

# The Impact of Foreign Direct Investment on Economic Growth, the Case of Somalia

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## Abstract

The purpose of this research is to look at the influence of foreign direct investment on Somalia's economic growth. Economic growth, as defined by the Real growth of GDP, is one of the macroeconomic variables considered in the study (RGDPGR). Foreign Direct Investment (FDI), Unemployment Rate (UemplR), which is also a dependent variable for measuring changes in employment levels, and finally Import of Goods (IMPG) and Export of Goods (EXPG) for further measuring the country's surplus or deficit, and finally Gross Capital Investment (GCI), which is an independent variable that indicates fixed and project investment in the country. The study which is time series study data covering period of 32 years starting from 1989 to 2021. These study employed unit roots test mainly, the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests to check for stationarity. Following that was a cointegration test utilizing Johansen (1990) and Juselius's Vector Error Correction Models (VECM) approach (1995). The result of the study indicates that FDI had a strong beneficial influence on employment, implying that increased FDI inflows may increase the opportunities for local people to work, reducing unemployment and poverty in Somalia in the long run. Furthermore, it has been established that FDI has a positive significant influence on product export by boosting capital domestic investment, which in turn actually intensifies elements of production, namely labor and capital, in the long term, which is vital for production and real GDP growth.

**Keywords;** Foreign Direct Investment, Augmented Dickey Fuller (ADF), Vector Error correction model (VECM), Unemployment rate, Real GDP Growth ,Gross Capital Investment .

## 1.1 Introduction

The informal sector, which consists mostly of cattle farming, camel commerce (which accounts for more than 40% of the country's exports), and remittances from abroad (which account for a fifth of the country's GDP), is critical to Somalia's economic recovery. Covid 19 pandemic, Floods, and Invasion of locust, economic shocks, and political instability in regard to elections all these hit the country in 2020 and sending the economy into downturn. According to projections, economic growth would fall to -1.5 percent in 2020, down from 2.9 percent in 2019, before getting back to 2.9 percent in 2021 and 3.2 percent in 2022 (IMF). Following the pandemic, the global economy is predicted to rebound to 2.9 percent in 2021, with development and humanitarian partners, livestock exports, and increased rainfall serving as major growth drivers in 2020. Since Youth unemployment is high which makes half of population comes from poor families and this unemployment rate increasing tremendously as it reached 13.1% by 2020 (world bank estimate), economic growth only is not enough to alleviate poverty .Though social needs are increasing significantly Poverty is thought to have risen as a result of the covid-19 outbreak, which caused real per capita income to drop by 4.4 percent (AFDB).

Foreign direct investment (FDI) is viewed as a vital cornerstone for economic success in today's global economy. Previous research has focused on economic development and the factors that influence it, particularly in emerging economies. FDI is viewed as the engine for economic advancement in terms of attracting new investment, upgrading technologies, and increasing professional knowledge in the country. Manufacturing and other critical development facilities that provide a competitive advantage receive the majority of FDI.

In underdeveloped countries, including the East African Community member states who have filed an appeal, foreign direct investment has played a crucial role in driving growth and economic development. Furthermore, foreign direct investment (FDI) has emerged as the most important source of foreign finance for developing economies; FDI facilitates technology transfer from developed to developing countries, attracts domestic capital speculation, and allows countries to improve their human and institutional development.

Foreign direct investment is presently substantially more than it was during the first two decades after the Somali federal republic of Somalia fell apart. FDI has reduced to practically zero as a result of the instability and civil fighting that devastated and shut down infrastructure and ports over these decades. Today, however, the government has been re-established, the ports and highways have been repaired, and stability is gradually returning, attracting foreign investors to our country. These developments advanced the country's economic integration with the rest of the world, attracting huge inflows of foreign direct investment. Foreign direct investment (FDI) is supposed to benefit emerging economies by supplementing domestic investment, creating jobs, and transferring technology. Many studies have looked into the impact of FDI on developing country economic growth, with some finding a positive correlation and others finding a negative correlation.

In 2020, foreign direct investment is estimated to total USD 3.6 billion. Despite the fact that Al-Shabab's present poor position is positive for investors, the country's high level of instability remains a key issue. Mogadishu, Somalia's capital, is undergoing a construction boom, powered primarily by Turkish investment, indicating that the country is improving. Food processing (bananas and fish) and, more recently, telecommunications are the areas that draw the greatest foreign direct investment.

The two major investors in Somalia are Germany and the United States. In 2020, the nation unveiled a new investment promotion program that covered 10 key foreign investment categories, including livestock, fisheries, energy, and industry. Agriculture, livestock, fisheries, and hydrocarbons, among other natural resources, have immense potential in Somalia. If the country's stability is achieved, this riches, as well as the telecommunications industry, may attract a large number of investors.

Somalia which is a young nation, and is geographically positioned to become a regional economic centre, as it has Africa's longest coastline. In the World Bank's 2020 report, Somalia is still ranked lowest (190th out of 190 economies) and it has ranked the second most corrupted country (179th out of 180 economies), in the world, according to Transparency International.

Current political problems, corruption, lack of transparency, lack of autonomous government not having full authority to enforce rule of law might constrain the development of foreign direct investment. In addition, lack of basic infrastructure particularly Airport, seaport and main roads hastened the ongoing growth of FDI at the beginning of 1990s when the whole government system collapsed at all level. Civil wars and ongoing violence of terrorist and other factors badly affected including instability, lack of good governance structure and transparency have undermined the confidence of external investors and constrained the FDI inflow in Somalia (The Heritage foundation). Both Germany and United has been most invested country in the country (Germany Agro Action Office) (AFDB).

This study will assist Somalia's economic leaders and economic policy makers in making future decisions about foreign direct investment. This study will also serve as a useful guide for monetary authorities and other approved external sector actors, as it will provide an overview of the current state of foreign direct investment in Somalia. It is also beneficial to overseas businesses and persons interested in investing in Somalia.

The study covers period of time series study starting from 1989 to 2020 and investigates the impact of foreign direct investment (FDI) on Somalia's economic growth. It employs econometrics analysis particularly the unit root test, co-integration test, and granger causal test are used. Secondary data will be acquired from international organizations such as the World Bank, OIC SESRIC and the International Monetary Fund, as well as research articles published in international publications. The structure of the study will be as following: The literature review will be put in Section 2, the data and methods will be in Section 3, the results and discussions will be forwarded in Section 4, and the summary, conclusion, and recommendation will be in Section 5 which will be the last one.

## **2.0 Literature review**

### **2.1 Foreign Direct Investment concepts and its application in Somalia**

A variety of ideas has been presented to explain how foreign direct investment affects countries economic growth. The location-based approach is one such hypothesis. The key premise underlying this strategy is that the host country's social, economic, and political factors are the major drivers of FDI levels (Makoni, 2015). According to this idea, natural resources, a sufficient enormous supply of qualified labor, business-supported government regulations, well designed physical infrastructure, and widening market are more likely to attract FDI (Makoni, 2015). This makes the most correct one. The features highlighted by the location-based strategy have been shown to be among the primary drivers of FDI, as discussed more below. The impact of FDI has been demonstrated to be impacted by a number of factors. Some of these issues were addressed by Asongu et al (2018).

The political environment, according to these researchers, is one of the most critical elements influencing whether FDI allows countries to expand economically. According to Asongu et al. (2018), countries must create a political environment that allows enterprises to operate freely and competitively in order to fully benefit from FDI. Furthermore, Asongu et al. (2018) noted that political stability increases investor confidence, increasing the positive benefits of FDI.

According to Asiamah et al. (2019), public economy has a significant influence on the outcomes of FDI. Asiamah et al. (2019) observed, by using Ghana as a case study, that developing nation's harmony and peace are positioned from FDI those with instability that frighten worries international investors. As a result, developing countries must first construct a business-friendly political environment in order to fully profit from FDI. Countries with attractive tax policies, a professional and experienced staff, and well-developed infrastructure are expected to attract FDI, in addition to political stability. As part of their discussion.

These are some of the most critical elements of effective FDI. As Asongu et al. prior committing cash to specific projects, Guarantees and investors need guarantees that they would join a market with low tax rates and incentives as well access to a huge pool of well trained and competent employees (2018). According to Asongu et al. (2018), the quality of the labor force distinguishes countries that have benefited from FDI from those that continue to struggle with poverty and poor economic growth. As a result, countries should invest heavily in worker training and infrastructure projects to ensure that FDI empowers their citizens and allows them to escape poverty.

From 1965 through 2009, Pradhan (2011) investigated the impact of FDI on the trade-led development hypothesis in three countries: Australia, Canada, and Israel. Panel co-integration and causality tests were employed in this investigation. After controlling for the heterogeneous country impact, the results demonstrate a long-run cointegration connection between FDI and growth. The causality test demonstrates a bidirectional association between openness and economic growth in both the long and short term. It also indicates that the link between economic growth and FDI is one-way, not two-way. FDI has only been proved to cause economic growth in the Australian economy at the individual level. In the three nations studied, economic progress was shown to be detrimental to openness and foreign direct investment.

FDI has a positive impact on local firm productivity, according to studies conducted by Aitken and Harrison (1991) on the manufacturing sector in countries such as Australia, Canada, Mexico, and Venezuela. They came to the conclusion that external effects are critical, particularly in terms of economic growth in the host country.

Darrat and colleagues (2005) looked at 23 countries from two different regions: Central and Eastern Europe and North Africa and the Middle East, respectively (MENA). They discovered that foreign direct investment supports economic growth predominantly in EU candidate countries, while it has little effect on growth in MENA countries and non-candidate countries, or

has negative effects there, using data from 1979 to 2002 and an estimate based on ordinary least squares.

In their presentation, they discovered that the bulk of empirical research undertaken between 1994 and 2012 to assess the link between economic development and FDI demonstrated moral and positive relationship between the two variables, with just a few examples demonstrating an inverse relationship (Almfraji & Almsafir, 2014). Naqeeb Ur Rehman was born in the Pakistani province of Sindh in the town of Naqeeb. Researchers created two methods to investigate the link between economic growth and FDI using a time series spanning from 1970 to 2012 in order to test various experimental techniques for determining the relationship between them. The error correction test contradicts the premise that FDI is influenced by economic progress and vice versa. FDI, human capital, and exports are all key in the second model. Raqeeb and Naqeeb (2015).

In the research of, Harrod model, the cointegration test, and the technique of classical minor data analysis were used to investigate the influence of global capital flows on economic growth in Nigeria (Okoro et al, 2019). FDI had the greatest influence on economic growth among these inflows, whereas other forms of inflows had minimal impact on economic growth in Nigeria.

Fedderke and Romm (2004) used the vector error correction model to study the growth effect and drivers of foreign direct investments in South Africa. The major purpose of the study was to conduct a structural analysis of FDI's impact on South African economy and its causes. The study looked at aggregate time series data in South Africa from 1960 to 2002. The empirical findings demonstrate that foreign direct investment (FDI) has a favorable impact on growth in South Africa, confirming the positive spillover effect of foreign capital on the country's output.

While foreign direct investment is crowding out domestic investment, the effect on the medium term is minimal.

Furthermore, using panel data collected over a 24-year period, Sukar et al. (2007) suggest that FDI has a big and beneficial impact on economic growth in Sub-Sahara Africa (1975-1999). Based on a nonlinear regression model, Tiwari and Mutascu (2011) indicated that FDI and exports had positive effects on the economic growth process. Their study looks at the impact of foreign direct investment (FDI) and exports on Asian economies. They also believe that FDI, labor, and capital are the most important determinants in economic progress. According to Adofu and Ilemona (2009), FDI has a significant impact on the growth rate of the Nigerian economy. They arrive to the conclusion that FDI has a considerable impact on the acceleration of economic growth. Their investigation, on the other hand, produced statistically insignificant results.

As a result, Aregbesola (2014) reviewed a number of studies on the interactions between FDI and economic growth in a number of developing African countries, concluding that trade openness, macroeconomic factors, political stability, and the abundance of natural resources all appear to have positive effects on growth. Similarly, Hailu emphasized the importance of human capital as an important predictor of FDI (2010). Furthermore, in the 1980s, Chen (1992).

(Najaf & Mingque, 2018) employed the cointegration test to demonstrate the long-term association between FDI and economic development, and then performed the Granger causality (GC) test, which is based on the VECM. The lack of connection between the two variables in both directions shows that there is no evidence

of causality in the short term. The long-run test found that foreign direct investment had a small but significant influence on economic growth. GDP, on the other hand, has a negative and moral influence on foreign direct investment.

According to Sultanuzzaman and Wang, FDI has a substantial causal association with GDP growth in Bangladesh because it provides sophisticated technology, investment capital, and expertise, all of which are necessary for output growth (Sultanuzzaman and Wang, 2018)

Finally, the Harrod-Domar model, the cointegration test, and conventional micro-data analysis techniques were used to investigate the influence of global capital flows on Nigerian economic growth (Okoro et al, 2019). FDI had the greatest influence on economic growth among these inflows, whereas other forms of inflows had minimal impact on Nigeria's economic growth. Empirical research has validated the majority of ideas concerning the predicted link between FDI and economic growth. Despite there is positive relationship by which its' morally hypothesized

,the size and the type of impact depending on how far the infrastructure development , Foreign policies ,foreign trade ,human capital ,government policies, knowledge sharing been developed to attract FDI follow in Somalia .In the study's scenario, Somalia went through civil wars in 1991, during which the country's primary institutional government fell apart. Because the primary elements relating to neoclassical growth theory are absent in Somalia, the theory's factors will alter, as will other essential factors for Somalia's economic growth, such as export, import, household consumption, and the lack of government.

Somalia's economy is predicted to increase rapidly as a result of its output. Somalia's GDP will rise as a result. Due to state collapse, which ruined the country's industry, social infrastructure, and assets, Somalia's economy is based on both traditional and contemporary production, but it is more reliant on customary, causing the economy to be law. Somalia's economy includes both traditional and contemporary output, but it is more reliant on customary, causing the economy to be governed by law.

In Somalia, there has been little research on FDI and economic growth, with the majority of data indicating that FDI has a positive impact on economic growth. Zahir Mohamed (2016) wrote one of these studies, which looked at the impact of foreign direct investment on Somalia's economic growth from 1970 to 2010. To see if the variables were stable, the ordinary least square (OLS) approach was used. According to the paper, macroeconomic variables that influenced Somalia's economic growth include foreign direct investment, gross fixed capital creation, import, export, quality of living, and lack of governance.

## **2.2 Inflows of FDI by countries of origin**

Foreign direct investment (FDI) is a critical resource for the Somali economy since it delivers more resources, as well as contemporary technology, managerial skills, and new markets, commodities, and employment. Increased productive capacity, new job creation, new inventions, foreign exchange earnings, human capital development, total economic growth, and increased income are just a few of the ways that FDI may assist developed countries in meeting their growth objectives.

Investors from all over the world are always looking for politically secure developing country environments in which to distribute their assets in order to earn higher returns, which have proven tough to come by in developed countries as a result of the global financial crisis of 2008/2009. (Business Africa, 2013).

In order to optimize economic growth in developing nations, African developing countries as receivers must understand the sectors into which FDI inflows should be directed as well as the types of FDI that should be attracted.

IMF and some Brics countries who hosted trade conferences which has been published a variety of media including journals, magazines and text books wrote more about Affric's Future and Investment opportunities, partnership, integration and industrialization (Games, 2012). These organizations renewed global organizations and created huge investment.



Foreign direct investment in developing countries has expanded dramatically during the last decade, now accounting for more than a third of global flows. The top FDI source countries for Somalia are Turkey, India, China, the United States, Qatar, the United Arab Emirates, remain the biggest investors in Somalia as a result of bilateral trade agreements. Somalia is likely to profit from a well-balanced FDI portfolio because FDI is associated to job creation, knowledge transfer, and infrastructure development.

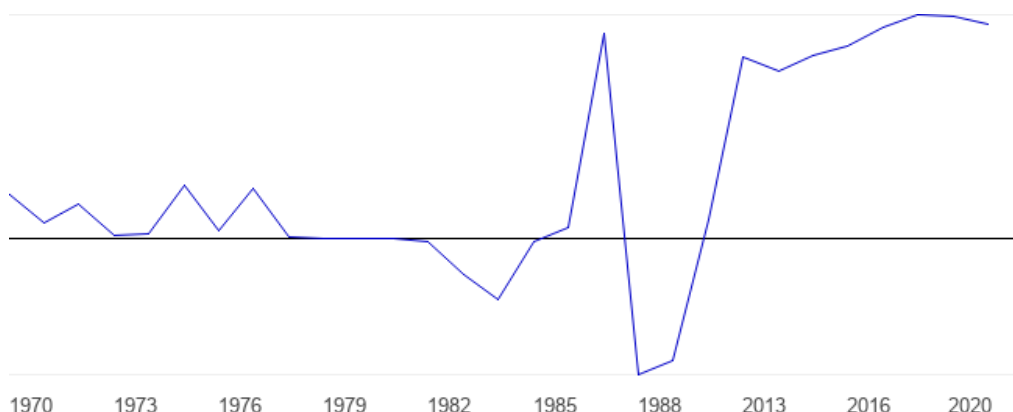
To put it another way, the Somali government is continuously thinking about hammering out more beneficial trade agreements that would help Somalia's trade balance. Consider the Turkish government, which ranks first in terms of foreign direct investment in Somalia. In conjunction with the Somali administration, Turkish government have started a number of economic and infrastructure initiatives in Somalia. They've initiated new projects and implemented in several sectors .The DIGFER, currently now REJEB ERDOGAN hospital is included and helped millions of Somali people who travel outside the country for health purpose and they develop other hospitals privately .Moreover , they renovated and rehabilitate the Aden Adde International Airport and the National Assembly building, among other projects.

Turkish Airlines was the first long-distance international commercial airline to restart flights to and from Mogadishu's Aden Adde International Airport in almost two decades. Favori LLC, a Turkish corporation, commenced operations at the airport in September 2013. The corporation revealed intentions to repair and create a new aviation facility, as well as remodel existing present service facilities, for a total cost of roughly \$10 million. The airport's capacity will be increased from 15 to 60 aircraft as a result of the renovation.

AL Beyrak also owns a share in Mogadishu Port, which it manages with the Somali government as part of a public-private partnership. In May 2013, the first Turkish-Somali Business Forum was organized in Istanbul to highlight the commercial potential of Somali and Turkish businesses in both Somalia and Turkey. Roundtable discussions on prospective economic initiatives in both countries, as well as business-to-business relations between Somali and Turkish enterprises, were held during the event, which was hosted by the Somali Council in partnership with Somali and Turkish government departments.

### **Sectoral distributions of FDI in Somalia**

Data on Somalia is presented from 1970 to 2020. The average inflation rate in Somalia throughout that time was 1.81 percent, with lows of -4.18 percent in 1988 and highs of 6.97 percent in 2018. The most recent value from 2020 is 6.66 percent. Based on 180 countries, the global average for 2020 is 3.99 percent.



The distribution of foreign direct investment (FDI) among the country's major economic sectors: agriculture, manufacturing & mining, and service, where agriculture includes all forms of agriculture-related activities,

manufacturing includes all types of industries, and service includes all types of services. In 2016, the Somalia Transport Sector Needs Assessment (TSNA) and Investment Program completed a comprehensive transport demand assessment for Somalia's roads, aviation, and ports. Based on population statistics, a network load is generated, which specifies the most important road routes and traffic flow. This has inspired a \$1.1 billion 10-year investment plan.

The strategy includes airports, ports, road networks, and bridges, all of which are aimed at attracting and facilitating industry. What can be done about inflows of foreign currency when the manufacturing and industrial sectors are not contributing? Before agricultural and livestock goods are exported or eaten domestically, a strong manufacturing or industrial sector adds very little value to them. The country's narrow economic base reflects its heavy reliance on primary commodities as a significant source of export income, which explains the current focus on FDI in manufacturing and tourism.

The service sector, on the other hand, supports all of those seemingly outstanding financial engineering areas by creating an investment-friendly environment. In theory, a healthy investment environment requires operable and sustainable health and education sectors, with the latter feeding into the human capital sector. Good hospitality amenities, including ports, and, of course, a booming media round out the image.

According to the latest NIPS report, FDI inflows into Somalia have been growing since 2012. FDI has mostly focused on joint ventures and transnational corporate subsidiaries in recent years. The private sector, foreign financial institutions, and development partners will account for a major amount of investment, according to the Somalia Investment Promotion Office (SOMINVEST).

## **2.4 Channels of effects on employment and other sectors of the Somali economy**

Economic growth theories, when seen through the lens of an aggregate production function, do a decent job of characterizing the broad patterns of economic development among countries. There are several economic growth theories, such as the Solow model, new growth theory, neoclassical growth theory, and Endogenous growth theory. In this case, neoclassical growth theory is used. Neoclassical growth theory is an economic theory that discusses how to employ the proper amounts of capital, technology, and labor to generate a consistent pace of economic growth. It is argued that technology progress has a significant influence on an economy by altering the quantities of labor and capital in the production function, and that economic growth cannot continue in the absence of technological improvements.

The foundation of neoclassical growth theory is that both the accumulation of capital and the conduct with which individuals use that wealth are vital for economic success. Furthermore, an economy's production is affected by the interaction between capital and labor. Finally, extending labor production capacity through technology is being investigated as a means of improving labor productivity. As a result, to compute an economy's growth and equilibrium, the neoclassical growth theory of production function, indicated by  $Y=F(K, L)$ , is utilized. "Y" stands for gross domestic product (GDP), "K" stands for capital, "L" stands for the amount of unskilled people in a certain nation, and "A" stands for technological level. Because of the link between labor and technology, the production function of the economy is commonly restated as  $Y=F(K, L)$ . As a result, these growth theories are applicable. FDI has a positive impact on employment and other sectors in Somalia by increasing production functions like technology, capital, and labor, as well as increasing employment opportunities and developing new work environments and technology, all of which contribute to the country's economic growth and GDP slanting upward. If one foreign company invests, for example, employment and production will

both increase. This adjustment rises and eventually brings GDP and other production factors, meaning that economic growth will be increased as well.

### 3.0 Data Methodology

Neoclassical Growth Theory, as established by Robert Solow and others, provides a framework for understanding long-term economic growth through capital accumulation, labor input, and technological progress. This theory posits that economies grow based on these core elements, ultimately reaching a steady state where output per capita grows at the rate of technological progress and population growth. To align a given model with Neoclassical Growth Theory, it is essential to interpret its variables in terms of capital, labor, and productivity. Foreign Direct Investment (FDI): In the Neoclassical Growth framework, FDI is treated as a capital inflow that influences capital accumulation and technological progress. FDI can enhance the economy's capital stock and introduce advanced technologies, thereby contributing to increased productivity. Hence, FDI is a key variable affecting the economy's growth potential.

Real GDP Growth Rate (RGDPGR): While RGDPGR is an outcome measure rather than a direct component of the Neoclassical model, it reflects the overall economic growth driven by changes in capital, labor, and technology. In this context, RGDPGR serves as a proxy for output growth influenced by the other variables in the model.

Unemployment Rate (UempR): Although not a direct element in the Neoclassical model, UempR can provide insights into labor market efficiency. High unemployment may indicate underutilized labor, which affects productivity and economic output. Therefore, it serves as an indirect measure of labor market conditions that could influence overall economic performance.

Imports Growth (IMPG) and Exports Growth (EXPG): Trade dynamics, represented by IMPG and EXPG, impact an economy's exposure to capital goods and technological advancements. In Neoclassical terms, trade can influence capital accumulation and productivity by facilitating access to advanced technologies and capital inputs.

Gross Capital Investment (GCI): The GCI aligns well with Neoclassical Growth Theory as it reflects factors related to productivity and technological progress. It captures elements such as infrastructure quality, innovation capacity, and institutional effectiveness, which are crucial for economic growth.

The initial model specification is given by:

$$Y = \beta_1 FDI + \beta_2 UempR + \beta_3 IMPG + \beta_4 EXPG + \beta_5 GCI$$

To integrate these elements into a Neoclassical Growth framework, the model is revised as follows:

$$Y = \alpha_0 + \alpha_1 FDI + \alpha_2 K + \alpha_3 L + \alpha_4 GCI + \epsilon$$

Where:

**Y:** Real GDP or output, representing economic performance.

**FDI:** Foreign Direct Investment, impacting capital accumulation and productivity.

**K:** Capital stock, reflecting the accumulated physical capital in the economy. It represent net export as well.

**L:** Labor force, representing total labor input.: it also represent employment level

**GCI:** Gross Capital Investment, capturing productivity and technological progress.

**$\alpha_0$ :** Constant term.

**$\alpha_i$ :** Coefficients representing the impact of each variable on output.

**$\epsilon$ :** Error term, accounting for unobserved factors.

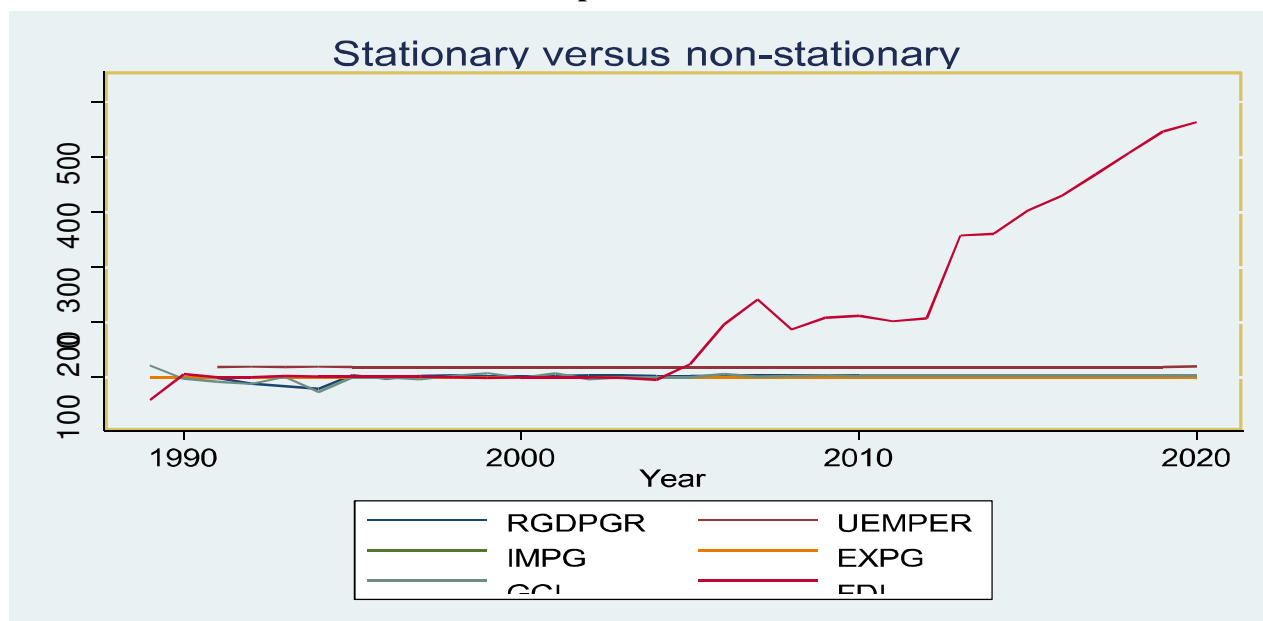
The data for this study was collected on a yearly basis during a twenty-one-year period, from 1989 to 2021, and was derived from OIC statistical data as a secondary data source. Real GDP growth which measures the



definite growth of economics have been measured against the impact of FDI inflow. In additions Unemployment Rate (UemplR), which are dependent variables for measuring changes in employment levels, and finally Import of Goods (IMPG) and Export of Goods (EXPG) for further measuring the country's surplus or deficit, and finally Gross Capital Investment (GCI), which indicates fixed and project investment in the country. The Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests were employed to check for stationarity in this investigation. After that, a cointegration test was performed using Johansen (1990) and Juselius's Vector Error Correction Models (VECM) method (1995).

#### 4.0 Econometric results and Interpretations

##### 4.1 Unit root Test Graph



##### 4.1.1 ADF and PP test

The stationary property of the data series is studied using the Augmented Dickey-Fuller and Phillips-Perron Unit Root Tests, as shown in Tables 1 and 2. With the exception of FDI and unemployment rate, which were non-stationary in both the level and difference of ADF and PP unit root tests, the study demonstrates that all variables are stationary in both the level and difference form in both unit root tests. The ADF and PP unit root tests have a combination of stationarity and non-stationarity, as this result indicates. This means that certain variables have a constant mean, variance, or covariance that doesn't vary over time and doesn't have a trend, whereas others don't and do have trends and change over time. As a result, the variables are integrated to the first order (0).

**Table 4.1.1: ADF Table**

|                  | Augmented Dickey-Fuller (ADF) |              | Decision | At difference form |           |          |
|------------------|-------------------------------|--------------|----------|--------------------|-----------|----------|
|                  | T statistics                  | *5% critical |          | T statistics       | *5% value | Decision |
| <b>Variables</b> |                               |              |          |                    |           |          |

|        |         | value  |                |         |        |            |
|--------|---------|--------|----------------|---------|--------|------------|
| FDI    | -0.709  | -3.576 | Non stationary | -6.159  | -3.580 | Stationary |
| RGDPGR | -8.157  | -3.584 | Stationary     | -13.002 | -3.592 | Stationary |
| UEMPER | -0.748  | -3.584 | Non            | -2.787  | -3.588 | Non        |
| IMPG   | -7.698  | -3.576 | Stationary     | -7.161  | -3.580 | Stationary |
| EXPG   | -10.959 | -3.576 | Stationary     | -13.253 | -3.580 | Stationary |
| GCI    | -7.280  | -3.576 | Stationary     | -10.065 | -3.580 | Stationary |

Significance level and \*\*\*\* stationary at 10% significance level.

**Table 4.1.2 : Philips Peron Test**

| Philips Peron Test –PP test |              |                   |                    |              |           |            |
|-----------------------------|--------------|-------------------|--------------------|--------------|-----------|------------|
| At level form               |              |                   | At difference form |              |           |            |
| Variables                   | T statistics | *5%critical value | Decision           | T statistics | *5% value | Decision   |
| FDI                         | -1.121       | -18.356           | Non                | 2.990        | -7.396    | Non        |
| RGDPGR                      | -35.410      | -18.204           | Stationary         | -32.943      | -7.364    | Stationary |
| UEMPER                      | -8.253       | -18.204           | Non<br>Stationary  | 0.027        | -7.364    | Non        |
| IMPG                        | -31.562      | -18.356           | Stationary         | -32.529      | -7.396    | Stationary |
| EXPG                        | -43.655      | -18.356           | Stationary         | -46.577      | -7.396    | Stationary |
| GCI                         | -34.069      | -18.356           | Stationary         | -36.099      | -7.396    | Stationary |

Source: Own table with data from Stata

#### 4.2 Regression Analysis (OLS)

Let me try to show the OLS regression analysis to outlook the correlation test among variables before passing through the co-integration test.

**Table 4.2**

| FDI effect on | Coefficient | Standard error | t-statistics | Prob. |
|---------------|-------------|----------------|--------------|-------|
| RGDPGR        | .0064778    | .0046833       | 1.38         | 0.177 |
| UMPER         | .0604836    | .0142756       | 4.24         | 0.000 |
| IMPG          | .0000595    | .0001384       | 0.43         | 0.670 |

|      |          |          |      |       |
|------|----------|----------|------|-------|
| EXPG | .0000704 | .0001027 | 0.69 | 0.498 |
| GCI  | .0075488 | .006758  | 1.12 | 0.273 |

Though the findings of this study accord in terms of positivity with earlier studies by Zahir Mohamed (2018) and Heang and Moolio (2013), there is still little difference in terms of

association strength. . However, I discovered that the link between FDI and economic growth is positive but insignificant, whereas those writers discovered that it has a positive correlation with economic growth. The study finds that FDI inflows have a considerable positive influence on employment, implying that increased FDI inflows may increase the opportunities for local people to work, reducing unemployment and poverty in Somalia in the long run. Export has a favorable and considerable impact on Somalia's economic growth, according to the report. This result was also discovered by Mofrad, (2012), who discovered that there is a positive and strong long-term association between investment and export and gross domestic product. The analysis finds that while products import and export, as well as gross capital investment, all have a positive association with FDI, the effect is small, as indicated in the table.

**Table 4.3: Lag selection method**

We have four different approaches for deciding how many delays to take in the criteria for selecting lags. The numbers marked with a star indicate that they are suitable lags to be used in the model. You may have picked lag two as the suitable lag in this model based on FPE requirements. The AIC and FPE criterion also show that two delays are superior. Finally, HQIC and SBIC indicate that lag zero is preferable to lag two. Finally, according to the AIC, lag 2 is the best option for this model.

| lag | LL      | LR     | df | p     | FPE      | AIC       | HQIC      | SBIC     |
|-----|---------|--------|----|-------|----------|-----------|-----------|----------|
| 0   | 27.7564 |        |    |       | 1.7e-07  | -1.42051  | -1.28528* | -.93296* |
| 1   | 47.6967 | 39.881 | 25 | 0.030 | 2.7e-07  | -1.01574  | -.542448  | .690688  |
| 2   | 83.2067 | 71.02* | 25 | 0.000 | 1.7e-07* | -1.85654* | -1.04518  | 1.06876  |

**4.4 Johansen co-integration test Trace statistics**

At the 5% significance level, the trace test revealed the existence of at least two cointegrating equations as indicates the test statistics of 59 and 3.3 which is greater than the critical value of 5% of 47 and 29 respectively .Therefore, The null hypothesis of no cointegration has been rejected. As a result, at a 5% significance level, the trace statistics revealed a two-cointegrating relationship.

| Maximum rank | Eigen value | Trace statistics | %5 critical value | Decision point |
|--------------|-------------|------------------|-------------------|----------------|
| 0            |             | 107.82           | 68.52             | H0 is rejected |
| 1            | 0.85697     | 59.2100          | 47.21             | H0 is rejected |

|   |         |         |       |                |
|---|---------|---------|-------|----------------|
| 2 | 0.66940 | 31.5390 | 29.68 | H0 is rejected |
| 3 | 0.57916 | 9.9017* | 15.41 | H0 is accepted |
| 4 | 0.23668 | 3.1497  | 3.76  | H0 is accepted |
| 5 | 0.11837 |         |       |                |

**Table 4.4 : Max statistics**

The maximum eigenvalue test in Table 4.4 confirms the existence of at least two cointegrating equations at the 5% significance level. The null hypothesis of no cointegrating vectors is rejected since the eigenvalue of 35.97 is greater than the 5% critical value of about 33.88. The null hypothesis of just two cointegrating vectors cannot be rejected using the same methods since the test statistic of 27.67 and 21.6373 is larger than the 5% critical value of 27.07 and 20.97, respectively.

| Maximum rank | Eigen value | Max statistics | %5 critical value | Decision point |
|--------------|-------------|----------------|-------------------|----------------|
| 0            |             | 48.6169        | 33.46             | H0 is rejected |
| 1            | 0.85697     | 27.6710        | 27.07             | H0 is rejected |
| 2            | 0.66940     | 21.6373        | 20.97             | H0 is rejected |
| 3            | 0.57916     | 6.07           | 14.07             | H0 is accepted |
| 4            | 0.23668     | 3.1497         | 3.76              | H0 is accepted |
| 5            | 0.11837     |                |                   |                |

**4.5 Granger Causality Test**

**Table 4.5: Wald test of grander causality**

| Equation | Excluded | Chi2     | df | Chi2> F |
|----------|----------|----------|----|---------|
| RGDPGR   | FDI      | 21.598   | 2  | 0.000   |
| UEMPER   | FDI      | . 8.2382 | 2  | 0.016   |
| IMPG     | FDI      | 1.3499   | 2  | 0.509   |
| EXPG     | FDI      | 3.7645   | 2  | 0.152   |
| GCI      | FDI      | . 1.8919 | 2  | 0 0.388 |

Net FDI inflows have an effect on the predictability of Somalia's real GDP growth rate (RGDPGR) and unemployment rate (UEMPER), as seen in Table 5, meaning that a 1% increase in FDI inflow produces a 1% increase in RGDPGR. Meanwhile, it has the same effect on unemployment as FDI. This is indicated by the importance of their p-values in the table (0.000 and 0.016 percent, respectively). As a result, the findings point to unidirectional Granger causation from real GDP growth and UNEMPER to net FDI inflows, which is in line with the Trace and max statistics results, which show that the equation has at least two co-integrating vectors.

**Table 6: VECM short run relationship using Wald test**

| Variables | T-statistics | Value    | Df | Probability |
|-----------|--------------|----------|----|-------------|
| FDI       | 39.3747      | 11.05218 | 2  | 0.3535      |
| RGDPGR    | 1.1055       | 62.09334 | 2  | 0.0000      |
| UEMPER    | .208749      | 2.736415 | 2  | 0.9870      |
| IMPG      | .035689      | 13.40607 | 2  | 0.2018      |
| EXPG      | .022842      | 97.44856 | 2  | 0.0000      |
| GCI       | 2.6944       | 42.24639 | 2  | 0.0000      |

As seen in table 6, a short-run causation impact exists between real GDP growth, gross capital investment, and exports and FDI. Because the probability values of RGDPGR, GCI, and EXPG are significant, that is, they are fewer than 5%, as indicated in the table above. The rest of the variables, such as IMPG and UNEMPER, have probabilities greater than 5%, indicating that there is no short-term causality between these factors and FDI.

**5.0 Summary , Conclusion and Policy recommendation**

The purpose of this empirical study was to determine how FDI inflows influenced Somalia's economic growth. IMPG, EXPG, and were utilized as control variables, with FDI as an independent variable and economic growth and unemployment rate as dependent factors. The study examined the impact of foreign direct Investment on economic growth in Somalia by collecting historical time series secondary data spanning from 1989 -2020 .The data has been sourced from OIC, SESRIC data base.

The findings of the study backed with previous research by Zahir Mohamed (2018) and Heang and Moolio (2013), which found that FDI has a beneficial impact on economic growth. It was also discovered that FDI had a strong beneficial influence on employment, implying that increased FDI inflows may increase the opportunities for local people to work, reducing unemployment and poverty in Somalia in the long run. Furthermore, it has been shown that FDI has a long-term beneficial significant impact on product import and export, which is crucial for production and real GDP growth. According to the trace and max statistics of Johnson cointegrating model analysis, the model has at least two cointegrating vector associations. According to the VECM model, real GDP growth, gross capital investment, and exports all have a short-run causal effect on FDI. Because RGDPGR, GCI, and EXPG have significant probability values (less than 5%, as mentioned in the analysis), but the rest of the variables do not exhibit short term causation with FDI.

FDI affects domestic economic growth primarily through a country's domestic capital, human capital, and technological assets. To begin, FDI inflows have the potential to boost domestic investment and capital goods by investing in public and private sectors like infrastructure, ports, fishing, and agriculture. Finally, FDI inflows contribute to the development of human capital by giving training and skills that transmit know-how technology to the local population, resulting in more employment and labor workers and a lower unemployment rate in the country. As a result, the country's real GDP will increase, and FDI inflows will benefit the economy as a whole. We used a limited time frame for our study, from 1989 to 2020; however, future researchers should utilize a longer time frame than we did for better results. Future researchers may tweak the study's variables, such as FDI, export and import, gross capital investment, and unemployment rate, as well as look into other variables like exchange rate, inflation, and balance of payments, among others. Foreign investors should be given



appropriate guidance by officials who should create a business-friendly environment for them. Many studies have demonstrated that enhancing governance and order, fostering an investment-friendly environment, knowledge transfer, and infrastructure development are all essential elements in attracting foreign investment and maximizing its economic benefit.

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