EFFECTS OF INTERNATIONAL TRADE ON
ECONOMIC GROWTH IN KENYA

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Abstract

The purpose of the study is to identify the effect of international trade on economic growth in Kenya. The specific objectives of the study are to: establish the effect of import of goods and services on economic growth in Kenya; to establish the effect of export of goods and services on economic growth in Kenya; and to establish the effect of net capital flows on economic growth in Kenya. The data was analyzed by use of descriptive statistics and regression analysis using E-views. The ARDL model was used in estimating the model. This study employed Augmented Dickey Fuller and Phillips Perron (PP) unit root test to check for stationarity of the data. Export and Imports had no unit root present. However, the unit root of the variables GDP and net capital flows disappeared at the first difference. The ARDL bound test found that there was no long-run relationship in the variables. Granger causality found that there was causality between all the variables and GDP. The short run model was run. The findings show that net capital flows and import have a negative relationship with GDP and are significant at 5% level of significance. Export has a negative relationship and is insignificant at 5% level of significance. The study recommends that the government should enhance export promotion activities by developing sectors with high export potential to realize the economic growth of the country. It

should also import capital goods and intermediate goods, which help in spurring economic growth. The study also recommends the government to attract capital flows that are important for growth while considering the type of the capital flows (foreign direct investment, portfolio flows and other investment capital flows).

Keywords: Economic growth, Exports, Imports, Capital flows

INTRODUCTION

Background of the Study

The integration of countries into the world economy is often considered an important aspect of income and growth differences between countries. Economic theory has identified the known channels through which trade can have an effect on growth (Lee and Masticare, 2010). More specifically, it is believed that trade promotes the efficient allocation of resources, allows a country to achieve economies of scale and purpose, facilitates the dissemination of knowledge, promotes technological progress and encourages competition in national and international markets which lead to the optimization of production processes and the development of new products (Squalli and Wilson, 2011). The importance of international trade in the 21st century is highlighted by the fact that nations are more closely integrated through trade in goods and services, through cash flow and investments in each economy. In recent decades, international trade has grown at an accelerated rate. This is due to technological innovation, the promotion of implemented policies and the introduction of business ideas to reduce the cost of cross-border transactions (Lee and Chew, 2010).

Empirical studies by Usman (2011) show that greater open and outward-oriented countries grow faster than countries with protectionist trade policies. Sachs and Warner (1995) have argued that trade liberalization improves well-being and growth, concluding that trade liberalization could have a positive impact on economic growth. Pradhan (2009), on the other hand, questioned the hypothesis of an association of economic growth with higher levels of international trade and concluded that international trade makes a country worse.

The relationship between international trade and economic growth has received great interest in the literature. International trade, as an important factor, has made an increasingly sizeable contribution to growth of the economy. Pradhan (2009) argues that imports bring more competition and variety to domestic markets, to the benefit of consumers, and exports enlarge markets for home manufacturing for the benefit of businesses. International trade exposes national companies to the best practices of foreign companies and to the demands of the most demanding customers, promoting greater efficiency. Trade offers businesses access to better

capital inputs, such as machine tools, greater productivity and new growth opportunities for developing countries. Therefore, it is difficult to estimate economic growth and development. However, some models, such as endogenous growth models, have sought to link different channels of international trade with economic growth (Lee and Chew, 2010).

Sipati (2014) studied the impact of international trade on economic growth in South Africa: The empirical results of the Johansen cointegration test reject the null hypothesis of no cointegration and suggest the presence of a long-term economic relationship among all the variables. Empirical investigation reveals that inflation rate, export and exchange rates are positively related to GDP whilst import is negatively related to GDP. The conclusion drawn from this work is that there is a correlation amongst GDP and its regressors.

The economies of countries like Nigeria have had a low performance compared to their economic endowment and their peers. With about 37 types of solid minerals and an estimated population of over 160 million people, with one of the largest oil and gas reserves in the world, the country's economic performance is rather weak compared to emerging Asian countries such as Thailand, Malaysia, China, India, Indonesia and even Brazil. In the 1970s, these countries had lagged behind Nigeria or were at par with Nigeria in terms of per capita GDP, but were later able to transform their economies into important players in the global economic landscape. In 1970, for example, Nigeria had a capital GDP of USD 233.35 and ranked 88th in the world, when China ranked 114th with a GDP per capital of US $ 111.82 (Favley, 2012).Compared to other selected African countries, the participation of Kenya in international trade is insignificant. Empirical studies such as Jenkins (2005) discover that while new export opportunities in the horticulture sector have increased poverty for some rural Kenyans, greater integration with the global economy cannot be a substitute for a strong program against poverty. Cobham and Dibeh (2011) underline that small farmers have been among the losers of trade liberalization, in particular those that lack credit and technological capacity; Since it is reasonable to take many of these farmers under or near the poverty line, this suggests that liberalization may have worsened rural poverty.

Kenya's main imports include machinery and transport equipment (capital goods), petroleum products and iron and steel (intermediate goods). In 1996, Kenya's total import value was $ 2,928 million, of which $ 727 million came from capital goods and $ 1,719 million from which they came from intermediate goods. Imports from Western Europe, again particularly from Germany and the United Kingdom, increased significantly from USD 715 million in 1994 to USD 1,048 million in 1997. Imports from African countries increased only marginally from US $ 59 million in 1994 to US $ 136 million in 1997. The balance of trade surplus with Africa indicates the relative economic strength of Kenya on the continent. Japan and the United States are also

important exporters to Kenya, as each of the goods and services they export amounts to US $ 245 million and US $ 261 million respectively in 1997 (Goshu, 2014).

Kenya's main exports include tea, coffee, fruit, vegetables, and petroleum products. Exports to Western Europe, particularly the United Kingdom and Germany, increased significantly from USD 437 million in 1992 to USD 672 million in 1997. However, this increase is limited compared to the increase in exports to African economies. In 1992, Kenya's exports to Africa reached $ 330 million, five years later, in 1997, and the figure that rose to $ 971 million. This phenomenal increase is largely the result of the East African Cooperation (EAC) economic treaty signed with Uganda and Tanzania in 1996. The EAC promotes regional economic integration through policies aimed at harmonizing inter-territorial tariffs, the elimination of trade barriers and, in the long-term currency alignment (Kim, 2011).

According to Kenya's Institute for Public Policy and Research, Kenya's share of world exports contributes only 0.03% in 2006 compared to Malaysia (1.33%), to South Korea (2.69%), in Singapore (2.25%) and Thailand (1.08%). The world prices of agricultural raw materials and vegetable oils have remained stagnant or have fallen over the years. The main exports of Kenya are in this category and this means that, to take advantage of the benefits of international trade, the country must diversify into manufacturing exports with higher added value (World Bank, 2008, as mentioned in KIPPRA, 2009). One of the most important goals of structural adjustment policies has been to implement reforms in international trade policy due to its importance in economic development (Goshu, 2014).

In 2014, Kenya exported $4.92B worth of services. The top services exported by Kenya in 2014 were Air transport ($1.19B), Government services ($908M), Personal travel ($780M), Other transport ($724M), and Telecommunications services ($651M). In 2018, Kenya exported a total of $6.63B, making it the number 103 exporter in the world. During the last five reported years the exports of Kenya have changed by -$138M from $6.77B in 2013 to $6.63B in 2018. The most recent exports are led by Tea ($1.46B), Cut Flowers ($616M), Refined Petroleum ($347M), Coffee ($243M), and Titanium Ore ($152M). The most common destination for the exports of Kenya are Uganda ($643M), Pakistan ($575M), United States ($527M), Netherlands ($511M), and United Kingdom ($433M). From a continental perspective, 35.2% of Kenya's exports by value were delivered to African countries while 30.5% were sold to importers in Asia. Kenya shipped another 24% worth of goods to Europe. Smaller percentages went to North America (8.4%), Latin America excluding Mexico but including the Caribbean (0.9%) then Oceania led by Australia (0.5%).

Kenya's main imports include machinery and transport equipment (capital goods), petroleum products and iron and steel (intermediate goods). In 2018 Kenya imported $19.7B, making it the number 79 trade destination in the world. During the last five reported years the imports of Kenya changed by $2.31B from $17.3B in 2013 to $19.7B in 2018. The most recent imports of Kenya are led by Refined Petroleum ($3B), Cars ($518M), Packaged Medicaments ($454M), Palm Oil ($441M), and Hot-Rolled Iron ($410M). The most common import partners for Kenya are China ($4.72B), India ($2B), Saudi Arabia ($1.66B), United Arab Emirates ($1.61B), and Japan ($944M). The top services imported by Kenya in 2014 were Sea transport ($1.3B), Other business services ($440M), Government services ($235M), Insurance services ($201M), and Air transport ($167M).

Kenya imports almost three times more than it exports, which translates into a trade balance that is largely in deficit. This situation persists, with a downward trend, due to imports related to infrastructure modernization and oil exploration. In 2017, the trade deficit amounted to USD 10.2 billion (WTO). In 2018, total goods exports reached USD 6.05 billion whereas total goods imported amounted to USD 17.37 billion. The bill of import of services amounted to USD 3.39 billion while the export of services generated USD 4.33 billion. The recovery in exports, mainly of agricultural products, is expected to continue and will reduce the goods deficit. At the same time, steps to rationalize capital expenditure should gradually curb demand for imports of capital goods

Capital flows have been noted to benefit recipient economies by augmenting domestic savings, lowering the cost of capital owing to better risks allocation, enhancing transfer of technology, developing the financial sector and inducing better policy formulation (Prasad et al., 2003) as well as improving welfare by supporting consumption smoothing (Bekeart et. al., 2005). Given the inherent benefits, capital flows enable the recipient economy to improve its economic growth.

Many other studies (Aizenman, Jinjarak and Park, 2013; Alfaro, Kalemli-Ozcan and Volosovych, 2011; Kose, Prasad and Terrones, 2009) also agree that international capital flows positively affect economic growth. Some studies establish that capital flows do not positively affect economic growth. Prasad, Rajan and Subramanian (2007) show that capital flows negatively correlate with growth. The study finds that countries with lower inflows of capital grow more than those with larger inflows. Gourinchas and Jeanne (2011) also noted that capital flows correlates with growth, as countries with slower growth attract more flows that faster growth counterparts. In separate studies, Edison et al. (2002) and Kraay (1998) find that capital flows do not affect growth at all.

The flow of financial capital between countries with excess savings and those where financial capital is scarce can increase liquidity, raise output, and lower the cost of capital. From an investment perspective, it is important to understand the complex and dynamic nature of international trade and capital flows because investment opportunities are increasingly exposed to the forces of global competition for markets, capital, and ideas. Over the past five years, cross-border capital flows into Africa have been driven up by both easy global monetary conditions and by the continent's own improved macro-economic performance (Mowlaei, 2018). Specifically, Kenya has attracted investment in a wide range of sectors including financial and manufacturing. Foreign investors target many sectors of the economy and the current infrastructure development is one of the major attractions. Due to the huge amounts of foreign cash entering the country in the form of FDI and portfolio investment flows (going into the capital market), the overall balance of payment is expected to be positive in the coming years.

Most countries do not have a visible zero balance: they usually have a surplus or a deficit. This will be offset by trade in services, other income transfers, investments and cash flows, which will translate into aGlobal stability of trade (Favley, 2012). The balance is stimulated by using changes in import and export volumes and additionally through modifications within the phrases of trade. All in all, the world often seems to have a negative visible balance with itself; that is, goods imports seem to exceed exports. There are many causes for this, such as the measurement of imports depending on cost, insurance and freight while exports are measured in free on board or statistical errors that occur when imports are more closely recorded than exports (Cobham and Dibeh, 2011).

Statement of the Problem

The importance of international trade for economic growth has aroused interest over the years for both politicians and economists. While the theoretical links among trade and economic increase have been widely discussed for more than two centuries, many controversies still abound in relation to their real effects (Hussain and Haque, 2016). For these reasons, several studies have been conducted to assess the determinants of international trade and how it affects the economy. The various research work Carried out on the results of global trade on growth of the economy is inconclusive. Tang and Abosedra (2014) argued that international trade could have a positive effect on economic growth. Yusoff and Yusoff (2016) have argued that trade liberalization improves well-being and growth, concluding that trade liberalization could have a positive impact on economic growth. Wambua (2014), on the other hand, questioned the hypothesis of an association of economic growth with higher levels of international trade and concluded that international trade makes a country worse than it would

be in the absence of such trade. Studies from previous researchers show conflict between the effects of international trade on economic growth. The important ingredients and major components of international trade are Imports, exports and capital flows. Import of capital goods is vital to economic growth. Imported capital goods affect investment directly. This consequently constitutes the engine of economic expansion. Exports on the other hand contribute greatly to GDP. Capital flows have been noted to benefit recipient economies by augmenting domestic savings, lowering the cost of capital owing to better risks allocation, enhancing transfer of technology, developing the financial sector and inducing better policy formulation (Prasad et al., 2003) as well as improving welfare by supporting consumption smoothing (Bekeart et. al., 2005). Most studies as regards this subject have been done in developed countries and few in the third world countries. International trade has always been a "catalyst of growth" for global economy. In contrast, some economists are against this idea in that they believe only developed countries benefit from international trade at the expense of developing economies. This paper seeks to fill in this gap by establishing the effect of international trade on economic growth in Kenya.

The study was guided by general and specific objectives as follows. The main objective of the study was to examine the effect of international trade on economic growth in Kenya. While the specific objectives were: to establish the effect of import of goods and services on economic growth in Kenya; to establish the effect of export of goods and services on economic growth in Kenya; and to establish the effect of net capital flows on economic growth in Kenya. Study tends to address following research questions-

  i.   How does import of goods and services affect economic growth in Kenya?

 ii.   How does export of goods and services affect economic growth in Kenya?

iii.   How does net capital flows affect economic growth in Kenya?

The results of the study will be of great importance for policy makers, as they will put policies in place aimed at improving the value export, imports and net capital flows, this will spur economic growth of the country. This area of study will be added to the body of knowledge on the area of research of international trade and economic growth in Kenya. Prospective future researchers will have a point of reference from the information gathered that will help to understand international trade and economic growth in Kenya.

The study was limited to effects of international trade on economic growth in Kenya. The objectives of the study are to determine the effects of imports of goods & services, export of goods & services, and net capital flows on economic growth in Kenya for a period of 12 years from 2009 to 2020. The literature review provided the reader with an explanation of the theoretical rationale of the problem being studied as well as what research has already been

done and how the findings relate to the problem at hand. The study used secondary data from central bank of Kenya and Kenya national bureau of statistics.

LITERATURE REVIEW

International trade and economic theory

The idea that international trade can influence GDP has been explored by various economic theorists and culminated in the export-led growth thesis. The principle behind the research is the increase in sales, the conditions of growth rate and the growth of the economy. The way in which this relationship can be interpreted suggests that the execution of exports has a stimulating effect on the entire economy of a country in the form of technological effects and other related favorable externalities. Export activities can exert these influences because exposure to international markets requires greater efficiency and supports product and process innovation activities, while specialization increases encourage profitable exploitation of economies of scale (Lee and Chew, 2010). Therefore, the export-driven growth thesis predicts that export growth will cause productivity throughout the economy.International trade has two contrasting views regarding the level of control placed on trade between countries. As international trade opens up the opportunity for specialization, and thus more efficient use of resources, it has the potential to maximize a country's capacity to produce and acquire goods. Opponents of global free trade have argued, however, that international trade still allows for inefficiencies that leave developing nations compromised. What is certain is that the global economy is in a state of continual change. Thus, as it develops, so too must its participants (Lee and Chew, 2010).

Classical Theory

In the field of foreign trade, classical economists were mainly interested in two questions. First, in the production of which a country should specialize or which goods a country will export and which will be imported (Chen et al., 2009). Each country will specialize in the production of goods for which it is suitable for: its climate, its natural resources, its real capital and its possessions as heritage of its previous generation, such as buildings, plants, equipment and means of transport. Each country will focus on the production of such goods, producing more than is necessary for its own needs and exchanging the surplus with less prepared to produce or not able to produce at all.The classical theory of commerce is based on the theory of the value of labor costs. This theory establishes that goods are exchanged between them in accordance with the relative quantities of work incorporated in them. Goods that have equivalent prices represent equal amounts of work. Adam Smith gives the following known

illustration. If a beaver or two deer can be killed with the same labor cost, then a beaver will always trade in the market against two deer. Therefore, the exchange ratio or prices are determined exclusively by the relative costs of labor, through their influence on supply and demand (Chen et al., 2009).

The Heckscher-Ohlin (HO) Theory

The HO theory was presented by Cobham et al. (2011) and explains the pattern of international trade as determined by the relative land, labour, and capital endowments of countries: a country will tend to have a relative cost advantage when producing goods that maximize the use of its relatively abundant factors of production. The central question of foreign trade theory is how to determine the pattern of foreign trade: which commodities will be exported and imported. The theory brings out relative endowments of the factors of production (land, labor, and capital) determine a country's comparative advantage. Countries have comparative advantages in those goods for which the required factors of production are relatively abundant locally. Exports of a capital-abundant country come from capital-intensive industries, and labour-abundant countries import such goods, exporting labour-intensive goods in return. Competitive pressures within the H–O model produce this prediction fairly straightforwardly. Conveniently, this is an easily testable hypothesis. Although the Heckscher-Ohlin model appears reasonable, most economists have had difficulty finding evidence to support it. A variety of other models have been used to explain why industrialized and developed countries traditionally lean toward trading with one another and rely less heavily on trade with developing markets. The Linder hypothesis outlines and explains this theory. It states that countries with similar incomes require similarly valued products and that this leads them to trade with each other (Adams and Klobodu, 2018).

These interactions across markets are one of the important economics lessons displayed in the results of this model. With the H-O model, we learn how changes in supply or demand in one market can feed their way through the factor markets and, with trade, the national markets and influence both goods and factor markets at home and abroad. In other words, all markets are everywhere interconnected. Among the important results are that international trade can improve economic efficiency but that trade will also cause a redistribution of income between different factors of production. In other words, some will gain from trade, some will lose, but the net effects are still likely to be positive (Adams and Klobodu, 2018).

Empirical Review

Muhammad and Benedict (2015) examined the impact of international trade on economic growth in Nigeria for the period 1981 to 2012. Using degree of openness to proxy international trade, the ordinary least squares technique was employed to estimate the impact of international trade on Gross Domestic Product. The broad objective of the study was to analyze the impact of international trade on economic growth in Nigeria based on time series data on variables considered relevant indicators of economic growth and international trade. The analysis was based on data extracted from World Bank data and Central Bank of Nigeria Statistical Bulletin. The result of the analysis showed that all the variables except interest rate were statistically significant. The study recommended that policy makers should adopt policies on trade liberalization such as reduction of non-tariff barriers, reducing tariffs, reducing or eliminating quotas that will enable the economy to grow at spectacular rates.

Kalu, Nwude and Nnenna (2016) conducted a study to study the impact of international trade on Kenya's economic growth by specifically examining the role of exports compared to other components of GDP over a period of about twenty-two years. The impact of imports on economic growth was also examined. The study adopts a linear model to examine the impact of public and private investments, public spending, foreign aid, imports and exports to GDP. Overall, the results showed that real export growth leads to real GDP growth.

Nedy, Irene, Kibet and John (2013) carried out a study to assess the impact of international trade on economic growth in Kenya with the years under consideration being 1960 to 2010. There are many components of international trade that effect economic growth, but this paper examined the effect of exchange rate, inflation and final government consumption on Kenyan economic growth. World Bank data for these variables were analyzed in order to achieve the desired objectives. A multiple linear regression model, Barro growth model, was used to estimate the existing the relationship between variables then ordinary least square method was applied. From the findings, Exchange rate has no effect on GDP growth rate, while inflations had negative and significant effect on GDP growth rate. Final government consumption had positive effect on GDP growth rate in Kenya.

Muhoro and Otieno (2014) look at the export led growth hypothesis in the case of Kenya. They used time series data from 1971 to 2011 while using dynamic time series techniques of Auto regressive Distributed lag and 2 stage least squares. The variables used include GDP, Export, Import, Household Consumption, Government Consumption, Gross Fixed Capital Formation and Foreign Direct Investment. The results indicated that there was unidirectional causality running from exports to gross domestic product. This implied that the export-led hypothesis can be supported by the Kenyan economy in the short run.

Soi, Koskei, Buigut, and Kibet (2013) look at the effect of international trade on Kenya's economic growth. The years under consideration was from 1960-20I0. Multiple linear regression model, Barro growth model, was used to establish the relationship between the variables then ordinary least squares method was applied. The main variables used include International trade, Economic growth, Exchange rate, Gross capital formation and Inflation. The results showed that exchange rate had no effect on GDP growth while Inflation had a negative but significant relationship with GDP. Government consumption had positive effect on GDP.

Duru, Uchechukwu & Ezenwe (2020) studied the Impact of Exports on Economic Growth in Nigeria. This study investigated the nexus between exports and economic growth in Nigeria from 1980 to 2016. The methodology utilized for this study was the Autoregressive Distributed Lag Bounds testing technique to cointegration. The short-run and long run results revealed that export exerted a negative and insignificant relationship with economic growth in Nigeria. However, openness to trade had a negative relationship with economic growth in both the short-run and long-run.

Grace and Manasseh (2014) studied the Export-Led Growth Hypothesis in Kenya using annual time series data from 1976 to 2011 and dynamic time series techniques of Auto Regressive Distributed Lag and 2-Stage Least Squares. The 2-Stage Least Squares is used to correct for the endogeneity problem of the variables involved. A seven-variable Vector Auto Regression (VAR) model (GDP, Exports, Imports, Household Consumption, Government Consumption, Gross Fixed Capital Formation and Foreign Direct Investment) is developed from a national income identity that links output to its contributing factors. The results indicate that there is unidirectional causality running from exports to economic growth. This implies that export-led growth hypothesis can be supported in the Kenyan economy in the short run. Besides, our results suggest that the growth rate of household consumption and Gross Fixed Capital Formation have positive and statistically significant impacts on economic growth. Hence, in the case of Kenya, export enhancing policies that will improve the quantity, quality and value of exports in the overall GDP contribution of exports are recommended in promoting and sustaining economic growth.

Ali and Mohamed (2018) studied the impact of exports and imports on the economic growth of Somalia over the period 1970-1991 was investigated. The study applied econometric methods such as Ordinary Least Squares technique. The Granger Causality and Johansen Co-integration tests were also used for analyzing the long term association. By using Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) stationarity test, the variables proved to be integrated of the order one 1 (1) at first difference. Johansen test of co-integration was used to determine if there is a long run association in the variables. To determine the direction of

causality among the variables, both in the long and short run, the Pair-wise Granger Causality test was carried out. It was found that there was a unidirectional causality between exports and economic growth. Also there is bidirectional Granger Causality between import and export. The results show that economic growth in Somalia requires export-led growth strategy as well as export led import. Imports and exports are thus seen as the source of economic growth in Somalia.

Abasimi and Vorlak & Salim and Xuan Li (2019) empirically tries to investigate the determinants of export service in selected West African countries (Ghana, Benin, Côte d'Ivoire, Gambia, Mali, Niger, Sierra Leone, Togo, Nigeria and Burkina Faso). The study adopted the export demand function introduced by Bahmani Oskooee (1986) with little additions and modifications of variables based on the reviewed literature. It was discovered from the empirical results that the value added by the services has no impact on service export. However, variables such as foreign direct investment, communication facilities, real exchange rate, and foreign income level possesses a significant robust impact on export trade in services in the selected countries. These countries should therefore widen their opportunities to strive in exporting services worldwide. This can be materialized by exploiting their potentials with relative competitiveness and reasonable negotiations in the global export markets.

Caroline Mudenda, IreenChoga and Cleopas Chigamba examined "the role of export diversification on economic growth in South Africa". The study used annual time series secondary data for the period covering 1980 to 2010 and employed a Vector Error Correction Model to determine the effects of export diversification and possible factors that affect it on economic growth. Possible factors that affect export diversification considered as independent variables in this study include gross capital formation, human capital, real effective exchange rate and trade openness. Results of the study reveal that export diversification and trade openness are positively related to economic growth while real effective exchange rate, capital formation and human capital have negative long run relationships with economic growth.

Lee and Chew (2010) carried out a study to analyze the relationship of imports and economic growth in Iran using systematic and unsystematic cointegration methods and neural networks and to compare them with each other. The data used in this study are the real gross domestic product (GDP) and the total imports of Islamic Republic of Iran during the years 1961 to 2010. In this study, the concerned time series were tested by unit root testing. Then the data were examined and the results were analyzed using an autoregressive distributed lag modeling, error correction model, and maximum likelihood method of Johansen-Julius. The findings show that no cointegration relationship is supported between GDP and imports when the real GDP is

a dependent variable and total import is an independent variable. However, the existence of cointegration relationship between total import and real GDP is supported when the total import is a dependent variable and the GDP is an independent variable. The use of neural network for modeling of the relationship of two variable shows a reliable result.

Maina (2015) attempted to investigate the relationship between exports, imports and economic growth in Kenya. The findings revealed that exports led to economic growth. There was a strong positive or direct relationship between the exports and the economic growth. However, the correlation coefficient exports and economic growth compared to the correlation between the imports and economic growth was slightly small. For this case, it would mean that imports had a greater impact than exports on economic development in Kenya. Also, the findings indicated that there was a strong positive or direct relationship between the imports and the economic growth in the country. It was easy to conclude that that the association is very strong as compared to exports.

Waweru and Ochieng (2017) investigated the immediate and lagged effects of the various forms of capital flows-FDI flows, portfolio flows and "Other investments capital flows"(which mainly represents corporate, financial institutions and general government borrowings as well as remittances from the diaspora)-on economic growth in Kenya over a 30 year period from1984 to 2014. FDI and portfolio investments flows have a negative impact on the GDP growth rate and that their impact is not statistically significant. However, other investments flows, which mainly represent corporate, financial institutions, general government borrowings and remittances from the diaspora, have a positive impact on GDP growth rate and the impact is statistically significant. Based on the study findings, it can be inferred that a significant slowdown or a reversal in capital flows in form of"Other investments capital flows "into Kenya result into significant slowdown in economic growth in the country.

Ocharo, Wawire, Ng'ang'a and Kosimbei (2014) investigated the causality between foreign direct investment, portfolio investment and cross-border interbank borrowing and economic growth; and analyzed the effect of foreign direct investment, portfolio investment and cross-border interbank borrowing on economic growth in Kenya. The study found that there was a unidirectional causality from foreign direct investment to economic growth and from economic growth to cross-border interbank borrowing. The coefficient of foreign direct investment as a ratio of gross domestic product was positive and statistically significant, and the coefficients of portfolio investment as a ratio of gross domestic product and cross-border interbank borrowing as a ratio of domestic product were positive and statistically insignificant. Following these results, the Government of Kenya should work towards an environment that attracts foreign

direct investment and pursue a high and sustainable economic growth rate so as to attract cross-border interbank borrowing.

Mowlaei (2018), studied the impact of foreign capital inflows on economic growth on selected African countries. The purpose of this paper was to study, first, the impact of different forms of FCIs, namely, foreign direct investment (FDI), personal remittances (PR) and official development assistant (ODA) on economic growth on 26 top African countries; and, second, which of them is more effective on economic growth of the studied countries. The results of the study show that all three forms of FCIs have positive and significant effects on economic growth in the long and short run. However, the PR had the most effect on economic growth in the long and short run. The study suggests that the governments should design and implement appropriate fiscal, monetary and trade policies in order to create and improve an enabling environment to attract FCIs as a supplementary source of domestic investment.

Adams and Klobodu (2018) examined the differential effects of capital flows on economic growth in five Sub-Saharan African (SSA) countries over the period 1970–2014. Using the autoregressive distributed lag methodology; the findings show that in the long-run capital flows (i.e. foreign direct investment (FDI), aid, external debt, and remittances) have different effects on economic growth. FDI has a significant positive effect in Burkina Faso and negative effects in Gabon and Niger whereas the impact of debt is negative in all countries. Aid, however, promotes growth in Niger and Gabon whiles it deters growth in Ghana. Remittances, on the other hand, have a significant positive effect in Senegal. Finally, gross capital formation is significant in most of the countries and the impact of trade is mixed. These results suggest that the benefits of capital flows in SSA have been overemphasized.

Gabriel, John and Baryl (2019) examined the impact of capital flows on economic growth in Nigeria using data covering the period 1981 to 2016 and sourced from the Central Bank of Nigeria. The method of error correction model framework and autoregressive distributed lag was adopted in estimating our specified model. Findings from our estimated model reveal that capital flows significantly affect economic growth in Nigeria. The study thus recommends that, sound, robust and vigorous economic policies be formulated with the sole purpose of attracting and drawing capital flows into the country that helps to bridge the needed capital for economic growth and development in Nigeria.

This paper investigates the effects of international trade on economic growth in Kenya by focusing on three important variables namely; import of goods & services, export of goods & services and net capital flows. This chapter discusses the literature review of the study; the empirical review explains the past studies previously undertaken on effects of international trade on economic growth. The theoretical review discusses the major past activities that addressed

the variables stated by the study objectives, this made the study to explore widely on the past efforts that have been undertaken on the effects of international trade in Kenya**.** Studies from previous researchers show conflict between the effects of international trade on economic growth. The situation is compounded by the fact that some variables that have been found significant in some studies have turned out to be insignificant in others. Such problems can be addressed, typically by focusing on the importance of a particular variable or set of variables and country specific i.e., focusing on Kenya in this research.

METHODOLOGY

The type of research design that employed in this study was descriptive research design. A research design is the structure of research. According to Kombo & Tromp (2006)", a research project is the provision of conditions for the collection and analysis of data in a way that aims to combine research with the economy in the procedure." Kothari also states that research design is the conceptual framework within which research is conducted; it constitutes the model for the collection, measurement and analysis of data. A descriptive study deals with the discovery of the phenomena of what, where and how. A descriptive study concerns the determination of the frequency with which something happens or the relationship between the variables.

According to Peil, (2005), the population is a complete set of elements (people or objects) that possess some common characteristics defined by the sampling criteria. The population of this study focused on economic indicators from Central bank of Kenya and Kenya National Bureau of Statistics. The target population relevant to this study was GDP, imports of goods and services, exports of goods and services and net capital flows for the period 2009 to 2020. Quarterly data on imports of goods and services, exports of goods and services, net capital flows and GDP data were collected from the Central Bank of Kenya and the Kenya National Bureau of Statistics sources for a period of 12 years from 2009 to 2020. The choice of data series 2009 to 2020 was because those were the years Kenya experience significant growth on the economy. The study employed secondary data collection. Secondary data can be defined as information collected by someone else than the researcher for some other purpose than the research project at hand (Ligthelm and Van Wyk, 2005). The secondary data included information on the imports of goods and services, exports of goods and services, net capital flows and GDP data.

Data was then analyzed by using regression analysis using E-views software. Descriptive statistics, which was presented using, mean, median, standard deviation, skewness

and kurtosis. he autoregressive distributed lag model (ARDL) was employed in estimating the model which was presented as follows;

$$\Delta GDP_t = \beta_{01} + \sum_{j=1}^{k} \beta_{1i} LnGDP_{t-1} + \beta_1 LnGDP_{t-2} + \beta_1 LnGDP_{t-3} + \beta_{2j} LnEXP_t + \beta_{2j} LnEXP_{t-1}$$
$$+ \beta_{3j} LnIMP_t + \beta_{3j} LnIMP_{t-1} + \beta_{4j} LnCF_t + \beta_{4j} LnCF_{t-1} + \mu_t$$

Where;

GDP- Gross domestic product

EXP = exports

IMP= Imports

CF= Net Capital Flows

ECT= Error correction term

μ = Error Term

FINDINGS AND DISCUSSION

Descriptive Statistics

Table 1 Descriptive statistics for all the individual variables

	RGDP	IMP	EXP	NCF
Mean	993291.0	361339.4	128783.3	-567534.0
Median	982917.0	367518.1	134754.0	-485338.4
Maximum	1351050.	473625.0	178716.2	330100.3
Minimum	705260.0	187409.6	15687.90	-1736693.
Std. Dev.	180907.4	80164.90	29239.68	713592.5
Skewness	0.128092	-0.801995	-1.446989	-0.196642
Kurtosis	1.857798	2.695005	6.084274	1.288282
Jarque-Bera	2.683419	5.109461	35.03038	6.040773
Probability	0.261398	0.077713	0.000000	0.048782
Sum	46684679	16621613	6052814.	-26674097
Sum Sq. Dev.	1.51E+12	2.89E+11	3.93E+10	2.34E+13
Observations	47	46	47	47

Table 1 represents the descriptive statistics of the raw data for all the variables. The mean value describes the average value for each of the variables. The mean for GDP, IMP, EXP, and NCF are KES 993291, 361339.4, 128783.3 and -567534 respectively. The median describes the middle value for each of the variables. The median for GDP, IMP, EXP, and NCF are KES 982917, 367518.12, 134754 and -485338.4 respectively. The maximum and the minimum values describe the highest and the lowest values in each of the variables. The standard deviation describes the deviation from the sample mean with respect to each of the variables. There seem to be huge standard deviation since it contains trend within the data. The standard deviation for GDP, IMP, EXP, and NCF are 180907.4, 80164.9, 29239.6, and 713592.5. It was necessary to confirm the normality characteristics of the variables.

Skewness measures the degree of the asymmetry of the series and kurtosis measure the peaks and flatness of the distribution of the series. For normal skewness, the value is 0 and for normal kurtosis the value of of 3. GDP portray normal skewness with a value of 0.12 and negative kurtosis (platykurtic) of a value of 1.85 which is lower than 3. IMP portrays negative skewness with a value of -0.80 and negative kurtosis (platykurtic) of a value of 2.69 which is lower than 3. EXP portrays negative skewness with a value of -0.80 and positive kurtosis (leptokurtic) of a value of 6.08 which is greater than 3. NCF portrays negative skewness with a value of -0.19 and negative kurtosis (platykurtic) of a value of 1.28 which is lower than 3.

Jarque-Bera (JB) tests statistic is for testing whether the series is normally distributed. The Jarque-Bera statistic is compared by using the p-values. The null hypothesis states that the variables are normally distributed. The JB statistics and their p-value in brackets are given as 2.68 (0.271), 5.11(0.07), 35.03 (0.000) and 6.05 (0.048) for variables GDP, EXP, IMP, and NCF respectively. Only GDP is normal with a p-value of 0.271 which is greater than 5% significance level.

Table 2 Descriptive statics Logarithm form for all variables

	LOGRGDP	LOGIMP	LOGEXP	LOGNCF
Mean	13.79230	12.76839	11.72127	14.72026
Median	13.79828	12.81453	11.81121	14.72592
Maximum	14.11639	13.06817	12.09355	15.13371
Minimum	13.46632	12.14105	9.660645	14.32827
Std. Dev.	0.184339	0.257126	0.366494	0.279625
Skewness	-0.102260	-1.192834	-3.950519	0.106273
Kurtosis	1.863575	3.436984	22.41235	1.212797

Jarque-Bera	2.611027	11.27454	860.2289	6.343574	Table 2…
Probability	0.271033	0.056308	0.083577	0.061929	
Sum	648.2383	587.3460	550.8996	691.8520	
Sum Sq. Dev.	1.563127	2.975122	6.178606	3.596748	
Observations	47	46	47	47	

The data is normalized by transforming the data to logarithm form. Table 4.2 represents the descriptive statistics of the logarithm form all the variables. The mean for LOGGDP, LOGIMP, LOGEXP, and LOGNCF are 13.7, 12.7, 11.7 and 14.7 respectively. The median for LOGGDP, LOGIMP, LOGEXP, and LOGNCF are 13.7, 12.8, 11.8 and 14.7 respectively. The maximum values for LOGGDP, LOGIMP, LOGEXP, and LOGNCF are 14.1, 13.0, 12.0 and 15.1 respectively. The minimum for LOGGDP, LOGIMP, LOGEXP, and LOGNCF are 13.4, 12.1, 9.6 and 14.3 respectively. The standard deviation for LOGGDP, LOGIMP, LOGEXP, and LOGNCF are 0.18, 0.25, 0.36, and 0.27 respectively.

LOGGDP portray portrays negative skewness with a value of -0.10 and negative kurtosis (platykurtic) of a value of 1.86 which is lower than 3. LOGIMP portrays negative skewness with a value of -1.19 and positive kurtosis (leptokurtic) of a value of 3.43 which is greater than 3. LOGEXP portrays negative skewness with a value of -3.95 and positive kurtosis (leptokurtic) of a value of 22.4 which is greater than 3. LOGNCF portrays normal skewness with a value of 0.10 and negative kurtosis (platykurtic) of a value of 1.21 which is lower than 3.

The JB statistic for all the variables with their respective p-values are 2.61 (0.27), 11.27(0.06), 860.2(0.08), 6.34(0.06) for the values of LOGGDP, LOGIMP, LOGEXP, and LOGNCF, respectively. The p-values for all the JB statistics are greater than 0.05. This means the null hypothesis that the data is normal is not rejected. Therefore, Iconclude transforming the data into logarithms successfully normalizes the data for all the variables.

Unit Root Test

Time series data is often known to have problems with non-stationary. It is important to determine whether a series is stationary (do not contain a unit root) or non-stationary (contains a unit root) before using it. One can obtain a high R^2 with non-stationary data even though there is no meaningful relation between variables. Therefore, before testing for the existence of cointegration among the variables of interest in the study, unit root tests were carried out using Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests.

Table 3 Unit Root Test

		Test statistic	p-values	5% significance level	Conclusion
LogGDP	ADF	-1.8379	0.6683	-2.93315	Non-stationary
	PP	-0.9204	0.7729	-2.9266	Non-stationary
LogGDP at 1st difference	ADF	-2.9467	0.0351	-2.93315	Stationary
	PP	-12.73	0.0000	-2.93	Stationary
LogEXP	ADF	-5.8041	0.0000	-2.926622	Stationary
	PP	-5.8081	0.0000	-2.9266	Stationary
LogIMP	ADF	-2.9292	0.0447	-2.9169	Stationary
	PP	-3.1445	0.0305	-2.9297	Stationary
LogCF	ADF	-1.52411	0.0512	-2.925169	Stationary
	PP	-1.3909	0.05786	-2.6007	Non-stationary
LogCF at 1st difference	ADF	-8.228791	0.0000	-2.9265	Stationary
	PP	-8.271199	0.000	-2.928	Stationary

Table 3 summarizes result of the augmented dickey-fuller tests and Phillips Perron for each of the variables. By comparing absolute figures to corresponding test statistics, it can be verified whether a variable under study has is stationary or non-stationary, with 95% confidence level. The presence of unit root in the manner shown by the results demands the data on GDP and net capital flows should be differenced accordingly before analysis. Export and imports has is stationary in the data while GDP, and net capital flows shows presence of unit root. However, the unit root in the GDP, and net capital flows disappear at first difference using both the ADF and PP.

LogGDP is non-stationary since its absolute value of ADF test statistic value is 1.83, which is less than the critical value 2.93, and has p-value of 0.067, which is greater than the 0.05 significance level. Likewise, to PP, the absolute PP statistic is 0.9204, which is less than 2.92. At 1st difference the unit root disappears with the p-value of 0.03 which is less than 0.05 significance level. The unit root disappears at 1st difference with PP test statistics of 12.73 which is greater than 2.93 at 0.05 significance level with a p-value of 0.0000, which is less than 0.05 significance level. LogEXP is stationary since the absolute test statistics of both ADF and PP test statistic value is 5.808, which is greater than 2.92, and has p-value of 0.000, which is less than 0.05 significance level. LogIMP is stationary because absolute test statistics of ADF test statistic is 2.92, which is, greater than 2.91, and has p-value of 0.06, which is greater than 0.05 significance level. It is stationary in the PP test as well with test statistic of 3.144, which is greater than 2.992 and has a p-value of 0.035, which is less than 0.05 significance level.

LogNCF is non-stationary in both the ADF and PP test. The absolute test statistic of ADF and PP value is 1.54 and 2.79 respectively with a p-value of 0.0512 and 0.066 which is not significant at 5% significance level. The unit root disappears at 1ˢᵗ difference with ADF and PP test statistic values of 8.2 and 8.27 respectively which is greater than 2.92 at 0.05 significance level with a p-value of 0.0000, which is less than 0.05 significance level.

Correlation Analysis

Table 4 Unit Root Test

Correlation Analysis: Ordinary

Sample: 2009Q1 2020Q3

Included observations: 46

Balanced sample (list wise missing value deletion)

Probability	LOGRGDP	LOGEXP	LOGIMP	LOGCF
LOGRGDP	1.000000			
LOGEXP	0.253268	1.000000		
LOGIMP	0.825506	0.361571	1.000000	
LOGCF	-0.786474	-0.227588	-0.282262	1.000000

Table 4 gives the Pearson's correlation coefficients between independent variables. The correlation coefficient can range in value from −1 to +1. There is weak positive correlation of 0.34 between imports of goods and services and exports of goods and services. This means that if exports of goods and services increase imports of goods and services increase as well. The result also indicates that there is weak negative correlation between exports of goods and services and net capital flows of -0.22. This means that if exports of goods and services increase net capital flow decreases. There is also negative correlation between imports of goods and services and net capital flows of -0.28. The results also indicate that the correlation between the independent variables was less than 0.38. This indicates that the expected model to bet estimated was devoid of multicollinearity. This meant that none of the variables involved in this study was correlated with the other and hence we can conclude that there is no multicollinearity.

Granger Causality Test

The Granger causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another. Ordinarily, regressions reflect "mere" correlations,

but causality in economics could be tested for by measuring the ability to predict the future values of a time series using prior values of another time series.

Table 5 Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.	Whether to Reject null hypothesis or not
IMP does not Granger Cause RGDP	41	2.71784	0.0451	Yes
EXP does not Granger Cause RGDP	45	0.60324	0.0494	Yes
NCF does not Granger Cause RGDP	45	0.13578	0.0213	Yes

Table 5 shows that all the variables in the study cause the variations in real GDP at 5% significant level. This is because; the test rejected the null hypothesis since the p values are less than 0.05. The p-values of their F-statistics for import, export and net capital flows are 0.0451, 0.0494 and 0.0213 respectively both of which are less than 0.05 significance level. This means that the lagged values of the independent variables can predict the future values of GDP.

ARDL

Model Selection

A good model technique will balance goodness of fit with simplicity. Therefore, it was necessary to carry out model selection. The Akaike criterion was the more preferred by the study. The optimal model selection is ARDL (3,0,0,1). This is agreeable by all the model selection criteria: the AIC, BIC, and HQ.

ARDL Model Estimation

Table 6 ARDL Model Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGRGDP(-1)	0.597092	0.128309	4.653541	0.0000
LOGRGDP(-2)	-0.314808	0.152490	-2.064457	0.0464
LOGRGDP(-3)	0.589476	0.127561	4.621119	0.0001
LOGEXP	-0.017095	0.015304	-1.117075	0.2716
LOGIMP	0.035001	0.051691	0.677128	0.5028
LOGCF	0.127624	0.043284	-2.948547	0.0057
LOGCF(-1)	0.077992	0.043693	1.785009	0.0829
C	2.275629	1.299574	1.751057	0.0887

				Table 6…
R-squared	0.966288	Mean dependent var	13.81519	
Adjusted R-squared	0.959546	S.D. dependent var	0.172699	
S.E. of regression	0.034735	Akaike info criterion	-3.715888	
Sum squared resid	0.042229	Schwarz criterion	-3.388223	
Log likelihood	87.89160	Hannan-Quinn criter.	-3.595055	
F-statistic	143.3167	Durbin-Watson stat	2.776287	
Prob(F-statistic)	0.000000			

Table 6 gives the results of the ARDL Model estimation. However, to check whether there is cointegration in the model check the F statistic of the ARDL bound test.

The ARDL Bound Test

ARDL bounds testing approach is a cointegration method developed by Pesaran et al. (2001) to test presence of the long run relationship between the variables. The approach is used irrespective of whether the series are I(0) or I(1) and unrestricted error correction model (UECM) can be derived from the ARDL bounds testing through a simple linear transformation. This model has both short and long run dynamics.

Table 7 ARDL Bound Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	1.045979	10%	2.72	3.77
K	3	5%	3.23	4.35
		2.5%	3.69	4.89
		1%	4.29	5.61
			Finite Sample:	
Actual Sample Size	43		n=45	
		10%	2.893	3.983
		5%	3.535	4.733
		1%	4.983	6.423
			Finite Sample:	
			n=40	
		10%	2.933	4.02
		5%	3.548	4.803
		1%	5.018	6.61

t-Bounds Test		Null Hypothesis: No levels relationship			Table 7...
Test Statistic	Value	Signif.	I(0)	I(1)	
t-statistic	-1.487754	10%	-2.57	-3.46	
		5%	-2.86	-3.78	
		2.5%	-3.13	-4.05	
		1%	-3.43	-4.37	

In this test, the null hypothesis is that there is no level relationship. The decision criteria are that if the F-statistic is lower than I(0), fail to reject the null Hypothesis while if the F statistic is higher than the I(1), reject the null hypothesis. In this case the F-statistic value is 1.04 which is lower than the I (0) bound. Therefore, the test fails to reject the null hypothesis and conclude the model has no level relationship. There was no need to conduct the Error correction Model. However, it was still necessary to estimate the short run model.

Short Run Model Estimation

Table 8 Short Run Model Estimation

Dependent Variable: D(LOGRGDP)

Method: Least Squares

Sample (adjusted): 2010Q1 2020Q3

Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGRGDP(-1))	-0.891634	0.130186	-6.848900	0.0000
D(LOGRGDP(-2))	-1.115300	0.128642	-8.669812	0.0000
D(LOGRGDP(-3))	-0.851818	0.159178	-5.351349	0.0000
LOGIMP	-0.093756	0.243758	-2.599929	0.0185
LOGIMP(-1)	-0.012806	0.064172	-0.199551	0.0436
LOGIMP(-2)	-0.089912	0.074372	-1.208946	0.1390
LOGIMP(-3)	-0.015382	0.060892	-0.252615	0.0428
LOGEXP	-0.002682	0.010782	-0.248771	0.8057
LOGEXP(-1)	-0.001604	0.010790	-0.148627	0.8831
LOGEXP(-2)	-0.006510	0.010893	-0.597646	0.5559
LOGEXP(-3)	0.002105	0.010966	0.191910	0.8495
D(LOGCF)	-0.035170	0.033140	-1.061261	0.0396
D(LOGCF(-1))	-0.005463	0.033796	-0.161638	0.0473
D(LOGCF(-2))	-0.017130	0.034067	-0.502831	0.1999
D(LOGCF(-3))	-0.010413	0.031995	-0.325459	0.4788

C	0.460483	0.311735	1.477161	0.1532	Table 8…
R-squared	0.855304	Mean dependent var		0.012810	
Adjusted R-squared	0.760937	S.D. dependent var		0.048543	
S.E. of regression	0.023734	Akaike info criterion		-4.351332	
Sum squared resid	0.012956	Schwarz criterion		-3.668845	
Log likelihood	100.8510	Hannan-Quinn criter.		-4.106462	
F-statistic	9.063600	Durbin-Watson stat		1.437117	
Prob(F-statistic)	0.000002				

The coefficients of the estimate of net capital flows and import were negative and significant at least at 5 % significance level. Export was negative and insignificant at 5% significance level. The coefficients of lag one and four for imports were negative and statistically significant. The coefficient of lag one of net capital flows was negative and significant. The R^2 and the adjusted R^2 of the model were 0.85 and 0.76 respectively, which means that 76% of the movements is explained by the model.

Diagnostic Checks

Heteroscedasticity

Table 9 Heteroskedasticity Test:

Breusch-Pagan-Godfrey

F-statistic	1.009028	Prob. F(15,23)	0.4792
Obs*R-squared	15.47856	Prob. Chi-Square(15)	0.4175
Scaled explained SS	17.63212	Prob. Chi-Square(15)	0.2825

The Breusch-Pagan-Godfrey Test (sometimes shorted to the Breusch-Pagan test) is a test for heteroscedasticity of errors in regression. The null hypothesis for the test was that "there is homoscedasticity" in the model presented. If the p-value of the test is more than some significance level (i.e., α = .05) then reject the null hypothesis and conclude that there is no presence of heteroscedasticity in the regression model. The output gave an F statistic of 1.0090 with a p value 0.4792. The P-value is higher than 0.05 and therefore the test rejects the null hypothesis and concludes that there is no heteroscedasticity.
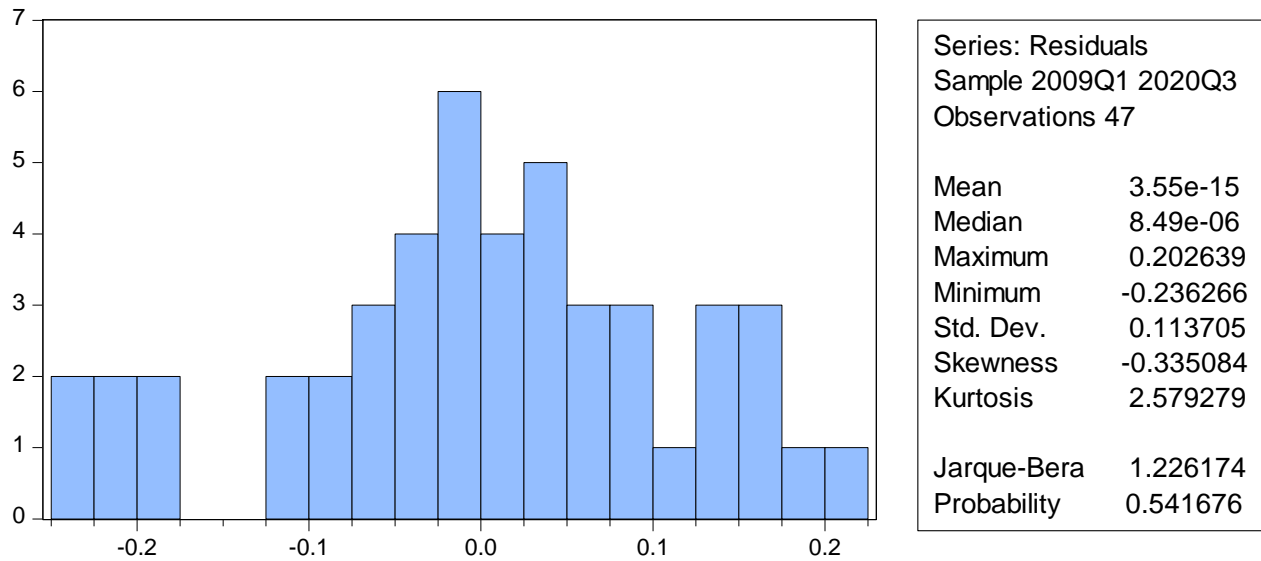
Residuals normality

Figure 1 Residual normality

Residual normality is the assumption that the residuals from the estimated are normally distributed, a good model must not violate the normal distribution of the error term assumption. This was tested by checking the Jarque-Bera test statistic The Null Hypothesis is that residuals are multivariate normal. The residuals give a Jarque-Bera statistic of with a p-value of 0.5416. This shows that the short run model residuals are normally distributed.

Autocorrelation

Table 10 Autocorrelation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.806958	Prob. F(2,21)	0.1888
Obs*R-squared	5.726140	Prob. Chi-Square(2)	0.0571

The Breusch–Godfrey test is a test for autocorrelation in the errors in a regression model. Because the test is based on the idea of Lagrange multiplier testing, it is sometimes referred to as an LM test for serial correlation. It makes use of the residuals from the model being considered in a regression analysis, and a test statistic is derived from these. The null hypothesis is that there is no serial correlation of any order up to p. The Null hypothesis is that there is no serial correlation. From the table above the test fails to reject the null hypothesis

since the F statistic of 1.8069 give a P-value of 0.1888, which is greater than 0.05 significance level.

Model specification test

Table 11 Ramsey RESET Test

Equation: UNTITLED

Specification: D(LOGRGDP) D(LOGRGDP(-1)) D(LOGRGDP(-2))
     D(LOGRGDP(-3)) LOGIMP LOGIMP(-1) LOGIMP(-2) LOGIMP(-3)
     LOGEXP LOGEXP(-1) LOGEXP(-2) LOGEXP(-3) D(LOGCF)
     D(LOGCF(-1)) D(LOGCF(-2)) D(LOGCF(-3)) C

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.104605	22	0.9176
F-statistic	0.010942	(1, 22)	0.9176
Likelihood ratio	0.019393	1	0.8892

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	6.44E-06	1	6.44E-06
Restricted SSR	0.012956	23	0.000563
Unrestricted SSR	0.012950	22	0.000589

LR test summary:

	Value
Restricted LogL	100.8510
Unrestricted LogL	100.8607

The Ramsey Regression Equation Specification Error Test (RESET) test is a general specification test for the linear regression model. More specifically, it tests whether non-linear combinations of the fitted values help explain the response variable. The intuition behind the test is that if non-linear combinations of the explanatory variables have any power in explaining the response variable, the model is mis-specified. The Ramsey RESET test null hypothesis is that the equation specification is not correct, and the model dose suffer omitted variables. Since the F statistic 0.0109 and the P value is 0.9176 which is greater than 0.05 significance level and therefore, reject the null hypothesis.

Study hypotheses test results

The findings show that negative and insignificant short run relationship exists between exports and economic growth. The coefficient of the lags is also negative and insignificant. This result contradicts with the findings of other researchers as earlier presented in the literature review, for instance a study by Ramesh and Boaz (2007) which tested export led growth hypothesis in Kenya using autoregressive distributed lag (ADRL) bounds test approach for Kenya where the results indicated that there existed a long-term relationship between GDP and exports. In the study by Axfentiou and Serletis (1991), the economic growth was found to be determined by exports in Norway, Japan, and Canada on the period 1950-1985).The finding shows that short run relationship between imports and GDP was negative and significant. A unit increase in imports leads to a 0.0938 decrease in economic growth. It was also found that lags one and four are negative and statistically significant with a p-value of 0.0436 and 0.0428 respectively. The ganger causality found that imports granger causes GDP with a p-value of 0.0451, which is less than 5% significance level. This means that the lagged values of import can predict the future values of GDP. The study contradicts with Maina (2015) who investigated the relationship between exports, imports, and economic growth in Kenya. The findings indicated that there was a strong positive relationship between the imports and the economic growth in the country. It was easy to conclude that that the association is very strong as compared to exports. From the results of this study, I find that there is a negative and significant relationship between net capital flows and economic growth. Therefore, a unit increase in net capital flows leads to a 0.0352 decrease in economic growth. It was also found that lags one is also negative and statistically significant with a p-value of 0.0473. The ganger causality found that net capital flows granger causes GDP with a p-value of 0.0213, which is less than 5% significance level. This means that the lagged values of net capital flows can predict the future values of GDP. The findings align with Gabriel, John and Baryl (2019) who examined the impact of capital flows on economic growth in Nigeria who found that that capital flows significantly affect economic growth in Nigeria

CONCLUDING REMARKS

Summary

One of the findings is that there are no long run relationships. ARDL bound test was done to estimate this. In this case, the F-statistic value was 1.04 which is lower than the I (0) bound and conclude the model has no level relationship. The findings shows that there exists negative and insignificant short run relationship between exports and economic growth. The granger causality found that there is correlation between exports and GDP. The p-value is

0.0494, which is less than 5% significance level. The findings also shows that there is negative and significant short run relationship between imports and GDP. Specifically, a unit increase in imports leads to a 0.0938 decrease in economic growth. It was also found that lags one and four are negative and statistically significant with a p-value of 0.0436 and 0.0428 respectively. The ganger causality found that imports granger causes GDP with a p-value of 0.0451, which is less than 5% significance level. This means that the lagged values of import can predict the future values of GDP. The findings found that there is a negative and significant relationship between net capital flows and economic growth. Therefore, a unit increase in net capital flows leads to a 0.0352 decrease in economic growth. It was also found that lags one is also negative and statistically significant with a p-value of 0.0473. The ganger causality found that net capital flows granger causes GDP with a p-value of 0.0213, which is less than 5% significance level. This means that the lagged values of net capital flows can predict the future values of GDP.

Conclusion

The aim of this study was to find out the effect of international trade on economic growth in Kenya for the period of 2009 to 2020. The independent variables were import, export and net capital flows. ARDL bound test showed that there was no long run relationship. Granger causality was done to show the correlation between the independent and dependent variables. It was found that there is causality between all the variables and GDP.

One of the key findings of this study is the there is a negative and insignificant relationship in the between exports and economic growth. It was also found that export granger cause GDP. Studies on the role of exports as a major driver of economic growth can be traced many decades ago. In Kenya, agriculture remains the backbone of Kenya's economy and central to Kenya's development strategy. According to the Food and Agriculture Organization of the United Nations, the sector accounts for more than 26% of the gross domestic product (GDP), forms 65% of export earnings, which consist of unprocessed agricultural products, and is a key supporter to many of the other non-agriculture sectors such as manufacturing, tourism, and social services, among others. Although Kenya is the most industrially developed country in East Africa, manufacturing accounted for only 9% of GDP in 2019 and has largely remained static for the past decade with the sector contributing 7.5% in 2019 (World Bank).

Due to slow growth of industrialization, it is difficult for the country to have positive reward of export activities. Across the globe, industrialization has been credited for increased per capita income, growth in international trade, high levels of employment and increased investment. Increase in industrialization creates international, regional as well as local markets. It promotes the country to ensure that the agricultural products are processes before they are

sold internationally, regionally, and locally. This promotes technology innovation, new product innovation and efficient allocation of resources.

The findings also indicated that there is a negative and significant short run relationship between the imports and the economic growth in the country. The theoretical explanation to this phenomenon is that imports reduce aggregate demand by increasing trade deficit. If imports decline sharply, it may indicate that the economy is getting stronger. Imports contribute to growth by relieving domestic supply constraints regarding goods and services, as well as technology. Although many developing countries have successfully built a capacity to produce non - durable consumer goods and some services, the domestic production of durable consumer, intermediate and capital goods and more complex services has not always proved feasible or efficient because of, among other things, limited opportunities for economies of scale due to the small size of domestic markets, inadequate resources and information, and a paucity of local expertise.

The findings also indicate there is a negative and significant relationship between net capital flows and economic growth. Capital flows have been noted to benefit recipient economies by augmenting domestic savings, lowering the cost of capital owing to better risks allocation, enhancing transfer of technology, developing the financial sector, and inducing better policy formulation (Prasad et al., 2003) as well as improving welfare by supporting consumption smoothing (Bekeart et. al., 2005). Kenya is working hard to achieve the goals as set in the vision 2030. Internal sources of finance are not usually enough to finance both recurrent and development expenditures of the country (Afrodad, 2003). To curb this financial constraint, the country obtains external finances in terms of foreign direct investment, foreign portfolio investment, foreign debt, foreign aid and remittances. However, if the finances are obtained beyond a certain limit for instance public debt, it may have detrimental effects on the country such as inability to pay the loan. This would make the country to direct every income obtained from other sources including taxes towards repayment of the loan further deteriorating the economic growth.

Recommendations

Based on the above study findings and conclusions, the government of Kenya should therefore put more effort in diversifying its export markets and destinations to reduce the trade imbalance. This can be achieved by increasing their export earning basket in creating a market for non-agricultural sectors such as manufacturing, tourism, and social services, among others. This helps the country not to rely on one sector making the country vulnerable to external shocks. The government of Kenya should also ensure that export-enhancing policies are

strengthened with a view of promoting and sustaining Kenya's economic growth which encourages profitable exploitation of economies of scale that has a positive and significant impact on economic growth.

It is of the essence for the government of Kenya to review its basket of imports so that it can focus on imports of intermediate and capital goods, which help in spurring economic growth. Additionally, the imports of capital goods should contribute to the development of new export markets, and monetary and fiscal policies should be refined.The study recommends that the policy makers in Kenya to attract capital flows that are important for growth while considering the type of the capital flows (foreign direct investment, portfolio flows and other investment capital flows). The Government of Kenya to create a favorable business environment for investors which will then increase the flow of foreign capital into the economy.

Areas for Further Research

The main aim of this study was to bring out effects of international trade in economic growth in Kenya. The study was limited to aggregate data of exports of goods and services, imports of goods and services and net capital flows from the period of 2009 to 2020. Therefore, further research can be done to show which category or sector of exported goods and services and imported goods affect economic growth as not all sectors perform in same level and hence their contribution towards GDP vary. Further study may need to be done to establish which forms of capital flows promote economic growth in Kenya. Other factors that affect international trade such as public debt, government expenditure, exchange rate and inflation maybe be considered.

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