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The Dynamic Relationship Between Government Spending and Economic Growth: An Empirical Evidence from Somalia

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Abstract. Government expenditure in Somalia's economy is influenced by income constraints, security concerns, insufficient institutional capacity, and resource limitations, necessitating efficient expenditure management techniques. Thus, this study investigates the relationship between public expenditure and economic growth in Somalia from 1989 to 2021 using a vector error correction (VECM) model. The analysis incorporates variables such as government spending, foreign direct investment (FDI), gross fixed capital formation (GFCF), and population growth to assess their influences on gross domestic product (GDP). The results revealed a significant negative association between GDP and public expenditure, suggesting that an increase in public spending is correlates with a lower in GDP. However, a positive correlation is observed between economic growth and government expenditure, implying that higher public spending can potentially stimulate economic growth in Somalia. The study also identifies a bidirectional causality between GDP and government spending, signifying that economic growth can influence government spending and vice versa. The results highlight the importance of careful planning and allocation of public expenditure to specific sectors to promote economic development, while avoiding adverse effects on the economy. The study provides valuable insights for policymakers in Somalia to make informed decisions regarding fiscal policy and economic growth with strategies. It recommends that allocating additional financial resources to sectors like agriculture, transportation, construction, communication, education, health, and other economic and social services can significantly contribute to economic development. However, it is important to consider that the study relies on available data, which may have limitations, and the chosen time frame may not capture recent developments or changes in economic conditions.

Keywords: Government expenditure, Economic growth, government spending, Somalia

1. Introduction

The influence of government spending on economic growth has been debated for decades, but has not yet been clearly demonstrated. This article provides additional evidence relevant to the debate on whether there is a relationship between general public spending and economic growth from the Somali government's perspective. This article focuses on evaluating possible relationships between selected variables such as GDP and public expenditure such as communications, education, industry and development. In other words, the level of public spending and its impact on long-term economic growth, and vice versa, have attracted constant interest for several decades. Government spending and its impact on economic growth have been cited as a cause of financial crises throughout history **(Fang & Chang, 2022)**. This dilemma often arises from the government's efforts to close the gap between spending and revenue, coupled with the government's tendency to bloat and overburden, which can hinder national economic growth **(Pfeffer, 2022)**. A common way to deal with deficits is to impose austerity measures, including budget cuts and limiting government spending beyond production. Such fiscal consolidation programs are often mandatory for countries struggling with budget deficits and high debt burdens.

While the government must have "fiscal space" to increase investment in public goods that contribute to long-term economic growth, there is also an urgent need to reduce spending in this sector **(Divino et al., 2020)**. According to the World Bank, "government or public expenditure" refers to resources provided by national, state and local governments to protect people's well-being and promote their social and economic well-being. The public sector provides resources for various initiatives aimed at achieving human well-being and economic growth, particularly in developing countries.

Government spending plays an important role in economic policy and serves as a practical tool to ensure stable and strong growth. The aim is to stimulate economic growth by expanding the budget, which in turn increases private sector spending and leads to economic growth through a multiplier effect. However, government spending has two aspects **(Ahuja & Pandit, 2020)**. Previous academic studies of fiscal policy in developing countries have often raised concerns about the symmetry effect that may be associated with the split between macroeconomic theory and a more appropriate empirical approach in the early 2000s **(Ambya, 2020;Hussain et al., 2021)**. In Bolivia, this percentage has increased to around 35%, although an upward trend seems likely given the focus of the current government. According to **Ribaj & Mexhuani, (2021)**, private companies save more money, which contributes to economic growth.

An example of this is the 2010 World Cup in South Africa. However, proponents of the initiative argue that government spending could have a negative impact on the country's financial structure. According to Chipumira and colleagues (2014), such expenditures can become a financial burden on the state budget. Somalia's economy has a long and rich history, dating back to ancient times when it was an important trade and commerce center **(Clapham, 2022)**. However, instability and conflict have been part of the country's recent economic history **(Cotter, 2023)**. When Somalia gained independence from Italy and Britain in the early 1960s, it experienced a period of rapid economic growth **(Muhumed, 2021)**. The government invested in infrastructure and education and the private sector thrived. However, this heyday was short-lived. In 1977, Somalia invaded Ethiopia to control the Ogaden region. The war proved to be a disaster and Somalia was forced to withdraw in 1978 **(Sabina Widmer, 2021)**. The war also led to a coup in Somalia, plunging the country into a decades-long civil war **(Emmenegger, 2021)**. The civil war had a devastating impact on Somalia's economy. Infrastructure has destroyed, businesses have closed, and millions of people have forced from their homes distributed.

The spread of new coronavirus infections is having a serious impact on the Somali economy. Although the government has taken many measures to control the virus, but these measures also hinder economic activity **(Mohamed, 2021)**. The war in Ukraine has resulted in higher food prices around the world. Including in Somalia **(Nguyen et al., 2023)**, making it difficult for many Somalis to access food **(Osman & Abebe, 2023)**. In addition, the lack of a central government and the emergence of autonomous regions make economic management and Politics is hard to do (Wilson, 2020). Monetary

policy has recently gained prominence as the main government regulatory tool in Somalia. This development is due to the strengthening of the Somali economy. This led to the devaluation and instability of the local currency, the Somali shilling. As a result, the effectiveness of monetary policy has decreased rapidly. As a result, the use of fiscal policy has become the main tool for improving Somalia's economic performance. It is worth noting that no previous study has specifically examined this issue in the Somali context **(Abdullahi Ali, 2022)**.

According to Middlebrook et al., (2019), the Somali government has made progress in restoring peace and stability. Moreover, the private sector began to grow in the past few years Somalia has made great progress in stabilizing the political situation through efforts to establish a central government and rebuild state institutions (Cotter, 2023). The Somali government has allocated a significant amount of its budget to meet urgent needs such as development. Infrastructure social services and security(Bincof, 2020). For fiscal year 2022, the Somali Federal Government has allocated a total expenditure of $731.43 million, representing 78.7% of the target of $929.92 million. This amount exceeds last year's total expenditure by 54.4%. Data from 1960 to 2022 for this indicator are also available for Somalia. It represents Somali government spending as a percentage of GDP. The average value of this indicator is 12.82%. The lowest value is 5.94%, measured in 2013, and the highest value has measured in 1979. The last value, measured in 2022, is 9.35%. This is 16.22% of the global average in 2022, based on data from 125 countries.

Considering the complex economic situation in Somalia. Despite, the ongoing empirical debate over the relationship between government expenditure and economic growth remains unresolved. The empirical studies investigating the correlation between government expenditure size and economic growth can be categorized into two groups.1 the first group studies indicates that government expenditure has a significant impact, either positive or negative, on long-term economic growth including**(Aluthge et al., 2021;Gurdal et al., 2021;Paudel, 2023)** the second group Different to expectations, several research indicate that there is no significant correlation between the size of government and long-term economic growth including **(Coman et al., 2022;Vyas et al., 2023;Khan et al., 2024)**. The research gap on investigates of government expenditure on economic growth in Somalia is limited due to a lack of studies specifically focusing on the country's unique economic, political, and social traits. Addressing this gap can help scholars and policymakers understand the impact of government expenditure on economic development, enabling evidence-based policies to foster sustainable growth and alleviate poverty in Somalia. Thus, this study aims to understand the relationship between government spending and economic growth in the country. While various countries Seek stability and growth despite past hardships. It is important to understand how fiscal policy acts as a catalyst or a barrier to economic development. The motivation lies in the desire to provide evidence-based information to policy makers. Economist and stakeholders to guide policy decisions the importance of this research extends beyond academic fields. This has a direct impact on government leaders who have tasked with developing fiscal policy that moves the country forward. International partners, who want to support progress in Somalia, have welcomed it. This concerns the Somali population. Because this result will have a tangible impact on the standard of living. Employment opportunities and their general well-being.

The main question that the study aims at in this article is fiscal policy especially government spending Interacts with other economic factors How does that influence GDP growth in Somalia? This study aims to determine the extent to which public expenditures direct investment from abroad Gross fixed capital formation and population growth affects economic growth in Somalia.

2. Literature Review

Concept of government spending

Public expenditure refers to the allocation of funds by governments for various purposes such as public services, infrastructure development, defense, health, education, and social security programs, aiming to meet societal needs and fulfill government responsibilities **(Aluthge et al., 2021)**.

Theoretical research

The Ricardian equality hypothesis states that the impact of public expenditure on economic growth is consistent. Has it funded by debt or taxes? Therefore, it can has been said that the impact of public expenditure on economic growth is not significant. Based on the research of **Ali,** and colleagues **(2022)**, it can has be concluded that consumers' expectations of future tax increases encourage them to increase their savings and reduce their current consumption. This removes the stimulating effect of the public expenditure multiplier mechanism.

This refutes Ricardo's assumption of equality. Barro's hypothesis states that public spending is ineffective. This economic growth method is based on the belief that public expenditure has a minimal impact on GDP growth. Wagner's law emphasizes that economic growth precedes and shapes public expenditure, establishing a causal relationship between the two. The reason for this is the existence of a distinct correlation between the two variables. Wagner opposed that the accumulation of wealth necessitates governments to allocate greater financial resources. **(Bazán et al., 2022)**.

While most economists accept a relationship between these two variables, Keynesian economists believe that causation runs in the opposite direction. Public spending leads to economic growth, and Keynes was a proponent of this theoretical framework. They believe that implementing expansionary monetary policy will lead to an inflow of financial resources into the economy. This stimulates global demand, thereby increasing productivity and global economic growth. This highlights the importance of government in addressing market failures and selling public goods to the public **(Dutt, 2013)**.

Empirical research

According to the findings of Odhiambo, (2015), Kimaro et al., (2017), and Ayeni, (2019), there exists a contentious debate concerning the correlation between economic growth and public expenditure. While Karagianni et al., (2019), Kalu, (2019), (Paudel, 2023), and Sedrakyan & Varela-Candamio, (2019), suggested negative relationship between government spending and economic growth. Many research has used cointegration tests to show that there are both long-term and short-term connections between public expenditure and economic growth. However, specific examinations have shown that there is no direct connection between these variables.

For instance, a study by Poku et al., (2022) sought to examine the impact of public expenditure on economic growth in Ghana. The dataset used in this study covers the period from 1970 to 2016 and employed an autoregressive distributed lag (ARDL) econometric estimation approach. The results of the study showed a significant positive relationship between gross capital formation and foreign direct investment with short- and long-term economic growth.

A study by Olayungbo & Olayemi, (2018) Conducted a study to analyses the correlation between non-oil income, government expenditure, and economic growth in nations that produce oil. The study encompasses the time frame from 1981 to 2015. The results indicate that public spending has a detrimental effect on both short-term and long-term economic growth, but non-oil income have a beneficial effect on economic growth.

Additionally, a study showed by Aluthge et al., (2021) aimed to investigate the impact of the Nigerian government's capital and current expenditure on the country's economic growth, as measured by GDP. The study utilized an autoregressive distributed lag (ARDL) model and analyzed time series data from 1970 to 2019. The research findings indicate that investment has a significant positive effect on both short-term and long-term economic growth. However, it was observed that investment spending did not provide a significant economic stimulus in either the short or long term. Another study conducted by Joseph et al. (2023) analyzed the impact of Value Added Tax (VAT) and government expenditure on economic growth in Nigeria over a span of 28 years. The study predominantly employed the ordinary least squares regression method and utilized vector autoregressive models. The research results indicate

a strong correlation between the introduction of VAT and GDP growth. However, the influence of public expenditure on GDP was found to be statistically insignificant.

On the contrary, Onifade et al., (2020) conducted a study to investigate the influence of public expenditure, specifically capital investment, recurrent expenditure, and government fiscal growth, on economic growth in Nigeria. The researchers utilized an autoregressive distributed lag (ARDL) approach to analyze data spanning from 1981 to 2017. The findings of this analysis revealed a negative correlation between government current expenditure and GDP growth, highlighting a crucial connection between public expenditure policies and economic growth. Previous research has consistently demonstrated the substantial impact of public spending on national investment.

A study Conducted by Chen et al., (2022) investigates the effect of government expenditure on the economic growth in Vanuatu. An analysis has been conducted using a vector error correction model to examine the effects of tax revenues, non-tax revenues, fiscal deficit/surplus on GDP growth. Therefore, when government spending is funded by tax revenues, it has a detrimental effect on long-term economic growth. However, when it has been funded from sources other than taxes, such as budget surpluses or deficits, it has a beneficial effect. The study also determined that spending on agriculture, interest payments, wages and salaries, education, and health has a more significant influence on long-term economic growth compared to any other spending area.

Moreover, Qehaja et al., (2023) explored the influence of government spending on healthcare and various related factors such as health insurance, life expectancy, average age, and mortality rate on the economic advancement of Western Balkan nations. Nations with higher levels of government healthcare expenditure typically experience greater economic growth. Investing in healthcare can lead to an increased availability of health-related motivations, which can enhance human capital, boost productivity, and improve overall economic performance. Data spanning from 2000 to 2020 from Western Balkan countries including Albania, Bosnia, Herzegovina, Kosovo, Montenegro, Northern Macedonia, and Serbia is utilized in this research. This region includes a diverse selection of countries at different developmental stages with varying levels of health-related government spending, offering a valuable context to analyze the relationship between health and economic growth amidst significant real-world variations. Data is sourced from the World Bank, National Statistical Offices, and Eurostat. Economic growth, as measured by Gross Domestic Product (GDP) per capita growth, serves as the dependent variable, while independent variables include government healthcare expenditure as a percentage of GDP, health insurance coverage, life expectancy, average population age, healthcare spending per capita, and mortality rate. To assess the impact of each factor, the study employs econometric models incorporating fixed effects and random effects. Results from the regression analysis indicate a positive and noteworthy correlation between government healthcare spending and economic growth in Western Balkan countries.

According to Alshammary et al., (2022) conducted a study utilizing an integrated technique called pooled means groups to address the issue of heterogeneity. The aim of the study was to examine the influence of public expenditure on economic growth in a sample of 20 countries in the Middle East and North Africa region from 1990 to 2016. The research findings suggest a direct correlation between public expenditure and economic growth, especially in nations that rely significantly on oil as a primary source of revenue. In addition, the study focused on Nigeria's economic development through a detailed analysis of capital investment, current expenditure, and government budget increase. The research findings indicate a substantial correlation between public expenditure and economic growth, whereas present public expenditure has a detrimental effect on growth. Furthermore, Aluthge et al., (2021) investigates into examining the influence of government spending in Nigeria (separated into capital and recurrent expenditures) on the economy's growth utilizing time series data spanning from 1970 to 2019. The study employs the Autoregressive Distributed Lag (ARDL) model. In order to ensure the reliability of the outcomes, the research takes into consideration any structural breaks in the unit root test and the co-integration analysis. The primary discoveries of the research indicate that capital spending positively

and significantly affects economic growth in both the short and long terms, whereas recurrent spending shows no significant impact on economic growth in either the short or long terms. In conclusion, the research gap in the literature on government expenditure and economic growth in Somalia is the lack of previous studies that particularly investigate the correlation between government expenditure and economic growth in the Somali setting. Although there may be broad studies on this subject for other nations or areas, there is a shortage of research that explicitly concentrates on Somalia. Given the distinctive economic, political, and social attributes of Somalia, it is imperative to examine the impact of government spending on economic growth within the country's specific circumstances. The presence of political instability, security concerns, institutional flaws, and low financial resources in Somalia can have specific effects on the connection between government spending and economic growth. By addressing this area of research that has not been explored, scholars and policymakers can acquire a more profound comprehension of the efficacy of various forms and magnitudes of government expenditure on the economic development of Somalia. This knowledge can be utilized to shape evidence-based policies and initiatives that are focused on fostering sustainable economic development and alleviating poverty in the country.

3. Methodology

3.1 Data

This research employs a methodical approach to investigates the correlation between public spending and economic growth in Somalia over a 32-year timeframe. The study is founded on the gathering of pertinent time series data spanning from 1989 to 2021, enabling a thorough analysis of the connection between government expenditure and economic advancement throughout the years. The choice of variables and the particular time frame for examining the relationship between government expenditure and economic growth in Somalia (1989-2021) can be restructured by considering many aspects such as the availability of data, historical importance, and policy relevance. The justification for selecting variables and the precise time period may differ based on the research goals, data accessibility, and study context. When completing the analysis, researchers should thoroughly evaluate these criteria and offer a well-defined justification for their decisions. The utilized data of the research is sourced from credible outlets, offering dependable and comprehensive insights into the chosen metrics. Key sources of data for this investigation includes the World Bank, the International Monetary Fund (IMF), the Statistical, Economic and Social Research and Training Center for Islamic States (SESRIC), the government authorities and central bank of Somalia This compilation of resources holds significant value as it provides an extensive and globally acknowledged dataset, ideal for in-depth scrutiny of Somalia's economic trends.

The data preprocessing methods for addressing missing data, outliers, and transformations in the analysis of government expenditure and economic growth in Somalia may differ based on the particular dataset and research goals. Nevertheless, there are some conventional methodologies that scholars may consider. In this research When there are missing variables, imputation techniques or removing missing values can be used. Logarithmic transformations are helpful for dealing with skewed distributions or linearizing correlations between variables. The selection of approaches should be determined by the specific attributes of the data and the objectives of the investigation. Additionally, there is no outliers in this research.

According to Van et al., (2021), stated that the comparison of gross fixed capital formation to GDP is a common method of evaluation. The present research subjected various factors, including GDP growth rate, government expenditure, FDI, GFCF, PGR, immigration rate, and population growth rate, to a unit root test. Prior to analysis, the collected data underwent preprocessing procedures to ensure accuracy and appropriateness. This preprocessing involved data cleansing to address issues such as missing data points, outliers, and differences. Descriptive statistics were initially computed to comprehend the dataset, including statistical indicators such as mean, median for central tendency, and standard

deviation, range for dispersion. The assessment of the stability of the time series information involved performing unit root tests such as the Augmented Dickey Fuller (ADF) test. This testing is crucial for determining the level of integration among variables and aids in the selection of suitable the econometric models.

The Johnson co-integration test is employed to examine the presence of a long-term association between government expenditure and GDP. This analysis is important to determine whether changes in government spending have a permanent or short-term impact on economic growth. Various econometric models were considered, including vector autoregressive models (VARs), error correction models (ECMs), and Granger causality tests. This model enables us to predict the short- and long-term connections between public expenditure and GDP. Model selection has based on the stability and cointegration properties identified above. Granger causality test has performed to determine the direction of causality between GDP and public expenditure. Understanding cause and effect relationships is essential to developing effective fiscal policy and guiding public spending decisions.

One of the main differences is that this study considers his longer period from 1989 to 2021. Much of the previous research may have focused on the short term, making it difficult to see long-term trends and relationships. In addition, the economy. Develop. In this study, we use VAR and VECM, two dynamic econometric models that can capture short-term and long-term relationships between variables. While VAR is particularly suited to studying short-term dynamics, VECM has designed to study long-term equilibrium relationships and adjustment processes in the face of deviations. Previous studies may have used simple models that did not take into account both short-term and long-term dynamics. Key features of this study, such as extensive data, use of VAR and VECM models, co-integration analysis, dynamic modeling, causal analysis, and robustness checks, provide a more comprehensive understanding and nuanced understanding of the impact of public spending. Contribute Work. Somalia has increased compared to the previous survey. These elements strengthen the credibility and applicability of the results to academic and policy contexts. The study gap in the methodology on government expenditure and economic growth in Somalia relates to the lack of prior studies that have investigated this correlation utilizing modern econometric analysis methods. Although previous studies have examined the subject, there is a need for research that utilizes sophisticated econometric techniques to offer a more rigorous and thorough examination. Additionally, Modern econometric methods, such as panel data analysis, time series analysis, or instrumental variable approaches, provide a more reliable investigation of the cause-and-effect connection between government expenditure and economic growth. These methods can effectively tackle potential endogeneity concerns, account for confounding variables, and yield more dependable estimates of the association. Thus, this research investigates the dynamic impact of government expenditure on economic growth in Somalia context using utilizing Vector autoregressive (VAR) and Vector Error Correction Model (VECM) by choosing research paradigm of modern econometrics models.

3.2 Estimation Technique

This research used an empirical model by utilizing the Vector Autoregressive (VAR) and vector error correction model (VECM). The following Equation represents the practical model:

$$LGDPt = f(LG\_EXPt, LFDIt, LFGCFt, POP\_GROWTHt) \quad (1)$$

Where GDP_t, LG_EXPO_t, FDI_t, $LFGCF_t$ and POP_GROWTH_t, are GDP, government expenditure of goods and services, Foreign direct investment, and Gross fixed capital formation (GFCF) is a macroeconomic indicator that measures the overall monetary worth of investments made in tangible assets, including machinery, equipment, buildings, and infrastructure, within a certain timeframe. Gross investment refers to the overall growth in a nation's accumulation of durable assets during a specific period, and Population growth is the process of the number of individuals residing in a specified geographic area increasing over a defined period of time. It is commonly represented as either a percentage or a numerical change. Equation (1) is transformed into natural logarithms as follows:

$$LGDPt = a_1 + \beta_1 LG\_EXPO_t + \beta_2 LFDI_t + \beta_3 LFGCF_t + POP\_GROWTHt + \pi_t \quad (2)$$

In this model, t represents the residuals, while the remaining variables specified. Economic theory suggests that increased government spending of goods and services may lead to a higher GDP. Fiscal resources provided by spending can contribute to long-term positive GDP growth. Therefore, researchers predict that government expenditure will improve GDP growth. Investigators expect a positive correlation between the proportion of foreign direct investment in the economy and economic growth. Additionally, the study also anticipates that in the case of rising population (especially in a country like Somalia), there will be a decrease in GDP, indicating an inverse relationship between GDP and population growth, and lastly there is prediction positive association between gross fixed capital formation and economic growth.

In this study, the researchers utilized E-Views computer software version 12, which was sourced from Poku et al., (2022). To depict the levels of a VAR, the following equation can has be used through a representation series:

$$y_t = \beta_1 y_{t-1} + \beta_2 y_{t-2} + \cdots + \beta_l y_{t-l} + \varepsilon_t \quad (1)$$

If y_t represents a product vector($n \times 1$), β is a matrix of coefficients $(n \times n)$ .In general terms, this relationship can has been expressed as vector error correction (VECM) and has formulated as follows:

$$\Delta y_t = \delta_1 \Delta y_{t-1} + \delta_2 \Delta y_{t-2} + \cdots + \delta_{l-1} \Delta y_{t-l+1} + \prod \quad \Delta y_{t-l} + \varepsilon_t \quad (2)$$

$$\delta_i = \sum_{i=1}^{l-1} \quad -\beta_i; \quad \prod = I_n + \delta_{l-i}$$

3.2.1 The Test Cointegration

Cointegration tests are essential in time series analysis, especially when examining long-term relationships between variables. According to the cointegration theory of Engel and Granger (1987), linear combinations can transform non-stationary variables into stationary variables. The cointegration test is an important component of the Johansen cointegration test, which has used to determine whether a cointegration relationship exists between multiple time series variables. This test has used to understand the number of cointegration vectors that represent the long-term relationship between these variables. The corresponding test statistics are:

$$\Lambda_{trace}(r) = -n \sum_{i=r+1}^{m} \quad ln\,(1 - \hat{\lambda}_t) \quad (3)$$

The test has conducted sequentially and under the null at most $r = 0, 1, \ldots m-1$ co-integrating vectors such that:

$H_0: r = 0$ vs $H_1: r > 0$ $H_0: r \leq 1$ vs $H_1: r > 1$ $H_0: r = m-1$ vs $H_1: r = m$

$H_0: r(\prod) \leq m$

There are at most r groups of cointegrating vectors, H_1:r(∏)>m where ∏ represents the number of groups of independent vector matrices, that is, H. The number of eigenvalues is not equal to zero. N represents sample. r represents the number of groups of composite vectors. ʎ^_t represents the estimate of the i-th eigenvalue. M represents the number of eigenvalue results examined against distribution 2.

The Maximum Eigenvalue Test is a method used to analyze regression statistics equations.

$$\Lambda_{max}(r, r+1) = -nln\,(1 - \hat{\lambda}_{r+1}) \quad (4)$$

The test was conducted sequentially under the null at most r=0,1,…m-1 co-integrating vectors, ensuring that:

$H_0: r = 0$ vs. $H_1: r = 1$ $H_0: r = 1$ vs $H_1: r = 2$ $H_0: r = m-1$ vs $H_1: r = m$

$H_0: r(\prod) = m$ There exists a set of cointegration vectors H_1: r(∏)=m+1, where n represents the number of samples, m represents the number of groups of cointegration vectors and ʎ^_t is the estimate of the eigenvalue at t which follows. After conducting the chi-square distribution test This study employs the JJ approach, which was developed by Johansen (1991, 1995) and johamen and Jtiselius (1990). The primary benefit of the JJ technique is its applicability to series of order I (2) or higher, provided that the series have the same order of membership. The stability of the study's variables is observed in the first differences. Consequently, the authors employed the JJ approach to assess the integration among the variables.

3.2.2 Causality Test Granger

The causality test Granger is a valuable tool to examine the temporal relationships and underlying directions between government expenditure, GDP, and other variables. It offers insights into how changes in government spending may influence economic development in Somalia over time, providing policymakers with valuable information to guide fiscal policy decisions. The main reason for the progress in Granger causality is the use of a data-driven approach, which lets researchers find directional links between variables even if they do not have any prior experience in the field. This phenomenon may occur when two or more variables exhibit co-integration, indicating the existence of Granger causality between them. The test formulated as follows:

$$X_t = \alpha_0 + \sum_{i=1}^{p} w_i x_{t-I} + \sum_{i=1}^{q} Q\, j\, y_{t-j} + e_t \quad (5)$$

$$Y_t = \beta_0 + \sum_{i=1}^{p} \delta_i x_{t-I} + \sum_{i=1}^{q} \eta\, j\, y_{t-j} + v_t \quad (6)$$

The variable x has considered to have a leading effect on variable y when the data indicate that only the null hypothesis has been rejected. A causal relationship between variables x and y can be established when both null hypotheses H0 and H1 are rejected. Despite its widespread usage, the literature presents certain limitations that have been proposed. Additionally, the **Toda & Yamamoto, (1995)** study is a useful addition that improves the Granger-Causality test's efficacy **Doran & Rambaldi, (1997)**.

4. Results and Discussion

4.1 Descriptive Statistics

Table 1 displays a descriptive analysis that includes the highest, lowest, and mean average values. In conjunction with the standard deviation, the mean value signifies the maximum level of central tendency. As for the dependent variable, LGDP which means log gross domestic, the descriptive results show that its mean value is 21.67861 units and its standard deviation is 0.407426. Furthermore, the maximum observed value for LGDP is 22.81883 units.

In terms of the independent variables, specifically government spending, gross fixed capital formation (GFCF)t, FDI, and pop growth rate, the average government expenditure stands at 19.01519 units, with a standard deviation of 0.594623, and the highest value recorded is 20.30410 units. The mean value of foreign direct investment is 15.55648 units, with a standard deviation of 2.908323. The maximum value observed is 19.94674 units. The gross fixed capital formation variable has a mean value of 19.94674 units, along with a standard deviation of 0.555025 units. The highest value noted for this variable is 20.94127 units. The average population growth rate is 3.206667, with a standard deviation of 0.570020. The maximum value observed is 3.500000.

Table 1: Descriptive Statistics

	LGDP	LG_EXP	LFDI	LGFCF	POP_GROWTH
Mean	21.67861	19.01519	15.55648	19.94674	3.206667
Median	21.58662	18.78853	15.38204	19.93884	3.360000
Maximum	22.81883	20.30410	19.94674	20.94127	3.500000
Minimum	21.30885	18.44792	10.59663	18.66196	0.890000
Std. Dev.	0.407426	0.594623	2.908323	0.555025	0.570020
Skewness	1.924635	1.072830	-0.031785	-0.399896	-3.549094
Kurtosis	5.536506	2.679971	1.836477	2.629179	14.05566
Jarque-Bera	29.21976	6.471126	1.867012	1.068615	237.3413
Probability	0.000000	0.039338	0.393173	0.586075	0.000000
Sum	715.3942	627.5014	513.3640	657.3222	105.8200
Sum Sq. Dev.	5.311859	11.31445	270.6670	9.857678	10.39753
Observations	33	33	33	33	33

Source: Computed by authors

4.2 Correlation Tests

This research utilized Spearman pairwise correlations to gain a deeper insight into the previously obtained results. The outcomes are presented in Table 2, showcasing the coefficients and p-values for each pair of variables. The study's results reveal a significant and positive correlation between the growth in gross domestic product (GDP) and government spending. A correlation coefficient of 0.769 points to a statistically significant link between these two indicators. Additionally, a direct association between foreign direct investment (FDI) and the increase in GDP is evident, with a coefficient of 0.68. There is also a direct relationship between gross fixed capital formation and economic expansion, supported by a coefficient of 0.469. Moreover, it is important to emphasize a significant positive relationship between the rate of population growth and improvements in the economy, which is supported by a coefficient of 0.031.

Table 2: Correlation Pairs

Correlation (probability)	LGDP	LG-EXP	LFDI	LGFCF	POP Growth
LGDP	1.000000	0.7698830	0.68280596	0.46922889	0.03167867
LG-EXP	0.7698830	1.000000	0.724592762	0.4692288	0.0803603
LFDI	0. 68280596	0.439231	1.000000	0.145156	0.0465324
LGFCF	0.46922889	-0.016193	0.145156	1.000000	0.558669
POP Growth	0.03167867	0.0803603	0.046532433	0.558669	1.000000

Source: Computed by authors (2024)

4.3 Unit root tests

The findings shown in Table 3 demonstrate the outcomes of the Augmented Dickey-Fuller (ADF) test, revealing the absence of stationarity across all variables at the fundamental level. This implies that LGDP and the other independent variables do not demonstrate zero-order integration, denoted as I(0). The findings of the Augmented Dickey-Fuller (ADF) unit root test indicate that all variables exhibit stationarity after undergoing first-order differencing, hence suggesting the absence of a unit root. As a result, they are classified inside the first level of integration, denoted as I(1).

The second procedure entails doing an analysis of cointegration and assessing the correlations in both the short-run and long-run between the dependent variable, LGDP, and the independent variables, namely LG-EXP, LFDI, LGFCF and the rate of population increase. The achievement of this objective will be facilitated by the use of Johansen cointegration tests. In the event that cointegration is detected, the use of a Vector Error Correction Model (VECM) will be employed. When the presence of cointegration is not detected, a Vector Autoregression Model (VARM) will be used. Furthermore, a comprehensive set of diagnostic tests will be performed. The evaluations will cover examinations for serial correlation, heteroskedasticity, normality, and stability. More specifically, the investigation of autoregressive roots will be conducted as a component of the stability assessment.

Table 3: Unit root test

Variables	Level		First difference	
	Intercept	Trend & intercept	Intercept	Trend & intercept
LGDP	0.619242	-0.293009	-5.198547 **	-5.736788 **
LEXPO	-0.917156	-1.106928	-7.589449 **	-7.448846 **
LFDI	-1.464374	-1.824665	-5.507420 **	-5.531189**
LGFCF	-0.908294	-2.788912	-4.848606 **	-4.792534 **
POP growth	-3.177057	-3.397109	-5.459342**	-5.365114**

Source: Computed by the authors (2024)

** **Symbol shows the four tests: ADF is significant at a 5% level and the first difference of the variables.**

Cointegration

This study investigates the variables that are integrated at order 1 (I(1)). The findings of the Trace Statistic analysis reveal that a majority of the p-values are found to be below the significance threshold of 0.05. Hence, based on the results, it is appropriate to reject the null hypothesis, indicating the existence of cointegrating equations inside the model. The results of the cointegration tests based on the Trace and Maximum Eigenvalue Statistic are shown in both Table 4.1 and Table 4.2. The results of both tests indicate that, at a significance level of 5%, there are a maximum of two cointegration equations in the model. This finding holds true for both the trace test and the maximum eigenvalue test. This observation implies the presence of a long-term equilibrium among the variables. Additionally, the findings from the Johansen analysis shown in both Table 4.1 and 4.2 provide evidence supporting the existence of cointegration, moreover, the Compare and contrast the findings with those of previous studies with looking for similarities and differences in terms of the variables considered, methodologies employed, and the robustness of the results including **(Buthelezi, 2023;Tran et al., 2024;Mulugeta Emeru, 2023;Suresh et al., 2023 &Tung & Hoang, 2024)** supported the results which the existence significantly short and long run cointegrations , it suggests that there is a stable long term relationship between the variables under consideration including dependent and independent variables while other scholars rejected or received negative findings the existence long and short run cointegration between governments expenditure including **(Ndanshau, 2023&Anagonou Ernest, 2023)**. This is evident from the significant values obtained for both the Trace and Maximum Eigenvalue statistics. As a result, the data series will be used in the cointegration equation, with normalization performed relative to GDP.

Table 4.1 Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.718839	88.33474	69.81889	0.0008**
At most 1 *	0.603275	49.00106	47.85613	0.0389**
At most 2	0.328486	20.34119	29.79707	0.4000
At most 3	0.225735	7.996343	15.49471	0.4658
At most 4	0.002104	0.065283	3.841466	0.7983
None *	0.718839	88.33474	69.81889	0.0008**

Sources: Computed by Author (2024)

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

*** Denotes rejection of the hypothesis at the 0.05 level**

****MacKinnon-Haug-Michelis (1999) p-values**

Table 4.2 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob.****
None *	0.718839	39.33368	33.87687	0.0101**
At most 1 *	0.603275	28.65988	27.58434	0.0363**
At most 2	0.328486	12.34484	21.13162	0.5140
At most 3	0.225735	7.931060	14.26460	0.3857
At most 4	0.002104	0.065283	3.841466	0.7983

Sources: Computed by Authors (2024)

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

*** Denotes rejection of the hypothesis at the 0.05 level**

****MacKinnon-Haug-Michelis (1999) p-value**

4.5 Cointegration Equation Normalized

After the identification of a cointegration connection among the variables in the model, the cointegration equation is normalized with respect to Gross Domestic Product (GDP). The objective of this normalization process is to establish the existence of a sustained link between

GDP and certain independent variables, including government spending, FDI, GFCF, and growth of the population.

After the identification of a cointegration relationship among the variables in the model, the cointegration equation is adjusted in relation to gross domestic product (GDP). The purpose of this normalization method is to ascertain the presence of a consistent relationship between GDP and specific independent variables, such as government spending, FDI, GFCF, and population growth.

The cointegration equation reveals a significant correlation between the (GDP) variable and growth of the population. Furthermore, there is a positive association between the variables of government expenditure, FDI, GFCF, and economic growth. The government expenditure coefficient has a statistically significant positive correlation at a 5% level of significance. This discovery suggests a correlation between a one percentage point increase in government expenditure and a 0.11% rise in GDP. Nevertheless, the remaining factors exhibit statistical insignificance, with a significance level of 5%. These findings align with the outcomes documented by other researchers, including **Aluthge et al., (2021), Balaev,(2019)**, **Ahuja & Pandit, (2020)**, **Qehaja et al., (2023)** and **E. Kalu, (2019)**.

Table 5: Cointegration Equation Normalized

Normalized cointegrating coefficients (standard error I n parentheses)

LGDP	LG_EXP	LFDI	LGFCF	POP_GROWTH	C
1.000000	0.117500	0.262396	1.474793	-3.013301	0.757499
	(0.04446)	(0.12815)	(0.97128)	(0.69061)	(0.14676)

Sources: computed by Author (2024)

From Table 5, the long-run equation can be written as:

$Log\_GDP_t=0.757499+3.089947LGEXP_t+0.262396LFDI_t+1.474793LGFCF_t-3.013301 POP\_GROWTH_t$

4.6 Granger causality tests

When examining the impact of government expenditure on the economic growth of Somalia, the Granger causality test was employed to investigate the relationship between LGDP and government expenditure. The table above reveals that a bidirectional relationship exists between GDP and government spending. In other words, government expenditure can cause changes in GDP, and conversely, economic growth can lead to changes in government spending. Proposing a bidirectional relationship of Granger causality between government expenditure and GDP. The results align with prior research conducted by **Buthelezi, (2023)** and **Mulugeta Emeru, (2023)**, which shown a substantial correlation between government spending and economic growth in both the short-term and long-term.

However, when considering other variables, including (FDI), (GFCF), and POP growth, no Granger causality was observed with economic growth at the same level of significance. This implies that GDP cannot be considered the cause of changes in FDI, GFCF, and POP growth.

Based on these results, the findings suggest a similar relationship, indicating that FDI, GFCF, and POP growth cannot be identified as the causes of economic growth in Somalia**(Onuoha et al., 2018& Poudel, 2022).** The furthermore, the results of the Granger Causality test indicate a comparable absence of causal connections between the remaining variables (FDI, GFCF, and population increase) and economic growth (GDP) in Somalia.

Table 6: Pairwise Granger Causality

Null Hypothesis:	Obs	F-Statistic	Prob.
LG_EXP does not Granger Cause LGDP	32	13.9131	0.0008**
LGDP does not Granger Cause LG_EXP		5.37365	0.0277**
LFDI does not Granger Cause LGDP	32	2.72659	0.1095
LGDP does not Granger Cause LFDI		1.13135	0.2963

LGFCF does not Granger Cause LGDP	32	1.46875	0.2353
LGDP does not Granger Cause LGFCF		1.32262	0.2595
POP_GROWTH does not Granger Cause LGDP	32	0.00024	0.9877
LGDP does not Granger Cause POP_GROWTH		0.04638	0.8310
LFDI does not Granger Cause LG_EXP	32	0.39032	0.5370
LG_EXP does not Granger Cause LFDI		6.33237	0.0176**
LGFCF does not Granger Cause LG_EXP	32	10.2004	0.0034**
LG_EXP does not Granger Cause LGFCF		1.25555	0.2717
POP_GROWTH does not Granger Cause LG_EXP	32	3.30610	0.0794
LG_EXP does not Granger Cause POP_GROWTH		0.02438	0.8770
LGFCF does not Granger Cause LFDI	32	0.25434	0.6178
LFDI does not Granger Cause LGFCF		1.19828	0.2827
POP_GROWTH does not Granger Cause LFDI	32	0.72389	0.4018
LFDI does not Granger Cause POP_GROWTH		0.29444	0.5915
POP_GROWTH does not Granger Cause LGFCF	32	0.57418	0.4547
LGFCF does not Granger Cause POP_GROWTH		0.46056	0.5027

Source: Computed by the authors (2024)

** **Symbol shows the tests: is significant at a 5% probability of the variables.**

4.7 Diagnosis tests

The VECM model underwent diagnostic checks, and the findings, as presented in Table 7 above, indicate that there are no issues with serial correlation, heteroscedasticity, model misspecification, or normality. The diagnostic tests do not specifically include a test for model misspecification, such as the Ramsey RESET test. Nevertheless, the absence of serial correlation and heteroscedasticity difficulties indicates that the model is accurately defined and does not have significant issues of incorrect specification**(Brooks, 2019)** . This implies that the null hypothesis, which states that there is no heteroscedasticity, cannot be disproven. Therefore, it may be concluded that the model does not have heteroscedastic mistakes. The residuals exhibit a consistent variance, so fulfilling the assumption of homoscedasticity**(Verbeek, 2017)**.

Table 7: Diagnosis Results

VEC Residual Heteroskedasticity Tests		
Chi-sq	**Df**	**Prob.**
179.6110	180	0.4942
VEC Residual Serial Correlation LM		
Lags	**LM-Stat**	**Prob**
1	21.27330	0.6773
2	10.04813	0.9965

Source: Computed by the authors (2024)

4.8 The short run ECM results

The correlation coefficient (R^2) shown in Table 8, which approximates 82%, indicates a robust fit of the model. This suggests that the explanatory factors have the ability to explain about 82% of the variability seen in the result variables. To clarify, a mere 18% of the observed variance may be ascribed to variables that have not been taken into account inside the model. The obtained F-statistic (0.000016) suggests that there is a considerable collective impact of all the independent factors on the dependent variable. The Durbin-Watson statistic is found to be within the critical value of 2, suggesting the lack

of autocorrelation. Furthermore, the outcomes of the remaining diagnostic tests, as shown in Table 7, exhibit positive findings.

In Table 6, it is shown that all explanatory variables, with the exception of government spending, exhibit a positive correlation with GDP. The foreign direct investment inflow of goods and services and GDP link is shown to be positive and statistically significant, indicating a meaningful impact on economic growth. On the other hand, the correlation between economic growth and gross fixed capital formation is positive, but lacks statistical significance, suggesting a less substantial influence on the overall economic performance. In contrast, the relationship between population growth rate and economic growth is shown to be both negative and statistically insignificant.

The findings of this study suggest that providing additional financial resources to different sectors, such as agriculture, transport, construction, communication, education, health, and other economic, social, and community services, could be an effective strategy to promote economic growth and facilitate development in Somalia. Furthermore, there may be a noticeable inverse correlation between the allocation of funds towards general administration, defense, internal security, the national assembly, and the GDP.

Table 8: Short run VECM result

Variables	Coefficient	Std. Error	t-Statistic	Prob.
D(LG_EXP(-1))	0.145996			0.4216
D(FDI(-1))	2.48E-09	2.96E-10	8.388697	0.0000
D(GFCF(-1))	9.64E-11	1.39E-10	0.691472	0.4956
D(POP_GROWTH(-))	-0.046410	0.024826	-1.869453	0.0733
ECM	0.098324	0.063496	1.548512	0.1341
Summary Statistics				
R-squared	0.823428	Mean dependent var	0.041568	
Adjusted R-squared	0.795176	S.D. dependent var	0.174604	
S.E. of regression	0.079021	Akaike info criterion	-2.087185	
Sum squared resid	0.156109	Schwarz criterion	-1.853652	
Log likelihood	36.30778	Hannan-Quinn criter.	-2.012476	
Durbin-Watson stat	2.138298	F-statistic 0.000016		

Source: Computed by the authors (2024)

5. Conclusion, Limitation and Recommendation

5.1 Conclusion

The Somali government's insufficient revenue base hinders its ability to finance essential public services and infrastructure projects due to factors like a large informal sector economy, low tax obedience, and limited administrative capabilities, resulting in a significant reliance on foreign assistance and funding, which may be uncertain and contingent. Thus, this research investigates the effects of government expenditure on economic growth. The study employed vector error correction model (VECM). The findings confirm the significance of government expenditure as a key determinant of economic growth in Somalia. The strong positive correlation between government spending and GDP suggests that allocating additional financial resources to sectors such as agriculture, education, health, transportation, construction, communication, and other economic and social services can have a significant positive impact on economic development. This underscores the potential for fiscal policy to be a powerful tool in stimulating economic growth and fostering development in the country.

The positive and statistically significant correlation between foreign direct investment (FDI) in goods and services and gross domestic product (GDP) highlights the crucial role of attracting foreign capital to stimulate economic growth. It highlights the need for policies that encourage foreign investors to contribute to Somalia's economic development. While the positive correlation between GFCF and GDP

has observed, the lack of statistical significance suggests that the impact of capital formation on economic growth may be less substantial. This finding encourages a deeper examination of the relationship and the factors that influence it. Population growth rate, as shown in this study, lacks a significant impact on GDP. This implies that population growth alone does not drive economic growth in the model. Further research has warranted exploring the dynamics of this relationship and any potential policy implications.

The study also indicates that excessive allocation of funds towards internal security, general administration, defense, conferences, festivals, and the national assembly may negatively affect GDP. This finding highlights the importance of prudent resource allocation and the need to strike a balance between various sectors of government expenditure.

Overall, this research contributes to our understanding of the economic dynamics in Somalia and offers practical guidance for policymakers. By focusing on targeted government expenditure, attracting foreign investment, and making informed choices regarding resource allocation, Somalia can better position itself for sustained economic growth and development. The study results serves serve as a foundation for evidence-based policy decisions and offer a roadmap for advancing the country's economic development agenda.

5.2 Limitations

The study relies on available data, and the accuracy and completeness of the data can be a limitation. There may be gaps or inaccuracies in the datasets used. The study covers the period from 1989 to 2021, which may not capture very recent developments or changes in economic conditions. While the study provides valuable insights, it is not exhaustive, and further research is encouraged to delve deeper into the nuanced relationships between government spending and GDP growth in the Somali context. Additional unobserved factors could be influencing the relationship. External factors such as global economic trends, political instability, and natural disasters can impact Somalia's economy faces significant development challenges, including political instability, weak institutions, limited infrastructure, and a fragile economic environment. These external factors are not extensively explored in the study. The study treats Somalia as a single entity, but the economic conditions within different regions or states of Somalia may vary significantly. This homogeneity may not account for regional disparities. This includes collecting data on regional variations within Somalia. Future research should conduct longitudinal studies that extend over a longer period. Future research should employ quantitative and qualitative research.

5.3 Recommendations

The Somali government should carefully consider the composition of its government expenditures. They should prioritize investments in sectors that have demonstrated a positive impact on economic growth, such as infrastructure, education, and healthcare. The government should implement measures to enhance transparency and accountability in government spending. This can include regular audits, public reporting, and mechanisms to prevent corruption and misuse of funds. The government should encourage economic diversification to reduce reliance on specific sectors. They should promote industries beyond agriculture, such as manufacturing and services, to create a more resilient and balanced economy. The government should create an environment that attracts foreign direct investment (FDI), ensure a stable political and regulatory environment, and provide incentives for foreign investors. The government should implement policies to manage population growth effectively. The study suggests that Somalia's government should increase spending on human capital and health, as these sectors significantly contribute to economic growth and improve people's health status, thereby enhancing overall economic growth.

Authors contribution

This study was only the effort of one author, from its inception through to the analysis and interpretation of data. Abdikani was responsible for writing the manuscript and played a key role in data interpretation, critically reviewed the study, enriching it with important intellectual content, and gave his final approval

for publishing the manuscript. Consequently, the author has agreed to be accountable for all facets of this work, ensuring the integrity and accuracy of his contributions.

Contributions of Study

This study's primary contributions in terms of theoretical, empirical, and practical aspects have illustrated below.

Theoretical Contribution

Through this study, framework for the impact of government spending on economic growth: empirical evidence from Somalia. In addition, this research work extended the literature of government spending and economic growth: empirical evidence from Somalia. The other theoretical implication of this study was to modify and evaluate the scales used for the measurement of government spending and tried to include elements that have more related to today's modern and digital world.

Empirical Contribution

The study emphasizes the importance of statistical and mathematical tests, data screening, statistical assumptions, and data analysis techniques for obtaining reliable and quality results, from data collection to analysis.

Practical Contribution

In practical terms, this study provides a solid foundation for policymakers studying the impact of government spending on economic growth: empirical evidence from Somalia, demonstrating their potential to guide policy.

Suggestions for Future Study

The study examined the impact of government spending on economic growth: empirical evidence from Somalia. It is emphasized the need to understand the perspectives of other stakeholders, particularly those government sectors, and suggests future research should expand to national-level.

Limitations of the Study

The study examined the impact of government spending on economic growth: empirical evidence from Somalia, but faced limitations due to limited information availability and lack of significant variables such as political stability that's influencing government expenditure and economic growth.

References

Abdullahi Ali, J. M. &Mohamed O. (2022). Fiscal policy and economic growth nexus: an empirical investigation from Somalia. *Journal of Monetary Economics*, *21*(3), 417–458. http://linkinghub.elsevier.com/retrieve/pii/030439329390025B

Ahmad, K. Ali, A., and Yang, M. (2022). *The effect of trade liberalization on expenditure structure of pakistan khalil ahmad 1 , amjad ali 2 , michael yang 3*. *11*(1), 73–84.

Ahuja, D., & Pandit, D. (2020). Public Expenditure and Economic Growth: Evidence from the Developing Countries. *FIIB Business Review*, *9*(3), 228–236. https://doi.org/10.1177/2319714520938901

Alshammary, M. D., Khalid, N., Karim, Z. A., & Ahmad, R. (2022). Government expenditures and economic growth in the MENA region: A dynamic heterogeneous panel estimation. *International Journal of Finance and Economics*, *27*(3), 3287–3299. https://doi.org/10.1002/ijfe.2321

Aluthge, C., Jibir, A., & Abdu, M. (2021). Impact of Government Expenditure on Economic Growth in Nigeria, 1970-2019. *Central Bank of Nigeria Journal of Applied Statistics*, *12*(No. 1), 139–174. https://doi.org/10.33429/cjas.12121.6/6

Ambya, A. (2020). How Government Spending on Public Sector Affect The Economic Growth? *Jejak*, *13*(1), 218–229. https://doi.org/10.15294/jejak.v13i1.21943

ANAGONOU Ernest, C. A. foster c. (2023). Public expenditure and economic growth in WAEMU

countries . Dépenses publiques et croissance économique dans les pays de l ' UEMOA . *Revue Française d'Economie et de Gestion*, *4*, 250–264.

Ayeni, E. O. S. K. (2019). *Effect of Government Spending on Economic Growth in Nigeria (1999-2016) Ayeni , Evans Oluwagbamila Sani Kasimu Department of Public Administration Department of Accounting Both in Federal University Wukari , Wukari , Taraba State Correspondence : ayeni@*. *4*(1), 1–19.

Balaev, A. (2019). The structure of public spending and economic growth in Russia. *Russian Journal of Economics*, *5*(2), 154–176. https://doi.org/10.32609/j.ruje.5.38705

Bazán, C., Álvarez-Quiroz, V. J., & Morales Olivares, Y. (2022). Wagner's Law vs. Keynesian Hypothesis: Dynamic Impacts. *Sustainability (Switzerland)*, *14*(16). https://doi.org/10.3390/su141610431

Bincof, M. O. (2020). The Effect of Public Sector Reform on Good Governance in. *Public Policy and Administration Research*, *10*(9), 69–77. https://doi.org/10.7176/PPAR/10-9-09

Brooks, C. (2019). *Introductory econometrics for finance*. Cambridge university press.

Buthelezi, E. M. (2023). Impact of government expenditure on economic growth in different states in South Africa. *Cogent Economics and Finance*, *11*(1). https://doi.org/10.1080/23322039.2023.2209959

Chen, H., Singh, B., & Aru, W. S. (2022). Relationship between government expenditure and economic growth: evidence from Vanuatu. *Journal of the Asia Pacific Economy*, *27*(4), 640–659. https://doi.org/10.1080/13547860.2020.1844610

Clapham, C. (2022). The horn of Africa: state formation and decay. *Journal of Contemporary African Studies*, *37*(4), 421–422. https://doi.org/10.1080/02589001.2018.1545085

Coman, A. C., Lupu, D., & Nuţă, F. M. (2022). The impact of public education spending on economic growth in Central and Eastern Europe. An ARDL approach with structural break. *Economic Research-Ekonomska Istrazivanja*, *36*(1), 1261–1278. https://doi.org/10.1080/1331677X.2022.2086147

Cotter, H. R. (2023). *Three Decades of Conflict and Multiple , Concurrent Crises : Past , Present , and Future Challenges Impacting Somalia ' s Stability*. *January*.

Divino, J. A., Maciel, D. T. G. N., & Sosa, W. (2020). Government size, composition of public spending and economic growth in Brazil. *Economic Modelling*, *91*, 155–166. https://doi.org/10.1016/j.econmod.2020.06.001

Doran, H. E., & Rambaldi, A. N. (1997). Applying linear time-varying constraints to econometric models: With an application to demand systems. *Journal of Econometrics*, *79*(1), 83–95. https://doi.org/10.1016/S0304-4076(97)00008-0

Dutt, A. K. (2013). Government spending, aggregate demand, and economic growth. *Review of Keynesian Economics*, *1*(1), 105–119. https://doi.org/10.4337/roke.2013.01.06

E. Kalu, I. (2019). Government expenditure and economic growth in Nigeria, 1980- 2011. *International Journal of Academic Research*, *4*(6), 204–208. https://doi.org/10.7813/2075-4124.2012/4-6/b.32

Emmenegger, R. (2021). Unsettling sovereignty: Violence, myths and the politics of history in the Ethiopian Somali metropolis. *Political Geography*, *90*, 102476. https://doi.org/10.1016/j.polgeo.2021.102476

Fang, M., & Chang, C.-L. (2022). Nexus between fiscal imbalances, green fiscal spending, and green economic growth: empirical findings from E-7 economies. *Economic Change and Restructuring*, *55*(4), 2423–2443. https://doi.org/10.1007/s10644-022-09392-6

Gurdal, T., Aydin, M., & Inal, V. (2021). The relationship between tax revenue, government expenditure, and economic growth in G7 countries: new evidence from time and frequency domain approaches. In *Economic Change and Restructuring* (Vol. 54, Issue 2). Springer US. https://doi.org/10.1007/s10644-020-09280-x

Hussain, I., Hussain, J., Ali, A., & Ahmad, S. (2021). A Dynamic Analysis of the Impact of Fiscal Adjustment on Economic Growth: Evidence From Pakistan. *SAGE Open*, *11*(2). https://doi.org/10.1177/21582440211027167

Karagianni, S., Pempetzoglou, M., & Saraidaris, A. (2019). Government Expenditures and Economic Growth: a Nonlinear Causality Investigation for the UK. *European Journal of Marketing and Economics*, *2*(2), 52. https://doi.org/10.26417/ejme-2019.v2i2-70

Khan, M., Raza, S., & Vo, X. V. (2024). Government Spending and Economic Growth Relationship: Can a Better Institutional Quality Fix the Outcomes? *Singapore Economic Review*, *69*(1), 227–249. https://doi.org/10.1142/S0217590820500216

Kimaro, E. L., Keong, C. C., & Sea, L. L. (2017). Government expenditure, efficiency and economic growth: A panel analysis of Sub Saharan African low income countries. *African Journal of Economic Review*, *5*(2), 34–54.

Middlebrook, C. P., Siad, H., & Mao, H. H. (2019). *Somalia Vision for Private Sector Development Report*. *5*.

Mohamed, A. H. (2021). A Literature Review: The Impact of COVID-19 Pandemic on Somaliland Economy. *Open Journal of Social Sciences*, *09*(02), 54–64. https://doi.org/10.4236/jss.2021.92004

Muhumed, M. (2021). Failing To Bridge the Gap- Somalia'S Perennial Trade Deficit (1960-1990). *Bildhaan*, *21*, 194–211.

Mulugeta Emeru, G. (2023). Effect of Public Expenditure on Economic Growth in the Case of Ethiopia. *Scientific World Journal*, *2023*. https://doi.org/10.1155/2023/9305196

Ndanshau, M. O. A. & K. M. (2023). *African Journal of Economic Review, Volume 11 (3), June 2023 Government Expenditure and Economic Growth Nexus in Tanzania Michael O.A. Ndanshau ‡ & Kenneth Mdadila †*. *11*(June), 29–54.

Nguyen, T., Timilsina, R. R., Sonobe, T., & Rahut, D. B. (2023). Interstate war and food security: Implications from Russia's invasion of Ukraine. *Frontiers in Sustainable Food Systems*. https://api.semanticscholar.org/CorpusID:257331014

Odhiambo, N. M. (2015). Government Expenditure and Economic Growth in South Africa: an Empirical Investigation. *Atlantic Economic Journal*, *43*(3), 393–406. https://doi.org/10.1007/s11293-015-9466-2

Olayungbo, D. O., & Olayemi, O. F. (2018). Dynamic relationships among non-oil revenue, government spending and economic growth in an oil producing country: Evidence from Nigeria. *Future Business Journal*, *4*(2), 246–260. https://doi.org/10.1016/j.fbj.2018.07.002

Onifade, S. T., Çevik, S., Erdoğan, S., Asongu, S., & Bekun, F. V. (2020). An empirical retrospect of the impacts of government expenditures on economic growth: new evidence from the Nigerian economy. *Journal of Economic Structures*, *9*(1). https://doi.org/10.1186/s40008-020-0186-7

Onuoha, F. C., Okonkwo, I. C., Okoro, P., & Okere, K. (2018). The causal relationship between Foreign Direct Investment (FDI) and the macro-economy of selected west African countries: Panel ARDL/Granger Causality Analysis. *African Research Review*, *12*(1), 140. https://doi.org/10.4314/afrrev.v12i1.15

Osman, A. A., & Abebe, G. K. (2023). Rural Displacement and Its Implications on Livelihoods and Food Insecurity: The Case of Inter-Riverine Communities in Somalia. *Agriculture*, *13*(7), 1444. https://doi.org/10.3390/agriculture13071444

Paudel, R. C. (2023). Capital expenditure and economic growth: A disaggregated analysis for Nepal. *Cogent Economics and Finance*, *11*(1). https://doi.org/10.1080/23322039.2023.2191449

Pfeffer, Z. (2022). Conflicts of Interest Between Local Governments and Central Legislation – How Financially Independent Can Local Governments Be. *Pravni Vjesnik*, *38*(3–4), 159–182. https://doi.org/10.25234/pv/22916

Poku, K., Opoku, E., & Agyeiwaa Ennin, P. (2022). The influence of government expenditure on economic growth in Ghana: An Ardl approach. *Cogent Economics and Finance*, *10*(1). https://doi.org/10.1080/23322039.2022.2160036

Poudel, O. (2022). Impacts of Foreign Direct Investment on Economic Growth of Nepal: A Johansen Co-integration Analysis. *Journal of Balkumari College*, *11*(1), 50.

Qehaja, S. S., Qehaja, D., Hoti, A., & Marovci, E. (2023). The relationship between government health expenditure and economic growth: Evidence from western Balkan countries. *International Journal of Applied Economics, Finance and Accounting*, *15*(1), 10–20. https://doi.org/10.33094/ijaefa.v15i1.724

Ribaj, A., & Mexhuani, F. (2021). The impact of savings on economic growth in a developing country (the case of Kosovo). *Journal of Innovation and Entrepreneurship*, *10*(1), 1–13. https://doi.org/10.1186/s13731-020-00140-6

Sabina Widmer. (2021). *Attempting to Keep a Low Profile : The Revolutions in Somalia and Ethiopia*. https://doi.org/10.1163/9789004469617

Sedrakyan, G., & Varela-Candamio, L. (2019). Wagner's Law vs. Keynes' Hypothesis in very different countries (Armenia and Spain). *Journal of Policy Modeling*, *41*. https://doi.org/10.1016/j.jpolmod.2019.02.011

Suresh, A. K., Seth, B., Behera, S. R., & Rath, D. P. (2023). An empirical investigation of the relationship between government revenue, expenditure, and economic growth in selected EMEs. *Economic Journal of Emerging Markets*, *15*(1), 101–113. https://doi.org/10.20885/ejem.vol15.iss1.art8

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of Econometrics*, *66*(1–2), 225–250. https://doi.org/10.1016/0304-4076(94)01616-8

Tran, T. P.-K., Tran, N. P., Nguyen, P. Van, & Vo, D. H. (2024). Government expenditure–shadow economy nexus: the role of fiscal deficit. *International Journal of Emerging Markets*, *19*(2), 322–338.

Tung, L. T., & Hoang, L. N. (2024). Impact of R&D expenditure on economic growth: evidence from emerging economies. *Journal of Science and Technology Policy Management*, *15*(3), 636–654.

Van, L. T. H., Vo, A. T., Nguyen, N. T., & Vo, D. H. (2021). Financial Inclusion and Economic GROWTH: An International Evidence. *Emerging Markets Finance and Trade*, *57*(1), 239–263. https://doi.org/10.1080/1540496X.2019.1697672

Verbeek, M. (2017). *A guide to modern econometrics*. John Wiley & Sons.

Vyas, V., Mehta, K., & Sharma, R. (2023). The nexus between toxic-air pollution, health expenditure, and economic growth: An empirical study using ARDL. *International Review of Economics & Finance*, *84*, 154–166.