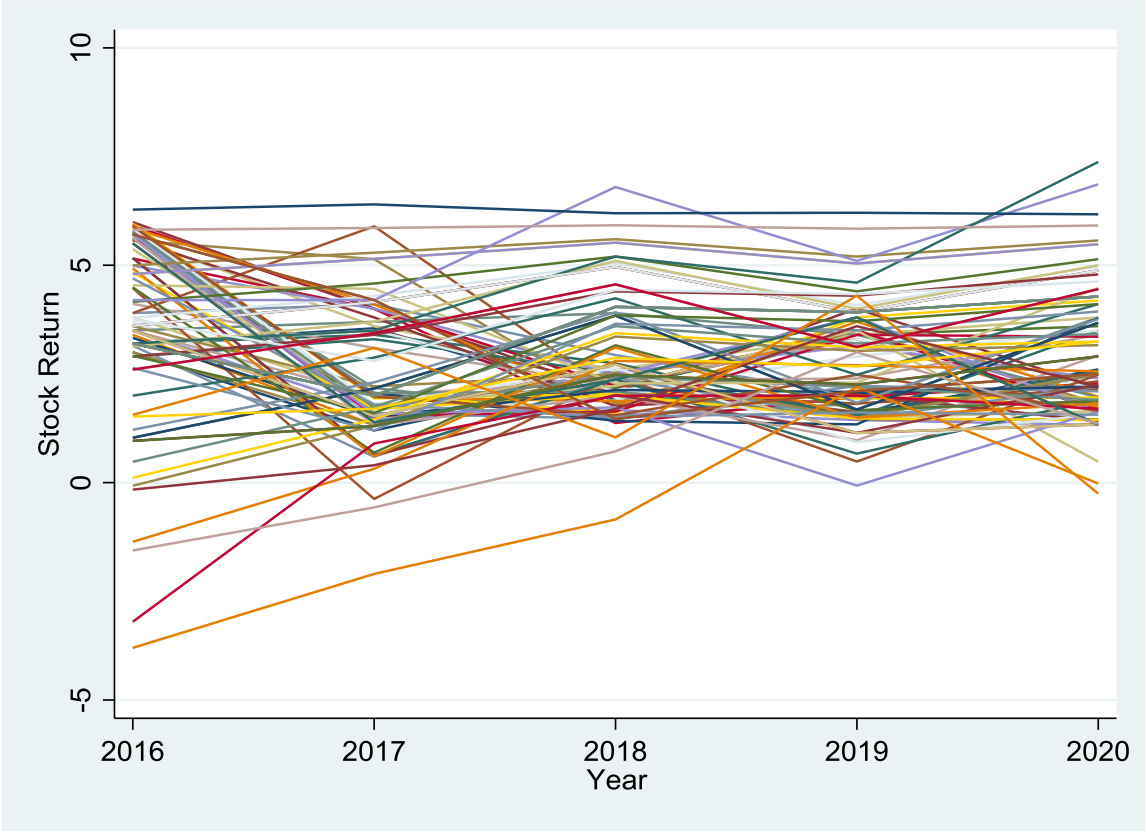

Figure 4.2: Overlay Graph of Stock Return

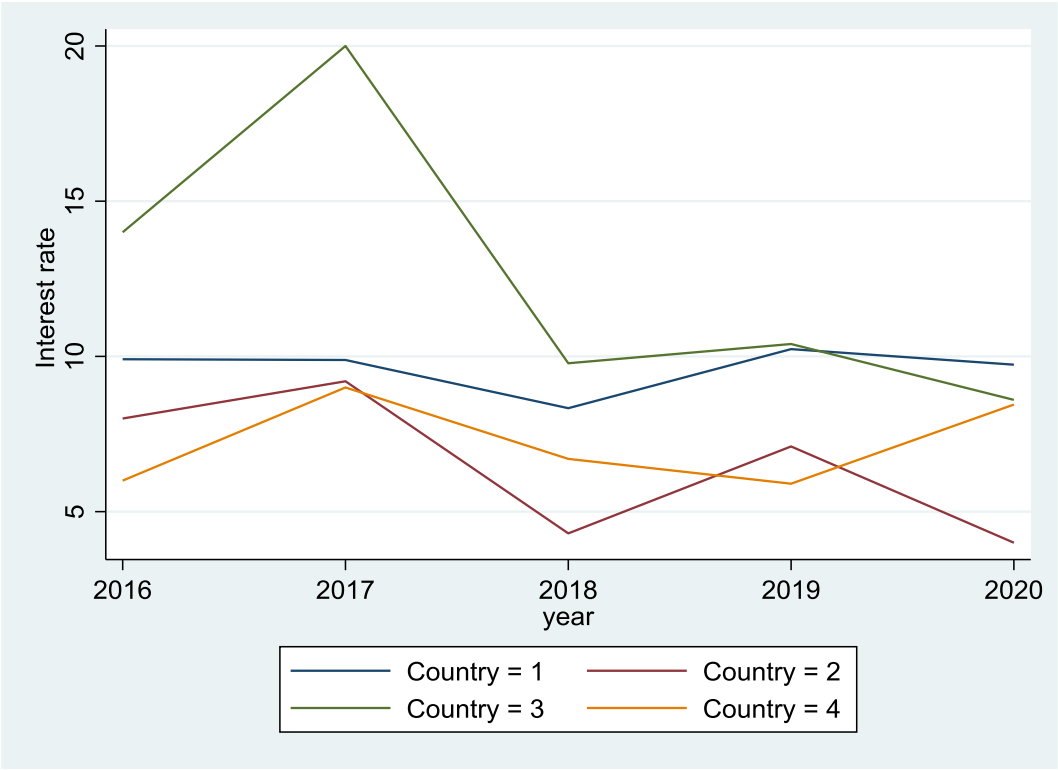

Figure 4.3: Overlay Graph of Interest rate

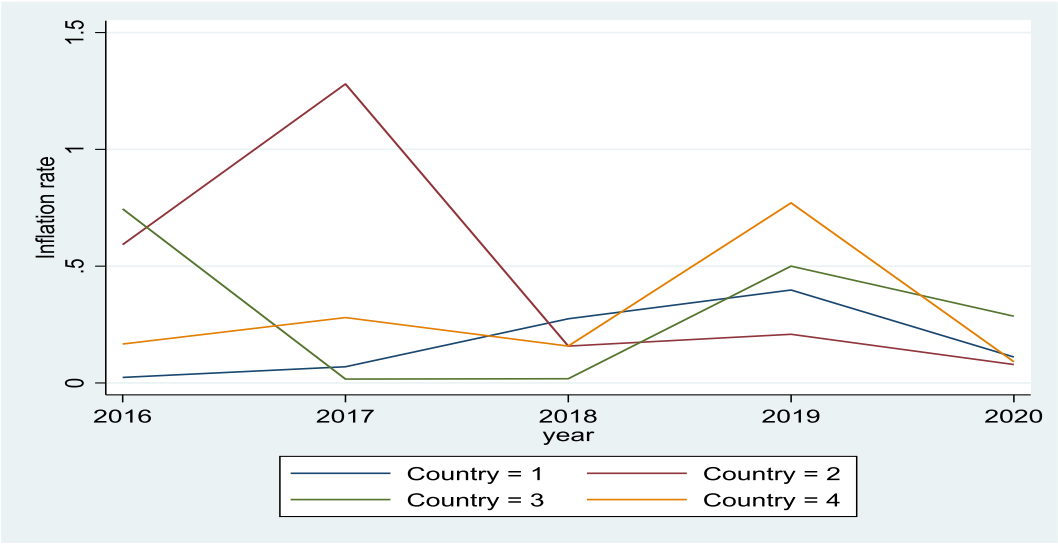

Figure 4.4: Overlay Graph of Inflation Rate

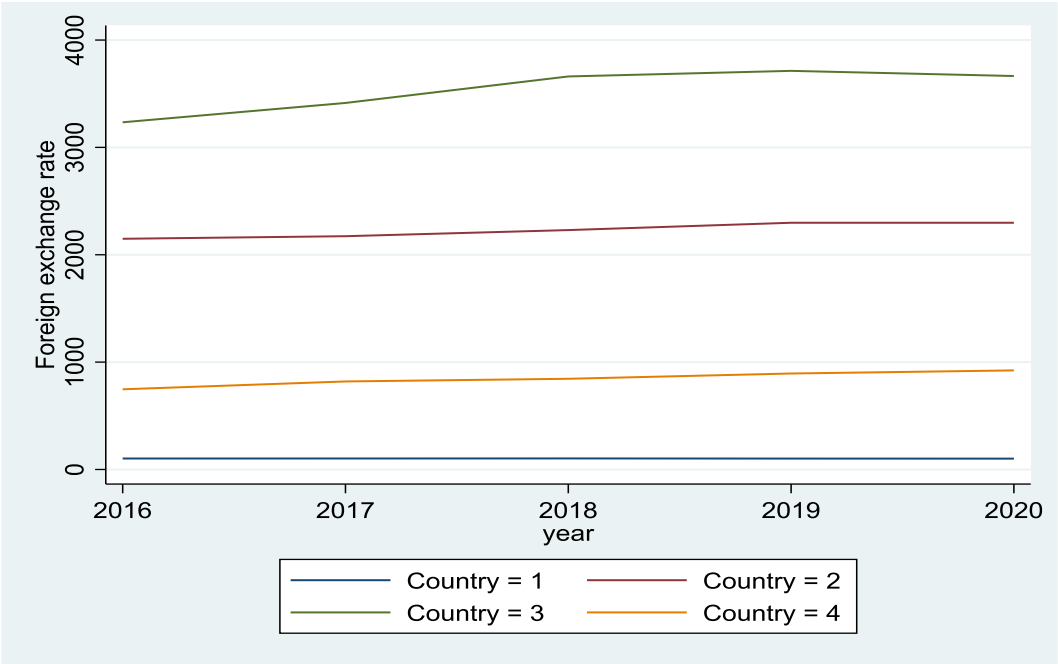

Figure 4.5: Overlay Graph of Foreign Exchange Rate

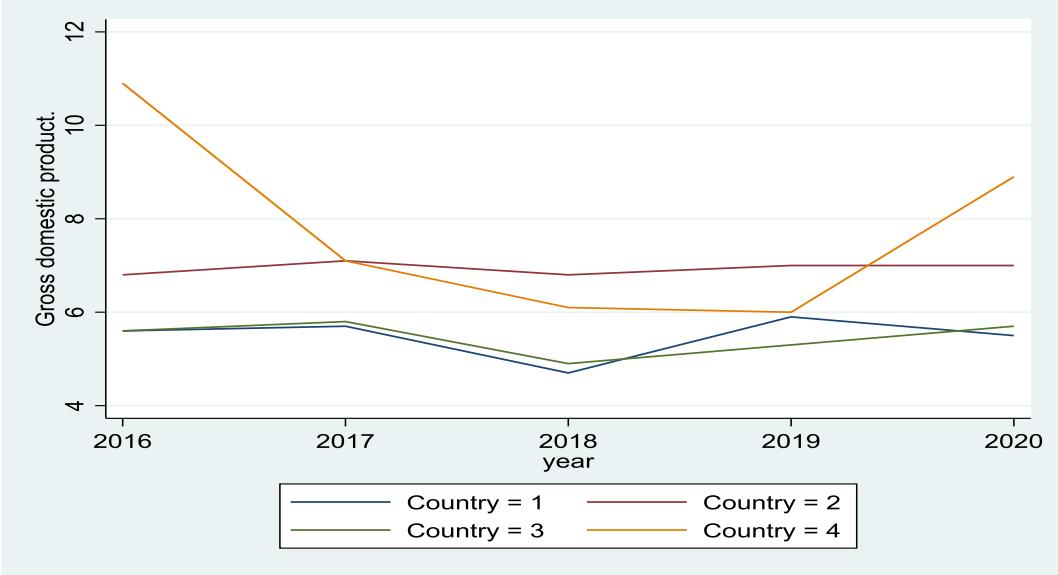

Figure 4.6: Overlay Graph of Gross Domestic Product

4.5.2 Diagnostic Test Results

Diagnostic tests were done in order to determine the appropriate analysis model. The tests were normality, heteroscedasticity, multi-collinearity and autocorrelation. Breusch Pagan LM test and Hausman test was also carried out in order to determine whether to use pooled OLS, fixed or random-effects model. The results are presented in Table 4.3.

The study adopted Jarque-Bera statistic to determine normality of the error terms or residuals. The null hypothesis for this test is that the data is normally distributed while the alternative hypothesis is that the data is not normally distributed. If Jarque-Bera statistic P>0.05 then this implies normality. The results indicated in Table 4.3 shows that the Jarque-Bera statistic was 0.379 with a probability of 0.827 which was is more than 0.05, suggesting that the residuals were normally distributed.

The study used Breusch-Pagan-Godfrey (BPG) test to test heteroscedasticity. The null hypothesis for this test is that there is no heteroscedasticity while the alternative hypothesis is that heteroscedasticity exists. The results indicated in Table 4.3 shows that the p-value for Breusch-Pagan statistic was 0.0786 which was more than 0.05. The null hypothesis that there is no heteroscedasticity is thus accepted. Autocorrelation was tested using Durbin Watson statistic. The Durbin Watson statistic should range between 1.5 and 2.5. The results indicated in Table 4.3 showed that the Durbin Watson statistic was 1.78 implying that there is no autocorrelation problem.

The study adopted the Breusch and Pagan Lagrangian multiplier test to establish whether pooled OLS was appropriate. The findings in Table 4.3 showed that the P value was 0.000 which was less than 0.05 implying that pooled OLS was not appropriate. Hausman test was further carried out to determine whether the random or fixed-effects model was appropriate. The results indicated in Table 4.3 showed that the p-value was 0.0023 which was less than 0.05 suggesting that the fixed effects model was appropriate.

Table 4.3: Diagnostic Test Results

Test	Test adopted	Results	Conclusion
Normality	Histogram normality	Jarque-Bera statistic was 0.379 with a probability of 0.827	The P value of Jarque-Bera statistic was more than 5% suggesting that the error term was normally distributed.
Heteroskedasticity	Breusch-Pagan-Godfrey (BPG) test	The p-value for Breusch-Pagan statistic was 0.0786	The P value is more than 0.05 implying no presence of Heteroskedasticity
Multicollinearity Test	VIF (Tolerance) test	The VIF values for all the variables were below 10 and the tolerance value (1/VIF) was below 1.	No multicollinearity in the multiple linear regression model because all the variables met the Tolerance threshold of 0.1<VIF< 10.
Autocorrelation Test	Durbin –Watson statistic	The Durbin Watson statistic was 1.78.	There is no first order linear auto-correlation in the multiple linear regression data because the value of Durbin Watson statistic is within the threshold 1.5<d<2.5
Use of pooled or random effects model	Breusch Pagan LM test	The P value was 0.000	The P value was less than 0.05, thus pooled effects model was not appropriate.
Random or fixed effects	Hausman test	The p-value was 0.0023	The p-value was less than 0.05, thus fixed effects regression model was appropriate.

Multi-collinearity was tested using variance inflation factor. A VIF below 1 indicates no correlation between predictors; a value of between 1 and 10 indicates a moderate correlation and a value above 10 indicates that predictor variables are highly correlated (Gujarati, 1995). The results are presented in Table 4.4

Table 4.4: Variance Inflation Factors

INDICATOR	**VIF**	**1/VIF**
Foreign Exchange Rate	1.8489	0.54086
Gross Domestic Product	1.7428	0.57376
Inflation Rate	1.1877	0.84192
Interest Rate	1.4890	0.67157
Firm Size	1.1565	0.86464
Leverage	1.1348	0.88118
Foreign Portfolio Investment	1.2317	0.81189
Mean VIF	**1.3987**	

The results presented in Table 4.4 shows that the VIF values for all the variables were below 10, implying that there was no multi-collinearity problem.

4.5.3 Macroeconomic Factors and stock return of firms listed at the Securities Exchanges in East Africa.

The first objective was to determine the effect of macroeconomic factors on stock return of firms listed at the Securities Exchanges in East Africa. The following hypothesis was thus tested using multiple linear regression models.

H_{01}: Macroeconomic factors have no significant effect on stock return of firms listed at the Securities Exchanges in East Africa.

The null hypothesis was tested using the following multiple linear regression model.

Model:

$$SR_{it} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 LEV_{jt} + \beta_6 SIZE_{it} + \beta_7 PE_{jt} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.1$$

Where:

SR is Stock Return, t = 1….,5 years, j = 1….4 countries, i = 1, ………...,96 firms, β_0 is regression constant, β_1 …. B_7 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, LEV is leverage and SIZE is the Size of company, PE is political environment while ε is the Error term

The results are presented in Table 4.5

Table 4.5: Fixed Effect Model Regression Results

Indicator	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	5.542677	1.725016	3.213117	0.0014
Foreign Exchange Rate	-0.003201	0.000652	-4.907699	0.0000
Gross Domestic Product	0.276239	0.058381	4.731633	0.0000
Inflation Rate	-1.092566	0.147547	-7.404871	0.0000
Interest Rate	-0.136044	0.026558	-5.122599	0.0000
Firm Size	0.501426	0.225339	2.225208	0.0267
Leverage	-0.0822270	0.033680	-2.441383	0.0000
Political Environment	-0.324856	0.048296	-6.726381	0.0000
R^2	0.674			
Adjusted R^2	0.640			
Prob (F statistic)	0.000			

Dependent variable is Stock Returns.

The regression results in Table 4.5 indicate that foreign exchange rate negatively and significantly affects stock returns ($\beta = -0.003201$, $p < 0.5$). The results were in agreement with the findings with some prior studies (Pilinkus & Boguslauskas, 2009; Subburayan & Srinivasan, 2014; Ibrahim & Musah, 2014) and contradict the findings by Barasa, (2014) and Kirui, (2014) which found an insignificant relationship. The findings imply that when the foreign exchange rate of a country increases, it negatively affects stock performance and thus the returns of stocks decrease. When a currency depreciates fast, a country may not be attractive to foreign investors who play a major role in the stock market. Capital flight to other attractive markets may also be experienced thus negatively affecting performance of the stock market and result in reduction of wealth in a nation. Adverse changes in exchange rates negatively impacts firm competitiveness leading in changes in firms' equity and profits, which in turn result to price adjustment in the stock market (Ibrahim & Musah, 2014).

The results also showed that gross domestic product positively and significantly affects stock returns ($\beta = 0.27$, $p < 0.5$). The results were consistent with the recommendation of other studies (Tripathy, 2011; Issakhu et al., 2013, Ho, 2017; lee & Brahmasrene, 2018). However, the findings contradict the results by Owiredu et al. (2016) which found insignificant relationship while Worlu and Omodero (2017) found a negative relationship. The findings imply that when gross domestic product increases, stock returns increase. During periods of high economic growth, there is confidence within the economy and this would stimulate demand for products and services which in turn lead to better returns to firms. On the contrary, in periods of economic downturn accompanied by high economic volatilities, investors' confidence on the prospect of the economy may be dampened and as a consequence, associated with a lower expected return on investments (Khan, 2019). The results also show that inflation rate negatively and significantly affects stock returns ($\beta = -1.09$, $p < 0.5$). The findings support the findings of other studies (Humpe & Macmilllan, 2009; Issakhu et al., 2013, Ho, 2017; lee & Brahmasrene, 2018). The findings however contradict the results by Ilahi, et al (2015) which found no significant effect of inflation and performance. The findings imply that when inflation increases in a country it results in decrease in stock returns.

Since inflation reduces consumers' purchasing power, they often don't have as much money to buy as many consumers discretionary items as usual. Thus, rising prices reduce the demand for the goods and services sold by firms, which decreases corporate revenue thus lowering net income which negatively impacts stock prices. When consumer's purchasing power is low, the prices of stocks also fall due to low demand. A high inflation rate raises the cost of living and results to a shift of resources from investments to consumption (Khan, 2019).

The results also showed that interest rate negatively and significantly affects stock performance ($\beta = -0.13$, $p < 0.5$).The results imply that when the rate of interest increases in a country, stock returns decrease. The findings were consistent with the results by (Humpe & Macmilllan, 2009; Tripathy, 2011, Ajaz et al., 2017, Chang and Rajput, 2018). The results also contradict the findings by Mlambo et al. (2013) and Camilleri et al. (2019) which found positive relationship. Growth stocks are heavily reliant on capital for future business expansion. During periods of low interest rates, it facilitates growth of stocks as capital can be obtained cheaply by the firms. Therefore, as interest rates rise, stocks become less favourable because their long-term discounted cash flow is reduced and their ability to secure low-cost debt financing is more difficult. The increase in interest rate thus causes investors to make a change in the structure of their investment generally from capital market to fixed income securities. High interest rates also slow down an economy resulting to poor returns (Egbune & Okerekeoti, 2018).

The data was also analysed using different models in order to check the robustness of our findings. The results presented in Table 4.6 shows that the results obtained from the different models are similar to the results of the fixed effects model adopted. The results from all the models indicate that the relationship between foreign exchange rate, inflation rate, interest rate, Leverage and stock returns was negative. The results of all the models also indicate that the relationship between gross domestic product, firm size and stock returns was positive. Therefore, the hypothesis that macroeconomic factors have no significant effect on stock return of firms listed at the Securities Exchanges in East Africa is rejected.

Table 4.6: Robustness or Additional Regression Analysis Results

Variables	Pooled OLS Model	Generalized Linear Model	Random effect Model	Fixed Effect Model	Robust Least Squares Model
C	0.376072	0.376072	0.398686	5.542677	-0.187141
(t-statistic)	(0.785801)		(0.858722)	(3.213117)	
(Z-statistic)		(0.785801)			(-.377248)
Foreign Exchange Rate	-0.000644*	-0.000644*	-0.000643*	-0.003201*	-0.000710*
(t-statistic)	(-7.625747)		(-7.805837)	(-4.907699)	
(Z-statistic)		(-7.625747)			(-8.112175)
Gross Domestic Product	0.332039*	0.332039*	0.329094*	0.276239*	0.379886*
(t-statistic)	(7.324153)		(7.54279)	(4.731633)	
(Z-statistic)		(7.324153)			(8.084234)
Inflation Rate	-1.021242*	-1.021242*	-1.019654*	-1.092566*	-0.979309*
(t-statistic)	(-7.523654)		(-7.851160)	(-7.404871)	
(Z-statistic)		(-7.523654)			(-6.960439)
Interest Rate	-0.035550*	-0.035550*	-0.036328*	-0.136044*	-0.030338
(t-statistic)	(-2.238052)		(-2.372177)	(-5.122599)	
(Z-statistic)		(-2.238052)			(-1.842613)
Firm Size	0.665785*	0.665785*	0.664672*	0.501426*	0.713591*
(t-statistic)	((1.24354)		(1.27322)	(2.225208)	
(Z-statistic)		(1.24354)			(1.28585)
Leverage	-0.860946*	-0.860946	-0.858202*	-0.822270*	-0.835490
(t-statistic)	(-3.68178)		(3.79134)	(-2.44138)	
(Z-statistic)		(-3.68178)			(-3.44699)
Political Environment	-0.3221*	-0.3221*	-0.3223*	-0.324856*	-0.2977
(t-statistic)	(-7.0954)		(-7.2481)	(-6.726381)	
(Z-statistic)		(-7.0954)			(-6.2481)
F.Stat.	62.92589	-	36.628	25.99637	-
Prob(F-Stat)	0.000	-	0.0000	0.00000	-
Prob(LR-Stat)	-	0.00000	-	-	-
Prob (Rn-squared. Stat)	-	-	-	-	0.000000
R-Squared	0.627098	-	0.622893	0.674152	0.639449
Adjusted R-Squared	0.624909	-	0.620646	0.640526	0.564217
Durbin-Watson Statistic	2.344761	-	2.338816	2.385999	-

* = Significant at the 0.05 level.

Dependent variable is Stock Returns.

Independent variables: Foreign exchange rate, Gross domestic product, interest rate and Inflation rate

Control Variables: Leverage and Firm Size

4.5.4 Macroeconomic factors, Foreign Portfolio Investment and Stock Return

The second objective was to determine the intervening effect of foreign investment portfolio on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa. The following hypothesis was thus tested using multiple linear regression model.

H_{02}: Foreign portfolio investment has no significant intervening effect on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa.

The study adopted a four step process proposed by Barron and Kenny (1986) evaluate the intervening effect of FPI on the relationship between macroeconomic variables and stock return of companies listed at the Securities Exchanges in East Africa.

The first step was to assess the relationship between the dependent and independent variables using the following model:

Model:

$$SR_{it} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4.2$$

Where:

SR is Stock Return, t = 1….,5 years, j = 1….4 countries, i = 1, ………..,96 firms, β_0 is regression constant, β_1 …. B_6 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, LEV is leverage and SIZE is the Size of company while ε is the Error term

The results are presented in Table 4.7

Table 4.7: Macroeconomic Factors and Stock Return Regression Results

Indicator	Coefficient	Std. Error	t-Statistic	Prob.
C	5.542677	1.725016	3.213117	0.0014
Foreign Exchange Rate	-0.003201	0.000652	-4.907699	0.0000
Gross Domestic Product	0.276239	0.058381	4.731633	0.0000
Inflation Rate	-1.092566	0.147547	-7.404871	0.0000
Interest Rate	-0.136044	0.026558	-5.122599	0.0000
Firm Size	0.501426	0.225339	2.225208	0.0267
Leverage	-0.0822270	0.033680	-2.441383	0.0000
R^2	0.674			
Adjusted R^2	0.640			
Prob. (F statistic)	0.000			

Dependent variable is Stock Returns.

The regression results are presented in in Table 4.7 indicated that the Prob. F statistic was (.000 < 0.05) and the p values for all the independent variables were less than 0.05. The findings implied that the independent variables significantly affected the dependent variable. The findings are in agreement with the previous studies by (Pilinkus & Boguslauskas, 2009; Subburayan & Srinivasan, 2014; Ibrahim & Musah, 2014; Humpe & Macmilllan, 2009; Tripathy, 2011; Issakhu et al., 2013, Ho, 2017; lee & Brahmasrene, 2018)

The second step was to assess the relationship between the intervening variable and the independent variables using the following model:

Model:

$$FPI_{it} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \varepsilon \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots . \ldots 4.3$$

Where:

FPI is Foreign Portfolio Investment, t = 1….,5 years, *j* = 1….4 countries, i = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_6 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, LEV is leverage and SIZE is the Size of company while ε is the Error term

The results are presented in Table 4.8

Table 4.8: Macroeconomic Factors and Foreign Portfolio Regression Results

Indicator	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.698654	0.019891	35.12373	0.0000
Foreign Exchange Rate	0.003541	0.000351	10.08834	0.0000
Gross Domestic Product	0.013256	0.001884	7.035342	0.0000
Inflation Rate	-0.059922	0.005642	-10.62138	0.0000
Interest Rate	0.002070	0.000660	3.135226	0.0018
Leverage	0.011657	0.002225	5.238425	0.0000
Size	0.001108	0.000972	1.140118	0.2548
R^2	0.083			
Adjusted R^2	0.082			
Prob. (F statistic)	0.000			

Dependent variable is foreign portfolio investment.

The regression results in Table 4.8 indicate that foreign exchange rate positively and significantly affects foreign portfolio investment (β = 0.003541, p < 0.5). The findings imply that when the foreign exchange rate of a country increases, it positively affects foreign portfolio investment. The results also showed that gross domestic product positively and significantly affects foreign portfolio investments (β = 0.013256, p < 0.5). The findings imply that when gross domestic product increase, foreign portfolio investment increase. The results also show that inflation rate negatively and significantly affects foreign portfolio investment (β = -0.059922, p < 0.5). This implies that when the inflation rate increases, foreign portfolio decreases.

The results show that interest rate positively and significantly affects foreign portfolio investment (β= 0.002070, p < 0.5). The results imply that when the rate of interest increases in a country, foreign portfolio investment increase. The findings indicated that the F statistic was (.000 < 0.05) and the p values for all the macroeconomic variables were less than 0.05 implying that the macro-economic factors predict foreign portfolio investment. The findings were consistent with other studies by Nazir, Nawaz, and Gilani (2010); Nyamakanga (2013); Sekhri and Haque (2015) and Oyerinde, (2019)

Step three was to assess the relationship between the intervening variable and the dependent variable using the following model:

$$SR_{it} = \beta_0 + \beta_1 FPI_{jt} + \varepsilon_{it} \ldots\ldots 4.4$$

Where

SR_{it} = is the Stock return, t = 1….5 years, *j* = 1….4 countries, *i* = 1…… 96 firms, FPI is foreign portfolio investment, β_1 is the coefficient and β_0 is the constant

The results are presented in Table 4.9

Table 4.9: Foreign Portfolio Investment and Stock Return Regression Results

Variable	Indicator	Coefficient	Std. Error	t-Statistic	Prob.
Constant	C	-0.919351	1.147851	-0.800932	0.4237
Intervening	Foreign portfolio investment	5.646287	1.623346	3.478178	0.0006
	R^2	0.061			
	Adjusted R^2	0.051			
	Prob. (F statistic)	0.000			

Dependent variable is Stock Returns.

The results in Table 4.9 indicates that foreign portfolio investment positively affect stock returns ($\beta = 5.646287$, $p < 0.5$). The results imply that an increase in foreign portfolio investment results to increase in stock returns. The results also suggest that foreign portfolio investment predicts stock performance. The results are consistent (Tripathi et al., 2015; Waqas et al., 2015; Malik & Amjad, 2013; Sekhri & Haque, 2015)

The fourth step was to assess the relationship between dependent variable, intervening variable and independent variable using the following model:

$$\mathrm{FPI_{jt}} = \beta_0 + \beta_1 FER_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 FPI_{\mathrm{jt}} + \varepsilon_{\mathrm{it}} \ldots\ldots\ldots\ldots\ldots 4.5$$

Where:

FPI is foreign portfolio investment, t = 1….5 years, *j* = 1….4 countries, *i* = 1…. 96 firms, β_0 is regression constant, β_1 …. B_5 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, FPI is foreign portfolio investment while ε is the Error term

The results are presented in Table 4.10

Table 4.10: Macroeconomic Factors, Foreign Portfolio Investment and Stock Return Regression Results

Indicator	Coefficient	Std. Error	t-Statistic	Prob.
C	6.179774	1.934826	3.193969	0.0015
Foreign Exchange Rate	-0.003206	0.000653	-4.911881	0.0000
Gross Domestic Product	0.267555	0.059620	4.487652	0.0000
Inflation Rate	-1.141176	0.162006	-7.044045	0.0000
Interest Rate	-0.139002	0.026882	-5.170770	0.0000
Foreign portfolio investment	0.815983	1.119625	-0.728800	0.0006
Leverage	-0.823461	0.033741	-24.40535	0.0000
Size	0.507071	0.225612	2.247539	0.0252
R^2	0.690			
Adjusted R^2	0.660			
Prob. (F statistic)	0.000			

Dependent variable is Stock Returns.

The results in Table 4.10 indicates that foreign exchange rate negatively and significantly affects stock returns (β = -0.003206, $p < 0.5$) while gross domestic product positively and significantly affects stock returns (β = 0.267555, $p < 0.5$). The results also show that inflation rate negatively and significantly affects stock returns (β = -1.141176, $p < 0.5$) while interest rate negatively and significantly affects stock performance (β = -0.139002, $p < 0.5$). The findings also indicate that foreign portfolio investment positively and significantly affect stock returns (β = 0.815983, $p < 0.5$). The results imply that macro-economic factors predict stock performance when foreign portfolio investment is in the model.

The findings of the first step indicated that all the macro-economic factors predict stock returns as all their beta coefficients were statistically significant. Similarly, the findings of the second step indicate that macro-economic factors predict foreign portfolio investment while the results of the third step indicated that foreign portfolio investment predicts stock performance. Finally, the results of the fourth step indicated that macro-economic factors and portfolio investments predicts stock performance when both are analysed in the same model. Therefore, the results for all the steps suggest that foreign portfolio investment intervenes the relationship between macroeconomic variable and stock returns.

The hypothesis that foreign portfolio investment has no significant intervening effect on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa is thus rejected. The findings are in agreement with previous studies by (Tripathi, Seth & Bhandari, 2015; Waqas et al., 2015; Malik & Amjad, 2013; Sekhri & Haque, 2015; Ho, 2017; lee & Brahmasrene, 2018)

4.5.5 Macroeconomic factors, Market Capitalisation and Stock Return

The third objective was to assess the moderating effect of market capitalisation on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa. A three step process proposed by Barron and Kenny (1986) was adopted to test the null hypothesis that market capitalisation has no significant moderating effect on the relationship between macroeconomic factors and stock return of companies listed at the securities exchanges in East Africa.

In the first step, the relationship between market capitalisation and stock return of companies listed at the Securities Exchanges in East Africa was evaluated using the following regression model:

$$SR_{it} = \beta_0 + \beta_1 MC_{ijt} + \varepsilon \quad \text{.....4.6}$$

Where:

SR was stock return, β_0 was the regression constant, j = 1….4 countries, i was 1…… 96 firms, t was 1, …., 5 years, β_1 was coefficients estimated, MC is market capitalisation and ε was the error term.

The results are presented in Table 4.11

Table 4.11: Market Capitalisation and Stock Performance Regression Results

	Coefficient	Std. Error	t-Statistic	Prob.
C	1.517197	0.088843	17.07725	0.0000
Market Capitalisation	1.031187	0.043915	23.48146	0.0000
R^2	0.235642			
Adjusted R^2	0.234671			
Prob (F statistic)	0.000			

Dependent variable is Return on Assets.

The results presented in Table 4.11 indicate that the F statistic was (.000 < 0.05) and the p values for the moderating variable was less than 0.05. The results implied that the moderating variable significantly affected the dependent variable. The findings are in consistent with previous studies by Tripathi, Seth and Bhandari (2015); Waqas et al., (2015); Malik and Amjad (2013) and Sekhri and Haque (2015).

In the second step, the relationship between the independent variable, moderating variable and the dependent variable were assessed using the following multiple regression model 4.7:

$$SR_{it} = \beta_0 + \beta_1 \text{FER}_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 MC_{ijt} + \varepsilon \text{ ……....4.7}$$

Where:

SR is Stock Return, t = 1…., 5 years, j = 1, …...,4 firms, i = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_5 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, MC is market capitalisation while ε is the Error term

The results are presented in Table 4.12

Table 4.12: Macroeconomic Factors, Market Capitalisation and Stock Return Regression Results

Indicator	Coefficient	Std. Error	t-Statistic	Prob.
C	2.537033	0.355813	7.130244	0.0000
Foreign Exchange Rate	-0.003454	0.004620	-0.747677	0.0045
Gross Domestic Product	0.057359	0.058916	0.973573	0.0330
Inflation Rate	-0.574724	0.211343	-2.719394	0.0068
Interest Rate	-0.058144	0.022878	-2.541530	0.0114
Market Capitalisation	0.987692	0.046100	21.42493	0.0000
R^2	0.550			
Adjusted R^2	0.546			
Prob (F statistic)	0.000			

Dependent variable is stock returns.

The results presented in Table 4.12 indicate that the F statistic was 0.000 which was less 0.05 and the p values for all the independent and moderating variables were less than 0.05. The findings suggested that the independent variable and the moderating variable significantly affected the dependent variable. The results are in agreement with the results by Tripathi, Seth and Bhandari (2015) Waqas et al., (2015) Malik and Amjad (2013) Sekhri and Haque (2015).

In the third step, the relationship between the macroeconomic variables (independent variable), market capitalisation (moderating variable), interaction of the independent variable with the moderating variable (macroeconomic factors* market capitalisation) and the stock returns (dependent variable) were analysed using the following multiple regression model 4.8:

$$SR_{it} = \beta_0 + \beta_1 \mathrm{FER}_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 MC_{jt} + \beta_6 FER_{jt} * MC_{ijt} + \beta_6 GDP_{jt} * MC_{ijt} + \beta_6 INR_{jt} * MC_{ijt} + \beta_6 IR_{jt} * MC_{ijt} + \varepsilon \quad \ldots\ldots 4.8$$

Where:

SR is Stock Return, t = 1…., 5 years, *j* = 1….4 countries, *i* = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_6 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, MC is market capitalisation, M*MC is the interaction of macroeconomic factors (geometric mean of macroeconomic factors) and market capitalisation while ε is the Error term. The results are presented in Table 4.13

Table 4.13: Interaction of Macroeconomic Factors with Market Capitalisation and Stock Return Regression Results

Indicator	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.63607	0.69855	-3.773631	0.0002
Foreign Exchange Rate	-0.09618	0.01260	-7.63353	0.0000
Gross Domestic Product	0.28917	0.06870	4.209124	0.0000
Inflation Rate	-1.03995	0.20490	-5.075527	0.0000
Interest Rate	-0.03079	0.23828	1.292209	0.0196
Market Capitalisation	0.84704	0.04617	18.34728	0.0000
Foreign Exchange Rate* Market Capitalisation	-0.121274	0.03654	-3.31893	0.0000
Gross Domestic Product* Market Capitalisation	0.557679	0.18549	3.00652	0.0000
Inflation Rate* Market Capitalisation	-2.079900	0.49175	-4.22961	0.0000
Interest Rate* Market Capitalisation	-0.017106	0.19062	0.74694	0.0012
R^2	0.615328			
Adjusted R^2	0.515186			
Prob(F statistic)	0.00000			

Dependent variable is stock returns.

The results presented in Table 4.13 indicate that the F statistic was (.000 < 0.05) and the p values for all the independent, moderating and the interaction of the independent and moderating variables were less than 0.05. The results suggested that the macroeconomic factors (independent variable) predicted the stock returns (independent variable) even after the introduction of the interaction between the independent variable and the moderating variable. The results were in agreement with the findings by Tripathi, Seth and Bhandari (2015) Waqas et al., (2015) Malik and Amjad (2013) Sekhri and Haque (2015).

The results of the first step indicated that the moderating variable (market capitalisation) significantly affected stock performance of the listed firms. Similarly, the findings of the second step indicated that macroeconomic factors and market capitalisation significantly affected the performance of the listed firms when both were assessed in the same model. The results of the third step also indicated that macroeconomic factors, market capitalisation and the interaction of the two variables significantly affected the stock returns of the listed firms when assessed in the same model. The results thus implied that market capitalisation moderate the relationship between macroeconomic factors and stock returns. The findings results were in agreement with the findings by Tripathi, Seth and Bhandari (2015) Waqas et al., (2015) Malik and Amjad (2013) Sekhri and Haque (2015). The hypothesis that Market capitalisation has no significant moderating effect on the relationship between macroeconomic factors stock return of companies listed at the Securities Exchanges in East Africa was thus rejected.

4.4.6 Macroeconomic Factors, Foreign Portfolio Investment, Market Capitalisation and Stock Returns

The fourth objective was to assess the joint effect of Macroeconomic Factors, Foreign Portfolio Investment, Market Capitalisation and Stock Returns of the firms listed in Securities Exchange in East Africa. The null hypothesis that Macroeconomic factors, foreign portfolio investment, market capitalization have no significant effect on stock return of firms listed at the East Africa Securities Exchanges was tested using the following multiple linear regression model:

$$SR_{it} = \beta_0 + \beta_1 \mathrm{FER}_{jt} + \beta_2 GDP_{jt} + \beta_3 INR_{jt} + \beta_4 IR_{jt} + \beta_5 FPI_{Jt} + \beta_6 MC_{iJt} + \beta_7 LEV_{it} + \beta_8 SIZE_{it} + \varepsilon \quad \text{.....4.9}$$

Where:

SR is Stock Return, t = 1…., 5 years, *j* = 1….4 countries, i = 1, ……...,96 firms, β_0 is regression constant, β_1 …. B_8 are the coefficients for the various independent variables, FER is Foreign Exchange rate, GDP is Gross Domestic Product, INR is Inflation Rate, IR is Interest Rate, FPI is foreign portfolio investment, MC is market capitalisation, LEV is leverage and SIZE is the Size of company while ε is the Error term.

The results are presented in Table 4.14.

Table 4.14: Macroeconomic Factors, Foreign Portfolio Investment, Market Capitalisation and Stock Returns

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.528243	0.825962	0.639549	0.5228
Foreign Exchange Rate	-0.005342	0.008461	-0.631446	0.0000
Gross Domestic Product	0.273777	0.043344	6.316365	0.0000
Inflation Rate	-0.907105	0.137999	-6.573273	0.0000
Interest Rate	-0.020450	0.014634	-1.397455	0.0162
Foreign portfolio investment	0.267047	1.005969	0.265462	0.0079
Market Capitalisation	0.337897	0.033070	10.21771	0.0000
Size	0.542546	0.051646	10.50506	0.0000
Leverage	-0.722984	0.025068	-28.84120	0.0000
R^2	0.758825			
Adjusted R^2	0.736427			
Prob. (F statistic)	0.000000			

Dependent variable is Return on Assets.

The results in Table 4.14 indicate that foreign exchange rate negatively and significantly affects stock returns (β = -0.005342, $p < 0.5$). The findings imply that when the foreign exchange rate of a country increases, it negatively affects stock performance and thus the returns of stocks decrease. Adverse changes in exchange rates negatively impacts firm competitiveness leading in changes in firms' equity and profits, which in turn result to price adjustment in the stock market. The results were in agreement with the findings by Pilinkus and Boguslauskas (2009); Subburayan and Srinivasan (2014); Ibrahim and Musah (2014).

The results also showed that gross domestic product positively and significantly affects stock returns (β = 0.2737, $p < 0.5$). The findings imply that when gross domestic product increases, stock returns increase. During periods of high economic growth, there is confidence within the economy and this would stimulate demand for products and services which in turn lead to better returns to firms. The results were consistent with the recommendation of other studies (Humpe & Macmilllan, 2009; Tripathy, 2011; Issakhu et al., 2013, Ho, 2017; lee & Brahmasrene, 2018). The results also show that inflation rate negatively and significantly affects stock returns (β = -0.907, $p < 0.5$). The findings suggest that when inflation increases in a country it results in decrease in stock returns. A high inflation rate raises the cost of living and results to a shift of resources from investments to consumption. The findings support the findings of other studies (Humpe & Macmilllan, 2009; Tripathy, 2011; Issakhu et al., 2013, Ho, 2017; lee & Brahmasrene, 2018).

The findings also show that interest rate negatively and significantly affects stock performance (β = -0.0204, $p < 0.5$). The results imply that when the rate of interest increases in a country, stock returns decrease. The increase in interest rate causes investors to make a change in the structure of their investment generally from capital market to fixed income securities. High interest rates also slow down an economy resulting to poor returns. The findings were consistent with the results by (Asprem, 1989; Mukherjee, 1995; Kandir, 2008; Humpe & Macmilllan, 2009; Tripathy, 2011, Ajaz et al., 2017, Chang and Rajput, 2018).

The results also indicated that foreign portfolio investment positively and significantly affect stock returns ($\beta = 0.267047$, $p < 0.5$). The results suggest that an increase in foreign portfolio investment in a country results to an increase in stock returns. Market capitalisation positively and significantly affect stock performance ($\beta = 0.33789$, p-value < 0.01). The findings suggest that an increase in market capitalisation results in an increase in stock returns. The relationship between stock return and size of the firm was positive and significant ($\beta = 0.5425$, p-value < 0.01). The findings suggest that when the size of a firm increases the stock returns increase.

The relationship between stock returns and leverage was negative and significant ($r = -0.7229$, p-value < 0.01). The findings imply that increasing leverage of a firm results to decrease in stock returns. The results were in line with other studies by Nazir, Nawaz, and Gilani (2010); Nyamakanga (2013) Oyerinde, (2019); Umar, Ismail & Solung (2015); Arikpo and Ogar (2018) The null hypothesis that macroeconomic factors, foreign portfolio investment, market capitalization have no significant effect on stock return of firms listed at the East Africa Securities Exchanges was thus rejected.

4.5 Summary of the of Hypotheses Tested

The summary of the four hypotheses tested, the results and decisions are presented in Table 4.15.

Table 4.15: Summary of Tests of Hypotheses

Research Objective	Research Hypothesis	Results	Decision
To determine the effect of macroeconomic factors on stock return of firms listed at the Securities Exchanges in East Africa.	Macroeconomic factors have no significant effect on stock return of firms listed at the Securities Exchanges in East Africa	Macroeconomic factors had a statistically significant effect on stock return of firms listed at the Securities Exchanges in East Africa	The null hypothesis was rejected
To evaluate the intervening effect of foreign portfolio investment on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa.	Foreign portfolio investment has no significant intervening effect on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa.	Foreign portfolio investment had a statistically significant intervening effect on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa.	The null hypothesis was rejected
To assess the moderating effect of market capitalisation on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa.	Market capitalisation has no significant moderating effect on the relationship between macroeconomic factors stock return of companies listed at the Securities Exchanges in East Africa.	Market capitalisation had a statistically significant moderating effect on the relationship between macroeconomic factors stock return of companies listed at the Securities Exchanges in East Africa.	The null hypothesis was rejected
To assess the joint effect of macroeconomic factors, foreign portfolio investment, market capitalization on stock return of firms listed at the Securities Exchanges in East Africa.	Macroeconomic factors, foreign portfolio investment, market capitalization have no significant effect on stock return of firms listed at the Securities Exchanges in East Africa	Macroeconomic factors, foreign portfolio investment, market capitalization had a statistically significant effect on stock return of firms listed at the Securities Exchanges in East Africa	The null hypothesis was rejected

CHAPTER FIVE
SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

The study investigated the relationship between macroeconomic factors, foreign portfolio investment, market capitalization and stock return of firms listed at the Securities Exchanges in East Africa. The chapter provides a summary of the findings of the study, interpretations, discussion on theory and practice and conclusions based on the findings of the study and recommendations. It also presents the limitations of the study and outlines proposed areas of future research.

5.2 Summary of the Findings

This study investigated the relationship between macroeconomic factors, foreign portfolio investment, market capitalization and stock return of firms listed at the Securities Exchanges in East Africa during the period 2016 - 2020. The data was collected from 96 firms listed at the Securities Exchanges in East Africa as at 31st December 2020. Specifically, the first objective was to determine the effect of macroeconomic factors on stock return of firms listed at the Securities Exchanges in East Africa. The second objective was to evaluate the intervening effect of foreign portfolio investment on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa. The third objective was to determine the moderating effect of market capitalization on the relationship between macroeconomic factors and stock return. The fourth objective was to investigate the joint effect of macroeconomic factors, foreign portfolio investment, market capitalization on stock return of firms listed at the Securities Exchanges in East Africa. The summary of the findings is presented in this section.

5.2.1 Macroeconomic Factors and Stock Returns

The study sought to determine the effect of macroeconomic factors on stock return of firms listed at the Securities Exchanges in East Africa. The macro-economic variables were foreign exchange rate, gross domestic product, interest rate and inflation rate. Multiple regression analysis was done to evaluate the relationship between the variables. The results showed that foreign exchange rate negatively and significantly affects stock returns. The findings suggest that when the foreign exchange rate of a country increases, it negatively affects stock performance and thus the returns of stocks decrease.

The results also showed that gross domestic product positively and significantly affects stock returns. The findings imply that when gross domestic product of a country increases, stock returns increase. The findings also showed that inflation rate negatively and significantly affects stock returns. The results suggest that when inflation increases in a country it results in decrease in stock returns. Similarly, interest rate negatively and significantly affects stock returns. The results imply that when the rate of interest increases in a country, stock returns decrease.

5.2.2 Macroeconomic Factors, Foreign Portfolio Investment and Stock Returns

The study sought to evaluate the intervening effect of foreign portfolio investment on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa. The study adopted a four step process proposed by Barron and Kenny (1986) to evaluate the intervening effect of foreign portfolio investment on the relationship. The first step was to assess the relationship between the dependent and independent variables. The regression results indicated that that the independent variables (macroeconomic factors) significantly affected the dependent variable (stock returns).

The second step was to assess the relationship between the intervening variable and the independent variables. The regression results indicated that foreign exchange rate positively and significantly affects foreign portfolio investment. The findings implied that when the foreign exchange rate of a country increases, it positively affects foreign portfolio investment. The results also showed that gross domestic product positively and significantly affects foreign portfolio investments. The findings imply that when gross domestic product increase, foreign portfolio investment increase. The results also showed that inflation rate negatively and significantly affects foreign portfolio investment. This implied that when the inflation rate increases, foreign portfolio decreases. The results showed that interest rate positively and significantly affects foreign portfolio investment. The results implied that when the rate of interest increases in a country, foreign portfolio investment increase. The results suggest that macroeconomic variables significantly affect foreign portfolio investment. The third step was to assess the relationship between the intervening variable and the dependent variable. The results indicated that foreign portfolio investment (FPI) positively affect stock returns. The results implied that an increase in FPI results to increase in stock returns.

The results also suggest that FPI predicts stock performance. The fourth step was to assess the relationship between dependent variable, intervening variable and independent variable. The results indicated that the P-values for all the independent and intervening variables were significant. The results implied that macro-economic factors and foreign portfolio investment predict stock performance when analysed in the same model. The results for all the steps thus demonstrate that FPI intervened the relationship between macroeconomic variable and stock returns. This implied that foreign portfolio impacts the relationship between macroeconomic variable and stock returns. The hypothesis that FPI has no significant intervening effect on the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa is thus rejected.

5.2.3 Macroeconomic Factors, Market Capitalisation and Stock Returns

The study evaluated the moderating effect of market capitalisation on the relationship between macroeconomic factors and stock returns. A three step process proposed by Barron and Kenny (1986) was adopted to test the null hypothesis that market capitalisation has no significant moderating effect on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa.The results of the first step indicated that market capitalisation significantly affected stock performance of the listed firms. Similarly, the findings of the second step indicated that macroeconomic factors and market capitalisation significantly affected the performance of the listed firms when both were assessed in the same model. The results of the third step also indicated that macroeconomic factors, market capitalisation and the interaction of the two variables significantly affected the stock returns of the listed firms when assessed in the same model. The results implied that market capitalisation moderate the relationship between macroeconomic factors and stock returns. The hypothesis that Market capitalisation has no significant moderating effect on the relationship between macroeconomic factors and stock return of companies listed at the Securities Exchanges in East Africa was thus rejected.

5.2.4 Macroeconomic Factors, Foreign Portfolio Investment, Market Capitalisation and Stock Returns

The fourth objective was to assess the joint effect of Macroeconomic Factors, Foreign Portfolio Investment, Market Capitalisation and Stock Returns of the firms listed in East Africa Securities Exchange. The finding indicated that foreign exchange rate negatively and significantly affects stock returns. The findings implied that when the foreign exchange rate of a country increases, it negatively affects stock performance and thus the returns of stocks decrease. The results also showed that gross domestic product positively and significantly affects stock returns. The findings implied that when gross domestic product increases, stock returns increase. Inflation rate negatively and significantly affects stock returns. The findings suggest that when inflation increases in a country it results in decrease in stock returns. Interest rate negatively and significantly affects stock performance. The results implied that when the rate of interest increases in a country, stock returns decrease.

The findings also indicated that foreign portfolio investment positively and significantly affect stock returns. The results suggested that an increase in foreign portfolio investment in a country results to an increase in stock returns. Market capitalisation positively and significantly affects stock performance. The findings suggest that an increase in market capitalisation results in an increase in stock returns. The relationship between stock return and size of the firm was positive and significant. The findings suggested that when the size of a firm increases the stock returns increase. The relationship between stock returns and leverage was negative and significant. The findings imply that increasing leverage of a firm result to decrease in stock returns. The null hypothesis that macroeconomic factors, foreign portfolio investment, market capitalization have no significant effect on stock return of firms listed at the East Africa Securities Exchanges was thus rejected.

5.3 Conclusions

The study concluded that macro-economic variables significantly affect stock returns. Specifically, foreign exchange rate negatively and significantly affects stock returns. An increase in foreign exchange rate of a country thus results to a decrease in stock returns.

The study also concluded that gross domestic product positively and significantly affects stock returns. An increase in gross domestic product of a country results to an increase in stock returns. Inflation rate negatively and significantly affects stock returns. An increase in inflation in a country thus results in decrease in stock returns. Similarly, interest rate negatively and significantly affects stock returns. An increase in the rate of interest in a country results in poor performance of stock returns. Political environment also negatively and significantly affects stock returns. A year before the election during the election and a year after election negatively and significantly affect stock returns

The study also concluded that macro-economic variables significantly affect foreign portfolio investment. Specifically, foreign exchange rate positively and significantly affects foreign portfolio investment. An increase in foreign exchange rate of a country thus attracts foreign portfolio investment. Similarly, gross domestic product positively and significantly affect foreign portfolio investments. An increase in gross domestic product thus results to an increase in foreign portfolio investment. Inflation rate negatively and significantly affects foreign portfolio investment. An increase in inflation rate results in a decrease in foreign portfolio investment. Interest rate positively and significantly affects foreign portfolio investment. An increase in the rate of interest in a country results to an increase in foreign portfolio investment. The study also concludes that foreign portfolio investment positively and significantly affects stock returns and intervene the relationship between macroeconomic factors and stock return of firms listed at the Securities Exchanges in East Africa. An increase in foreign portfolio investment thus results to an increase in stock returns. Similarly, market capitalisation positively and significantly affected stock performance of the listed firms and moderates the relationship between macroeconomic factors and stock returns. An increase in market capitalisation thus results to an increase in stock performance.

5.4 Recommendations

The study makes the following recommendations on policy and practice based on the results.

5.4.1 Recommendations on Policy

This study demonstrates that macroeconomic variables, foreign portfolio investment and market capitalisation significantly affect stock returns. Therefore, the study recommend that governments and other stakeholders should put in place proper macro prudential policies in order to encourage local and foreign investments and boost stock returns. The study also recommends that regulators and policymakers should come up with policies and regulations that will ensure growth in GDP, reduce or stabilize inflation, interest rates and exchange rates.

5.4.2 Recommendations on Practice

The study recommends that directors of various firms and investors in the stock exchange to scan the nature of macro environment the firms operate in and come up with strategies that will counter the negative effects of inflation and foreign exchange rate fluctuation. The investors should also capitalise on the opportunities of favourable interest rates and gross domestic product by investing in stocks.

5.4.3 Suggestions for Further Study

This study investigated the relationship between macro-economic variables and stock returns of 96 Firms listed in East Africa Securities Exchanges. Therefore, the findings of this study can be applied to firms listed in Securities Exchanges in East Africa. We suggest that future research may focus on data from other firms operating in different stock exchanges to compare and contrast the effect of macro prudential policies adopted in the various countries and its effects on foreign portfolio investment stock returns.

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APPENDICES

Appendix 1: Research Gaps

Author	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
Gatuhi (2015)	Macroeconomic Factors And Stock Market Performance In Kenya	Regression model	The relationship between the macroeconomic factors and stock market performance were either positive or negative depending on the sector the firm operates.	The study did not use moderating and intervening variables.	This study adopted market capitalisation as a moderating variable and foreign portfolio investment as intervening variable.
Hassan and E Gezery (2010)	The effect of macro-economic variables on Egyptian stock market return.	Regression model	The findings showed that the stock market index responded positively to inflation but the coefficient was insignificant. Interest rates were found to be negatively related to the market return. The exchange	The study found that inflation was insignificant which contradicts other studies which found significant effect of inflation. The study also did not use	The study attempted to resolve the conflicting findings. This study also adopted market capitalisation as a moderating variable and foreign portfolio

Author	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
			rate was found to be positively related to the market return. Money supply was found to be positively significant to the market return.	moderating and intervening variables.	investment as intervening variable.
Kirui *et al* (2014).	Macroeconomic Variables, Volatility and Stock Market Returns: A Case of Nairobi Securities Exchange, Kenya	Regression model	The study found a negative and significant relationship between exchange rate and stock market returns. The study further indicated that Gross Domestic Product, Inflation and the Treasury bill rate has insignificant relationships.	The study contradicts other studies which found a significant effect of the macro-economic variables on stock market return. The study also did not use moderating and intervening variables.	This study adopted market capitalisation as a moderating variable and foreign portfolio investment as intervening variable. The study also attempted to resolve the conflicting findings

Author	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
Malik and Amjad (2013)	The effects of FPI on the Pakistani stock market KSE.	Regression model	The results show that FPI had a positive impact on the Pakistani stock market	The study did not investigate the effect of macro-economic factors	This study investigated the intervening effect of FPI on the relationship between macro-economic factors and stock market return
Mumo, (2017).	Effects of Macroeconomic Volatility on Stock Prices in Kenya.	Johansen procedure and the Vector Error Correction Model (VECM) was used for data analysis	The study found a negative relationship exists between money supply and stock prices whereas a positive relationship exists between exchange rates, interest rates and stock prices.	This contradicts other studies which found a negative relationship between exchange rates, interest rates and stock prices. The study also did not use moderating and intervening variables.	This study adopted market capitalisation as a moderating variable and foreign portfolio investment as intervening variable. The study also attempts to resolve the conflicting findings

Author	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
Arikpo & Ogar (2018).	The relations among stock market development, FPI and macroeconomic stability.	Regression model	The findings revealed that there is a long run association among the variables. The study further shows that FPI has positive and statistically insignificant impact on stock market	The study focused on stock market development.	This study focused on stock market returns
Ochieng and Adhiambo (2012)	The relationship between macroeconomic variables on NSE All share index (NASI).	Regression analysis	The study established that T bill rate has a negative relationship with the NASI while inflation has a weak positive relationship with the NASI.	The study did not investigate the moderating effect of market capitalization and intervening effect of FPI	This study investigated the moderating effect of market capitalization and intervening effect of FPI on stock market return.

Author	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
Ouma and Muriu (2014)	The impact of macroeconomic variables on stock market returns in Kenya	Regression analysis	Money supply and inflation are significant determinants of the returns at NSE. Exchange rates is however, found to have a negative impact on stock returns, while interest rates is not important in determining long rung run returns in the NSE	The study found that interest rate is not important in determining long rung run returns in the NSE. This contradicts other studies which found significant effect of interest rate. The study also did not use moderating and intervening variables.	The study attempts to resolve the conflicting findings.
Sekhri and Haque (2015).	The relationship and impact of FPI & FII on Indian stock market.	Regression model	The study found a strong positive correlation between FPI stock market of India	The study did not investigate the effect of macro-economic factors	This study investigated the intervening effect of FPI on the relationship between macro-economic factors and stock market return

Author	Focus of the Study	Methodology Used	Findings	Knowledge Gap	Focus of Current Study
Tripathi, Seth and Bhandari (2015)	The relationship between FPI and macroeconomic factors	Regression model	The study found that all the macroeconomic variables considered except Exchange rate are significantly affecting FPI inflows.	The study did not investigate the effect of macro-economic factors	This study investigated the intervening effect of FPI on the relationship between macro-economic factors and stock market return
Waqas,Hashmi and Nazir (2015)	Effect of macroeconomic factors and foreign portfolio investment volatility.	Regression model	The findings show that that there exists significant relationship between macroeconomic factors and foreign portfolio investment volatility.	The study did not investigate the effect of macro-economic factors and FPI on stock market return	This study investigated the intervening effect of FPI on the relationship between macro-economic factors and stock market return
Oyerinde, (2019)	The impact of foreign direct investment (FDI) on stock market development.	Regression model	The study found that foreign direct investment has positive and statistically insignificant effect on stock market development. Exchange rate and gross domestic savings exert positive and significant impact while inflation rate has insignificant negative influence on stock market development.	The study did not investigate the effect of macro-economic factors	This study investigated the intervening effect of FPI on the relationship between macro-economic factors and stock market return

Appendix 2: Record Survey Sheet

ITEM	YEAR				
	2016	**2017**	**2018**	**2019**	**2020**
Interest rate					
Inflation rate					
Foreign exchange rate					
Gross domestic product.					
Dividend					
No. of outstanding shares					
Price per share					
Shares turnover to foreign investors					
Total shares turnover in the market					
Total assets					
Market value					
Total earnings					
Long term debt					
Equity					

Appendix 3: Listed firms in NSE, USE, DSE and RSE as at 31st December 2020

Companies Listed on the Nairobi Securities Exchange

1. Eaagads Ltd
2. Kapchorua Tea Co. Ltd
3. Kakuzi Ltd
4. Limuru Tea Co. Ltd
5. Rea Vipingo Plantations Ltd
6. Sasini Ltd
7. Williamson Tea Kenya Ltd
8. Car and General (K) Ltd
9. Barclays Bank Ltd
10. Stanbic Holdings Plc.
11. Diamond Trust Bank Kenya Ltd
12. HF Group Ltd
13. KCB Group Ltd
14. National Bank of Kenya Ltd
15. NIC Group PLC
16. Standard Chartered Bank Ltd
17. Equity Group Holdings
18. The Co-operative Bank of Kenya Ltd
19. BK Group PLC
20. Express Ltd
21. Sameer Africa PLC
22. Kenya Airways Ltd
23. Nation Media Group
24. Standard Group Ltd
25. TPS Eastern Africa (Serena) Ltd
26. Scangroup Ltd
27. Uchumi Supermarket Ltd
28. Longhorn Publishers Ltd
29. Athi River Mining Ltd
30. Bamburi Cement Ltd
31. Crown Paints Kenya PLC.
32. E.A.Cables Ltd
33. E.A.Portland Cement Ltd
34. KenolKobil Ltd
35. Total Kenya Ltd
36. KenGen Ltd
37. Kenya Power & Lighting Co Ltd
38. Umeme Ltd
39. Jubilee Holdings Ltd
40. Sanlam Kenya PLC
41. Kenya Re-Insurance Corporation Ltd
42. Liberty Kenya Holdings Ltd
43. Britam Holdings Ltd
44. CIC Insurance Group Ltd
45. Olympia Capital Holdings ltd
46. Centum Investment Co Ltd
47. Trans-Century Ltd
48. B.O.C Kenya Ltd
49. British American Tobacco Kenya Ltd
50. Carbacid Investments Ltd
51. East African Breweries Ltd
52. Mumias Sugar Co. Ltd
53. Unga Group Ltd
54. Eveready East Africa Ltd
55. Kenya Orchards Ltd
56. Safaricom PLC

Companies Listed in Uganda Securities Exchange (USE)

1. Bank of Baroda Uganda
2. British American Tobacco Uganda
3. Centum Investment Company Ltd
4. Development Finance Company of Uganda Ltd
5. East African Breweries Limited
6. Equity Bank Limited
7. Jubilee Holdings Limited
8. KCB Group
9. Kenya Airways
10. Nation Media Group
11. National Insurance Corporation
12. New Vision Printing and Publishing Company Ltd
13. Stanbic Bank Uganda
14. Uchumi
15. Uganda Clays Limited
16. Umeme limited

Companies Listed in Dar-salaam Securities Exchange (DSE)

1. Acacia Ltd
2. CRDB Bank
3. DCB Commercial Bank
4. East African Breweries
5. Jubilee Holdings Limited
6. Maendeleo Bank
7. Mkombozi Commercial Bank
8. Mufindi Community Bank Ltd
9. Mwalimu Commercial Bank
10. National Investments Company (NICOL)
11. NMB Bank Plc
12. Precision Air Services
13. Swissport Tanzania
14. Tanga Cement Company
15. Tanzania Breweries Limited
16. Tanzania Cigarette Company
17. TCCIA Investment PLC
18. Tanzania Portland Cement Company
19. Tanzania Tea Packers (TATEPA)
20. TOL Gases
21. Vodacom Tanzania Limited

Companies Listed in Rwanda Stock Exchange (RSE).

1. Bank of Kigali limited
2. Bralirwa limited
3. Crystal Telecom limited

Appendix 4: Research Permit

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Date of Issue: **29/September/2020**

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