NEAR EAST UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

DEPARTMENT OF BANKING AND FINANCE

THE IMPACT OF FOREIGN DIRECT INVESTMENT AND INTERNATIONAL TRADE ON ECONOMIC GROWTH IN KENYA (1970-2021)

MSc. THESIS

AMAL ISAK ALI

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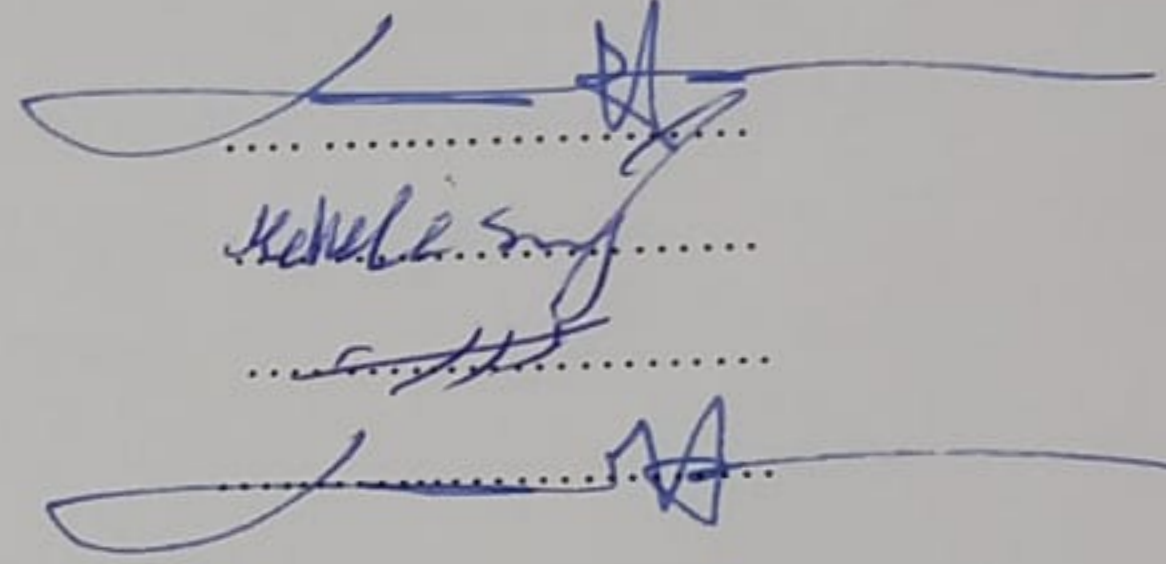**Chairmen Banking and Finance Department.**

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Approval

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

AMAL ISAK ALI

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AMAL ISAK ALI

Abstract

THE IMPACT OF FOREIGN DIRECT INVESTMENT AND INTERNATIONAL TRADE ON ECONOMIC GROWTH IN KENYA (1970-2021),

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The study aims to assess the impact of foreign direct investment (FDI), international trade, broad money, the exchange rate, and the inflation rate on Kenya's economic growth for the 1970–2021 period. The backdrop of the study, the problem statement, the importance of the study, the research questions, the aims of the study, the statement of hypothesis, the limits of the study, and the definitions of important terminology were all covered in Chapter 1 of this research. The literature review, which deals with the theoretical and empirical literature, conceptual mode, the discussion of how different factors affect economic development, as well as other crucial theories of growth, is covered in Chapter 2. The Augmented Dickey-Fuller test and the Phillip-Perron test were used in this study, and the results show that all of the variables were stationary at intercept and intercept and trend level at first difference. The Granger causality test was used to investigate the direction of the association between the variables. In order to verify the results, the serial correlation test, heteroscedasticity test, multicollinearity test, normality test, stability test, and cumulative sum (CUSUM) test were utilized. The findings of empirical tests suggest that FDI and foreign direct investment are connected to Kenya's economic development. Each economic element, however, has a distinct influence on economic growth. FDI has a favorable and statistically significant impact on Kenya's economic development. International trade has a statistically significant beneficial influence on economic growth. To conclude, the results of the instruments used imply that the relationship between the variables is unidirectional.

Keywords: FDI, International Trade, Broad Money, Exchange Rate, Inflation, Economic Growth.

Özet

Çalışma, doğrudan yabancı yatırımın (DYY), uluslararası ticaretin, geniş paranın, döviz kurunun ve enflasyon oranının Kenya'nın 1970-2021 dönemindeki ekonomik büyümesi üzerindeki etkisini değerlendirmeyi amaçlamaktadır. Çalışmanın arka planı, problem ifadesi, çalışmanın önemi, araştırma soruları, çalışmanın amaçları, hipotez ifadesi, çalışmanın sınırları ve önemli terminolojinin tanımları bu araştırmanın 1. Bölümünde ele alınmıştır. Teorik ve ampirik literatür, kavramsal mod, farklı faktörlerin ekonomik kalkınmayı nasıl etkilediğinin tartışılması ve diğer önemli büyüme teorilerini ele alan literatür taraması Bölüm 2'de ele alınmıştır. Bu çalışmada Artırılmış Dickey-Fuller testi ve Phillip-Perron testi kullanılmış ve sonuçlar, tüm değişkenlerin ilk farkta kesişme ve eğilim düzeyinde durağan olduğunu göstermektedir. Değişkenler arasındaki ilişkinin yönünü araştırmak için Granger nedensellik testi kullanıldı. Sonuçları doğrulamak için seri korelasyon testi, heteroskedastisite testi, çok doğrusallık testi, normallik testi, stabilite testi ve kümülatif toplam (CUSUM) testi kullanılmıştır. Ampirik testlerin bulguları, DYY ve doğrudan yabancı yatırımın Kenya'nın ekonomik kalkınmasıyla bağlantılı olduğunu göstermektedir. Bununla birlikte, her ekonomik unsurun ekonomik büyüme üzerinde ayrı bir etkisi vardır. DYY'nin Kenya'nın ekonomik gelişimi üzerinde olumlu ve istatistiksel olarak anlamlı bir etkisi vardır. Uluslararası ticaretin ekonomik büyüme üzerinde istatistiksel olarak anlamlı bir faydalı etkisi vardır. Sonuç olarak, kullanılan araçların sonuçları, değişkenler arasındaki ilişkinin tek yönlü olduğu anlamına gelir.

Anahtar kelimeler: DYY, Uluslararası Ticaret, Geniş Para, Döviz Kuru, Enflasyon, Ekonomik Büyüme.

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List of Abbreviation

ARDL: Autoregressive distributed Lag

ADF: Augmented Dickey-Fuller

PP: Philip Perron

WDI: world development indicator

FMF: Ministry of Finance

IMF: International Monetary Fund

WBK: world Bank of Kenya

EG: Economic Growth

FDI: Foreign Direct Investment

IT: International Trade

EXR: Exchange Rate

BM: Broad Money

INF: Inflation rate

CHAPTER ONE
INTRODUCTION

Background of the study

For any country to thrive job prospects, people's incomes, and steady economic expansion is essential. When a country's economy grows steadily over time, it can help up people's living standards and improve their quality of life. Most governments work hard to craft economic policies that will ensure sustained growth. The success of any government, including Kenya's, is measured by the health of its economy. We call this the significance of FDI and international trade. There is a widespread effort among governments to craft economic policies that will ensure sustained, rapid expansion. With the Vision 2030 plan's emphasis on the economy, Kenya hopes to raise its residents' level of living to that of a middle-income country by 2030. Kenya has a national economic development program that spans the entire country with the goal of increasing the country's GDP by 10% annually (Republic of Kenya, 2007).

Numerous studies have looked at the nexus betwixt FDI and economic growth over the last few decades. Growth models, both neoclassical and endogenous, have found a correlation between these two macroeconomic indicators. Findlay (1978) argues that the introduction of more sophisticated technology and managerial methods through FDI results in a "contagion" impact that accelerates the pace of technological improvement in host economies. The diffusion of new technology has also been demonstrated to accelerate economic development when foreign direct investment is present. By introducing innovative inputs and technologies, the capital stock of the host nation is increased by foreign direct investment (FDI), as examined by (Blomstrom et al., 1992; Borensztein et al., 1998). Foreign direct investment (FDI) has the ability to boost domestic firm productivity by using the "spillover effect" of new technologies (Chanegriha et al., 2020). One of the various ways through which foreign direct investment (FDI) is routed is via multinational companies (MNCs), whose training activities have been proven to increase human capital in recipient countries (Anwar & Nguyen, 2010). The selling and purchasing of goods and services across international boundaries are referred to as "international trade" (Vernon, 2017). Booth and Erskine (2016) claim that international trade exposes domestic enterprises to the higher standards adopted by foreign firms, which in turn leads

to enhanced efficiency, based on the global strategic rivalry theory of international trade. One school of thinking holds That changes in one currency's value in relation to the next are related to trade between countries. The idea posits that human nature leads to drastically reduced levels of trade when currency exchange rates are highly volatile. The term "international trade" refers to the buying and selling of commodities and services betwixt different countries. To be considered "international," the activities must involve at least two countries and involve some form of cross-border commercial exchange. Profit maximization resulting from differences in country economies is the driving force behind traders' economic actions (Adedeji, 2006). The theory of comparative advantage enlightens us as to why countries engage in commodity and service trade with one another: differences in countries' reserves of natural resources, human capital, financial capital, and technical capability. Some nations have an abundance of these materials, whereas others do not, but even those with a decent amount may not have the skills to manage and use them well. This keeps them from helping their economies grow, technology improve, and living standards rise, which are all important for their people.

In economic theory, the connection between freer trade and higher GDP growth has been a point of contention. The belief that more trade will improve economic growth has been called into question in light of recent developments. Increased international trade will make it possible to import high-tech products directly, which will spread knowledge and boost economic progress (Barro and Sala-i-Martin, 1997; Baldwin et al., 2005; Almeida and Fernandes, 2008). Gains from FDI are amplified, and integration with innovation hubs is facilitated via trade. Economies are better able to reap the rewards of economies of scale and specialization thanks to trade openness, which expands the market (Alesina et al., 2000; Bond et al., 2005). The growth of the GDP and inflation are two of the most often cited indicators of economic health. Due to different growth rates, the steady state equilibrium of revenue per person and production per worker in countries around the world is very different today (World Bank, 2020). Policymakers are tasked with formulating and enforcing macroeconomic policies that promote high and sustained economic growth, low and stable inflation, and other related goals (Ghosh & Phillips, 1998). To do this, central banks like Kenya's have tried to reduce the bad effects of inflation on the country's economy and standard of living by doing things like keeping an

eye on and controlling interest rates and increasing the money supply (International Monetary Fund/IMF, 2020).

Almost universally, policymakers and economists in the field of development agree that stable prices are necessary for rapid economic expansion (Andrés & Hernando, 1997). This perspective is informed by the fact that the OECD as a whole experienced macroeconomic turbulence between 1973 and 1984, when inflation averaged over 13%. Since Keynesian economics came out in the late 1930s, there has been a lot of debate about whether a link exists between inflation and economic expansion and what that link is. Odhiambo, 2021; Eggoh & Muhammad, 2014; Iqbal & Nawaz, 2009; Andrés, Hernando, & Lopez-Salida, 2004; Mallik & Chowdhury, 2001; Fischer, 1993; Lucas) conducted research on several African nations with regards to policy sector reforms, institutional frame structure, and financial strategy policy. Hence, the results of these examinations have been radically varied. Kenya was one of several African nations that started a thorough reform of its institutions, public sector, economy, and finances in the 1980s. By the mid-1990s, this process had been expedited. Changes in the economy were the reason for the policy change.

Foreign direct investment (FDI) and increased trade are two factors widely acknowledged as crucial to a flourishing economy. Knowledge and abilities that can be expanded through the import and application of highly productive technology and innovation are made available through trade. Exporters might use innovation and technology to their advantage while working as subcontractors for foreign enterprises or when competing on global markets. However, overseas corporations compete aggressively against imported alternative items. The products of emerging countries are often capital intensive; hence, they need to use more capital-intensive production facilities to compete (Frankel and Romer 1999). Due to the buildup of physical capital and the transfer of technology, trade openness can have a positive and considerable impact on economic development. Foreign direct investment's primary function is to increase the availability of cash for domestic investment in host countries. To accomplish this, the production chain can be utilized, in which foreign investors purchase final goods made in the country of origin and sell intermediate goods to local businesses.

Foreign direct investment (FDI) has the added benefit of limiting the host country's ability to export, which means that developing nations can make more money in the process. Foreign direct investment, on the other hand, has the potential to boost economic growth, local job creation, and the spread of innovative technologies in the nations that receive them. Technology spillovers from multinational businesses to their local equivalents largely occur via four channels: mutation, competition, skills (i.e., labor mobility), and connections, as mentioned by Wang and Blomstrom (1992). Lipsey et al. (2000) and Baliamoune-Lutz et al. (2004) mentioned that previous empirical studies primarily focused on the association betwixt trade and economic development as well as the impact of FDI on economic development. (Karbasi et al., 2005). (Baliamoune-Lutz, 2004; Lipsey, 2000). (2005) (Pahlavani et al., 2005) talked about the nexus betwixt trade and economic development.

The following are some of the questions we want to solve via our investigation: Does an increase in trade and foreign direct investment mean that the economy is expanding? Is it additive or multiplicative to have foreign direct investment, trade, and economic expansion? The government, interested parties, business organizations, academic researchers, and policymakers would benefit from a better knowledge of the direction of the causal relationship betwixt different macroeconomic elements in order to develop and stabilize the economy. Foreign direct investment (FDI), trade openness (used interchangeably with trade liberalization in this research), and economic development all have interrelated dynamics, making a concise framework of these interconnections critical. All indications indicate to a rise in foreign direct investment (FDI) into African nations as a result of trade liberalization brought about by globalization. Foreign direct investment (FDI) into Africa has increased dramatically in recent years, particularly in 2014. The World Investment Report confirms this (UNCTAD, 2016). Around US$87 billion more was invested in the continent, a 65% increase, while the number of foreign direct investment projects rose by 6%. The shows that Egypt is still the continent's most popular spot for foreign direct investment (FDI), with a total of around US$15 billion documented over 118 separate projects. Also, foreign direct investment (FDI) in Kenya is said to have grown the most, from 49% to 85%, for a total of almost US$2.5 billion.

Problem statement

In the past decade, Kenya has undergone numerous significant political and economic transformations. Progress in areas such as economic growth, social progress, and political stability can be attributed in part to this factor. But the country still has a lot of problems, like poverty, inequality (because there is a big gap betwixt the rich and the poor), climate change that is getting worse, slow private sector investment, and an economy that is vulnerable to shocks from both inside and outside the country (The World Bank, 2021). In 2010, a new constitution was ratified, ushering in a bicameral legislature, a legally tenured electoral body, an independent judiciary, and devolved county governments. Kenya's economy grew at an annualized rate of 5.7% from 2015 to 2019, placing it among the region's fastest-growing economies. The strong services industry, along with a healthy macroeconomic climate and buoyant investor confidence attributed to fast growing economy. Both foreign and internal demand and supply shocks impacted the economy with the arrival of the COVID-19 shock (Rutto et al., 2019).

Kenya's government has always prioritized steady economic expansion as a means to the end. The correlation between trade and economic growth has, however, received little attention in Kenya, and the few studies that have been done have led to contradictory results. Neddy et al. (2013) discovered a conflicting association betwixt global business and Kenyan economic development. Muhoro and Otieno (2014) discovered a positive connection. Kenya's government has been consistent in implementing policies that integrate the country into the global economy in order to achieve continual economic progress. Kenya's government has taken steps to stimulate foreign direct investment and enhance international trade, but the effect of these measures on the country's GDP remains unknown. Foreign direct investment (FDI) and trade are two of many factors that contribute to economic expansion. The globalization trend in developing countries like Kenya is generally credited to foreign direct investment and international trade (Blomstrom and Persson, 1983). Many government measures have been implemented to encourage foreign direct investment and global trade in order to realize this goal. Numerous reports have looked at how FDI has helped Kenya's economy grow, as stated by Nyamwange (2009), Ocharo et al. (2014), Robert et al. (2014), and Abala (2014). Nonetheless, these researchers' conclusions about FDI's effect on economic growth are

mixed. Despite the positive impact that FDI has been shown to have on economic development in Kenya by Ocharo et al.., (2014) and Robert et al.., (2015), some researchers, such as Nyamwange (2009) and Abala (2014), have found the opposite to be true.

Many studies have been done to find out how trade and FDI affect economic development. However, the outcomes of this inquiry have been inconsistent. In order to understand how trade and foreign direct investment impact Kenya's economy, further study is needed. This study examines how foreign direct investment (FDI)and international trade affected Kenya's GDP development from 1970 to 2021. Also, the consideration of other variables like inflation, exchange rate and broad money supply would help to give more information on the association betwixt international trade, foreign direct investment and economic development in Kenya.

Research Questions

    (i)   What impact does FDI have on Kenya's economic expansion?

    (ii)   What effect does inflation have on Kenya economic advancement?

    (iii)   What are the economic and development forces of international trade in Kenya?

    (iv)   What is the consequence of exchange rate methods on Kenya economic Expansion?

Objective of the study

The study's overarching goal is to learn how foreign direct investment and trade have affected economic expansion in Kenya. Those precise aims are:

    (a)   To determine how FDI has affected Kenya's economic growth.

    (b)   To ascertain how inflation affects economic expansion in Kenya.

    (c)   To ascertain how trade affects economic expansion in Kenya.

  (d) To ascertain how the exchange rate in Kenya affects economic expansion.

Significance of the study

Since Kenya has witnessed a decline in foreign direct investment (FDI) inflows over the past few years, this research will be crucial. It should be underlined that foreign direct investment (FDI) inflows into Kenya are extremely important since they serve as a source of capital, especially in light of the gradual decline in foreign aid. Foreign direct investment (FDI) helps domestic investment, boosts economic growth, and creates job opportunities. Because of this, this study is very important. There are two ways in which the findings of this study will be beneficial to academics and policymakers: first, they will contribute to the competency of researchers in this subject; second, they will serve as a guide for both central bankers and academics. The findings will provide guidance to policymakers in both rich and developing nations as they work to implement FDI-friendly measures. Policymakers would have more evidence to back up their efforts to improve the quality of institutions, which is known to help economic growth and development.

Statement of the Hypothesis

H0: That FDI does not have a nexus with economic growth in Kenya.

H1: That FDI does has significant nexus with economic growth in Kenya

H0: That International Trade does not have a link with economic growth in Kenya.

H1: That International Trade have a link with economic growth in Kenya.

H0: That Inflation does not have a nexus with Kenya economic growth.

H1: That Inflation does have a nexus with Kenya economic growth.

H0: That broad money does not have a nexus with Kenya economic growth.

H1: That broad money does have a nexus with Kenya economics growth.

H0: That Exchange rate does not have a nexus with economic growth Kenya.

H1: That Exchange rate does have a nexus with economic growth Kenya.

Limitations

This research spans 51 years (1970 – 2021). The research has limitations in that, despite the large size of the sample, it is focused on a time period with low predictive power. Research relies on historical records and previous studies since they are the

foundation upon which new findings may be built. Kenya and the rest of sub-Saharan Africa are understudied when it comes to this topic. Few studies have examined the elements that influence international trade and FDI's impact on economic development, and their findings are inconsistent. This suggests that additional factors should be included in the conclusions of this research to reduce the possibility of bias.

Definition of Terms

Foreign direct investment-To put it simply, foreign direct investment (FDI) is when an individual, group of individuals, corporation, or government from outside of the home nation acquires a share in an operating entity or project located outside of their home country. In business, this word refers to the practice of purchasing a sizable share of a foreign company or perhaps buying it entirely in order to enter a new market. It is uncommon to use this term to describe investing only in the shares of a foreign firm. Due to its role in fostering robust, long-lasting linkages between nations' economies, foreign direct investment (FDI) plays a significant role in fostering global economic integration.

Inflation- is a rise in the cost of living across the board for consumers and businesses alike. Inflation is a loss in the purchasing power of money, since a higher general price level results in one unit of currency being able to purchase fewer goods and services.

Trade- includes the exchange of one set of commodities and services for another, typically for monetary compensation. Economists use the term "market" to refer to any system or network that facilitates commerce. Bartering was an early type of trade in which commodities and services were exchanged directly for one another without the use of money. Financial instruments are frequently used as a means of exchange in today's business world. Therefore, purchasing is decoupled from selling and revenue generation. Money (along with letters of credit, paper money, and virtual currencies) dramatically facilitated and expanded trade after their inception. Bilateral trade is when two different parties do business with each other. Multilateral trade is when more than two parties do business with each other.

Gross Domestic Product- The total value of all goods produced inside a country's borders within a certain time period. Because it is a high-level representation of domestic

production, it may provide insight into the status of the economy as a whole. The term "gross domestic product" (GDP) refers to the monetary worth of a country's finished goods and services produced and provided during a certain time period, often one year. When evaluating a country's economic well-being, most people look at its GDP.As a notion, GDP did not emerge until the late 18th century. In 1934, American economist Simon Kuznets came up with the idea, and by 1944, the Bretton Woods conference had established it as the standard by which nations were judged economically.

exchange rate- The current exchange rate between two currencies influences both international trade and the flow of money between nations.

Broad money- refers to a class of variables used to assess the flow of currency in a country. It is the most complete way to measure a country's monetary base because it includes all assets that can quickly be turned into money for use in the market, not just narrow money.

CHAPTER TWO

Literature Review Analysis

Introduction

You might be able to discover more about previous research done on the issue by conducting a survey of the current literature on the topic. It is vital to carry out a comprehensive analysis of previous studies before agreeing on a topic for further investigation. For the study, data can be taken from standard books, magazines, journals, published and unpublished research papers, and other easily accessible market sources. In this chapter, we go into substantial detail about the GDP growth as well as the currency exchange rate. There have been a number of academic studies done on the currency exchange rate, as well as the literature that surrounds it. Currency exchange rates can be found online along with a plethora of other information. In order to carry out research on exchange rates, a substantial number of academics and industry professionals have given their time and expertise. This chapter provides a synopsis of the research findings based on an extensive corpus of previous work on topics connected to currency exchange rates. The theoretical and empirical work that has been done on exchange rates will be investigated for the objectives of this chapter. The following is a selection of the most significant research that, in light of the most recent investigation, needs to be taken into consideration.

Theoretical Literature

A nation's economy will always be connected to the economy of the world in some way through economic activities that take place on the global stage, such as international trade and investment. Many scholars, adopting a wide range of perspectives, have studied the relationship between FDI and international trade for quite some time. Everyone believes that foreign direct investment (FDI) and international trade are related to the expansion of an economy, despite the fact that the conclusions drawn from empirical studies may not always agree with one another. Foreign direct investment, according to Ali and Hussain's (2017) version of the idea, is a crucial element in the advancement of global economic integration. Ali, M., & Malik, I. R. (2017) This interpretation of the theory. Researchers analyzed time series data via correlation and multiple regression

analysis to learn how FDI affected Pakistan's economic growth from 1991 to 2015. This investigation was conducted from 1991 to 2015, a 24-year span. "The findings demonstrate that foreign direct investment has a favorable impact on Pakistan's GDP growth. The total cost of all commodities produced within a nation's boundaries during a certain period of time. Due to the high degree of domestic output, it may provide light on the state of the economy as a whole. The term "gross domestic product" refers to the total value of all goods and services that a country produces and sells at the end of a certain time period, often one year (GDP). Malaysia's GDP expanded by 0.046072% between 1970 and 2005 as a result of a 1% increase in FDI. Sokang (2018) presents an alternative viewpoint and evaluates the impact of FDI on the Cambodian economy using a two-stage least squares technique. Using information from 2006 to 2016, Sokang showed the beneficial impact of foreign direct investment on Cambodia's economic development. According to Sokang, FDI aided in the diffusion of cutting-edge technology, practical education, and worker training, all of which aided in the advancement of Cambodia's economy. Sokang urged the Cambodian administration to keep up its modernization. Sokang also looked at the association betwixt FDI and Tanzania's economic development between 1970 and 2014." The results showed that foreign direct investment influenced the economy's development in a positive way. Marobhe understood the value of foreign direct investment (FDI) in helping developing nations like Tanzania expand their economies.

Foreign direct investment (FDI) enables developing nations to acquire technology and capital, as well as the conditions necessary to improve the working skills of their workforce. In order to attract foreign direct investment (FDI), he advised that Tanzania's government implement preferential measures, including tax breaks, infrastructural upgrades, political stability, and worker skill enhancements. He studied, Mohamed Mustafa (2019) looked at the effect that foreign direct investment and tourism receipts had on Sri Lanka's gross domestic product from 1978 to 2016. The author got to the conclusion that foreign direct investment and tourist revenue had a long-term, favorable, and statistically significant impact on Sri Lanka's GDP with the use of the econometrics program EViews 10. Much as they did with foreign direct investment, several researchers have investigated the link betwixt global commerce and economic development (FDI).

International trade is one of the most often discussed subjects worldwide, according to Mogoe and Mongale (2014), not only in South Africa. This is true not only in South Africa but also throughout the rest of the world. These academics carried out an analysis to determine the extent to which international commerce contributed to the expansion of South Africa's economy from 1990Q1 to 2013Q2: According to the findings, exports had a constructive impact on GDP, whereas imports were responsible for a deleterious effect on GDP. According to, increasing exports helped build up South Africa's infrastructure and had the ability to spur the country's economy. Javed, Qaiser, Mushtaq, Saif-ullaha, and Iqbal (2012) evaluated how international trade affected Pakistan's GDP growth using the ordinary least-squares approach. Researchers came to the conclusion that international trade was a significant contributor to the growth of Pakistan's economy after analyzing time series data spanning from 1973 to 2010It took a 0.32 percentage point gain in GDP to offset a 0.1 percentage point rise in exports. The expansion of the gross domestic product increased by 0.18 percentage points for every one point in imports. Azeez, Dada, and Aluko (2014) reached the same conclusions when they examined the effect of international commerce on the growth of the Nigerian economy. Also, researchers used ordinary least-squares to analyze time-series data for each year between 2000 and 2012. According to the conclusions of the statistical study, higher levels of economic activity on a global scale are connected with higher rates of economic growth. The entire Gross Domestic Product (GDP) of Nigeria increased by 0.635 units, with a gain of 0.359 units attributable to an increase of a unit in both import and export. Overall, the GDP increased by 0.635 units. Vik, Atukeren, and Korkmaz (2019) conducted research to examine the effect of international trade (from the vantage point of trade openness) on the expansion of the Turkish economy. Increased trade openness has the potential to boost economic growth in a number of crucial ways. Some of these include enhancing the effectiveness with which limited resources are distributed, enabling the transfer of technology from developed to developing nations, encouraging learning through experience, and more. Rising wealth encourages freer trade, according to experimental experiments done in Turkey. The study, which covered the years 1950 to 2014, found a correlation between trade openness and economic development. The phrase "sequential feedback" was to characterize this form of connection.

Hye, Wizarat, and Lau (2016) used the generalized autoregressive conditional lag (ARDL) cointegration approach and the rolling regression method to study China's trade openness and GDP growth from 1975 to 2009. The results displayed examined. According to empirical data, trade liberalization fosters economic development over both long and short durations. This study strengthens the case that China's economy has to remain open to trade in order to experience long-term development. Numerous studies looked at how different economic factors, such as foreign direct investment (FDI) and international commerce, influenced the pace of economic development in a single country or across a group of countries. The outcomes were drastically different.

The ordinary least-square method was Boakye and Gyamfi (2017) in order to determine the influence that Ghana's economic growth has on factors such as foreign trade, FDI, external debt per capita, gross capital formation, inflation, and remittances per capita. The findings revealed that there was a connection between each variable and GDP. The expansion of Ghana's export sector was a major contributor to the country's overall economic growth. Increasing exports by one unit can boost GDP by 2.085751 percent on average. Additionally, FDI had a positive impact on GDP, albeit a negligible one. If foreign direct investment went up by one percent, Ghana's economy would grow by 2.676554 percent. It was revealed that the gross domestic product had a favorable association with both personal savings and capital development. He performed study in Bangladesh between 1986 and 2008 with the goal of identifying the nature of the interaction that exists between different economic components. GDP, trade openness, capital creation, and FDI all tend to settle into a constant equilibrium over time, according to the statistics (FDI). Bangladesh's economic growth is significantly influenced favorably by both the volume of capital formation and the degree of FDI. On the other hand, while it was gradually lessening, trade openness had a significant detrimental impact on the economy. According to him, the devaluation of the currency, the substantial quantity of materials imported, and the unfavorable trade balance position are the key causes of the negative effects of trade liberalization. In order to stimulate economic expansion, Adhikary suggested that the government of Bangladesh enact policies that would attract Foreign Direct Investment (FDI) and guarantee a higher level of capital formation.

It required a 0.32 percentage point increase in GDP to counterbalance a 0.1% increase in exports. GDP increased by 0.18 percentage points for every point of imports. Azeez, Dada, and Aluko (2014) reached the same result on the effect of foreign trade on Nigerian economic development. Each of the four components—government spending, interest rates, imports, and exports—had a substantial and positive influence on economic

development, according to the statistical study. However, neither foreign direct investment nor the currency rate has a significant negative influence on the Nigerian economy. The 2016 research by Abdullahi, Safiyanu, and Soja examined the effect of global trade on economic development in 16 of West Africa's 17 countries between 1991 and 2011.They used the STATA 10.0 version of the economics application. Academics looked at export, import, and the general currency exchange rate as they related to GDP. Findings from the regression indicated that the population employed in the model had sufficient statistical power. But different variables were shown to have different impacts on economic expansion. Increased exports had a big and positive impact on the development of the economies of West African countries. A rise of just one percent in exports is predicted to boost GDP by 5.11 percent. It was also found that imports boosted GDP growth by 0.41 percentage points for every 1 percentage point rise in imports. The influence of imports on economic development in West African countries, on the other hand, was statistically insignificant. The negative impact the exchange rate had on the economy was small but nevertheless statistically significant. According to the scholars, the results of this study showed that export promotion is important for economic growth.

Neoclassical Theory

Capital arbitrage, in which investment is directed toward the country offering the highest rate of return on investment, was proposed by early neoclassical theories as a means of explaining international capital movements. According to Cockcroft and Riddell (1991), the incentive package is based on the projected rate of return, the safety of the investment, and the quantity and timeliness of the money that firms may recover. The amount of money that will subsequently be invested is determined by this. Foreign direct investment (FDI) can be affected by a number of factors, including the country's investment legislation or rules, its tax system, and its overall macroeconomic policies. Despite these modifications, additional work is still required to enhance the variables that serve as investment barriers. When there are no patents, price restrictions, labor regulations, taxation policies, or foreign exchange controls in place, this lack of formal laws and legal infrastructure becomes apparent. If these problems can be handled, according to Cockcroft and Riddel (1991), the climate for attracting foreign investment

will improve dramatically. Meier (1994) says that the main supply-side factor that affects FDI in developing countries is that companies expect to make more money. Developed countries usually invest in less developed countries where they can get a higher return on their money (Ekpo, 1996).

Theoretical Perspectives on Industrial Organization and Internalization

These hypotheses are based on the assumption that multinational corporations operating in host countries have oligopolistic power (Cockcroft and Riddell, 1991; Meier, 1994). It says that the differences between the real world and the model of a perfect market are caused by both small and large economic factors. According to this theory, companies select a location for their investments based on the comparative advantage offered by that location. Meier (1994) makes a significant contribution to this theory by arguing that FDI may also be used to gain control over inputs, which in turn impedes the ability of potential rivals to enter the market. To paraphrase the internalization hypothesis, companies keep their operations internal through the use of a subsidiary that is wholly owned by the parent company in order to control risk, maintain control, and preserve market share. Multinational corporations use foreign direct investment (FDI) to gain internalization advantages. Costs can be cut with foreign direct investment (FDI) because of the company's linkages, Integration, transfer pricing, and centralization-related economies when compared to external markets (Meier, 1994).

Keynesian Theory of Economics

Even though colonies and the connection between rich and poor countries in the 1950s didn't care much about development, the roots of development aid to the world's least developed countries may be found in colonialism (Riddell, 1992). This transpired as a direct consequence of the implementation of Keynesian economics, as illustrated by the works of Rostow, Chenery, Strout, and Rosentein-Rodan, amongst others. Their main concern was how to make regions and societies that are generally seen as backward and unproductive into ones that are dynamic and growing economically (Riddell,1992). Since aid has already aided developing countries, foreign capital's role is to alter the economy and bring about sustained prosperity rather than immediately raising living

standards (Bhagwadti and Eckaus, 1970). The rich countries had an economic motive to invest in the welfare of the developing countries since doing so would help them improve their own quality of life. Both sets of nations stand to gain when the interest rate is lower than the capital productivity in the rich countries but higher in the developing ones. However, the developed countries stand to benefit more than the developing countries. If developed countries have resources that are not being put to good use but cannot be If international help is directed to poor nations after balance of payments restrictions have been imposed, both parties will benefit. This is because developed countries can't use their resources because of problems with their balance of payments (Brandt Report, 1980).

The Marginal Efficiency of Investment (MEI) and Accelerator Theories

MEI (marginal efficiency investment) is a method of determining how much money a company wants to spend. When a company's marginal effective rate of return (MEI) on new investments exceeds its cost of capital, it is considered to be in a sweet spot and must pay when making investment choices (Keynes, 1936). MEI may be defined as the interest rate that reduces the present value of an investment to zero. If the market interest rate is high, so will the investment, and vice versa. The next step in the expansion of investment theory was the accelerator theory, which says that changes in inputs have a linear effect on investment. The firm's rate of investment goes up the more there is between the amount of capital it already has and the amount it wants to have. Whether to make small changes or big changes to the capital stock depends on how much money the company will make (Tobin, 1969).

Conceptual model

Figure 1 Conceptual Model
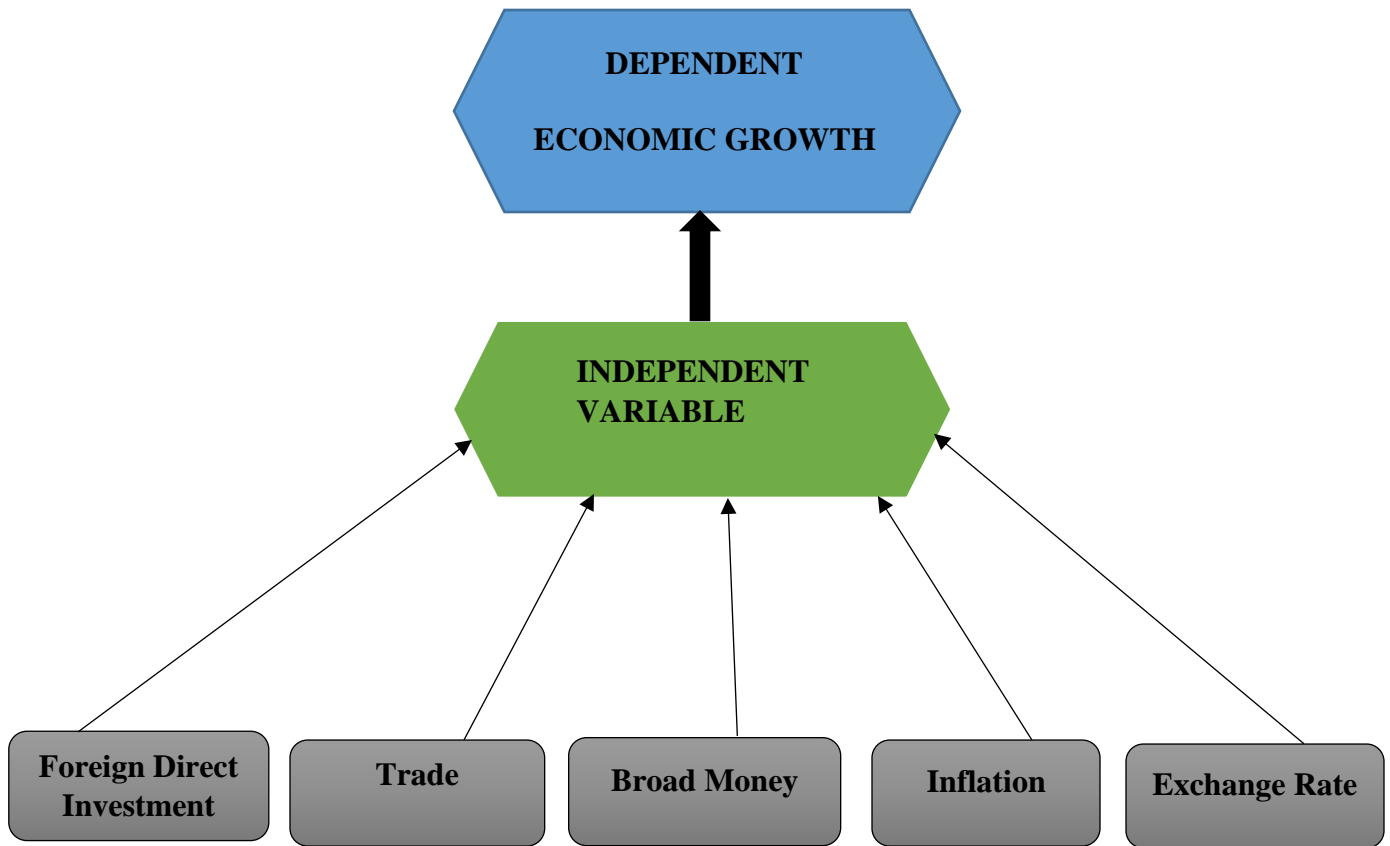
Empirical Literature Review

  The impact of foreign direct investment, trade, broad money, inflation and exchange rate has gathered numerous results from various studies universally which are all gear towards impacting the empirical analysis of researchers across the globe. The empirical literature of this research will present findings and conclusions from previous studies related to the study under review. The empirical literature will provide extra knowledge to future researcher of this or related topic as it will exclusively focused on the regress and regressors of the study.

Empirical Literature on FDI and Economic growth

  There is a concrete attestation purporting that foreign direct investment is a cardinal pillar for economic development and expansion. (Agrawal, 2015; Salaa & Trivin,

2014; Alege & Ogundipe, 2013; Abadi, 2011; Lamine, 2010; Beugelsdijk & Zwinkels, 2008), investigated the influence, structures, frameworks, and fundamental association between foreign direct investment and economic development, with varied conclusions as follows: Some argue that foreign direct investment is always beneficial to a country's economic expansion; others argue that the effect of FDI on a country's economic advancement depends on institutional and legal structure, educational enlightenment and human resource levels, trade liberalization, and a variety of other socio economical, and geographic factors.

Makiela, K., and Ouattara, B. (2018) examined the transmission mechanism of FDI to economic development using time series instruments for the period 1970-2007. The findings show that input accumulation affects economic growth but not total productivity growth.

Odhiambo, N. M. (2022) used the ARDL limits testing technique to cointegration to analyze "the link betwixt foreign direct investment (FDI) and economic growth in Kenya from 1980 to 2018. The findings suggest that there is a unidirectional causal flow from economic growth to FDI in Kenya." Based on these findings, it is possible to infer that Kenya's present booming FDI inflows are mostly driven by the country's robust economic development and sound macroeconomic policies implemented in recent decades.

Lasbrey, A., Enyoghasim, M., Tobechi, A., Uwajumogu, N., Chukwu, B., and Kennedy, O. (2018) examine the relationship between FDI and EG using time series instruments from 1980 to 2018. The result is inconsistent, but heavily skewed toward a significantly positive effect; nonetheless, in certain cases, the impact of FDI on EG is negative or even nonexistent. Additionally, we find that key factors that affect FDI placement and its capacity to have a beneficial influence on EG generally include market size, economic freedom, and internet accessibility.

M. R. Sultanuzzaman, H. Fan, M. Akash, B. Wang, and U. S. M. Shakij (2018) investigate the long-term and short-term associations betwixt FDI inflows, exports, and economic development in Sri Lanka betwixt 1980 and 2016.A method known as autoregressive distributed lag (ARDL) bounds testing was used to assess the association betwixt the variables. The study found an association between FDI inflows and both long-

term and short-term economic development that was both favorable and statistically significant. GDP will rise if FDI inflows increase. Exports, on the other hand, have a long-term, inverse connection with economic growth. If exports rise, GDP growth will slow. The majority of Sri Lanka's exports are based on basic commodities. There is a possibility of restricted resources and an unanticipated cost. It is hardly surprising for a developing nation like Sri Lanka. Furthermore, exports will have a favorable and considerable association with economic development in the foreseeable future. Increased exports will significantly boost GDP growth. Both FDI inflows and exports, according to the statistics, contribute to Sri Lanka's economic development. According to the concept of developing market economies, FDI inflows are helpful for boosting the host country's production process and, as a result, contribute to Sri Lanka's exports and economic development.

Empirical Literature on Broad Money and Economic growth

Tegegne, Y. E. (2021) Investigates the effect of the money supply on the actual GDP of Ethiopia. The annual report of the Ethiopian National Bank, which covered the years 2002 to 2017, provided the time-series data for this research. The data analysis using a vector autoregressive model and causality test showed that raising the money supply positively and significantly impacted real GDP. The results of the Johansen cointegration test indicate that there is no long-run correlation betwixt real GDP and the total money supply.

C. O. Omodero (2019), An investigation of how Ghana and Nigeria's economies have developed in relation to their monetary and financial systems. With the help of the ordinary least square's regression method, data from 2009 to 2018 are analyzed. Statistics show that although a plentiful supply of money has a huge and positive impact on Ghana, it only marginally lowers Nigeria's actual gross domestic product (RGDP). Credit to the private sector (CPS) has a somewhat positive influence on RGDP in both Nigeria and Ghana, but the broad money supply has a considerable negative impact on RGDP in Ghana.

Gnawali, L. (2019), Examines the influence of Nepal's money supply on GDP growth between 1975 and 2016 using cointegration, the VECM and Causality Test, and

the Augmented Dickey-Fuller (ADF) unit root test. The findings show that increasing the money supply is very good for economic development.

Dingela, S., and H. Khobai (2017), Using time series data from 1980 to 2016, investigate the dynamic consequences of a big money supply on South African economic development (GDP) per person. The findings show that there is a statistically significant positive relationship between the money supply and economic growth in both the short and long term.

T. S. Mahara (2020Investigates the effect of the money supply on Nepal's economic development. The empirical findings of co-integration using the ARDL technique show a substantial and favorable long-term link between Nepal's money supply and real economic development. The causality conclusion shows that there is only one path of cause and effect connecting the money supply to real GDP

Empirical Literature on Trade and Economic growth

Purnama, P. D., and M. H. Yao (2019) investigate the relationship betwixt international commerce and economic expansion in ASEAN nations. From 2004 to 2015, the data was subjected to a Pedroni panel co-integration test. The findings indicate that international trade and economic development in ASEAN nations have a long-term, co-integrated connection international trade and foreign direct investment contribute to economic development throughout time. Meanwhile, the exchange rate has a long-term negative influence on economic growth. Furthermore, the GDP and international trade have a bidirectional causal relationship, as do the GDP and the exchange rate. In contrast, international trade has a direct and bidirectional connection with the currency rate. FDI has an impact on GDP, international trade, and currency rates. The findings show that government initiatives aimed at increasing the funding of new investment for economic development should be used to encourage international trade.

Hye, Q. M. A., Wizarat, S., and Lau, W. Y. (2016) Data from 1975-2009 is used to analyze the effect of China's trade opening on the country's economic development. A trade openness indicator is developed, adding to the existing body of research. The focus of this investigation is on how freer commerce affects economic growth. Cointegration using rolling regression is accomplished using the autoregressive distributed lag (ARDL)

approach. Empirical data reveal that trade openness, as measured by specific trade indicators and the composite trade openness index, is connected to both long- and short-term economic development. Trade openness, as assessed by the composite trade openness index and individual trade indicators, has been linked to both long-term and short-term economic development. The rolling window research, on the other hand, demonstrates that trade openness has only a transitory negative connection with economic progress.

Empirical Literature on inflation and economic growth

Numerous researches on the link between inflation and growth have produced diverse findings. Malla (1997), For example, panel analysis was employed to study the effect of inflation on development in eleven OECD and Asian countries. Contrary to popular belief, there is no link betwixt inflation and growth in OECD countries. In Asian countries, however, there was a substantial negative link between inflation and growth. Bruno and Easterly (1998) discovered that higher inflation rates limit economic growth, whereas lower inflation rates have less of an influence on economic costs using the threshold model for 26 countries. A nation is considered to be in the throes of a serious inflation crisis when its inflation rate surpasses 40%. Even when the same set of nations is studied, data concerning the particular level of inflation that is either harmful or advantageous to economic development is ambiguous. Khan and Senhadji (2001) utilized the nonlinear square approach to analyze the effect of inflation on economic development in 140 developed and developing nations. They estimated an inflation threshold of 1% to 3% for affluent nations and 7% to 11% for developing countries based on data from 1960 to 1998 in order to achieve the desired rate of development. A. O. Adaramola and O. Adaramola Dada (2020) Studied the effects of inflation on the potential for economic growth in Nigeria from 1980 to 2018, and it was discovered that both inflation and the real exchange rate had a significant detrimental impact on economic development.

Ghosh and Philips (1998) utilized panel data to investigate the connection between inflation and growth in the US economy from 1960 to 1996. The correlation between inflation and GDP expansion was studied using a mixed method of panel regression and linear regression. Multivariate regression was used to examine the model's robustness and

see whether inflation and growth were indeed linked in a way that was not linear. While there may be no visible signs that the correlation between inflation and GDP has broken, Sarel argues that inflation still has a negative effect on development nevertheless. However, Ghosh and Phillips found a positive correlation betwixt inflation and development during periods of low inflation. Moreover, it has become clear that something is off with this connection. Even after accounting for nonlinearity, their data shows a negative link betwixt inflation and growth.

In Kenya, T. Saungweme (2021) Examines the association betwixt inflation and economic development. The multivariate Granger-causality test and the autoregressive distributed lag (ARDL) bounds testing method are used to examine time series data from 1970 to 2019. According to other study findings, inflation has a statistically significant negative effect on long-term economic development. The short-run unidirectional causality from economic growth to inflation was clearly confirmed by the multivariate Granger-causation results in Kenya.

The relationship between exchange rate and economic growth

Using an autoregressive distributed lag (ARDL) model, Ozata, E. (2020) looks at how fluctuations in the value of the Turkish lira affected the country's economic growth from 1980 to 2019. The estimate results from the ARDL model show that the volatility of Turkey's The actual effective exchange rate has a statistically significant negative effect. on the country's economic development. Long-term real GDP is significantly impacted positively by exports and investment and significantly negatively by imports and exchange rate volatility.

Abdinur, M. A., & ELMAS, B. (2022) employ the ordinary least square (OLS) correlation and multiple regression analysis to analyze the effects of changing exchange rates and inflation rates on GDP growth in Somalia from 2005 to 2020. Based on empirical research, the exchange rate has a somewhat positive relationship with GDP development. However, some researchers have stated that this relationship is negative, while others have suggested that it is. However, the study's empirical research showed a favorable correlation between the exchange rate and production growth.

There are many writers, and each of them has their own perspective on how the exchange rate affects economic development. While some of these researchers' findings show that changes in exchange rates boost economic development, others imply the opposite. Besimi (2003) uses the Republic of Macedonia as a case study to show the link between the repercussions of exchange rate changes in global business. He concluded that the influence of changing exchange rates on international commerce is endogenous, which means that it is determined by the current exchange rate regime. Therefore, when there is greater variation in exchange rates, there is a negative effect on international trade, and this effect is highly volatile. Conversely, when exchange rates are lower, there is less turbulence in the impact on global commerce, and the sign changes from adverse to favorable. Using an alternative strategy of exchange rate targeting to promote fast economic development may quickly undermine macroeconomic stability, according to all of Fetai's (2013) econometric results, which also show that there would be no appreciable economic benefits.

Studies on Foreign Direct Investment

When looking back over the past two decades, we can see that there a significant rise in the amount of money coming in from foreign direct investment, or FDI. Because of these shifts, several empirical publications have been written to test the hypotheses about the positive effects FDI inflows will have on host countries. Recent theoretical and empirical research demonstrates that the removal of barriers to FDI, significant advancements in communication and transportation technologies, and direct policy actions taken by many governments to attract FDI have all contributed to the changes in Kenya's economy brought on by increased FDI inflows, as well as to the overall economic effects and spillover effects of FDI in the nation. According to recent theoretical and empirical studies, the decreasing economic changes brought about by increased FDI inflows in Kenya, as well as the overall economic effects and spillover effects of FDI in the nation, were all influenced by significant advancements in transportation and communication technology, as well as direct policy actions adopted by many countries to attract FDI. The removal of obstacles to FDI, which in turn was a consequence of removing obstacles, has led to these improvements (Hubert, F., and Nigel Pain, 2000). A

significant number of empirical publications that assess the presumptions about the advantages that FDI inflows are supposed to bring to the host countries have been published as a result of these developments. Based on the research's results, it is also possible to assess the financial advantages of the incentives the government offers to draw in multinational firms (MNEs). A country's economy may see a variety of effects if its foreign direct investment (FDI) increases. The labor and capital markets, economic development, trade patterns, and other factors may all be impacted by foreign direct investment. Increase (FDI) and Multinational Corporations (MNC) Presence in Kenya May Cause Economic Changes Even while the number of articles written on this particular subject is substantial and continues to rise, it is still possible to organize the vast majority of the available research into rather consistent groupings, which makes conducting an overall analysis much simpler. In addition, the recent application of micro-based panel data sets and the improvement of econometric approaches have eliminated the majority of the inconclusiveness and inconsistency that were found in the early literature. When the most recent body of research is used as a point of reference, it is possible to arrive at some broad generalizations concerning the economic impacts of inward foreign direct investment (FDI) (Lejour et al., 2007). The researcher is concentrating on studies that provide quantifiable proof of the shift in aggregated production that occurs as a direct result of the increasing presence of MNEs. These estimates are going to be used to figure out how an increase in the amount of foreign capital will affect Kenya's productivity.

These changes have prompted a slew of empirical studies that test the assumptions behind the benefits that foreign direct investment (FDI) inflows are forecast to deliver to the host nation. Recent theoretical and empirical literature links the lowering of barriers to FDI, major improvements in transportation and communication technologies, and direct policy measures taken by many governments to attract FDI to the increase in FDI flows into Kenya, as well as the country's overall economic effects and spillover effects. This is a result of the fact that the barriers to FDI have been reduced, that transportation and communication technologies have improved, and However, Recent studies have had access to data at the firm and plant levels, better aligning with firm-level theory. The effects of the foreign exchange market, taxes, institutions, and trade protection are some of the most important factors that determine foreign direct investments. As we'll see in the

next section, they have a big effect on both foreign direct investment and the economy as a whole.

To better understand how fluctuations in exchange rates affect FDI, researchers have looked at both the level and volatility of exchange rates between nations (FDI). In the event of a rise in the value of the Kenyan shilling, the purchase of foreign assets would become more affordable. However, this would be offset by a reduction in the expected nominal return in the local currency, so the overall rate of return would remain the same. An imperfect capital markets story is presented by Froot and Stein (1991) to explain why a currency appreciation may actually lead to an increase in the amount of foreign investment made by a company. Because of the imperfections in the capital markets, the cost of raising capital internally is lower than the cost of borrowing from external sources. So, when the value of the currency goes up, the firm's wealth goes up and it has more low-cost funds to invest than firms in a foreign country whose currency goes down.

Blonigen argues that shifts in the level of the exchange rate may also impact the amount of FDI a host country receives (1997). If a company's motivation for engaging in FDI is the purchase of internally-focused assets (such as technology, managerial skills, etc.) that can be used across multiple markets without a currency transaction, then an increase in the value of the home currency will lead to a decline in the value of the foreign asset. On the other hand, this may not always lead to a decrease in nominal return. To put it another way, the devaluation of a nation's currency may very well make it possible for transferable assets to be "fire sold" to foreign companies that are engaged in international trade, as contrasted to domestic firms that may be unable to participate in international markets. In a number of studies, including Grubert and Mutti (1991), Swenson (1994), and Kogut and Chang (1995), short-term swings in exchange rates have been found to increase inbound FDI (1996). Foreign direct investment (FDI) mergers and acquisitions may be an exception, however there is little evidence to support this (see, e.g., Klein and Rosengren, 1994). As a result, the majority of the data supports what Froot and Stein (1991) and Blonigen (1997) predicted. Furthermore, previous research assumed that the impacts of exchange rates on foreign direct investment (FDI) are symmetrical and proportionate to the size of exchange rate swings. In a nutshell, this study has resulted in the creation of substantial and fascinating firm-level models that explain how changes in

exchange rate uncertainty might impact the flow of foreign direct investment (FDI) depending on the firm's characteristics.

Both domestic and foreign economists have taken an avid interest in how taxation affects foreign direct investment (FDI). A common assumption is that increased taxation will discourage foreign direct investment (FDI), albeit the size of the increase is more relevant than the hypothesis itself. In addition, De Mooij and Ederveen's (2003) assessment of the literature is particularly thorough. On the other hand, a number of the more credible articles in the body of research have shed light on the reasons why such a number might be quite deceiving. According to the findings of these papers, the way in which taxes are levied, how FDI activity is measured, and how investors in both the home and destination countries are taxed all have a role in shaping the net impact of taxes on FDI. Furthermore, it is possible for a multinational enterprise to be subject to taxation in both its home country and the country in which it is operating. The fact that different countries solve the problem of double taxation in different ways makes it harder to predict how taxes will affect foreign direct investment (FDI).

Hartman's publications (1984, 1985) are generally regarded as the seminal works on the topic of the impact of taxation on FDI. These authors were the first to suggest that some forms of foreign direct investment (FDI) might, unexpectedly, be somewhat insensitive to taxes. The most important takeaway from Hartman's (1985) research is that a foreign affiliate's earnings in a foreign country are subject to taxation in both the parent country and the host country. This is the case regardless of whether or not the profits are brought back home or reinvestment in the business leads to additional profits being generated by the foreign affiliate. In the end it would take deliberate action to avoid paying taxes to foreign governments on these profits. New investment decisions, however, need to include in the capital injection by the parent company into the subsidiary. These wires have not yet been taxed by the government of the recipient country because they did not originate there. In a few words, this has far-reaching implications. Slemrod (1990) put forth the idea that laws created to combat double taxation might have an effect on tax responsiveness, and this idea did acquire momentum amongst academics. Generally speaking, nations are divided into two categories: "territorial," which does not tax income earned outside of the parent country, and "worldwide," which treats all income earned by

its parent companies as potentially taxable but may treat foreign income in a number of different ways to prevent double taxation of multinational corporations (MNEs). There are no taxes on income generated in a territory by the parent nation.

The home country of the multinational corporation (MNE) can either provide a credit or a deduction for foreign tax payments made by the MNE as two standard treatments for the problem of double taxation. When considering the effects of taxes on foreign direct investment (FDI), there is more to the story than meets the eye initially, as was pointed out quite nicely in the research that has been published. MNEs are subject to a wide range of tax rates in both the country in which they are hosted and their home country. Policies that deal with the problem of double taxation could make a big difference in how much these taxes affect an MNE's desire to invest.

Among the many factors that influence foreign direct investment (FDI) activity, the quality of the institutions in a country is one of the most important factors. This is especially true for less developed nations. To begin, inadequate asset protection under the law raises the likelihood that a company's property will be taken without compensation, the results of which are discouraging to investors. The high cost of doing business is a direct outcome of the weak market institutions (and/or corruption) should also lead to a reduction in the amount of FDI activity. And finally, the expected profitability of a market, as well as the amount of foreign direct investment that goes into that market, will both decrease to the extent that weak institutions will lead to weak infrastructure (i.e., public goods). Even though these fundamental hypotheses are not in dispute, Unfortunately, there are currently no reliable methods for measuring the impact that institutions have on FDI, making it difficult to provide an accurate estimate of this relationship. Because of this, determining the impact of organizations on FDI is challenging. Most metrics are composite indices that take into account a country's governmental, judicial, and economic structures. These standards are derived from surveys of government and corporate leaders who are well-versed in the country's situation (Wheeler and Mody, 1992). The majority of trade economists believe that the FDI and trade protection relationship is real and logically evident. According to this hypothesis, businesses should react to greater trade protection by switching out exports for affiliate manufacturing in order to reduce the costs associated with trade production. Only a few studies have been carried out to specifically

verify this hypothesis, which may be because the theory is simple and generic in nature. This technique is sometimes referred to as "tariff-jumping FDI." Another justification is to think based on data. It could be challenging to accurately quantify non-tariff forms of protection in many industries. Numerous company-level studies have taken into consideration different trade protection regimes using industry-level methodologies, including those by Grubert and Mutti (1991), Kogut and Chang (1996), and Blonigen (1999). However, the findings of these studies have typically been inconclusive (1997).

The influence of FDI on the state of the economy has been thoroughly examined in the empirical economic literature, especially at various points in time (Blomstrom & Kokko, 2003; Borenzstein, De Gregorio, and Lee, 1998). These two studies used information on FDI received by developing countries in a framework for cross-country regression to examine the association betwixt FDI and economic progress. They discovered some evidence that FDI aids in a nation's economic expansion, but the magnitude of this advantage varied depending on the amount of human capital stock present in the recipient nation.

The improved productivity brought about by Foreign direct investment is viable only if the host country has a sufficient quantity of human capital. Sun (1998) discovered evidence of a usually greater degree of efficiency growth among foreign-funded enterprises in China compared to domestic firms in research done by Chen and Demurger (2002). The results obtained by Sun mirrored those obtained by Chen and Demurger. These studies utilized data from a variety of industries threshold stock of human capital does the increased productivity brought about by FDI hold true. In a study conducted by Chen and Demurger (2002), Among businesses receiving funding from outside, Sun (1998) found evidence of a greater rate of productivity increase in China compared to domestic firms. Sun's findings were similar to those of Chen and Demurger's. These studies utilized data from a variety of industries, but they are restricted due to the fact that their primary focus was on agricultural businesses Studies may be divided into two main categories: those that examine the pattern and variables influencing FDI and those that examine how FDI affects the host country's economy. The amount and pace of local market development, the domestic business climate, technical advancements, trade and

investment policies, adherence to international rules and agreements, and other variables all have an impact on foreign direct investment (FDI).

Conclusion

The data on foreign direct investment, international trade, and economic development accompanying this article's evaluation yield some interesting results. According to the research, growth, inflation, and the exchange rate may have a positive or negative influence on each other. Rises in inflation are not likely to impact foreign direct investment. However, prolonged periods of rising inflation will result in a decrease in FDI due to the impeccably high level of inflation and no other aspect of a country's economy that influences FDI. In addition, growth and the value of a currency, as well as foreign direct investment, are linked in a beneficial manner. According to existing empirical data, it may be difficult to draw inferences about the direction of causation between variables based on assumptions about causality between variables. An empirical and crucial topic, it changes based on the kind and style of the economy that is being explored. In the following chapter, we'll go through the research process in depth.

CHAPTER THREE

Data and Methodology

Introduction

This portion of our investigation or research will focus on different procedures, processes, or actions that are carried out in order to obtain essential informational data for the study. These procedures, processes, and actions will be discussed at length and given careful consideration in accordance with econometric standards. This thesis also discusses the regressors and regress and that were utilized in the process of running the regression in this research, as well as how and where these variables were obtained. In this section, we will also take a look at and talk about the various statistical methods that were applied in order to conduct an analysis on the data that was gathered for this research.

Data Collection

This research concentrated primarily on secondary sources of information as its primary point of inquiry. In light of the fact that it supplied background information and allowed comparisons to be made between previous experiences and those that are now being had, the utilization of secondary data was deemed to be appropriate for this piece of research. The gathering of data is an essential component of every research project in order to provide an explanation for a specific occurrence of interest. The term "data collection" refers to any method or practice of acquiring information. In order to provide an explanation for a particular occurrence of interest, this study, which is an operational analysis of foreign direct investment and its influence on the economic development of Kenya, relies heavily on secondary data, particularly time series data. This is because primary data is not readily available. The overarching purpose of this research is to determine how the magnitude of Kenya's foreign direct investment affects the country's rate of economic expansion. This line of inquiry made use of secondary data, which was gathered from the database of the World Bank and the World Development Indicators. This line of inquiry also makes use of secondary data. The conclusion that can be drawn from this is that the study was fruitful. Although this study examines a span of time spanning fifty-one (51) years, beginning in 1970 and continuing through 2021, its sample size only includes fifty-one (51) years' worth of data. The research began in 1981 and

continues through 2021. One can find the following, among other places, an in-depth analysis of the factors that were taken into consideration in this research:

Variables and Usage

All of the variables that were considered for use in this study were economic variables. Each of these variables has the potential to bring about change in an economy, which is why they are categorized as economic variables. Unprocessed data for each variable used in this study were collected for analysis, as well as to draw conclusions or make policy recommendations as needed.

Economic Growth - GDP in this particular piece of research, growth is being used as a substitute for economic growth because it has been applied in the context of comparing one time period to the next. When we discuss an increase in income, what we truly mean is that there has been a rise in the output of goods and services used in the economy. When comparing one historical period to another, the statistic that is most usually employed is the increase of the nation's gross domestic product. Depending on how you feel about it, you may choose to represent the sum using either nominal or real units (with inflation taken into account). However, the GNP or GDP has historically been employed as an indicator of economic expansion. The GDP and GNP have both been used as indicators of economic health in the past (GNP). Once upon a time, measures of economic health included the Gross National Product and the Gross National Product per capita. Historically, the terms gross domestic product (GDP) and gross national product (GNP) have been used synonymously.

Exchange Rate (EXR)- The Real Effective Exchange Rate is a measure of how much one currency is worth in another (REER); the exchange rate is the price of one currency in terms of another. Depending on the context, they might be presented as either an average rate throughout a certain time period or an end-of-period rate. The World Bank and the IMF both agree (IMF), exchange rates can be broken down into three primary classifications: (1) market rates, which are established by the market; (2) official rates, which are decided by the government; and (3) currency rates. The value of a particular currency expressed in terms of the value of the United States dollar is indicated by a conversion rate. Because Kenya is one of the most populous countries in the world, we

thought it would be interesting to investigate how exchange rates work in that country. Because of this, we decided to go with the actual exchange rate, which provides an indication of how much domestic goods and services are worth when converted to another currency.

Inflation (INF)- In the field of economics, one of the terms that is used the most frequently is "inflation," abbreviated as "INF." As a direct result of inflation, many nations have spent significant amounts of time stuck in a state of limbo. The term "inflation hawk" is commonly applied to central bankers in order to characterize the behavior of these individuals. Politicians have found themselves in positions of power after winning elections on the promise that they would bring inflation under control. However, when they fail to deliver on their promises, they find themselves in jeopardy of losing those positions. Inflation was identified by Gerald Ford, while he was serving as president for the first time, as the nation's most pressing issue of general concern. First things first: what exactly is inflation, and why is it such a big deal in the world we live in today?

Price inflation can be measured as the rate at which prices rise as a function of time over a period of time. Inflation occurs over time. Inflation is frequently defined as a broad indication, such as the overall rise in prices or the growth in the cost of living in a nation. This is because inflation tends to have a cumulative effect over time. However, it is possible for it to be determined in a more precise manner for particular things, such as food, or for particular services, such as haircuts. The term "inflation" refers to an increase in the prices of a specific group of goods and services over the course of a specific period of time, typically one year, in any given environment.

The amount of money that circulates throughout an economy is referred to as the "broad money" of that economy. It is the most exhaustive method for determining how much money a nation has because it takes into account both cash and other assets that can be converted into currency to purchase goods and services. As a result, it provides the most accurate picture of a nation's financial situation. Since cash can be exchanged for such a wide variety of financial goods, it presents a significant challenge for economists to accurately measure the amount of money that is moving through the economy. There are a variety of methods that can be used to compute the monetary supply. A capital "M" and a number are occasionally used by economists as shorthand to indicate the measurement

they are employing in a particular example. The formula that is used to estimate the amount of money in circulation varies from country to country. The term "broad money," which encompasses certificates of deposit, currencies, money market accounts, Treasury notes, and anything else that can be converted into cash, is considered the most comprehensive definition of the term "money" (but not corporate shares). An increase in the total amount of money that is currently in circulation has a number of beneficial effects. Most importantly, it enables policymakers to better recognize the possibility of inflationary tendencies. Central banks frequently consider both broad money and narrow money when formulating their policies regarding the monetary system. Economists have shown that there is a significant association betwixt the amount of money in circulation, the rate of inflation, and interest rates. By lowering interest rates, central banks such as the Federal Reserve are able to increase the amount of money that is in circulation, which in turn stimulates economic growth and makes more money available to individuals.

When there is less money in circulation, there is a corresponding increase in interest rates. This indicates that costs will be brought down to a more reasonable level. Simply put, when there is more money around, the economy grows faster because businesses can get their hands on more capital more easily. When there is less money in circulation, the economy experiences a slowdown and either a decrease or a maintenance of current prices. Broad money is one of the signs that central bankers assess when deciding what, if any, measures to take to have an impact on the economy. Sims (1972), Heber (1991, 1996), and other comparable studies have shown that there seems to be a significant relationship betwix the quantity of money in the economy and its expansion. Additionally, there are instances in Neusser and Kinglert, Wachtel and Rousseau, King and Levine (1993b), and King and Levine (1995). (1996).

Additionally, discussed were Mansor (2005) and Acemoglu and Ziliboti (1997). It is advisable to maintain a fair dosage of skepticism when considering the impact of the money supply on the growth of Nigeria's economy. But several studies have shown a link betwixt the growth of the economy and the rise of the money supply.

Foreign Direct Investment (FDI)- For example, "mergers and acquisitions," "building new facilities," "reinvesting income gained from abroad operations," and "intra-company loans" are all actions that fall under the banner of "foreign direct investment"

(FDI) (FDI). An investor must develop a new facility and acquire long-term management ownership (ten percent or more of the firm's voting shares) in a company that conducts business in a country with a different economic system than their own in order for it to be termed FDI. The balance of payments entries for equity capital, long-term capital, and short-term capital combined makeup total FDI (FDI) (FDI). Management involvement, the creation of joint ventures, and the exchange of knowledge and skills are typical FDI components. The FDI stock is computed by deducting the FDI intake from the FDI outflow during a certain time frame. More than 10% of a company's shares must be purchased to be considered a direct investment. A corporation operating in one country that has a majority share owned by a foreign entity is said to be engaging in foreign direct investment (FDI), a subset of international factor movements. There is a distinction between foreign portfolio investment, which is a passive investment in the assets of another country like public stocks and bonds, and foreign direct investment, which is an active investment in those securities. "The globally accepted threshold for control is 10% of voting shares," said the Financial Times. However, this is a gray area because it is common in publicly traded companies for a smaller block of shares to provide control. De facto control can also be accomplished by having command of key inputs such as capital or even management and technology."

Money Broad (BM)- according to the central mechanism of monetary theory, which states that an increase in the money supply will lead to an increase in demand, production, and the creation of new jobs (Kimberly, 2018). People who believed this thought that changes in monetary policy would have both long-term and short-term effects on employment and output (Ahuja, 2011). like to Umeora (2010), the money supply is the backbone of the economy, and as such, it has far-reaching consequences for the state of any given nation. This is because an increase in the money supply would encourage genuine investments and consumption, leading to stability. According to Inam and Ime (2017), in a well-coordinated economy, the relationship between monetary policy and economic development is weakly positive at best. Aslam (2016) draws the conclusion that a large money supply has had a positive and noticeable result on the Sri Lankan economy. Since central banks control all the instruments of monetary policy, it follows that as the money supply in a country expands, real economic activities will expand in tandem

(Omodero, 2019). The money supply has a positive association with economic development both in the long run and the short run, as found by research by Dingela and Khobai (2017).

Trade (IT) - when referring to macroeconomics, almost always refers to international trade, which is the network of exports and imports that connects economies all over the world. A product that is exported is one that is sold on the global market, while a product that is imported is one that is bought from the global market. When an economy is well connected, exports can be a significant contributor to the country's overall wealth. Increased productivity is one of the side effects of international trade, which also makes it possible for nations to reap the benefits of foreign direct investment (FDI) made by companies based in other nations. Foreign direct investment (FDI) can infuse a nation with both foreign currency and foreign expertise, which in turn can boost local employment and skill levels. Foreign direct investment (FDI) gives businesses the chance to grow and expand, which can lead to more money in the long run.

Table 3.1 Variable Description

Variables	Abbreviation	Variable Types	Source	Unit Measurement
Economic Growth	EG	Dependent Variable	World Development indicator	GDP per capita (constant 2015 US$)
Foreign Direct Investment	FDI	Independent Variable	World Development indicator	net inflows (% of GDP)
International Trade	IT	Independent Variable	World Development indicator	Trade (% of GDP)
Inflation	INF	Independent Variable	World Bank of Kenya	GDP deflator (annual %)

Exchange rate	EXR	Independent Variable	International Monetary Fund	IMF based exchange rate
Broad Money	BM	Independent Variable	World Development indicator	Broad money (% of GDP)

Descriptive Statistics

Descriptive statistics are statistics that can be used to describe or summarize aspects of a sample or data collection. Some examples of descriptive statistics include the mean, standard deviation, and frequency of a variable. If we want to learn about the qualities shared by the individual parts of a data sample when it is considered as a whole, we might find it helpful to make use of inferential statistics. As a result, the first step of this research included examining the correlation between the independent and dependent variables, such as GDP growth, which serves as a stand-in for economic growth. Using statistics from the World Development Indicator of the World Bank, this article examines FDI, trade, the real exchange rate, inflation, and broad money from 1970 through 2021. When beginning a quantitative research investigation, it is essential to make use of descriptive statistics right away. These statistics not only help us to logically simplify vast amounts of data, but they also provide us with a comprehensive overview in a format that is easy to work with. Stationarity and other characteristics of time-series data When conducting empirical research, it is important to keep in mind that the non-stationarity of time series data can at times present a challenge. Working with non-stationary variables results in erroneous results or regression findings, both of which, if used further, can lead to incorrect inferences. Working with non-stationary variables generates erroneous results or regression findings. During the entirety of the observation period, a stationary process will always maintain the same structure in terms of its mean, variance, and auto correlation. The concept of stationarity in mathematics refers to a series that appears to be unchanging and does not follow any discernible trend. It also has a variance that is unchanging over time, an auto-correlation structure that does not change significantly over time, and does not exhibit periodic oscillations. "Stationary series are those in which the

mean and auto-correlation of the series are not altered by changes in the length of time that has elapsed since the series' beginning," write Gujarati and Porter (2009). What this means is that the length of time since the series' inception has no effect on the series' mean or auto-correlation. To phrase it another way, the passage of more time does not affect the stationary series in any way. Before beginning any kind of regression analysis, it is of the utmost importance to first conduct a test to determine whether or not the data is stationary. This can be accomplished by employing either the Augmented Dickey-Fuller (ADF) test or the Phillip-Peron test. Both of these are diagnostic procedures.

Unit Root Test

Because this investigation made use of data from a time series, it was deemed necessary to investigate whether or not the variable in question or the data were stationary. This investigation was carried out because it was thought to be necessary. In addition, before running the cointegration test in time series or any other kind of test analysis, it is necessary to make sure that the variables in question are stationary. This is true whether or not the test is being run on time series data or on data from other kinds of analyses. For this purpose, many diagnostic procedures like the Phillip-Perron test, the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test, and the standard Augmented Dickey-Fuller (ADF) test are used. The augmented Dicky-Fuller test and the Phillip-Perron test are going to be the ones that are utilized in this study because they are the ones that are the most reliable and are able to best serve the purposes of this research. The application or utilization of these tests led to the determination of the order in which all variables should be integrated. This led to the determination of the order that should be followed. The null hypothesis Ho, which is indicated by Ho=0 and states that "there is a unit root if the p-value is above the 5 percent significance threshold," is the alternative hypothesis, whereas the alternative hypothesis (H1) states that H1: 0. The alternative hypothesis (H1) states that "there is a unit root if the p-value is above the 5 percent significance threshold." (If the p-value is less than the 5% significance level, there is no unit root in the data.) Throughout the entirety of each and every one of these evaluations, the E-views 12 Student Edition Lite was utilized.

The Augmented Dickey-Fuller (ADF)

In order for Dickey and Fuller (1979) to test their hypothesis using a computer program, they designed and built the program themselves. The computer program is able to determine whether or not a variable possesses a unit root, as well as whether or not the variable is subjected to an a priori random walk. The program also has the capability of determining whether or not the variable in question possesses both a unit root and an a priori random walk. You can use this information to assess whether or not a variable is subjected to an a priori random walk, enabling you to establish whether or not a variable is exposed to an a priori random walk. In order to illustrate the applicability and usefulness of the larger Dickey–Fuller test, Hamilton (1994) suggests four distinct testing situations. These scenarios are presented in order to demonstrate the test's applicability. The expanded Dickey–Fuller test manual contains the scenarios that are being discussed here. The assumption that the variable in question has only a single unit root at each and every point in the distribution is the basis for the null hypothesis. This assumption lies at the foundation of the null hypothesis. The fact that the circumstances are different does not change the fact that this is true. When comparing the two strategies, one of the most significant differences is whether or not a drift term is included in the null hypothesis. The second approach differs significantly from the first in that it may or may not incorporate a constant term and a temporal trend into the regression used to construct the test statistic. These two considerations are important when deciding whether or not to include a drift term in the null hypothesis. The most salient differences between the two approaches are these. When deciding whether or not to include a drift term in the null hypothesis, these two aspects are very important considerations to take into account and take into account when making the decision. The primary difference between this test and the Dickey–Fuller test is that this one is performed on the model rather than the other way around, as was the case with the test that came before it. This is the case because the Dickey–Fuller test was developed after this one. This is because the Dickey–Fuller test came before this one, and this one was developed after it. yt= + t+ yt1++p1ytp+1 + t5.1.2 Since it incorporates delays of the order p, the ADF formulation allows for the possibility of higher-order autoregressive processes to take place because of the space it provides for this possibility.

As a result of this, it is extremely important to determine the length of the lag p that existed before the test could be successfully applied to the data. This is a necessary precondition for reaching this conclusion. The Phillips-Peron Testing Model (3.10.2).

Model specification

In this analysis, expansion of the economy is tracked by looking at the GDP. The variables that serve as predictors for GDP are broad money, inflation, the exchange rate, and trade. The predictor variables for GDP are foreign direct investment and inflation. The link between the variables that are being explained and those that are being explained by can be expressed as follows in its subtler form:

$$EG_t = f(FDI, IT, BM, EXR, INF) \tag{1}$$

$$EG_t = \beta_0 + \beta_1 FDI_t + \beta_2 IT_t + \beta_3 BM_t + \beta_4 EXR_t + \beta_5 INF_t + \varepsilon_t \tag{2}$$

The ARDL Bound Test

Now that it is unclear whether the data-collection technique that lies behind a time series is a trend or a first difference, stationary bound testing, a type of ARDL modeling, is utilized in a univariate equilibrium correction system to determine how significant later levels of variables are to the system. This is done because it is unclear whether the data-collection technique that lies behind a time series is a trend or a first difference. Moreover, as per Haug (2002), the ARDL limit testing technique is better suited for and generates superior findings when a small sample size is employed. This is due to the simultaneous computation of both short-run and long-run parameters, which results in a more precise method. In addition, Haug (2002) believes that a larger sample size is optimal for this technique and delivers superior results. The ARDL may indicate the association betwixt the change in the exchange rate and economic expansion as follows:

(3)

$$\Delta EG_t = \beta_0 + \sum_{it=1}^{P} a_1 \Delta EG_{t-1} + \sum_{it=0}^{q_1} a_2 \Delta FDI_{t-1} + \sum_{it=0}^{q_2} a_3 \Delta IT_{t-1} + \sum_{it=0}^{q_3} a_4 \Delta BM_{t-1}$$

$$+ \sum_{it=0}^{q_4} a_5 \Delta EXR_{t-1} + \sum_{it=0}^{q_5} a_6 \Delta INF_{t-1} + \gamma_1 EG_{t-1} + \gamma_2 LFDI_{t-1}$$

$$+ \gamma_3 LIT_{t-1} + \gamma_4 LBM_{t-1} + \gamma_5 LEXR_{t-1} + \gamma_6 LINF_{t-1} + \mu_t$$

EG: Economic Growth

FDI: Foreign Direct Investment

IT: International Trade

BM: Money Broad

EXR: Exchange Rate

INF: Inflation

μ: Error Term

Error Correction Model

The study estimated how the variables would act in the short term after figuring out how they were likely to act in the long term. The ordinary least squares approach is used to estimate the error correction model, and the error correction equation is written as follows:

(4)

$$\Delta EG_t = \alpha_0 + \sum_{i=0}^{q} \Delta\beta_1 InEG_{t-k} + \sum_{i=0}^{p} \Delta\beta_2 InFDI_{t-k} + \sum_{i=0}^{p} \Delta\beta_3 InIT_{t-k}$$

$$+ \sum_{i=0}^{p} \Delta\beta_4 InBM_{t-k} + \sum_{i=0}^{p} \Delta\beta_5 InEXR_{t-k} + \sum_{i=0}^{p} \Delta\beta_6 InINF_{t-k} + \lambda ECM_{t-1}$$

$$+ \varepsilon_t$$

All of the original meanings of the variables remain in effect, with the exception of the ECT, which stands for the error correction term. The empirical literature says that there is evidence of a short-run association betwixt the variables only when the error

correlation coefficient is negative and statistically significant (shown by a low P-value and a high t-statistic).

Granger Causality Test

It is possible, through the use of the tried-and-true Granger causality test, to determine which variable came first in the sequence of occurrences that resulted in the other variables (Granger, 1969). The theory of error correction, also referred to as ECM, will serve as the basis for this investigation. ECM contends that even though the past might be able to cause or forecast the future, the future is not capable of causing or forecasting the past. the future in the examination, this is considered to be one of the grounds that it is based on. According to Granger (1969), X is thought to be the cause of Y if earlier values of X can be used to make a more accurate prediction of Y to a greater degree of accuracy than earlier values of Y can. When determining whether or not X is the cause of Y, this is one of the criteria that must be satisfied. This is a list of regressions that were used for the test, and it goes as follows:

$Yt = 0 + I = 1$) $Xt = 0 + I = 1$ and Ut n $I = 1$ (9). ni y = 1 (10) (10) Yt 1 Xt + Yt n I K ix While Ut and Vt are the terms that denote the white noise disturbance, Xt and Yt are the variables that need investigation. The letters stand for Xt and Yt, respectively. The variables Xt and Yt are denoted by the superscripts t and t, respectively. The null hypothesis argues that $I X = I Y = 0$ for every I in contrast to the alternative hypothesis, which states that $I X = I Y = 0$. $I X = I Y = 0$ for all I according to the null hypothesis. The premise underlying both theories is that there is no change in the relationship between I X and I Y. In the event that the I X coefficient is statistically significant but the I Y coefficient is not, then X is the cause of Y but not Y in the event that the I Y coefficient is statistically significant, and vice versa, if Y is the cause of X rather than X in the event that the I Y coefficient is statistically significant. If the hypothesis is false, then Y must be the factor that caused X, not X itself. This is so because there is no other explanation but Y. On the other hand, there is proof of a bidirectional causal link if the I X coefficent and the I Y coefficent are both significant on their own. A set of variables is said to be co-integrated of order (d, b) by Engle and Granger (1987), with the notation Yt = CI (d, b),

if all of its components are integrated of order d or b (band d > 0), and there is a vector (= (1, 2... n)) such that a linear combination YYt I = (Y1t + 2Y2t + (Y2t + (d,b).

Diagnostic and stability tests

In addition to the diagnostic procedures described above, a number of other diagnostic procedures are currently being utilized in this investigation in order to evaluate the reliability of the model. A few examples of these tests include the White (heteroscedasticity) test, the residual normality test (series correlation test), and the cointegration test. The degree of autocorrelation in the dataset should be regulated by displaying the residual results against the anticipated quantities. Additionally, the worth of the standardized residual values should be displayed against the relationship with the future, along with the value of the residual values. This will ensure that the degree of autocorrelation in the dataset is controlled. Because of the F-statistics, we can say that the model has heteroscedasticity.

Model's Stability Test and Diagnostics

The validity, robustness, and reliability of the model are examined in this work using the Breusch-Godfrey serial correlation test, the Breusch-Pagan-Godfrey heteroskedasticity test, and the Jarque-Bera normalcy test. A variety of diagnostic and stability tests must be run in order for the modeling process to be completed successfully. Additionally, the outcomes of the multiple tests described in this body of work might have a substantial influence on the model's validity. A critical step is to assign a numerical value to the degree to which the data are related to one another. This can be accomplished by comparing the values of the residuals to the values that were predicted, as well as by demonstrating the value of the residual's values in relation to the values that were projected. Alternatively, this can be done by comparing the values of the residuals to the values that were projected. Utilizing a concrete example is yet another viable option for achieving this goal. When the estimated F-statistics are compared to the null hypothesis, the null hypothesis is rejected with a probability of 51. This leads to the conclusion that the model either shows heteroscedasticity or homoskedasticity.

Conclusion

This research's design, procedure, and structure were discussed with precision and clarity (World Bank). From 1970 through 2021, our sample was meticulously selected and spans a total of 51 years. We validated our data with a variety of necessary technologies (E-views 12). We begin by providing a descriptive summary of the variables in this study, and then we conduct a unit root test using the Augmented Dickey-Fuller and Phillips-Perron procedures. To ascertain whether or not our variables are permanently linked, we used the Johansen co-integration test. Lastly, the model was put through a number of diagnostic and stability tests, such as the Breusch-Pagan, heteroskedasticity, and white tests, as well as the serial correlation LM test, to see how stable it was and how well it could control itself.

CHAPTER FOUR
RESULT AND DISCUSSIONS

Introduction

This chapter sets out to explore the various results and an indebt discussion of related graphs and tables. The association betwixt foreign direct investment, international trade, broad money, the exchange rate, inflation, and economic growth examined by ARDL in both the long- and short-run. Since the descriptive statistics provide a summary of the variables employed in this study, we first evaluate them to identify the dependent and independent variables as well as the fundamental qualities they display. This chapter, therefore, offers the findings from an analysis of the long- and short-term link betwixt foreign direct investment, international trade, and economic development in Kenya using the aforementioned econometric methodologies for the time period 1970-2021. There are seven divisions in this chapter. The first two parts of this report present statistical data (descriptive statistics) and test findings (unit roots). In the third section, the outcome of the Bound test of co-integration is shown. Results from the pair-wise granger causality test and other hypothesis-testing procedures are presented in the following four sections. The estimated model's diagnostic tests are presented in the first six sections, followed by a discussion of the diagnostic's stability in the final two. Have a lengthy discussion about the accompanying charts and tables. Since the variables in this study were summarized using descriptive statistics, we start by assessing these summaries to determine the nature of the dependent and independent variables. The stationarity of the variables is analyzed by deducing the meaning of the Augmented Dickey-Fuller test and the Phillips Perron test, and the explanation of the bound test for co-integration is explored, leading to the inference that the short-run and long-run ARDL tests should be carried out. Once we know if the variables are co-integrated, we may run ARDL tests over shorter and longer time periods to see if there is a correlation between them. We then want to execute and thoroughly investigate the granger causality test, a tool for helping scientists deduce the nature of the link between two variables or the chain's direction of causation. As the last step, we'll perform a suite of diagnostic tests and verify the consistency of your data, then explain what we found in detail. The proven and true E-views 12 software was used to process and interpret all of these economic factors.

Descriptive Statistics

Table 4.1 Descriptive Variable

	EG	FDI	IT	BM	EXR	INF
Mean	1271.5587	0.726932	54.37733	34.40281	50.19631	11.40144
Median	1237.186	0.471818	55.38017	35.37559	57.55810	9.787285
Maximum	704.967	3.094712	74.57340	42.81939	108.6713	45.97888
Minimum	824.2399	0.004721	27.23390	25.71029	7.020384	1.554328
Std. Dev.	164.8477	0.682555	10.75558	4.705900	35.92243	7.968520
Skewness	0.575319	1.725242	-0.573940	-0.051111	0.062076	1.968429
Kurtosis	4.083401	5.612446	3.238391	1.828753	1.448316	8.453584
Jarque-Bera	5.411740	40.58322	2.977990	2.994918	5.250131	98.02095
Probability	0.066812	0.000000	0.225599	0.223698	0.072435	0.000000
Sum	66122.52	37.80047	2827.621	1788.946	2610.208	592.8749
Sum Sq. Dev.	1385912	23.75993	5899.810	1129.420	65811.47	3238.363
Observations	52	52	52	52	52	52

Source: Extract from estimation output using E-views 12 student version.

There are 51 observations total for each variable in the study's descriptive statistics, and the data spans the years 1970 to 2021. The logarithmic scale used for the variables allows them to be read as elasticities. Descriptive statistics are used to provide context for numerical data by displaying characteristics such as the mean, standard deviation, skewness, and normalcy. Table 4.1 displays descriptive statistics for the study's variables, which confirms a mean rate of economic growth of 1271.55 and a standard deviation of 164.84 percentage points. Foreign Direct Investment averages 0.72, with a standard deviation of 0.68. International Trade is 54.37, with a standard deviation of 10.75. Broad Money has an average of 34.40 and a standard deviation of only 4.70. In a typical year, the average amount of Exchange rate is 50.19, with a standard deviation of 35.92. Inflation has a mean value of 11.40 and a standard deviation of 7.96. The skewness measures symmetry, or the lack thereof. Therefore, all variables are right skewed except for INF, as shown in the results below. The kurtosis statistic determines whether or not the data follows a bell-shaped or flat distribution compared to a normal distribution. Leptokurtic

(higher peak or long tail) kurtosis statistics reveal that EG, INF, and FDI are leptokurtic while the remaining variables are platykurtic (short-tailed or fat). By combining the results of these tests for skewness and kurtosis, we may ascertain whether or not the data have a normal distribution. Using Jaurque-Bera (JB), we can infer that residuals are often perturbed and so perform a normality test. Since the sum of the Jaurque-Bera probabilities for all the variables is greater than 0.05. Two variables are included in the model, and it is said that while international trade and broad money increase are not normally distributed, gross domestic product, FDI, Exchange rate and inflation are.

Unit Root Test

Investigating whether or not model variables are long-run co-integrated requires first looking at how they behave as time series. We can ensure that no erroneous judgments will be reached if we delve into the root causes. A stationary series is one in which the variance and covariance do not change over time, making the testing for stationarity a crucial operation when working with time series data in scientific study. Stationary time series are those in which the values do not change over the course of the series. Non-stationary time series have values that change over time. In order to find out if the data has a unit root, a battery of stationarity tests was run. In time series data, in particular, "the presence of a unit root indicates that the data is not stationary, which means that the variance, covariance, and mean are not stationary and that the results of any statistical analysis will be inaccurate. Several alternative hypotheses can be tested against the null hypothesis that a unit root exists. These include being at a standstill, moving in a straight line, or even making a sudden and dramatic change in direction. Researchers in this study used the Augmented Dickey-Fuller and Philip-Peron tests, which are predicated on the idea that the data include a unit root, to reach their findings. The pervasive problem of spurious regression is caused by the large majority of economic data having a unit root (i.e., it is not stationary). In order to avoid this, the ADF and PP tests are performed to determine if the time series data are actually stationary. Using the Akaike information criteria, the optimum lag time was selected for the ADF evaluation (AIC). Non-stationary time series are generally identified by the existence of a unit root. Both the ADF and PP tests reveal that the null hypothesis is false at a significance level of 10%. Tables 4.2 and

4.3 provide the results of the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests on the levels. These outcomes are consistent with the fact that the growth of the gross domestic product, inflation, and foreign direct investment has been reasonably constant during the last several years. We were unable to reject the null hypothesis of a unit root issue," despite substantial evidence of a unit problem for international trade, broad money, and the exchange rate.

Table below 4.2 Augmented Dickey-Fuller (ADF)

shows the results and significance levels of ADF at a level and at a difference.

Variables	Augmented Dickey-Fuller (ADF)			
	Intercept		Intercept and trend	
	Level	Diff.	Level	Diff.
Economic Growth	0.7298	0.0001	0.7657	0.0012
Foreign Direct Investment	0.0000	0.0000	0.0001	0.0000
International Trade	0.4298	0.0000	0.1180	0.0000
Broad Money	0.4121	0.0000	0.0554	0.0000
Exchange rate	0.9691	0.0000	0.3894	0.0000
Inflation	0.0028	0.0000	0.0083	0.0000

Source: Extract from estimation output using E-views 12 student version.

Because all series, except for inflation and foreign direct investment have unit root problems, the researcher looked at whether the series are stationary at the first difference level.

Following a successful application of the Augmented Dickey-Fuller (ADF) test, the findings of this unit root test that are reported in Table 4.2 above suggest that the result demonstrates that, with regard to the dependent variable economic growth, the following independent variables: It was recommended to do an additional test at the first difference

in order to determine whether or not it is possible to acquire stationarity. The international trade, along with Broad Money, economic growth and Exchange rate were unable to attain stationarity when tested at a level. Stationarity is achieved after the variable has been successfully processed through the first difference. international trade, economic development, Broad Money and Exchange rate reached a stationary state for the first time with a considerable level of 1 percent.

when I examine the ADF test at the level with an intercept scenario, I get a result that says Foreign Direct Investment, and Inflation are all stationary at the 10% significant level. I get a result that says Foreign Direct Investment, Broad Money and Inflation are all stationary at the 10% significant level in the trend and intercepts scenario. I ran the ADF test on the first difference with an intercept scenario, trend and intercepts scenario and all the data were confirmed stationary at the 10% level of significance. when I examine the PP test at the level with an intercept scenario, I get a result that says Foreign Direct Investment and Inflation are all stationary at the 10% significant level. I get a result that says Foreign Direct Investment, Broad Money, International Trade and Inflation are all stationary at the 10% significant level in the trend and intercepts scenario.

I ran the PP test on the first difference with an intercept scenario, I get a result that economic development, Foreign Direct Investment, Broad Money, Exchange rate and Inflation are all stationary at the 10% significant level, while in the trend and intercepts scenario, GDP, Foreign Direct Investment, Broad Money, Exchange rate, International Trade and Inflation all the data were confirmed stationary at the 10% level of significance.

Table below 4.3 Phillip- Perron (PP)

The shows the results and significance levels of PP at a level and at a difference.

Variables	Phillip- Perron (PP)			
	Intercept		Intercept and trend	
	Level	Diff.	level	Diff.
Economic Growth	0.6222	0.0002	0.5258	0.0014

Foreign Direct Investment	0.0000	0.0001	0.0001	0.0001
International Trade	0.5665	0.1399	0.0000	0.0944
Broad Money	0.4668	0.0000	0.0453	0.0000
Exchange rate	0.9671	0.0000	0.3894	0.0000
Inflation	0.0033	0.0000	0.0083	0.0000

Source: Extract from estimation output using E-views 12 student version.

The unit root results show that the levels of these macroeconomic variables are not stationary, but they are stationary at the first difference level, which is in line with the findings of the empirical literature. Also, since the series are not integrated at the second difference level I (2), we can move on to the next step in the ARDL co-integration procedure, which is to look for a long-term link between the model's variables.

Bound Test Approach to Co-integration

Table below 4.4 ARDL Bond Test Result

The table below shows the results bound test approach to co-integration.

F-Bounds Test		Null hypothesis: No levels of relationship		
Test Statistic	Value	Significance	I (0)	I (1)
F-Statistic	5.312730		Asymptotic=1000	
K	5	10%	2.08	3
		5%	2.39	3.38
		2.5%	2.7	3,73
		1%	3.06	4.15
Actual sample size	49		Finite sample: n=50	
		10%	2.259	3.264
		5%	2.67	3.781
		1%	3.593	4.981

			Finite sample: n=45	
		10%	2.276	3.297
		5%	2.694	3.829
		1%	3.674	5.019

Source: Extract from estimation output using E-views 12 student version.

The ARDL bond test approach is a long-run technique that was used in this research to determine whether or not there is a long-run relationship betwixt the variable economic growth and the rest of the other variables that were utilized in this study. The purpose of this research was to determine whether or not there is an association between these variables in the long run. Table 4.4 illustrates the outcomes that can be achieved using this method. The following are the factors that will be considered in making the decision: Ho denotes that there is no long-term connection if the F-statistics are lower than the lower I (0) constraint. H1 rejects the Ho hypothesis if the F-statistics are greater than the I (1) barrier threshold. The lag time was kept at its default setting since we are working with a very large sample size, and the Akaike information criteria were used for the automated selection. Because the F-statistic was 5.312730, which was higher than both the lower and upper limits, as the result shows, we may now draw the conclusion that there is a long-term association betwixt the variables. This is because the F-statistic was greater than both of these bounds. There is a possibility of a shock in the near term, but ultimately there will be convergence.

Results of a short run of ARDL-ECM

Table 4.5 result of short run ECM

Selected model: ARDL (3, 3, 4, 4, 4, 3)				
Model selection method: AIC				
Variables	Coefficient	Std. Error	T- statistics	Critical values

Foreign Direct Investment	0.510137	0.090763	5.620543	0.0008
International Trade	3.241043	0.941405	3.442771	0.0108
Broad Money	4.148084	1.956242	2.120435	0.0717
Inflation	-0.685039	0.204808	-3.344787	0.0123
Exchange rate	-3.407883	1.650104	-2.065254	0.0778
Ect-1	-0.631591	0.099971	-6.317728	0.0004
R-squared				0.964188
Adjusted R-Squared				0.876035
Durbin-Watson stat				2.422566

Source: Extract from estimation output using E-views 12 student version.

Findings from the short-term ARDL model used in this study are shown in Table 4.5. The ECT (-1) error correction model has a coefficient of -0.631591. A statistically significant value of - 0.631591 for the speed-up adjustment coefficient indicates that the difference betwixt the long-run equilibrium value and the actual value of economic growth will be closed in less than a year. Therefore, the system is progressing toward long-term equilibrium at a pace of 63.15%. The co-integration was validated by the negative sign of the adjustment coefficient and a statistically significant value (probability). The error correction coefficient does, in fact, have a negative sign and is statistically significant at the 1% level of significance. As a result, it supports earlier results of long-run co-integration between relevant variables in the model. R-square (0.964188), a measure of a model's overall fitness, suggests that our independent variables do an excellent job of explaining variations in economic growth. Additionally, the F-statistics are statistically significant at the 1% level of significance, suggesting that the model is statistically significant overall. Over the years 1970–2021, there was a strong positive correlation betwixt Kenya's economic growth and foreign direct investment. Data analysis was used to arrive at this conclusion. The results of this inquiry corroborate this conclusion. The

outcome indicated that FDI might have a short-term effect on economic growth. In Kenya, between 1970 and 2021, there was a negligible negative association between inflation and economic growth. Data analysis was used to arrive at this conclusion. The results of this inquiry corroborate this conclusion. The outcome also indicated that there is immediate link between inflation and economic growth in the short run. The estimated parameter for international trade is 3.241043, with a P-value of 0.0108. Therefore, it can be asserted that international trade meaningfully promotes the growth of the economy at the chosen level of significance (0.1). There is an insignificant positive association betwixt inflation and economic growth in Kenya over the course of the period 1970–2021. This was determined by looking at the data. This finding is supported by the findings of this investigation. The result also suggested that there is short-term impact of inflation on economic growth. Interestingly, all our scale variables are largely in agreement with the research expectations. Broad money is a positive function of economic growth. In the same vein, the exchange rate shows a negative expected sign in the short run. The statistical value of the Durbin-Watson is 2.148510, which indicates that no autocorrelation exists betwixt the variables.

Results of Long-Run Coefficients of ARDL

Table 4.6 Long run ARDL results

Selected model: ARDL (3, 0, 2, 2, 4, 3)				
Model selectin method: AIC				
variables	Coefficient	Std. Error	T- statistics	Critical values
C	54.81965	178.0032	0.307970	0.0760
Foreign Direct Investment	24.53240	7.249707	3.383916	0.0021
International Trade	0.609562	1.060026	0.575045	0.0699
Broad Money	6.798822	2.188401	3.106754	0.0043
Exchange rate	-3.568422	1.102218	-3.237494	0.0031
Inflation	-1.975757	0.820020	-2.409400	0.0228

R-squared	0.983558
Adjusted R-Squared	0.972400
S.E. of regressions	24.46344
Sum squared resid	16756.88
F-statistic	88.15338
Prob (F-statistic)	0.000000
Akaike info criterion	9.526574
Durbin-Watson stat	2.147916

Source: Extract from estimation output using E-views 12 student version.

Next, this section presents the estimation of the long-run coefficients in the model since the study ascertained long-run co-integration between the variables under investigation. Table 4.6 displays our findings. Overall, the empirical results indicate that all regressors have a statistically significant effect on economic growth. In particular, inflation and the exchange rate were shown to have a large negative influence on economic growth, while the other explanatory factors had a considerable positive impact. Indeed, as indicated in Chapter 3, I had no previous assumption about the sign of inflation utilization. However, the calculated coefficient of the long-run connection indicates that inflation has a negative long-run influence on Kenyan economic growth. This indicates that Kenya's economic growth would slow down as inflation rises. A 1% rise in inflation results in a 197 percent decline in economic growth. As the probability value is smaller than 0.10, interestingly, t-statistics demonstrate that the variable is significant at a 10% significance level (p-value 0.10). Given the statistical findings, it is firmly inferred that inflation has a 10% statistically significant negative effect on economic growth. My results are consistent with the genres of literature. In order to evaluate whether inflation and economic growth are associated over the long run in the estimated model, Saungweme, T. (2021), the author of this study, did a joint limits F-test and provided the results of the cointegration test based on those results. The calculated F-statistic seems to be bigger than the upper limit of the critical value at the 1% level of significance based on the data provided. In the long term, inflation proved to be statistically negative. This leads us to the conclusion that although inflation has no effect in the short term, it has a negative effect on Kenya's economic development over the long run. The theoretical literature backs up this

conclusion, which is consistent with earlier findings (Eggoh and Muhammad 2014 and Gillman and Harris 1996). (2010).

"In the long run, both the signs and magnitudes of the coefficients reveal that inflation is adversely and strongly related to GDP. Adaramola, A. O., and Dada, O. (2020) I completed the research and discovered that the inflation rate has a strong negative link with economic growth in the long term, according to the ARDL conclusion. Supporting the research of structuralists like Al-Taeshi (2016), Denbel et al. (2016), Idris and Suleiman (2019), Kasidi and Mwakanemela (2015), Manoel (2010), and Mkhatshwa et al. (2015). Inflation, as shown by this study, has been shown to hinder economic expansion. Because inflation lowers the value of money, it discourages investment and slows economic growth. According to the findings of Anidiobu et al. (2018), D. In a conversation between Chude and N. We also find a negative correlation (at the 1% level of significance) between the exchange rate and GDP growth, which contradicts the findings of Chude (2015), Enejoh and Tsauni (2001), and others (2017). This suggests that a one percent increase in the exchange rate would delay the long-term increase in economic growth by 3.56%. This outcome is in line with both our previous predictions and actual studies like those conducted by E. Adjei (2019). The findings reveal a statistically significant inverse association between economic development and exchange rate volatility (-2.9889) over the long period. Therefore, a 1% increase in exchange rate volatility would result in a 2.9889 percent reduction in long-term GDP per capita (economic growth) profits." This largely corroborates the findings of Musyoki et al. (2012), who found that currency volatility was negatively linked to GDP growth in Kenya. Ahmed (2009) looked at quarterly data from North America, Western Europe, and Eastern Europe to find out how exchange rates affect the growth of economies. According to the results of their research, currency exchange rate volatility has a major and unfavorable effect over time.

Considering the impact of International trade (IT), it has the positive impact on economic development as projected. This implies that an increase of International trade GDP growth follows suit. The decision is based on the probability value of the IT which is less than 0.10 (p-value < 0.10). The estimated coefficient 0.609562 indicates long-run the International trade elasticity for economic growth is elastic. This result is in line with

our prior expectations as well as the empirical works of literature like Bardi, W., and M. A. Hfaiedh (2021), An important factor in the expansion of the economies in our sample is the degree to which they are open to international trade. Consistent with the findings of Mangir et al. (2017), Moyo and Khobai (2018), and Gries and Redlin (2001), the proxy of trade openness presents a decisive variable for economic growth both over the long and short term and when considering each country separately (2020). Due to the fact that the majority of their commerce is with the European Union, the nations to the south and east of the Mediterranean have profited from association agreements. Trade openness has a positive and statistically significant coefficient of variation. Bardi, W., and M. A. Hfaiedh (2021). There is a positive value in the first variable. This finding demonstrates the catalytic effect of trade liberalization on economic expansion. So, being open to the outside world helps progress and economic growth a lot.

The authors of this study are Purnama, P. D., and Yao, M. H. (2019). The purpose of this research was to learn how much of an impact international trade has on the economic development of ASEAN member states. Growth in the economy was the dependent variable, and five independent factors were explored: bilateral trade, the exchange rate, and FDI. Using yearly data for 10 ASEAN countries between 2004 and 2015, the Pedroni Panel Co-integration Test was used to investigate the long-term relationships between these variables. On the basis of these results, we may conclude that trade, the currency rate, and foreign direct investment (FDI) all have long-term impacts on economic development in these ten ASEAN nations. This is supported by Pedroni panel co-integration tests. According to test findings from FMOLS and DOLS, foreign direct investment (FDI) and international trade boost economic development in ten ASEAN nations, but the exchange rate inhibits it. Additionally, the GDP is related to international trade and the exchange rate, both indirectly and in a causal manner. Alternatively, international trade and the exchange rate are causally linked directly to one another in both directions. Gross domestic product, foreign trade, and money exchange rates all follow FDI.

Moreover, I find that foreign direct investment has a positive association with economic development and is statistically significant at the 1% level of significance. This implies that a one percent rise in foreign direct investment would magnify the emission of

economic growth in the long run by 24 percent. This result is in line with the empirical literature, such as Dr. Daniel Abraham's (2015). Long-term analysis demonstrates a positive correlation betwixt FDI and GDP development, with a 1% rise in FDI resulting in a 0.9% rise in real GDP per capita. Statistics from diagnostic tests are fed into the ARDL, lending credence to the model's findings. The impact of exports on economic expansion was studied by Md. Reza Sultanuzzaman and colleagues in 2018. Our empirical research examines the role that exports and foreign direct investment (FDI) play in Sri Lanka's economic growth using the ARDL bound testing method for co-integration of long-run relationships. These results back up Lee and Chang's (2009) and Naveed et al.'s (2013) claims that there is a long-term positive and statistically significant correlation betwixt FDI inflows and GDP growth. They also support a shorter-term relationship between the two Increasing foreign direct investment by 1 percent boosts economic growth by 0.97 percentage points over 10 years and by 0.66 percentage points over the same time period if the inflows continue. Based on the data, it appears that foreign direct investment is a critical component of the Sri Lankan economy.

Additionally, we demonstrate that broad money has a statistically significant positive connection with GDP growth at the 1% level of significance. This suggests that a one percent increase in overall economic growth would result in a long-term 6.79 percent increase in economic growth. The empirical literature, namely that of Hlalefang, K., and D. Siyasanga (2017), is consistent with this conclusion. The estimated components support the theoretical argument that increasing the money supply would increase economic growth. More specifically, if everything else remains constant, a 1% increase in the money supply would result in a 0.58% increase in GDP, indicating that the money supply's long-run elasticity is 0.58. The findings are consistent with earlier studies (see, for example, Mohammad et al. (2009), Hameed et al. (2011), Ihsan et al. (2013), Zapodeanu et al. (2010), Maitra et al. (2011), Aslam et al. (2016), and Chude et al. (2016)). (2017). The purpose of this research is to provide more insight into the link between inflation and the money supply. The ARDL limited test and paired Granger causality tests served as the basis for the econometric methodologies utilized to examine and investigate the long-term connection and causality between the variables under consideration. The

bulk of the econometric findings supported a long-term and short-term positive relationship between the money supply and economic growth.

That means that both in the short run and the long run, the growth of the Nepalese economy is positively impacted by the money supply. Regarding the direction of causality, the results reveal that real GDP in Nepal over the research period is directly proportional to the growth in the country's money supply (M2). The research concludes that this indicates a correlation between shifts in the money supply and variations in Nepal's real GDP growth. Research like this lends credence to Keynesians who argue that there is an oblique (long-term) connection betwixt the money supply and real income. This verifies Gnawali's conclusion that a rise in Nepal's money supply causes the country's economy to expand (2019).

Granger Causality Test

Table 4.7 Granger Causality Result

Pair wise Granger Causality test			
Sample: 1970-2021			
Lags: 2			
Null hypothesis	Obs	F-statistics	Prob
EG does not Granger Cause IT	50	6.27358	0.0040
IT does not Granger Cause EG	50	0.85346	0.4327
FDI does not Granger Cause INF	50	4.62978	0.0148
INF does not Granger Cause FDI	50	0.22346	0.8006
BM does not Granger Cause INF	50	4.36835	0.0185
INF does not Granger Cause BM	50	0.79584	0.4574

FDI does not Granger Cause IT	50	2.77293	0.0732
IT does not Granger Cause FDI	50	0.84860	0.4347
EXR does not Granger Cause IT	50	2.71822	0.0768
IT does not Granger Cause EXR	50	1.87716	0.1648

Source: Extract from estimation output using E-views 12 student version.

The findings of this regression tools Granger causality test are showing in Table 4.6. There are three possible outcomes or interpretations for the number, and those three interpretations are as follows: When one variable has an effect on another but the other variable does not affect the other variable, a result is said to be unidirectional. When two variables both have effects on one another, the results are said to be bidirectional. When there is no effect running from one variable to the other, a result is said to have no direction and should not be considered. Since this is the case, the rule of thumb or decision-making criterion for the Granger Causality test is that when the probability value is more than ten percent, we agree with the null hypothesis, but when the probability value is less than ten percent, we disagree with it and declare the null hypothesis to be false.

The table that can be seen below demonstrates that there are five outcomes that all turn out to be unidirectional for the following variable: economic growth is utilized as a proxy for economic growth, along with intentional trade, the foreign direct investment on inflation, broad money on inflation, foreign direct investment on intentional trade and the exchange rate on intentional trade. The first finding demonstrates that there is a unidirectional causal chain running from economic development to intentional trade (IT); that there is also a unidirectional causal chain running from foreign direct investment to inflation (INF); that there is a unidirectional causal chain running from broad money to inflation (INF); that there is a unidirectional causal chain running from foreign direct investment to intentional trade (IT); and that there is a unidirectional causal chain running from exchange rate (EXR) to intentional trade (IT).Residual Diagnostic Testing and Results.

In this section, the study conducted various diagnostic checking tests to ensure the validity and soundness of our model. In order to test this, the study checked serial correlation, heteroscedasticity, multicollinearity, normality, stability, and also model specification.

Serial Correlation

When the errors are correlated to each other, it is evidence of presence of serial correlation. In other words, serial correlation applies to the situation where the current errors are related to the previous errors. Accordingly, it violates the assumptions of classical linear regression, which requires that the errors should not be correlated with each other. As a result, when serial correlation is present in the model, it is best linear unbiased estimator (BLUE), so the standard errors and t-statistic are longer valid. Therefore, to avoid serial correlation problem, Breusch-Godfrey LM test was performed to detect the presence of serial correlation under the following hypothesis.

$H_0: \rho = 0$ (There is no autocorrelation)

$H_1: \rho \neq 0$ (There is autocorrelation)

As shown in Table 4.8, we success to reject the null hypothesis, therefore there is serial autocorrelation in the model.

Table 4.8 Serial Correlation LM test

Breusch-Godfrey Serial Correlation LM test:			
Null hypothesis: No serial correlation at up to 1 leg			
F-statistic	0.855175	Prob. F (1,27)	0.3633
Obs* R-squared	1.473637	Prob. Chi-Square (1)	0.2248

Source: Extract from estimation output using E-views 12 student version.

Heteroskedasticity

Table 4.9 Heteroskedasticity Test

Heteroskedasticity test: Breusch-Pagan-Godfrey			
Null hypothesis: homoskedasticity			
F-statistic	1.297719	Prob. F (5,46)	0.2814

Obs* R-squared	6.428195	Prob. Chi-squared (5)	0.2668
Scaled Explained SS	8.856282	Prob. Chi-squared (5)	0.1149

Source: Extract from estimation output using E-views 12 student version.

The study investigated the presence of heteroskedasticity in the model. Classical linear regression assumptions also require that the errors should be homoskedasticity which means that the variance of the errors is constant over time. However, if the model succeeds to fulfil out this assumption, the issue of heteroscedasticity does not occur. As a result, it is, again, BLUE, then the standard errors and t-statistic are longer accurate and valid. To avoid this, Breusch-Pagan-Godfrey test was used to detect the presence of heteroskedasticity.

$H_0: \sigma^2 = 0$ (There is no heteroskedasticity)

$H_1: \sigma^2 \neq 0$ (There is heteroskedasticity)

As shown in Table 4.9, we succeed to reject the null hypothesis, therefore there is evidence of heteroskedasticity.

Normality Test

The Jaurque-Bera test was used to conduct a normality test in order to determine if the residuals are normally distributed with a zero mean and constant variance. In order for the traditional linear regression model's assumptions to be true, errors must be spread out in a regular way.

H_0 residuals are normally distributed.

H_1 residuals are not normally distributed.

As shown in Figure 4.1, since p-value is more than 0.05, we succeed to reject the null hypothesis, therefore we conclude that the errors are not normally distributed.

Figure 4.2 Normality Test
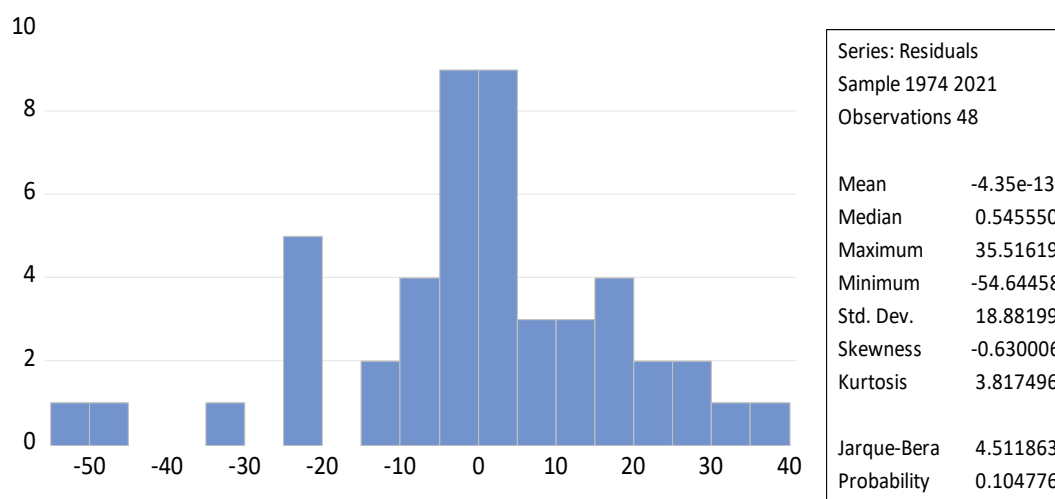
Source: Extract from estimation output using E-views 12 student version.

Multicollinearity

Multicollinearity in a regression model happens when two or more independent variables are highly related to one another. This means that another independent variable can be used to predict the value of an independent variable in a regression model. Multicollinearity makes the estimated coefficients less accurate, which makes your regression model less strong from a statistical point of view. You may be unable to find statistically significant independent variables using p-values. To check if the model has been properly described and is running effectively, multicollinearity tests can be carried out. One such instrument is the variance inflation factor. Using variance inflation factors, the level of concerns about multicollinearity can be measured, which lets the model be adjusted as needed. The variance inflation factor quantifies how much an independent variable's behavior (variance) is influenced by the other independent variables. The higher the VIF, the more likely multicollinearity exists, and more research is required. When VIF is more than 10, there is severe multicollinearity that must be corrected. If VIF is less than, there is no multicollinearity.

Table 4.10 Multicollinearity Test

| Variance inflation factors | | | |
| Sample: 1990-2020 | | | |
Variables	Coefficient variance	Uncentered VIF	Centered VIF
FDI	365.2609	2.386319	1.106570
IT	3.027073	61.62328	2.277149
BM	26.72418	213.5619	3.848490
EXR	0.656660	16.48056	5.510271
INF	3.155904	4.023157	1.303106
C	24953.61	165.4502	NA

Source: Extract from estimation output using E-views 12 student version.

Stability Test

Further, CUSUM and CUSUM square tests, accordingly, were performed during the study period to verify the model's parameter stability. The parameters are considered stable across the sample period if and only if the cumulative sum of residuals and the cumulative sum of squares do not exceed the critical lines. Figures 4.2 and 4.3 demonstrate that our model's coefficients are stable because the cumulative sum of residuals and the cumulative sum of squares remain inside the red lines.

Figure 4.3 CUSUM test
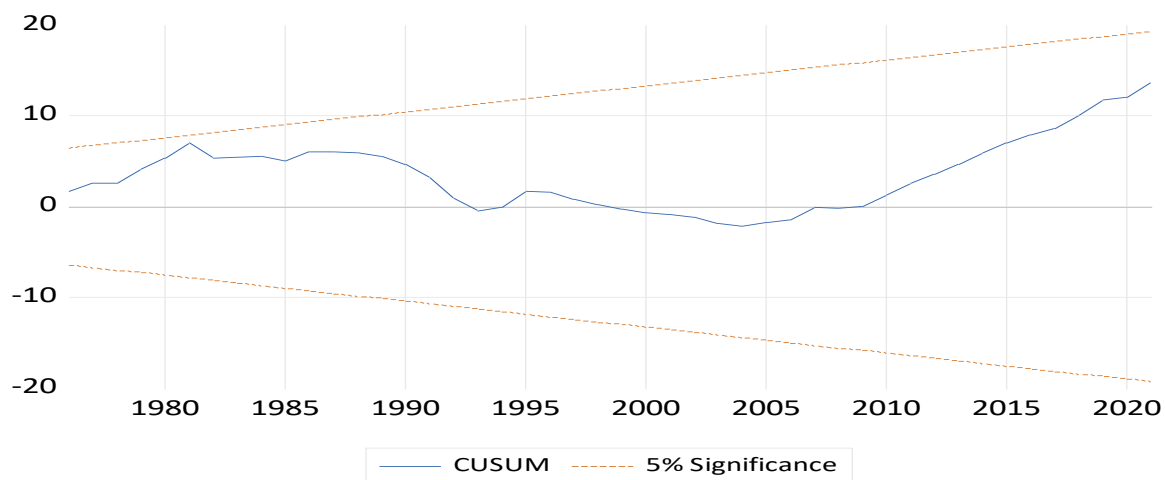
Figure 4.3 CUSUM of squares test
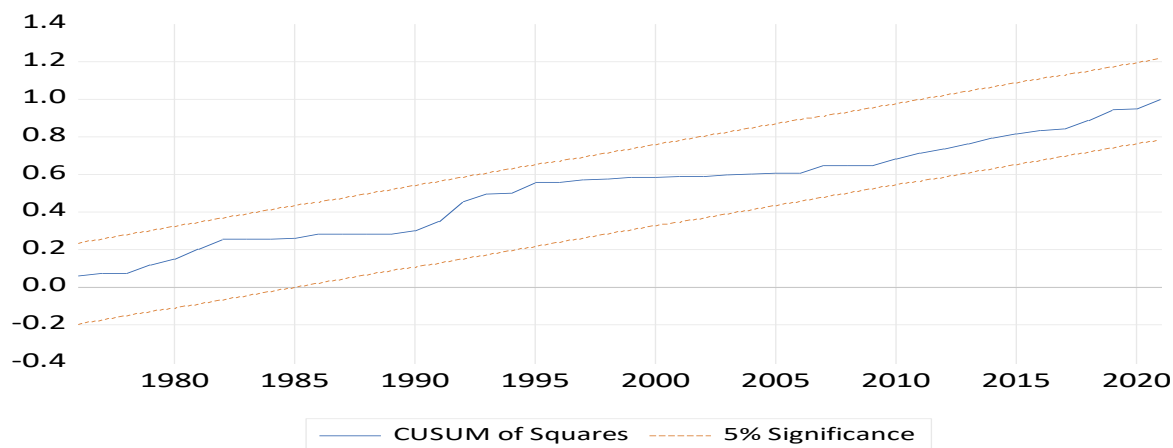
Source: Extract from estimation output using E-views 12 student version.

Specification Test

Finally, the study tested if the model was correctly specified in order to avoid the misspecification of the model resulting from the inclusion in the model of unnecessary variables, the exclusion in the model of appropriate variables or the adoption of incorrect functional type. If this happens, ss a result, the model is not BLUE, so the standard errors and t-statistics are not reliable. To detect this, RESET test is used on the model.

H_0 = the model is correctly specified error.

H_1 = the model is not correctly specified error.

From Table 5.11, the null hypothesis is rejected since p-value is more than 0.05, thus the Ramsey's RESET statistics suggested the model is no correctly specified error**.**

Table 4.11 Ramsey Reset test

	Value	DF	Probability
F-statistic	0.206051	(1,27)	0.6535

Source: Extract from estimation output using E-views 12 student version.

CHARPTER FIVE

Conclusion and Recommendation

Conclusion

This research examines the impacts on Kenya's economic development of foreign direct investment, international trade, broad money, the exchange rate, and the inflation rate between the years 1970 and 2021. In Chapter 1, we addressed the historical context of the study, the explanation of the issue, the significance of the inquiry, the research questions, the aims of the investigation, the statement of the hypothesis, the constraints of the study, and the definitions of essential terminology. While Chapter 2 explains the literature review, which is comprised of the theoretical and empirical literature, the conceptual model, and a discussion of the effects that various variables have on economic growth as well as other essential theories of growth, chapter 3 provides a summary of the findings and conclusions drawn from the study. According to the findings of the Augmented Dickey-Fuller and Phillips-Perron tests, all of the variables that were looked at were stationary at the intercept, the trend, and the intercept, and the indicators were either significant at the level or at the first difference. This was the case regardless of which test was performed. The Granger causality test was used in order to determine the direction of the link that exists between the variables in question. The serial correlation test, the heteroscedasticity test, the multicollinearity test, the normality test, the stability test, and the cumulative sum (CUSUM) test were used to get conclusive diagnostic results. The data suggest that FDI has had a substantial influence on economic development. Using a time series technique that tracks FDI, inflation, international trade, broad money, and GDP, the effect has been assessed. The elements have either a correlative or a complementary relationship, as determined by the results of this research. The data in this research were gathered from a data source maintained by the World Bank, and the EViews econometric tool was used to analyze the data.

The following is a summary of the empirical findings from Chapter 4: Regarding the data, statistical analysis revealed that every regressor had an impact on GDP expansion. While certain explanatory factors were shown to have a considerable positive impact on economic growth, others were found to have a negative impact. It was shown that, in the short term, only inflation and the exchange rate have a significant negative

impact on economic development, whereas all other factors have a significant positive impact. The F-statistic for the ARDL bound test is 88.15338, which indicates that the independent variables and the dependent variable are related across time and that the null hypothesis may be rejected. As a result, the estimated coefficient of the long-run relationship demonstrates that inflation has a detrimental long-term effect on the growth of Kenya's gross domestic product. This indicates that Kenya's economic growth will slow down as inflation rises. A 1% rise in inflation causes an 1.97 % drop in economic development. The variable is interestingly significant at a 10% significance level according to t-statistics since the probability value is smaller than 0.10 (p-value 0.10). Given the statistical findings, it can be firmly inferred that inflation has a 10% statistically significant negative effect on economic development.

Additionally, the figures demonstrate a statistically significant (at the 1% level) negative correlation between economic growth and the exchange rate. This suggests that a 1% rise in the exchange rate would lead to a 3.56 % decrease in economic growth emissions over time. On the other hand, IT is projected to help the growth of GDP. This suggests that GDP growth influenced by international trade will accelerate. The choice is based on the IT's probability value being smaller than 0.10 in this case. (P = 0.10) The computed long-term international trade elasticity for economic growth is 0.061728, indicating that it is elastic. The statistics shown above reveal a positive link betwixt foreign direct investment and economic development that is statistically significant at the 1% level of significance. This means that over time, a 1% increase in foreign direct investment would cause economic development to climb by24.53%. Finally, we found that, at the 1% level of significance, broad money has a statistically significant positive connection with GDP growth. This implies that a 1% increase in total economic growth would result in a 6.79% increase in economic growth over the long run. The ARDL co-integration test's short-run findings indicate that there will soon be a statistically significant correlation betwixt economic development and foreign direct investment. GDP and FDI are positively correlated (foreign direct investment). The coefficient of foreign direct investment will rise by 51 percentage points as the economy grows. According to the stability test, the parameters have a stable distribution, and the residuals are normally distributed according to the normality test. As a consequence, at the stated level of

significance, international trade may be considered to significantly increase economic growth (0.1). From 1970 to 2021, there was a minor positive association betwixt inflation and GDP growth in Kenya. This was determined after evaluating the data. The results of the inquiry support this conclusion. The data also demonstrated that inflation had no effect on GDP growth in the near term. Surprisingly, all of our scale variables agree with the assumptions of the research. Broad money has a favorable effect on GDP growth. Similarly, the exchange rate is expected to fall in the near future. The Granger causality test findings show that the following variables have five unidirectional outcomes: economic growth (used as a proxy for economic growth); intentional trade; the foreign direct investment on inflation; broad money on inflation; foreign direct investment on intentional trade and the exchange rate on intentional trade. The first finding demonstrates that there is a unidirectional causal chain running from economic development to intentional trade (IT); that there is also a unidirectional causal chain running from foreign direct investment to inflation (INF); that there is a unidirectional causal chain running from broad money to inflation (INF); that there is a unidirectional causal chain running from foreign direct investment to intentional trade (IT); and that there is a unidirectional causal chain running from exchange rate (EXR) to intentional trade (IT). The empirical findings from Chapter 4 are as follows: In terms of statistics, each regressor was statistically proven to have an effect on economic growth. Some explanatory variables were shown to have a considerable positive impact on economic growth, whereas others were found to have a large negative impact. Inflation and the currency rate have a considerable negative impact on economic development in the near term, while all other variables have a significant positive impact. The results of the ARDL bound test reveal that the null hypothesis may be rejected since the F-statistic is 88.15338, indicating that the independent variables and the dependent variable are connected across time. As a consequence, the calculated long-run relationship coefficient suggests that inflation has a negative long-run effect on economic growth in Kenya over the study period. This implies that an increase in inflation will slow Kenya's GDP growth. A 1% increase in inflation causes an 1.975757 % decline in economic growth. Surprisingly, t-statistics indicate that the variable is significant at 10% since the probability value is less than 0.10. (p-value

0.10). According to the data, inflation has a negative and significant impact on economic development, which is statistically significant at 10%.

Recommendations

The following suggestions for policy makers are made to enhance the effect of FDI and foreign commerce on Kenyan economic development:

Maintaining, putting into practice, and developing special policies to interest FDI is necessary. To attract strategic investors and entice multinational firms to fund large-scale projects in Kenya, the government should implement a number of remarkable favorable policies that are also competitive worldwide.

The main objectives of FDI policy should be quality, efficiency, technology, and environmental protection. Kenya should have policies that give priority to initiatives using cutting-edge, environmentally friendly technology, contemporary management, high added value impacts, and global production and supply chain connections.

To provide a conducive atmosphere for international economic activity, free trade agreements should be further negotiated and signed. Kenya must continue to support and carry out trade liberalization objectives by actively and fully taking part in the signing of international trade agreements.

This research suggests that policymakers control the current levels of inflation in the nation because they have an impact on FDI inflows into the nation. This research advises policy makers to implement ways to improve economic development as it attracts foreign direct investments since it was discovered that economic growth also has a beneficial impact on FDI inflows.

As with many other developing countries, Kenya also substantially depends on foreign direct investment for its development. To increase foreign direct investment, policymakers should pay close attention to the economy's backlogs. In light of this, certain policy suggestions have been suggested for decision-makers to implement in order to draw in foreign direct investment. Because there is a negative association betwixt inflation and economic development, a spike in inflation might have a detrimental influence on many elements of the Kenyan economy. Higher rates of productivity growth are required to maintain price stability in Kenya due to the one-way link between inflation and real GDP

growth in that country. Fundamental economic challenges are stifling the nation's economic growth, and in order to win the war against inflation, actions that directly address these problems must be implemented. Since the two are connected, growing inflation in Kenya discourages FDI for two different reasons. Lack of inflation may make attracting FDI challenging because of the one-way link betwixt FDI and inflation. The country's low inflation is significantly impacted by high amounts of FDI from other nations. Since agriculture is the foundation of Kenya's economy, fiscal and monetary policies that favor FDI would thus aid the country in achieving long-term high and sustained development success. Export-oriented foreign direct investment (FDI) should also be encouraged in the industrial sector. The government must immediately create an inviting atmosphere to promote FDI. The modernization of Kenya's transportation infrastructure and industrial sector, as well as the provision of clean water and energy, the management of East, the advancement of communication technologies, and the construction and maintenance of ports and harbors, are all prerequisites for luring FDI. As a consequence, it is essential to place greater emphasis on the function and nature of development as well as the general standard of human capital. Future research on the cause-and-effect relationship between foreign direct investment and economic growth should take into account other important parts of these variables, like the multivariate VAR system. As a consequence, we anticipate getting better outcomes and being able to make more reliable judgments.

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Appendix

Appendix 1: Descriptive Statistics

	EG	FDI	IT	BM	EXR	INF
Mean	1271.5587	0.726932	54.37733	34.40281	50.19631	11.40144
Median	1237.186	0.471818	55.38017	35.37559	57.55810	9.787285
Maximum	704.967	3.094712	74.57340	42.81939	108.6713	45.97888
Minimum	824.2399	0.004721	27.23390	25.71029	7.020384	1.554328
Std. Dev.	164.8477	0.682555	10.75558	4.705900	35.92243	7.968520
Skewness	0.575319	1.725242	-0.573940	-0.051111	0.062076	1.968429
Kurtosis	4.083401	5.612446	3.238391	1.828753	1.448316	8.453584
Jarque-Bera	5.411740	40.58322	2.977990	2.994918	5.250131	98.02095
Probability	0.066812	0.000000	0.225599	0.223698	0.072435	0.000000
Sum	66122.52	37.80047	2827.621	1788.946	2610.208	592.8749
Sum Sq. Dev.	1385912	23.75993	5899.810	1129.420	65811.47	3238.363
Observations	52	52	52	52	52	52

Appendix 2: GDP UNIT ROOT

Variables	Augmented Dickey-Fuller (ADF)				
	Intercept		Intercept and trend		
	Level	Diff.	Level	Diff.	
Economic Growth	0.7298	0.0001	0.7657	0.0012	
Foreign Direct Investment	0.0000	0.0000	0.0001	0.0000	
International Trade	0.4298	0.0000	0.1180	0.0000	
Broad Money	0.4121	0.0000	0.0554	0.0000	

| Exchange rate | 0.9691 | 0.0000 | 0.3894 | 0.0000 |
| Inflation | 0.0028 | 0.0000 | 0.0083 | 0.0000 |

Appendix 3: GDP UNIT ROOT (pp)

Variables	Phillip- Perron (PP)			
	Intercept		Intercept and trend	
	Level	Diff.	level	Diff.
Economic Growth	0.6222	0.0002	0.5258	0.0014
Foreign Direct Investment	0.0000	0.0001	0.0001	0.0001
International Trade	0.5665	0.1399	0.0000	0.0944
Broad Money	0.4668	0.0000	0.0453	0.0000
Exchange rate	0.9671	0.0000	0.3894	0.0000
Inflation	0.0033	0.0000	0.0083	0.0000

Appendix: 4 ARDL Bond test results

F-Bounds Test		Null hypothesis: No levels of relationship		
Test Statistic	Value	Significance	I (0)	I (1)
F-Statistic	5.312730		Asymptotic=1000	
K	5	10%	2.08	3
		5%	2.39	3.38
		2.5%	2.7	3,73
		1%	3.06	4.15

Actual	49		Finite sample: n=50	
sample size		10%	2.259	3.264
		5%	2.67	3.781
		1%	3.593	4.981
			Finite sample: n=45	
		10%	2.276	3.297
		5%	2.694	3.829
		1%	3.674	5.019

Appendix: 5 ARDL Short Run Test

Selected model: ARDL (3, 3, 4, 4, 4, 3)				
Model selection method: AIC				
Variables	Coefficient	Std. Error	T- statistics	Critical values
Foreign Direct Investment	0.510137	0.090763	5.620543	0.0008
International Trade	3.241043	0.941405	3.442771	0.0108
Broad Money	4.148084	1.956242	2.120435	0.0717
Inflation	-0.685039	0.204808	-3.344787	0.0123
Exchange rate	-3.407883	1.650104	-2.065254	0.0778
Ect-1	-0.631591	0.099971	-6.317728	0.0004
R-squared				0.964188
Adjusted R-Squared				0.876035
Durbin-Watson stat				2.422566

Appendix: 6 ARDL Long Run Test

variables	Coefficient	Std. Error	T- statistics	Critical values
Selected model: ARDL (3, 0, 2, 2, 4, 3)				
Model selectin method: AIC				
C	54.81965	178.0032	0.307970	0.0760
Foreign Direct Investment	24.53240	7.249707	3.383916	0.0021
International Trade	0.609562	1.060026	0.575045	0.0699
Broad Money	6.798822	2.188401	3.106754	0.0043
Exchange rate	-3.568422	1.102218	-3.237494	0.0031
Inflation	-1.975757	0.820020	-2.409400	0.0228
R-squared				0.983558
Adjusted R-Squared				0.972400
S.E. of regressions				24.46344
Sum squared resid				16756.88
F-statistic				88.15338
Prob (F-statistic)				0.000000
Akaike info criterion				9.526574
Durbin-Watson stat				2.147916

Appendix: 7 Granger Causality Test

Null hypothesis	Obs	F-statistics	Prob
Pair wise Granger Causality test			
Sample: 1970-2021			
Lags: 2			
EG does not Granger Cause IT	50	6.27358	0.0040

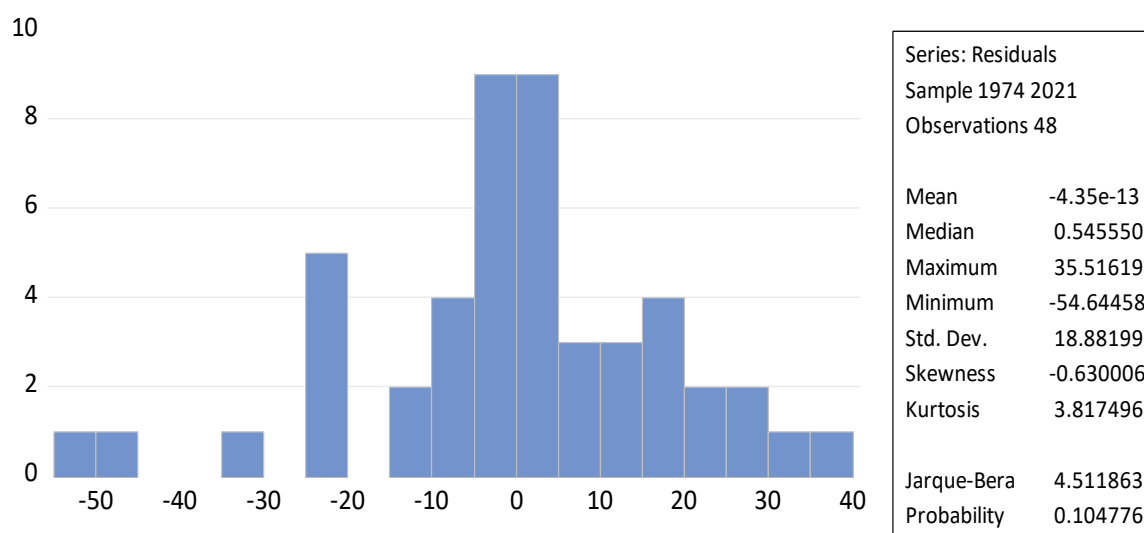| IT does not Granger Cause EG	50	0.85346	0.4327
FDI does not Granger Cause INF	50	4.62978	0.0148
INF does not Granger Cause FDI	50	0.22346	0.8006
BM does not Granger Cause INF	50	4.36835	0.0185
INF does not Granger Cause BM	50	0.79584	0.4574
FDI does not Granger Cause IT	50	2.77293	0.0732
IT does not Granger Cause FDI	50	0.84860	0.4347
EXR does not Granger Cause IT	50	2.71822	0.0768
IT does not Granger Cause EXR	50	1.87716	0.1648

Appendix: 8 Serial Correlation

Breusch-Godfrey Serial Correlation LM test:			
Null hypothesis: No serial correlation at up to 1 leg			
F-statistic	0.855175	Prob. F (1,27)	0.3633
Obs* R-squared	1.473637	Prob. Chi-Square (1)	0.2248

Appendix: 9 Heteroskedasticity Test

| Heteroskedasticity test: Breusch-Pagan-Godfrey			
Null hypothesis: homoskedasticity			
F-statistic	1.297719	Prob. F (5,46)	0.2814
Obs* R-squared	6.428195	Prob.Chi-squared (5)	0.2668
Scaled Explained SS	8.856282	Prob. Chi-squared (5)	0.1149

Appendix: 10 Normality Test

Series: Residuals	
Sample 1974 2021	
Observations 48	
Mean	-4.35e-13
Median	0.545550
Maximum	35.51619
Minimum	-54.64458
Std. Dev.	18.88199
Skewness	-0.630006
Kurtosis	3.817496
Jarque-Bera	4.511863
Probability	0.104776

Appendix 11 Multicollinearity

Variance inflation factors			
Sample: 1990-2020			
Variables	Coefficient variance	Uncentered VIF	Centered VIF
FDI	365.2609	2.386319	1.106570
IT	3.027073	61.62328	2.277149
BM	26.72418	213.5619	3.848490
EXR	0.656660	16.48056	5.510271

| INF | 3.155904 | 4.023157 | 1.303106 |
| C | 24953.61 | 165.4502 | NA |

Appendix 12 CUSUM and CUSUM of Squares test Results
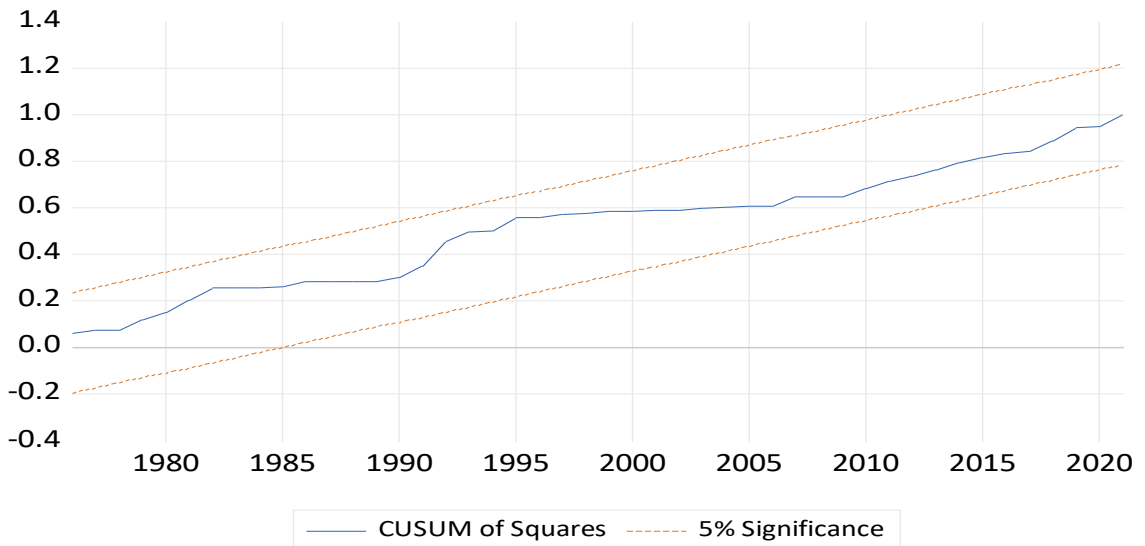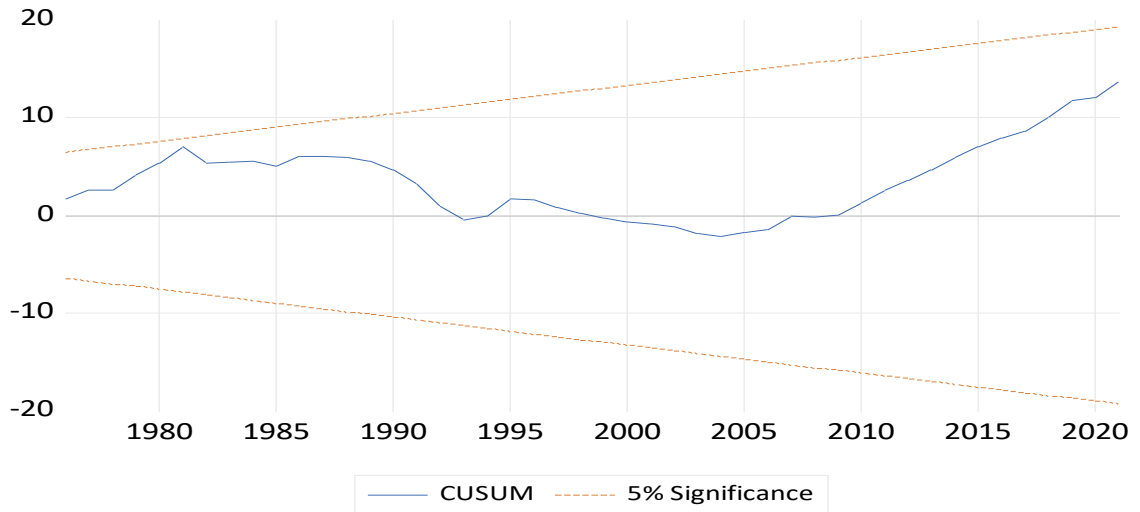
Appendix 13 Ramsey Reset test

	Value	Df	Probability
F-statistic	0.206051	(1,27)	0.6535

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