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Casual Relationship Between Government Revenue and Economic Growth in Uganda

Patrick Edward Ssemanda*

Lecturer at the Department of Economics and Statistics, Kyambogo University, Kampala-Uganda

***Corresponding author:** Patrick Edward Ssemanda, Lecturer at the Department of Economics and Statistics, Kyambogo University, Kampala-Uganda; E-mail: ssemandapatrick@yahoo.com

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Abstract

This article examines the causal relationship between government revenue (LGTR), foreign direct investment (LFDI), Inflation (LINF) Domestic Investment (LDI), Domestic Savings (LSAV), Institutional Quality (LGNS), Population Growth (LPOGR) and economic growth (LGDPR) in Uganda during the period 1986 to 2024 using the vector error correction model and the Toda-Yamamoto (1995) method. The Toda-Yamamoto results show that there is unidirectional causality from LGDPR to LINF, LGDPR to LSAV, LGDP to LDI, LGTR to LGNS, LGTR to LSAV, LGTR to LPOGR LGTR to LDI, LFDI to LSAV and LFDI to LDI there is also evidence of significant causality from LINF to LGTR and LGTR to LGDPR and economic growth. There is also bidirectional causality from LGDPR to LGTR and LGTR to LINF. From sustainability perspective, the there is a significant causal effect from LFDI and LSAV to economic growth, and from LDI to economic growth suggests that Uganda's economic policy, that is driven on private sector-led and LFDI-led growth, has significantly transformed the economy to bring about significant growth-enhancing effects. This study recommends that policymakers in Uganda could identify and implement measures targeted at enhancing LFDI and LDI alongside LGNS and LSAV that could assure wider LGTR mobilization and macroeconomic policies that could control LINF to sustain the economy.

Keywords: Foreign direct investment; Institutional Quality; economic growth; Toda-Yamamoto; Uganda; Domestic Investment and domestic savings

Introduction

Government revenue and economic growth are interdependent, revenue funds public investments that enable growth, while growth expands the tax base that generates revenue. Government revenue derives primarily from taxes, fees, and other fiscal instruments. Economic growth measures the increase in a nation's production of goods and services. Revenue finances infrastructure, education, and healthcare that drive productivity. Excessive taxation can dampen investment and reduce growth potential. Optimal fiscal policy balances revenue needs with growth-promoting incentives. Developing economies often face revenue mobilization challenges that constrain development. The revenue-growth relationship varies by tax structure, governance quality, and economic context. Government revenue represents the income collected by public authorities through various channels. Tax revenue comes from Income taxes, corporate taxes, VAT/sales taxes, property taxes and customs duties. Non-tax revenue comes from Fees, fines, licenses, state enterprise profits. Grants and transfers come from foreign aid, intergovernmental transfers and Borrowing comes from Bonds and loans. Domestic government revenue, comprising of taxes, non-tax fees, and other locally generated income serves as the primary engine for sustainable economic growth and public service delivery. In economies of Sub-Saharan Africa, increasing domestic revenue is considered a crucial alternative to foreign aid, directly influencing a government's ability to fund infrastructure, education, and healthcare. Domestic revenue enables governments to fund public goods and services that directly boost economic activity. Reliance on domestic sources, rather than volatile external debt, allows for more predictable funding of development projects. Studies like Tran suggests that higher government revenue per capita leads to improvements in governance, which in turn fosters economic growth [1]. While revenue is necessary for growth, excessive or inefficient taxation can hinder private sector activity. However, when combined with strong institutional quality, government revenue significantly boosts economic growth. Governments employ several strategies to boost revenue, as seen in the Ugandan context, which aims to finance a larger share of its national budget through domestic sources.

Uganda government has introduced some reforms to improve domestic revenue mobilization. Modernizing tax systems, such as introducing Value Added Tax (VAT) and strengthening tax administration, can significantly increase revenue. Bringing the informal sector into the tax fold and reducing tax exemptions are key focus areas. Utilizing digital tax stamps, online filing, and digital payment platforms reduces compliance costs and minimizes human error. In addition, strengthening anti-corruption measures is critical to ensure that collected revenue is used for development purposes rather than being lost. Domestic revenue mobilization (DRM) is strongly correlated with good governance and positive correlation between tax-to-GDP ratios and governance indicators. Domestic government revenue and economic growth are deeply intertwined, with the relationship largely moderated by the quality of institutions and the efficiency of tax administration. While increased revenue is necessary for funding development, the effect of taxation on growth depends on how it is collected and used. Therefore, for domestic revenue to effectively drive growth, it must be accompanied by strong, transparent institutions and a focus on equitable, efficient tax policies. Despite the potential for growth, several bottlenecks limit revenue mobilization due to large informal sector among others. Large informal sectors in developing economies make it difficult to tax a significant portion of the economic activity. Weak administrative capacity and limited, under-trained staff can hinder effective tax collection. A weak fiscal-social contract which is where citizens do not feel they are receiving public services in exchange for taxes can lead to high tax evasion. Increased public spending and lower revenue have created high debt levels in many developing nations, leaving little fiscal space for investment. Domestic revenue mobilization is essential for fostering a stable, self-sufficient economy. While the correlation between revenue and growth is strong, success depends on creating efficient, fair tax systems, enhancing institutional quality, and ensuring that revenue is effectively used to improve public services.

Impact of Institutional Quality for Sub-Saharan Africa (SSA), government revenue tends to boost economic growth when combined with high-quality institutions like rule of law, anti-corruption measures among others. The Virtuous Circle where an increase in government revenue leads to a steady improvement in governance levels, which in turn improves the effectiveness of public spending, creating a virtuous circle. The Growth Effects where an increased tax revenue can improve long-run growth, and causes short-run disruptions, especially if it hampers private investment or if the revenue is not used efficiently. Governments primarily raise revenue through taxes that include income, corporate, VAT, excise and non-tax sources like fees, licenses and fines. Improving tax administration is critical, as many nations struggle with low compliance due to weak infrastructure or lack of trust. In addition, diversification through shifting away from heavy reliance on trade taxes toward consumption and property taxes can promote more sustainable growth. Also, digitalization through use of technology-driven solutions, such as electronic tax stamps and digital reporting, helps to broaden the tax base and increase compliance. And Natural Resource Revenue, in SSA, is increasingly relying on natural resources like oil, gas and minerals to boost revenue. Uganda's GDP composition has undergone a significant structural transformation between 1986 and 2024, shifting from a near-total reliance on subsistence agriculture to a more diversified economy dominated by services and a growing industrial sector. The economy has expanded from approximately US$1.5 billion in 1986 to over US$50 billion by 2024. The structural shift over the last four decades in Uganda is characterized by a drastic reduction in agriculture's share of GDP and an increase in the service sector. In 1986, the economy was heavily dependent on agriculture, with the sector accounting for over 56% of GDP. By roughly 2015-2020, this share had declined to approximately 24%. The service sector saw the most significant growth, expanding from roughly 31.1% in 1986 to 43.14% of GDP by 2024. Uganda's service sector grew significantly between 1986 and 2024, becoming the largest contributor to GDP due to post-conflict stabilization, economic liberalization, rapid urbanization, and increased foreign investment. It served as a primary driver of economic transformation, absorbing labor from agriculture and fueling advancements in telecommunications, finance, and tourism. The industrial sector grew from a very low base of 9.6% 1986 to 24.86% in 2024 (Table 1).

The economy has grown since the 1990s where real gross domestic product (GDP) grew at an average of 6.7% annually during the period 1990–2015, whereas real GDP per capita grew at 3.3% per annum during the same period. As shown in figure 1. During this period, the Ugandan economy experienced economic transformation and the share of agriculture value added in GDP declined from 56% in 1990 to 24% in 2015 according to World Bank [2]. The share of industry grew from 11% to 20% with manufacturing increasing at a slower pace, from 6% to 9% of GDP and the share of services went from 32% to 55% (Figure 1). Uganda experienced massive hyperinflation in the mid-1980s, in 2024, the average inflation rate in Uganda stood at 3.32 % and between 1980 and 2024, the figure dropped by 95.88% points, though the decline followed an uneven course in the rest of the years 1986 to 2024.

with rates reportedly as high as 143.8% in 1986. Following economic reforms initiated by the government, inflation was brought under control, stabilizing significantly over the next decades. In the 2020s, Uganda's annual headline inflation has remained relatively low, generally ranging between 2% and 8%. Between 1980s–1990s, there was gradual stabilization, although periodic high inflation occurred due to structural issues. In 2011, a major spike occurred, with inflation peaking at 16.56%. Most of the period inflation has generally been moderate averaging to 4.93% as shown in figure 2. The Ugandan shilling has become one of the more stable currencies in East Africa in recent years, with the inflation rate often among the lowest on the continent in the past decade (Figure 2). The causal relationship between government revenue and economic growth is complex, often bidirectional, and context-dependent. Muriithi identified that while increased revenue (taxation) provides fiscal space for growth-enhancing public investment, high taxation can also hamper growth, suggesting a mix of increased tax and growth and growth and tax, and sometimes independent relationships [3].

Tax-and-Growth Hypothesis proposes that increased government revenue (especially tax revenue) drives economic growth by funding infrastructure, education, and healthcare, which enhances productivity. In addition, Growth and Tax Hypothesis suggests that economic growth leads to higher tax revenues, as a growing economy increases the tax base. While the Bidirectional/Feedback Relationship has it that government revenue and economic growth have a mutual, long-run, and short-run feedback effect, particularly in developing economies. Negative effects of government revenue on economic growth emerge when high taxes reduce incentives to work, save, and invest, or when large public sectors, if inefficiently managed, because crowding out of private sector activity. Poorly designed taxes can stifle innovation, while excessive reliance on specific revenues (like natural resources) can lead to economic instability. Negative Effects, if excessive government revenue collection through high taxes can distort economic growth by reducing investment incentives, innovation, and private capital accumulation. Also, Fiscal Independence indicate no, or very limited, causal relationship in specific contexts, where revenue growth does not significantly affect economic growth, pointing towards a possible independence in fiscal policy. Effective fiscal policy requires balancing revenue generation with economic incentives to ensure that taxes support, rather than hinder, overall growth.

Statement of the Problem

It has been observed over the years that government revenue has generally been grossly inadequate to fund Uganda's budget. This has accelerated the public debt due to yearly fiscal deficits. Furthermore, the Ugandan economy is not growing at the same pace with revenue mobilization. It is expected that the Uganda government would be generating more revenue which should lead to economic growth and improve the economic well-being of the citizens. However, it does not seem to be the case. Uganda does not generate enough domestic revenue to independently sustain high economic growth, as its tax-to-GDP ratio revenue-to-GDP ratio has generally remained low, fluctuating around 10% to 13% for most of the last three decades, although it has recent shown upward trends towards 14% by 2024 again. below the 15% threshold for sustainable development. While revenue collections are rising, the government relies heavily on public debt to finance infrastructure and development. Government revenue mobilization as a source of financing economic activities in Uganda has been difficult primarily due to various forms of resistance which include tax evasion, tax avoidance and corruption among other factors. In some cases, citizens do not have the interest of paying taxes since they claim not to see what the government is doing with the available tax revenue generated. The purpose of this study is to examine the relationship between government revenue and other factors how they affect economic growth in Uganda.

Objectives

The main objective of this study is to determine the effect of government revenue on economic growth in Uganda while the specific objectives are:

1. To determine the effect of domestic savings on economic growth of Uganda
2. To find out the effect of Institutional Quality on the economic growth of Uganda
3. To establish the effect of population growth on economic growth of Uganda

A Theoretical Framework on Government Revenue and Economic Growth

This chapter centers on the relationship between how a government or entity generates income (primarily through taxation) and the subsequent impact on economic performance (GDP growth). It explores how revenue, as a source of capital for public expenditure (infrastructure, health, education), can fuel growth, while simultaneously acting as a potential deterrent if high taxes reduce private investment and consumption. The evidence reveals complex, often non-linear relationships between different revenue types and economic growth. While aggregate tax revenue generally shows positive associations with GDP growth in developed economies, the composition of tax structures matters significantly. Property taxes and consumption-based taxes demonstrate more growth-friendly characteristics than income and corporate taxes in most contexts. The review identifies substantial heterogeneity across country income levels, institutional quality, and time horizons, with developing countries exhibiting different revenue-growth dynamics than advanced economies. Non-tax revenue remains understudied despite its importance in resource-rich and developing nations. The findings have important implications for fiscal policy design, suggesting that revenue-neutral shifts toward less distortionary tax instruments can enhance growth prospects while maintaining fiscal sustainability.

The components of the theoretical framework often include

Economic Theories on Growth

Neoclassical Growth Theory of Solow (1956) model Suggests that, in the long run, growth is driven by exogenous technological progress, while saving/investment rates that is influenced by revenue affect short-term growth. The Neoclassical Growth Theory, popularized by the Solow-Swan model, explains long-run economic growth through capital accumulation, labor force growth, and exogenous technological progress, assuming diminishing returns to capital and a steady-state equilibrium where growth per capita eventually relies solely on tech improvements, providing a foundation for modern growth analysis and policy. The Solow-Swan model, a foundational concept in economic growth theory, was independently developed by Solow and Swan, providing a framework to explain long-run growth through capital accumulation, labor, and technological progress [4]. While both published in 1956, Solow's work focused on capital and labor, with technical progress treated separately by Solow [5]. Classical economists like Smith, emphasized minimal taxation and limited government intervention, suggesting that excessive revenue collection could distort markets and reduce private investment. Neoclassical models argue that taxation reduces savings and capital accumulation, thereby dampening long-run growth unless offset by efficient government investment. Production Function: Output (Y) depends on Capital (K), Labor (L), and Technology (A), often using a Cobb-Douglas form $Y=A\cdot f(K,L)$, Capital Accumulation which is the Investment increases capital, while depreciation reduces it, driven by savings (s). The diminishing returns where more capital per worker eventually yields smaller increases in output, meaning growth slows without new technology. Exogenous Technology (A): Technological progress, crucial for sustained per capita growth, comes from outside the model, assumed to grow at a constant rate (g). Steady State: An equilibrium where capital per worker (k) and output per worker (y) are constant, with per capita growth only occurring through technological advancement. Key drivers and dynamics include:

Savings Rate is the higher savings lead to more investment, a larger capital stock, and a higher steady-state income level, but not faster long-run per capita growth. Population Growth (n) is the faster population growth dilutes capital per worker, requiring more investment just to keep capital per worker constant, slowing convergence. Convergence of the poor countries with less capital tend to grow faster than rich ones (conditional convergence) as they catch up to their steady-state income levels. The significance of this include: Benchmark Model that became the standard model for studying growth, replacing earlier Keynesian ideas (Harrod-Domar). The policy insights help analyze how savings, investment (including infrastructure), and education (human capital) affect growth. The foundation for endogenous Growth, its limitations (exogenous tech) spurred newer endogenous growth theories that try to explain technology's origins.

The Endogenous Growth Theory, pioneered by Romer and Lucas [6,7], challenges the neoclassical models by showing sustained growth comes from within the economy through innovation, human capital, and knowledge, rather than just exogenous factors, with key works published around 1986-1988. Endogenous Growth Theory argues that policy, specifically public investment in human capital, knowledge, and Research and Development which is funded by revenue, can generate sustainable long-term economic growth.

Keynesian Theory was developed by British economist Keynes, fundamentally shaped by the Great Depression, with its core ideas presented in his seminal 1936 book, The General Theory of Employment, Interest, and Money, which argued for government intervention to manage demand and stabilize economies. Keynesian Theory focuses on revenue from taxation, as a tool for economic stabilization and controlling demand, especially during recessions.

Barro advanced the endogenous growth model, proposing that government spending financed by revenue can positively affect growth if directed toward productive sectors (e.g., infrastructure, research, and education) [8]. However, distortionary taxation (e.g., on income and profits) can negatively affect incentives for labor and capital accumulation. Optimal fiscal policy, therefore, balances revenue collection and productive expenditure. Keynesian theory emphasizes the stabilizing role of fiscal policy. In times of economic slowdown, increased public spending—even if deficit-financed—can stimulate aggregate demand and employment, leading to short-term growth. However, over time, maintaining fiscal sustainability requires effective revenue mobilization.

Theories of Government Revenue (Taxation)

Theories of government revenue focus on why and how governments collect funds, highlighting sources like taxes, property income, and sales, with key theories including the Benefit Theory (taxing based on service received), the Cost-of-Service Theory (taxing based on provision cost), and the Socio-political Theory (taxes reflecting societal goals). Other perspectives, like Wagner's Law and the Displacement Effect, link revenue to expenditure growth, while classical theories emphasize funding essential public goods and modern approaches focus on efficiency, equity, and stabilizing economies through tax smoothing. It includes the following principles: Benefit Received Theory which proposes that taxpayers should contribute to the government in proportion to the benefits they receive from public services. Cost of Service Theory which suggests that tax equity should be viewed based on the cost of services delivered to citizens. Socio-Political Theory which argues that tax policy should be determined by social and political objectives rather than just for meeting expenditures. Ability-to-Pay Theory which suggests tax burdens should be distributed based on the taxpayer's ability to pay, often justifying progressive taxation.

Key Mechanisms in the Revenue-Growth Nexus

The Displacement Effect which is proposed by Peacock and Wiseman, suggests that in times of crisis, tax levels rise to meet needs, and when the crisis passes, these taxes remain high, allowing for increased public spending [9]. The Peacock and Wiseman Displacement Effect posits that public expenditure does not rise in a smooth, continuous line but rather in a step-like pattern driven by social upheavals (e.g., wars, pandemics). During crises, government spending increases to meet new demands, financed by higher taxes that citizens become accustomed to, shifting expenditure to a permanently higher level even after the crisis subsides. They observed this "displacement" pattern in historical data, noting that temporary surges in spending during crises led to permanently higher tax burdens and public service levels after the event, creating new fiscal plateaus.

Empirical Literature Review

This literature review examines empirical evidence on the relationship between government revenue—encompassing various tax types and non-tax sources—and economic growth indicators, primarily GDP growth rates. The review is structured to first establish theoretical foundations, then examine methodological approaches employed in the literature, followed by detailed analysis of empirical findings organized by revenue and context other variables with economic growth. The Laffer introduced the Laffer curve that tries to explores the non-linear relationship between tax rates and tax revenue, suggesting that very high tax rates can actually decrease total revenue and hinder growth [10]. concept in economics showing that government tax revenue first increases as tax rates rise from 0%, but then decreases as rates approach 100%, because extremely high taxes dis-incentivize work and investment, shrinking the tax base. It suggests there's an optimal tax rate between 0% and 100% that maximizes revenue, implying that cutting rates in the "prohibitive range" could paradoxically increase tax collection and economic growth. Barro Introduced government spending (as a public good) into the production function, forming the basis for modern productive expenditure analysis. Productive vs. Non-Productive Expenditure tries to explain the effect of revenue on growth depends heavily on whether the revenue is spent on productive investments (infrastructure) or unproductive consumption. The concept of distinguishing between Productive vs. Non-Productive Expenditure in economic analysis gained significant traction in the late 1980s and early 1990s, with Barro's paper being a seminal contribution, formally integrating public spending into growth models; however, the broader debate and IMF work on classifying "unproductive" spending became prominent around 1991-1995, formalizing the distinction for policy, especially in the context of public finance and growth. North (1990) introduced the Institutional Quality (Governance) that tried to explain the effectiveness of revenue in fostering growth is heavily dependent on the quality of institutions, as poor governance can lead to misuse of funds. The concept of Institutional Quality (Governance) wasn't proposed at a single moment but evolved, significantly advanced by Douglass North in the New Institutional Economics (NIE) from the 1970s (especially 1981, 1990) linking rules to long-term economic performance, with formal studies on its impact growing in the 2000s. Key work by North defined institutions as the rules of the game, while researchers like North, Ostrom empirically analyzed how effective governance shapes economic growth and development [11]. The paper asks how analyses of common property might change, and what they need to consider, if they loosen assumptions about sovereign selves and apolitical property rights institutions. Their examination of these questions concludes this review with an emphasis on the need to (a) attend more carefully to processes of subject formation, and (b) investigate common property arrangements and associated subject positions with greater historical depth

Paolo and Joao analyzed the share of tax revenues in GDP in developed countries and developing countries and found a negative relationship between GDP per capita and population growth in terms of tax rates [12]. According to the socio-political tax theory for which Bhartia was a strong supporter, the social and political goals of the country should be the main factors in choosing the tax structure [13]. According to this theory, tax systems should be designed to serve each individual and to cure evil in society as a whole. Using cross-country analysis, Gordon showed that corporate tax rates are negatively correlated with the average rate of economic growth and as such have a major impact on other determinants of economic growth [14]. Wildmalm also analyzed the relationship between income tax revenue and economic activity, and found that there was a negative ratio [15]. According to her, the claims about the negative effects of indirect taxes on the economy have not yet been confirmed with certainty. Arnold and Bhartia analyzed the OECD countries and pointed out the negative impact that corporate taxes have on productivity in the economy, and this negative impact is particularly pronounced in private corporations [16]. Thus, Arisoy and Unlukaplan analyzed the effect of direct and indirect taxes on Turkey's economic growth [17]. They concluded that direct taxes do not have a significant impact on the country's economic growth. Kneller, Bleaney and Gemmell found that distortionary taxes negatively affect growth, whereas productive public expenditure (e.g., education, infrastructure) enhances it [18]. Engen and Skinner reported a modest but positive link between efficient fiscal systems and per capita GDP growth in OECD countries [19]. Gupta demonstrated that increasing revenue mobilization, especially through broad-based taxation and improved governance, significantly correlates with faster GDP growth in developing economies [20]. Aghion and Howitt this study developed into a book referred to as the Economics of Growth [21]. This comprehensive introduction to economic growth presents the main facts and puzzles about growth, proposes simple methods and models needed to explain these facts, acquaints the reader with the most recent theoretical and empirical developments, and provides tools with which to analyze policy design. The treatment of growth theory is fully accessible to students with a background no more advanced than elementary calculus and probability theory; the reader need not master all the subtleties of dynamic programming and stochastic processes to learn what is essential about such issues as cross-country convergence, the effects of financial development on growth, and the consequences of globalization.

The main growth paradigms of the neoclassical model, the AK model, Romer's product variety model, and the Schumpeterian model. The text then builds on the main paradigms to shed light on the dynamic process of growth and development, discussing such topics as club convergence, directed technical change, the transition from Malthusian stagnation to sustained growth, general purpose technologies, and the recent debate over institutions versus human capital as the primary factor in cross-country income differences. Finally, the book focuses on growth policies—analyzing the effects of liberalizing market competition and entry, education policy, trade liberalization, environmental and resource constraints, and stabilization policy—and the methodology of growth policy design. All chapters include literature reviews and problem sets. Apinoko examined the relationship between tax revenue and economic growth in Nigeria for the period 1994-2020 [22]. They explore the linkages between availability of higher resource revenue and lower taxation effort of other revenue categories and the effects of these on growth. They used Ordinary Least Square (OLS) estimation technique in estimating the specified model. In addition, cointegration and the VECM were adopted forthwith. Empirical results revealed that taxation has a significant effect on economic growth in Nigeria. They recommended that the government should institute an appropriate tax system with an emphasis on broadening the tax base and in some cases, reviewing upwards the tax rates in order to increase the tax effort as well as ensure optimal contribution of taxation towards economic growth and development. Tanzi and Zee this study discusses in a systematic and comprehensive way the existing literature on the relationship between the growth of countries' economies and various public finance instruments, such as tax policy, expenditure policy, and overall budgetary policy, from the perspectives of a locative efficiency, macroeconomic stability, and income distribution [23]. It reviews both the conceptual linkages between each of the instruments and growth and the empirical evidence of such relationships. The paper broadly concludes that fiscal policy could play a fundamental role in affecting the long run growth performance of countries. Tumba and Jibrilla investigated the money supply-real output nexus while examining the neutrality hypothesis for Nigeria utilizing data from 1980 to 2022 [24]. The study used the autoregressive distributed lag (ARDL) technique and the discrete threshold regression model. The finding supports the money neutrality hypothesis in the long run but non-neutrality in the short run. In order words, money supply does not have a significant influence on real output growth in the long-term but does in the short-term.

Inflation was found to have a reducing consequence on real output growth in the long and short term, while real effective exchange rates have a reducing effect on real output in the long run but advance in the short run. Structural breaks before the year 2000 have a significant influence on GDP growth in both the long and short run. Sequel to these outcomes, the study suggests an optimum fiscal policy mix with modest monetary policy should be adopted in Nigeria with more attention on the fiscal responsibility of the government to influence changes in real variables. They recommended the CBN to urgently begin to announce specific inflation targets for the country since it has a reducing impact on GDP growth in the long run while ensuring the attainment of a more realistic exchange rate for the naira by increasing domestic production for export in the long run. Ogunmuyiwa and Ekone this paper investigated the impact of money supply on economic growth in Nigeria between 1980 and 2006 [25]. Applying econometric technique-O.L.S.E, causality test and E.C.M to time series data, the results revealed that although money supply is positively related to growth but the result is however insignificant in the case of GDP growth rates on the choice between contractionary and expansionary money supply. They further found that tax revenue positively affects economic growth when combined with sound fiscal management. Nurudeen and Usman this paper investigated the effect of government expenditure on economic growth; they employed a disaggregated analysis [26]. The results reveal that government total capital expenditure (TCAP), total recurrent expenditures (TREC), and government expenditure on education (EDU) have negative effect on economic growth. On the contrary, rising government expenditure on transport and communication (TRACO), and health (HEA) results to an increase in economic growth. The authors' recommendations include among others the following. Government should increase both capital expenditure and recurrent expenditure, including expenditures on education, as well as ensuring that funds meant for the development of these sectors are properly managed. Secondly, government should increase its investment in the development of transport and communication, in order to create an enabling environment for business to strive. Thirdly, government should raise its expenditure in the development of the health sector since it would enhance labor productivity and economic growth. Lastly, government should encourage and increase the funding of anti-corruption agencies in order to tackle the high level of corruption found in public office.

Uremadu, Orikara and Uremadu study investigates the relationship between government recurrent expenditures and economic growth in Nigeria for 18 years: 1999-2016 [27]. In doing this, the paper disaggregated government current expenditures into five categories used as explanatory variables. The estimated result showed that influence of government expenditures on national assembly, pensions and gratuities had insignificant effect on economic growth. However, total government expenditures on administration and public debt servicing had a positive and significant effect on economic growth. Also, the study revealed that total government expenditures on transfers had insignificant effect on economic growth. Study therefore recommends that annual government recurrent expenditures on administration and public debt servicing should be sustained as they led to economic growth, but that all leakages arising from such spending should be blocked in order to achieve an enhanced growth. Lee and Gordon the past theoretical work predicts that higher corporate tax rates should decrease economic growth rates, while the effects of high personal tax rates are less clear. In this paper, we explore how tax policies in fact affect a country's growth rate, using cross-country data during 1970–1997. We find that statutory corporate tax rates are significantly negatively correlated with cross-sectional differences in average economic growth rates, controlling for various other determinants of economic growth, and other standard tax variables. In fixed-effect regressions, we again find that increases in corporate tax rates lead to lower future growth rates within countries. The coefficient estimates suggest that a cut in the corporate tax rate by 10 percentage points will raise the annual growth rate by one to two percentage points. Adebayo and Okorie (2024) investigates the roles of institution in the effectiveness of tax revenue on the economic growth in Nigeria using ARDL to analyse data and employed principal component analyses to generate institutional quality index. The results show there are short-run significance of tax on the economic growth regardless of the level of the quality of institution. However, there are no evidence of joint cointegration among the economic growth, tax revenue and the institutional quality which could be attributed to poor policy coordination to foster synergy. Meanwhile, the long-run individual effects show strong significant role of institution in a sustainable economic growth, which implies that growth enhancing variables, would be ineffective when the institutional quality is poor. Specifically, the threshold analysis revealed that tax and other macroeconomic variables would be ineffective on the economic growth if the institutional index in the country is below 1.92. However, the higher the institutional quality index, the higher the effect of growth enhancing variables on the economic growth.

Egbunike and Odum study builds on prior research and examines empirically the relationship between board leadership structure and earnings quality of manufacturing firms in Nigeria [28]. The purpose of this paper is to specifically focus on four board structure characteristics: board size, composition, proportion of non-executive directors and CEO duality. Design/methodology/approach – Data used for this investigation were collected from secondary sources, i.e. annual reports and accounts. The study used the Pooled OLS regression model to examine the effect of the board structure on earnings management for a sample of 45 non-financial listed Nigerian companies (conglomerates, consumer goods and industrial goods firms) for the years 2011 to 2016. Findings show, board size and board composition were positive and significant. However, proportion of non-executive directors was negative and significant; while, CEO duality was positive and statistically significant. It was consequently recommended that audit firms should review their audit business model and become more circumspect of their client, e.g. provide fraud assessment and checks for earnings quality. Boards should not just reflect size but rather the skills and expertise of individuals appointed to the board. Furtherance to this, the effectiveness of boards can be improved by committees and sub-committees' allocation of duties. Dackehag and Hansson analyzed how tax on income impact upon GDP growth. More specifically, they studied how statutory tax rates on personal income and corporate income influence GDP growth by using panel data for 25 rich OECD countries [29]. The findings reveal that both taxation of personal and corporate income negatively influence GDP growth. However, the correlation between corporate income tax (CIT) and GDP growth was found to be more robust. Kalas Andrasic and Mirovic provided an empirical approach to taxes and economic growth in the United States in the period 1996-2016 [30]. The basic goal is to explore how taxes affect economic growth. The subject of the research is measuring the effects of tax revenue growth and tax form as a personal income tax, corporate income tax and social security contributions on gross domestic product as a proxy for economic growth. Methodology framework includes several tests to clear the potential problem of heteroscedasticity, autocorrelation, multicollinearity and specification of the model. Based on diagnostic tests, a regression model is adequately created where fundamental econometric procedures are applied. Correlation matrix reflects a strong and positive relationship between tax revenue growth and corporate income tax on the one side and gross domestic product growth, on another side. Also, personal income tax and social security contributions are weakly related to gross domestic product growth. The model shows a significant effect of tax revenue growth and social security contributions, while personal income tax and corporate income tax do not have a significant impact on gross domestic product growth. Interestingly, personal income tax as the main tax form in the tax structure of the United States has no significant impact on economic growth compared to social security contributions which percentage share is lesser.

Kalas examine the relationship between indirect taxes and gross domestic product per capita in the Republic of Serbia from 2005 to 2019 [31]. The aim of this paper is to evaluate the long-run relationship between value added tax, excises and gross domestic product per capita based on Johansen cointegration test. The empirical analysis includes descriptive statistics, unit root test, cointegration test and FMOLS model. The results reveal a long-run relationship between indirect taxes such as value added tax and excises and the gross domestic product per capita in the Republic of Serbia for the observed period. Empirical findings confirm that revenues of value added tax and excises have positive and significant effect on the gross domestic product per capita in the long-run Etale examined the relationship between market share and profitability of the banking sector in Nigeria [32]. The study involved ten banks listed on the Nigerian Stock Exchange (NSE). Secondary data was collected from the NSE covering a period of nine years from 2003 to 2011. The multiple regression analysis was used to test the hypotheses. The dependent variable in the regression model is profitability represented by profit after tax (PAT), while the independent variables are two components of market share for banks: deposit customers (DC) and loan customers (LC). The results of the study revealed that market share represented here by deposit customers (DC) and loan customers (LC) have positive relationship with profitability (PAT) of the banking sector in Nigeria. The researchers recommended that management of banks in Nigeria should entreat quality of management as an important part of market share effect because superior management causes banks to operate at a higher level of effectiveness and efficiency in managing the deposit portfolio and loan volume which in turn will boost profitability. Dehghan and Nonejad showed that the country economy is based on oil and fossil fuel based, very vulnerable to factors such as war and sanctions and in recent years the Iranian government is trying to reduce dependence on oil and expanding the tax revenue [33]. In this study the use of tax revenues, the effect of three types of tax rates including corporate tax rate, business tax rate and indirect taxes rate (each share of taxes in GDP) on economic growth in Iran during the Thirty Years' 1981-2010 with using of Auto Regressive Distributed Lags (ARDL) examined. In addition to these three variables, other variables such as annual population growth rate, inflation rate and degree of trade openness on economic growth are examined. The results suggest that the impact of the increase in the rates of these three types of taxes on economic growth is negative and significant, and for an increase in the rate of corporate tax rate, business tax rate and indirect taxes rate by 2/4 and 2/8 and 1/8 of economic growth is reduced. The results also reflect the positive impact of population growth rate, trade openness rate and the negative impact of inflation rate on economic growth in Iran.

Temerigha examined the significance and contributions of taxation revenue in stimulating economic activities, which leads to economic growth and development [34]. The study was carried out critically to examine the impact of taxation revenue and its sustainability on economic growth of Nigeria from 1994 to 2021, with empirical evidence. Taxation revenue has been a major sustenance of economic growth in both developed and developing countries, as government is saddled with responsibility to cater for its citizens' wellbeing through the provision of infrastructures, public goods, and services. He applied time series secondary data, using regression analysis, correlation, cointegration and Augmented Dicky-Fuller tests. The research results led to four main conclusions. First, value added tax is reported to impact significantly on economic growth. Secondly, custom and excise duty tax is reported to have contributed positively on economic growth. Thirdly, the study revealed petroleum profit tax has negative downturn on economic growth due to the huge subsidy cost of petroleum product bore by government. Finally, the study indicates that company income tax revenue does not impact much on economic growth due to multiple taxation on corporate income which affects savings and investment. Hunady and Orviska investigated the problem of taxation and its potential impact on economic growth [35]. The main aim of the paper was to verify an assumed nonlinear impact of corporate tax rates on economic growth. Based on the theory of public finance and taxation, they hypothesized that at relatively low tax rates it is possible that the impact of taxation on economic growth become slightly positive. Despite the fact that the most of the existing studies find a negative linear relationship between these variables, they also found strong support for a non-linear relationship from several theoretical models as well as some empirical studies. Based on panel data fixed-effects econometric models, were found empirical evidence for a non-linear relationship between nominal and effective corporate tax rates and economic growth. They used annual observations for the period 1999 to 2011 for EU Member States.

Çollaku Balaj and Hajdini examined the relationship between tax revenues and the economic growth of Kosovo as a developing country [36]. The paper uses quarterly time series data for 2010 to 2021. The data were analyzed using EViews v10. Augmented Dickey-Fuller (ADF), Johansen cointegration test, vector autoregressive (VAR) model, vector error correction model (VECM) estimation, and Granger causality test was used to analyze the model. The VECM results showed that fluctuations in tax revenues have a negative effect on the gross domestic product (GDP) in the long run. The importance of the paper lies in the fact that fluctuations in tax revenues are an important cause of negative changes in GDP in the long run. Nguyen and Darsono demonstrated that tax revenues have an adverse effect on economic growth [37]. Using Granger causality, the results showed that tax revenue growth could cause GDP growth, and GDP growth can cause tax revenue. The study examined the relationship among tax revenue, investment, and economic growth in nine ASEAN countries from 2000 to 2020, using data from the World Bank database. The study found statistical evidence of a negative effect of tax revenue on economic growth. However, when considering the non-linear effects of taxation, the results suggested that higher tax revenue could help to mitigate the disadvantages of tax impacts and thereby boost economic growth. The report emphasized the importance of government intervention through taxation and investment to regulate economic development. Kwaku studied quantitative to ascertain the effect of foreign direct investment, real exchange rate, remittances, and import on economic growth in Ghana. Secondary data on gross domestic product, foreign direct investment, real exchange rate, remittances, import, and gross capital formation from 1980 to 2018 were analyzed. The study employed Autoregressive Distributed Lag for the econometrics analysis. The study found that foreign direct investment, real exchange rate, remittances, imports, and gross capital formation cointegrates with economic growth. The main findings are that foreign direct investment, real exchange rate, import, and remittances matter from growth perspective. Remittances have a positive and significant effect on economic growth in Ghana both for the short run and the long run. The study also revealed that foreign direct investment, real exchange rate, and imports have a negative and significant effect on the growth process of Ghana's economy for both the short run and the long run. The study recommends that the Ministry of Finance, Ghana, financial analysts and other policy makers should undertake steps to reduce imports and attract more remittances inflows to attain long-run economic growth. In addition, the economy must concentrate on viable exchange rate policies such as undervaluation of currency to stimulate sustainable economic growth.

The analysis involves the determination of cointegration among the variables. The study uses the Johansen and Juselius cointegration approach, whose main advantage lies in its ability to test for cointegrating vectors while at the same time allowing for inclusion or exclusion of the deterministic components in the cointegrating equation and the VAR according to Johansen and Juselius. The error-correction specification in the Johansen and Juselius method, which is used to test for cointegration and estimate cointegrating relationships, involves a Vector Error Correction Model (VECM). This model incorporates both the differences of the variables and the previous period's error term from the cointegrating relationship, ensuring that short-term deviations from the long-run equilibrium are accounted for. Okonkwo and Mojekwu study on crude oil export of Nigeria, found out that crude oil prices and production significantly affect Nigeria's economic performance, which heavily relies on oil exports as its main source of revenue [38]. The study aimed to examine the relationship between these oil-related factors and the country's Gross Domestic Product (GDP). The Key Insights includes: Reliance on Oil, Nigerian economy is highly dependent on crude oil exports for revenue, making it vulnerable to oil price fluctuations, Economic Impact on the economic, social, and environmental effects of crude oil prices and production also GDP Performance is influenced by crude oil prices and production and Recommended that another governments tighten tax collection methods and regularly evaluate tax policies to sustain tax revenue, which is crucial for economic development.

Methodology and Data

The study uses Augmented Dickey-Fuller (ADF) test and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests to determine the relationship among Economic growth (LGDPR), Foreign Direct Investment (LFDI), Domestic Investment (LDI), Government Revenue (LGTR), Population Growth (LPOGR), Inflation (LINF), Domestic Saving (LSAV) and Institutional Quality (LGNS) in Uganda. To examine the stationarity properties of all the time series variables, the ADF test is used with the null hypothesis of non-stationarity against the alternative of stationarity in the time series under investigation. In contrast, the KPSS test examines the null hypothesis of stationarity against the alternative of non-stationarity in the time series. The Toda-Yamamoto (TY) Granger causality test is used to test for causality between non-stationary, cointegrated, or mixed-order integrated variables, I(0), I(1) and I(2) without needing to pre-test for cointegration. It uses an augmented VAR (k + dmax) model, making it robust when variables have long-run relationships or unknown integration orders. The Toda-Yamamoto (TY) Tests is used when variables are integrated of different orders I(0), and I(1) or when cointegration is suspected but not confirmed, when data to use is non-stationary and standard Granger tests are inappropriate, when you want to avoid the potential,, errors and biases introduced by pre-testing for unit roots and cointegration, and it can detect relationships in, or in the absence of, long-run equilibrium. Then the LM test for serial correlation and Heteroscedasticity Tests examine the residual diagnostic, and CUSUM test and CUSUM of square test check the stability of the model. The Ramsey Reset Test, also known as the Ramsey Regression Equation Specification Error Test, is a diagnostic tool used to test if the functional form of a regression model is appropriately specified. Finally, to find out the relational ship and direction of causality among the variables, the study uses the Toda and Yamamoto procedure of Granger Causality test in standard VAR approach [39].

Cointegration

Cointegration in time series analysis describes a long-term relationship between two or more non-stationary time series. It means that even though the series individually are not stationary, there's a linear combination of them that is stationary, indicating a stable, long-run equilibrium relationship. It involves time series that have trends and not stationary. The stationary linear combination suggests that the series are somehow tied together in the long run and will tend to move together in a way that maintains their relationship. A cointegration test is used to establish if there is a correlation between several time series in the long term. The concept was first introduced by Engle and Granger after British economist Newbold and Granger published the spurious regression concept [40,41]. Cointegration tests identify scenarios where two or more non-stationary time series are integrated together in a way that they cannot deviate from equilibrium in the long term. The tests are used to identify the degree of sensitivity of two variables to the same average price over a specified period of time.

Data sources

Annual time series data from the data was extracted from the Ministry of Finance and Economic Planning, Bureau of Statistics and World Database Indicators (WDI) are the sources of data for every variable that make up this study. (Table 2) provides a comprehensive explanation of each of the variables, including their measurements and data sources. Using secondary data can save time and resources compared to collecting primary data. So, using existing secondary data is often a more affordable option and time-saving. Secondary data is readily available and don't have to invest time in data collection. The data in this study spans for 1986 to 2024. Economic variables such as gross domestic product, foreign direct investment, growth fixed capital formation, inflation, Institutional quality, government revenue, population growth and domestic savings are considered in this study, with economic growth being the dependent variable. This study investigated the relationship for Economic growth (LGDPR), Foreign Direct Investment (LFDI), Domestic Investment (LDI), Government Revenue (LGTR), Population Growth (LPOGR), Inflation (LINF), Domestic Saving (LSAV) and Institutional Ability (LGNS) in Uganda.

Model

A common approach to testing this relationship involves modeling real GDP growth (GDPR) as a function of government revenue (GTR), often measured as a percentage of GDP, Institutional Quality (GNS), foreign direct investment (FDI), domestic savings (SAV), population growth (POG), Inflation (INF) and Domestic investment (DI). The theoretical foundation for exploring the relationship of economic growth in the economy is the neoclassical growth model as given by Cobb and Douglas (1928) and Solow (1956) where capital and labor are considered as the main determinants of production activities. The framework of the Cobb-Douglas production function is given as: $Y = K_{it}^{\alpha_{1t}} L_{1t}^{\alpha_{2t}} e^{u_{it}}$ ……………………………………………………………….(1)

In the above equation, Y is output; K and L represent capital and labor, respectively; e is the error term capturing unobserved variables; and the subscript t, represents the time. The growth model is extended by adding the possible other factors that might affect economic growth and revenue. Therefore, the augmented growth model for empirical work is given as:

$$LGDPR_t = f(LFDI_t, LGTR_t, LDI_t, LINF_t, LPOGR_t, LSAV_t, LFDI_t) \quad \text{……………..….(2)}$$

In linear form, (2) can be written as:

$$LGDPR_t = \beta_1 LFDI_t + \beta_2 LGTR_t + \beta_3 LDI_t + \beta_4 LINF_t + \beta_5 LPOGR_t + \beta_6 LSAV_t + \beta_7 LFDI_t + e_t \quad \text{….(3)}$$

L represents natural logs.

Toda-Yamamoto Granger causality tests

Modified Wald test in the VAR approach proposes by Toda and Yamamoto investigate the causality. This approach can overcome the problems of traditional Granger Causality test by avoiding any possible non-stationary or cointegration among the variables during the causality test. Toda and Yamamoto suggest this approach to estimate VAR model formulated in the levels of the data and test causality among variables on the parameter matrices even if the variables are integrated or cointegrated in a different order. Furthermore, within these traditional methods, there is a risk of incorrectly identifying the order of integration of the series according to Mavrotas and Kelly [42]. The Toda and Yamamoto (TY) procedure mitigates these risks by augmenting a vector autoregression (VAR) model in levels with the series' highest order of integration, ensuring that the Wald statistics possess the necessary power properties. This means there is no imperative need to establish the series' order of integration before conducting the causality test. The long-run causality test adjusts the lag order of the VAR based on the highest order of integration, denoted as d_{max}, ensuring that Granger causality test statistics adhere to the standard asymptotic distribution as stated by Wolde-Rufael [43]. To enhance the Wald statistic, the augmented VAR model is estimated using a modified Wald (MWALD) test for the causality examination as by Zapata and Rambaldi. After then use the significance of the first lag(s) to evaluate the causal relationship. Employing this procedure, the following VAR model is estimated using MWALD to discern causal relationships between government revenue and economic growth.

The Toda and Yamamoto procedure of Granger Causality test starts with the determination of optimal lag length k by applying usual lag selection procedure. Then the maximal order of integration dmax, needs to be established. If the stationarity test (unit root test) shows that the variables are stationary at I (0), I (1) and I (2) the dmax will be 2. To make a valid model, k should be greater than or equal to dmax, i.e., $k \geq$ dmax. Finally, it is necessary to estimate a (k+dmax)th order of VAR and check Block Exogeneity Wald test for the direction of causality. The presence of cointegration across variables implies a minimum of three causal links, yet it doesn't reveal the direction in which these interactions are oriented. In a similar vein, the Toda-Yamamoto causality test is used in this investigation to determine whether there is a direct causal link between the series in question. This information helps formulate LFDI, LDI, LINF, LGTR, LPOGR, LGNS, LSAV and LGDPR that will lead to economic growth (Table 3).

Discussion of the Empirical Findings

Learning from the works of Sharifi-Renani and Mirfatah, Hamida, Kyereboah-Coleman and Agyire-Tettey, the relationship between economic growth and revenue can be modeled as follows [44-46]:

$LGDPR_t = \beta_0 + \beta_1 LINF_t + \beta_2 LFDI_t + \beta_3 LGNS_t + \beta_4 LPOGR_t + \beta_5 LDI_t + \beta_6 LGTR_t + \beta_7 LSAV_t + \epsilon_t$ …....(4)

Table 4, shows the summary statistics of all the variables under study in their raw form. It shows the mean, maximum, minimum and standard deviations of all variables. The skewness, kurtosis and Jarquebera statistics of all variables shown do not fully indicate the true nature of the data series since the probability value of Jarquebera statistics of all the series are shown to be less than the acceptable 0.05 for LGDPR, LGTR, LDI, LSAV, LINF, LFDI, LGNS and LPOGR indicating non-normality of the series (Table 4).

Table 4 reports the results of the unit root test the ADF test, the study concludes that variables, LFDIY, LTOY, LGCFY, LREER and LGDPY are of mixed level of integration. Some at I(0) and others at I(1), then we apply the bound test to test for cointegration among variables. The KPSS results confirm that LFDI and LDI are integrated at I(2), therefore our d_{max} is 2 (Table 5).

The KPSS test has confirmed that the order of integration is 2. We now use the TY approach for the causality test. The determination of optimal lag length k is conducted by applying usual lag selection procedure. When choosing the correct lag order, the VAR is crucial for accurate inference. Several information criteria are used to select the optimal lag order, including Akaike Information Criterion (AIC), Hannan-Quinn Criterion (HQIC), and Schwarz Information Criterion (SIC). These criteria balance model fit with model complexity, penalizing models with more parameters. Table 7 indicates the appropriate lag of 1 since the AIC, SC and HQ all have an italic on 1 as shown. The existence of cointegration is confirmed in table 4.4 among the variables. The study then estimates the Toda-Yamamoto causality and Table 8 reports the results in The Toda-Yamamoto causality test is based on the modified Wald statistic known as the MWald statistic (Table 6).

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Given the trace test and the maximum eigenvalue (λ-max) statistics derived under the Johansen cointegration test, the study confirms that there is cointegration among the variables. The trace test indicates one cointegrating vector, while the maximum eigenvalue test suggests two cointegrating vectors (Table 7). After confirming the existence of cointegration among the variables, the study estimated the Toda-Yamamoto causality and reports the results in Table 4.5 Unlike the Granger causality test that uses the conventional Wald statistic, the Toda-Yamamoto causality test is based on the modified Wald statistic known as the MWald statistic. The augmented lag length for the MWald statistic, p, is set to 3, which is computed from the sum of the VAR lag length (k) plus the maximum order of integration (d). That is to say: p = (k + d); leads to p = (2 + 1) = 3.

The Toda-Yamamoto causality results in Table 8 suggests that there is unidirectional significant at 5% causality from real GDP growth (LGDPR) to government revenue (LGTR), indicating that LGDPR cause LGTR in Uganda for the period understudy to grow.

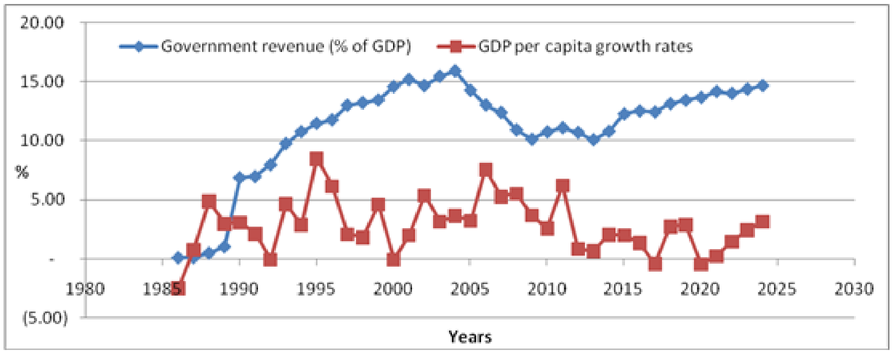

Figure 1: *Government revenue and GDP percapita growth.*

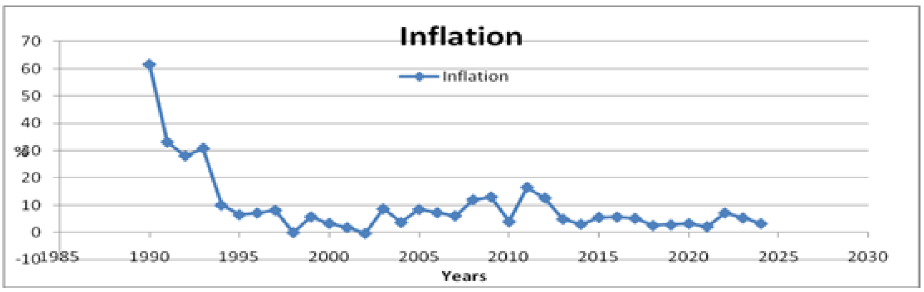

Figure 2: *Inflation.*

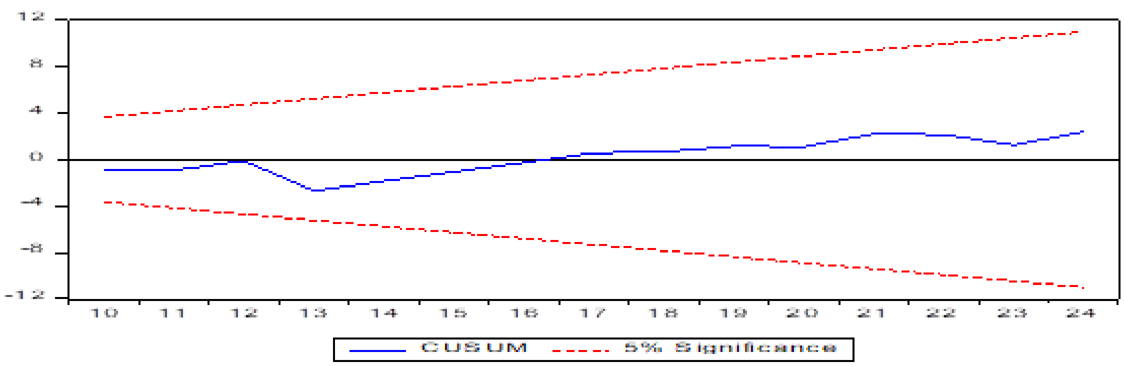

Figure 3: *CUSUM Test.*

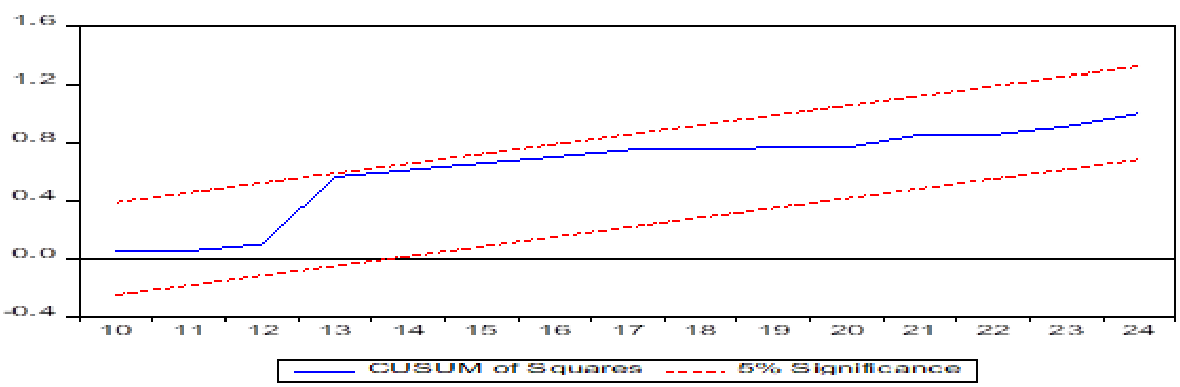

Figure 4: *CUSUM of Square Test.*

Table 1: *Uganda GDP Composition per GDP for 1986 to 2024.*

Series	1986 - 1990	1991 - 1995	1996 - 2000	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	2021 - 2024
Agriculture, fore, and fishing, (% GDP)	53.96	47.47	35.94	24.51	27.09	26.09	23.25	24.14
Services, value added (% GDP)	31.28	33.22	38.12	47.28	46.07	44.62	43.42	42.29
Industry (and construction), (% GDP)	9.95	12.44	17.27	22.23	25.70	26.51	26.31	26.13
Others (% GDP)	4.82	6.87	8.66	5.98	1.14	2.78	7.03	7.44
Source: Own Computations								

Table 2*: Variable definition.*

Variables	Description	Measuring Units	Sources
LGDPR	Gross domestic product	Real GDP Per Capita	MoFPED, UBOS and World Bank database
LINF	Inflation	Inflation is the rate at which the general level of prices for goods and services rises, reducing the purchasing power of money over time.	MoFPED, UBOS and World Bank database
LGTR	Government revenue	Government revenue is the total income a government receives from taxes, fees, and other sources to fund public services, infrastructure, and operations. Primarily driven by taxation (income, corporate, value-added tax), it also includes non-tax revenue like natural resource royalties, fines, and user charges.	MoFPED, UBOS and World Bank database
LPOGR	Population growth	The rate at which population grow at yearly	MoFPED, UBOS and World Bank database
LFDI/GDP	Foreign Direct Investment	A ratio that represents the amount of Foreign Direct Investment (FDI) as a percentage of a country's Gross Domestic Product (GDP)	MoFPED, UBOS and World Bank database
LDI/GDP	Domestic Investment	Measures the total investment in an economy, encompassing additions to fixed assets, changes in inventories, and the acquisition of valuables	MoFPED, UBOS and World Bank database
LSAV	Gross Savings	Gross savings are the total income generated in an economy (gross national income) minus total consumption (public and private), plus net transfers, often expressed as a percentage of GDP.	MoFPED, UBOS and World Bank database
LGNS	Institutional Quality	Institutional quality refers to the efficiency, effectiveness, and stability of a country's governance, legal systems, and regulatory frameworks, which are crucial for driving economic development, protecting property rights, and minimizing corruption	World Governance Indicators (WGI) of the World bank
Source: Authors compilation			

Table 3: *Expected signs of variables to economic growth.*

Variable	Relationship to Economic Growth	Note
Institutional Quality	Positive	Acts as a fundamental driver and moderator.

Domestic Savings	Positive	Essential for domestic investment and capital accumulation.
Domestic Investment	Positive	Directly increases production and growth.
FDI	Positive	Key source of technology transfer and capital.
Government Revenue	Positive (Conditional)	Effective with high institutional quality.
Population Growth	Mixed/Negative	Can strain resources (negative) or increase demand (positive).
Inflation	Mixed/Negative	High inflation hinders growth.
Core Interactions		

Table 4: *Descriptive statistics of variables.*

	LGDPR	LGNS	LGTR	LINF	LPOGR	LSAV	LFDI	LDI
Mean	6.08	3.72	2.12	2.27	1.12	2.29	0.80	2.96
Median	5.97	3.72	2.52	1.88	1.12	2.55	1.14	3.04
Maximum	6.98	3.82	2.77	5.30	1.25	3.17	1.90	3.45
Minimum	5.02	3.57	-2.04	0.88	0.99	-1.58	-3.50	2.13
Std. Dev.	0.61	0.05	1.16	1.22	0.07	0.93	1.23	0.30
Skewness	0.03	-0.62	-2.76	1.24	0.09	-2.50	-2.31	-1.00
Kurtosis	1.49	4.27	9.35	3.59	2.03	10.41	7.62	3.44
Jarque-Bera	3.72	3.82	115.00	9.75	1.57	116.33	63.97	6.86
Probability	0.16	0.15	0.00	0.01	0.46	0.00	0.00	0.03
Sum	237.05	108.01	82.69	81.75	43.83	80.28	28.67	115.36
Sum Sq. Dev.	14.17	0.08	51.55	52.09	0.18	29.61	52.63	3.45
Observations	39	29	39	36	39	35	36	39
Source: Authors computations								

Table 5: *Results of the unit root tests.*

	ADF Test		KPSS Test		
Variables	**Level**	**First Difference**	**Level**	**First Difference**	**Second Difference**
LGDPR	-0.36	-4.34**	0.64	0.14**	
LGTR	-11.64**		0.44**		
LFDI	-8.31**		0.62	0.5	0.40**
LDI	-2.08	--6.61**	0.64	0.66	0.14**
LINF	-4.01**		0.61	0.21**	
LSAV	-6.44**		0.76	0.24**	
LPOGR	-3.37**		0.10**		
LGNS	--3.56*	-5.70**	0.5	0.13**	
Note: *, ** and *** indicate significance level at 10%, 5% and 1% respectively. Source: Own computations					

Table 6: *VAR Lag Order Selection Criteria.*

Endogenous variables: LGDPR LGTR LINF LFDI LGNS LSAV LPOGR LDI

Lag	LogL	LR	FPE	AIC	SC	HQ
0	90.5758	NA	0.0000	-7.5069	-7.1102	-7.4134
1	260.8705	201.2573*	7.25e-18*	-17.17004*	-13.59936*	-16.3289*
* indicates lag order selected by the criterion						

Table 7: *Results of the Johansen cointegration test.*

Null Hypothesized	λ-Max Statistics	Critical Value	Trace Statistic	Critical Value
r=0	127.52**	95.75	55.45	40.08
r≤1	72.07	69.81	29.89**	33.88
r≤2	42.17	47.85	26.52	27.58
Note: ** represents the rejection of the null hypothesis at 5% level of significance. Source: Own computations				

Table 8: *Granger causality results based on Toda-Yamamoto procedure.*

Null hypothesis	Causality dynamics	MWald statistic	Probability value
LGDPR does not Granger-cause LGTR	LGDPR → LGTR	5.18**	0.023
LGDPR does not Granger LINF	LGDPR → LINF	3.32*	0.068
LGDPR does not Granger-cause LFDI	LGDPR → LFDI	0.87	0.35
LGDPR does not Granger-cause LGNS	LGDPR → LGNS	1.70	0.191
LGDPR does not Granger-cause LSAV	LGDPR → LSAV	5.35**	0.021
LGDPR does not Granger-cause LPOGR	LGDPR → LPOGR	1.52	0.218
LGDPR does not Granger-cause LDI	LGDPR → LDI	5.94**	0.015
LGTR does not Granger-cause LGDPR	LGTR → LGDPR	16.7***	0.00
LGTR does not Granger-cause LINF	LGTR → LINF	7.3***	0.007
LGTR does not Granger-cause LFDI	LGTR → LFDI	1.2	0.26
LGTR does not Granger-cause LGNS	LGTR → LGNS	3.89**	0.046
LGTR does not Granger-cause LSAV	LGTR → LSAV	47.0***	0.00
LGTR does not Granger-cause LPOGR	LGTR → LPOGR	3.87**	0.049
LGTR does not Granger-cause LDI	LGTR→ LDI	10.0***	0.00
LINF does not Granger-cause LGDPR	LINF → LGDPR	1.76	0.41
LINF does not Granger-cause LGTR	LINF → LGTR	26.59**	0.00
LINF does not Granger-cause LFDI	LINF → LFDI	4.58	0.10
LINF does not Granger-cause LGNS	LINF→ LGNS	0.58	0.75
LINF does not Granger-cause LSAV	LINF → LSAV	1.27	0.53
LINF does not Granger-cause LPOGR	LINF → LPOGR	16.99***	0.00
LINF does not Granger-cause LDI	LINF→ LDI	10.0***	0.00
LFDI does not Granger-cause LGDPR	LFDI → LGDPR	2.39	0.127
LFDI does not Granger-cause LGTR	LFDI → LGTR	3.52*	0.061
LFDI does not Granger-cause LINF	LFDI → LINF	1.8	0.177
LFDI does not Granger-cause LGNS	LFDI→ LGNS	2.46	0.117
LFDI does not Granger-cause LSAV	LFDI → LSAV	9.65***	0.002
LFDI does not Granger-cause LPOGR	LFDI → LPOGR	3.77*	0.052
LFDI does not Granger-cause LDI	LFDI → LDI	10.89***	0.001
LGNS does not Granger-cause LGDPR	LGNS → LGDPR	0.053	0.818
LGNS does not Granger-cause LGTR	LGNS → LGTR	0.07	0.781
LGNS does not Granger-cause LINF	LGNS → LINF	0.03	0.86
LGNS does not Granger-cause LGNS	LGNS→ LFDI	0.02	0.88
LGNS does not Granger-cause LSAV	LGNS → LSAV	0.22	0.63

LGNS does not Granger-cause LPOGR	LGNS → LPOGR	0.22	0.22
LGNS does not Granger-cause LDI	LGNS → LDI	0.46	0.46
LSAV does not Granger-cause LGDPR	LSAV → LGDPR	0.153	0.695
LSAV does not Granger-cause LGTR	LSAV→ LGTR	0.150	0.698
LSAV does not Granger-cause LINF	LSAV → LINF	0.354	0.551
LSAV does not Granger-cause LFDI	LSAV→ LFDI	0.518	0.471
LSAV does not Granger-cause LGNS	LSAV → LGNS	0.330	0.565
LSAV does not Granger-cause LPOGR	LSAV→ LPOGR	0.674	0.411
LSAV does not Granger-cause LDI	LSAV → LDI	0.095	0.756
LPOGR does not Granger-cause LGDPR	LPOGR→ LGDPR	1.60	0.205
LPOGR does not Granger-cause LGTR	LPOGR→ LGTR	0.069	0.792
LPOGR does not Granger-cause LFDI	LPOGR→ LFDI	1.98	0.159
LPOGR does not Granger-cause LGNS	LPOGR → LGNS	0.29	0.586
LPOGR does not Granger-cause LSAV	LPOGR→ LSAV	3.18*	0.074
LPOGR does not Granger-cause LDI	LPOGR→ LDI	12.05***	0.0005
LDI does not Granger-cause LGDPR	LPOGR→ LGDPR	0.49	0.4839
LDI does not Granger-cause LGTR	LPOGR→ LGTR	3.77	0.0521
LDI does not Granger-cause LINF	LPOGR → LINF	0.11	0.7324
LDI does not Granger-cause LFDI	LPOGR→ LFDI	2.40	0.1208
LDI does not Granger-cause LGNS	LPOGR → LGNS	0.46	0.4960
LDI does not Granger-cause LSAV	LPOGR→ LSAV	5.90**	0.0151
LDI does not Granger-cause LPOGR	LPOGR→ LDI	0.89	0.34

Note: ** denotes significance level at 1%. The augmented lag length for the MWALD statistic is given by (k + d) = (2+1) = 3; where k is the lag length obtained from unrestricted VAR, and d is the maximum order of integration.
Source: Authors computations

Table 9: *Breusch-Godfrey Serial Correlation.*

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.52	Prob. F(2,13)	0.382
Obs*R-squared	2.37	Prob. Chi-Square(2)	0.167

Source: Authors computations

Table 10: *Heteroskedasticity Test: Breusch-Pagan-Godfrey.*

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.612	Prob. F(10,14)	0.195
Obs*R-squared	13.47	Prob. Chi-Square(15)	0.198
Scaled explained SS	22.42	Prob. Chi-Square(15)	0.131

Source: Authors computations

Table 11: *Ramsey Reset Test.*

Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	0.77	14	0.453
F-statistic	0.59	(1, 14)	0.453

Source: Authors computations

This finding can be partly attributed to GDP growth in Uganda boosts government revenue primarily by expanding the tax base through increased industrial, agricultural, and service sector activities, driving higher corporate income tax, VAT, and PAYE collections. In addition, it has been established from this study that LGTR unidirectional significantly at 1% causality real growth rate (LGDPR). This can be so because Government revenue boosts real GDP growth in Uganda by financing critical public investments, such as infrastructure development, education, and healthcare, which enhance productive capacity. Increased revenue, including through digital tax systems (e.g., EFRIS) and tax base expansion, reduces reliance on debt and funds economic stimulation. The LGDPR is found to granger cause inflation (LINF) significantly at 10%. This is probably in Uganda, real GDP growth Granger-causes inflation primarily through demand-pull pressures, where increased economic activity and income levels outpace the supply of goods and services. Rapid expansion raises consumer demand, leading to higher prices, especially when coupled with supply-side bottlenecks characteristic of a developing economy. In this study, LINF was found not to granger cause LGDP growth. Also, LGDPR was found to Granger-cause domestic savings (LSAV) significantly at 5%. This is probably because past economic growth helps predict and increase future savings, acting as a one-way, short-to-long-term driver. This occurs because rising incomes from GDP growth boost disposable income, allowing for increased savings capacity among households and firms. But LSAV is not found to granger cause real GDP growth.

The study established that LGDPR does Granger-cause domestic investment (LDI) significantly at 5%. This is probably because Real GDP growth in Uganda Granger-causes domestic investment, specifically private sector investment, through a demand-pull mechanism, where higher economic growth increases business confidence, higher consumption, and better market performance. This means past growth levels in Uganda help predict future increases in domestic capital formation. But domestic investment does not granger cause LGDPR as established by the study. The study established that LGTR Granger-cause LINF significantly at 1%. In Uganda, real government revenue contributes to inflationary pressures primarily when it fails to keep pace with expenditures, leading to budget deficits that are financed through inflationary means. Although higher tax revenues are meant to fund development, structural inefficiencies and deficits mean that government fiscal operations often drive-up demand and prices, a relationship validated through Granger causality tests. Also, LINF in this study is found to significantly at 5% to ganger cause LGTR. In Uganda, research like Ssebulime indicate a Granger causal relationship where inflation, often driven by money supply or external shocks, impacts government revenue, specifically tax revenue, in both the long and short run. Inflation influences nominal tax bases, with high inflation potentially causing financial market frictions that reduce investment and, consequently, long-term tax revenue [47]. The study established that LGTR Granger-causes institutional quality (LGNS) significantly at 5%. In Uganda, government revenue, particularly from improved tax administration, Granger-causes better institutional quality by providing the fiscal capacity to strengthen regulatory frameworks and enhance government effectiveness. Increased tax revenue, managed through institutions like the Uganda Revenue Authority, allows for better service delivery, fostering trust and reducing corruption, which in turn improves overall governance. But LGNS is not found to granger cause LGTR. Also, LGTR is found to granger cause domestic savings in Uganda significantly at 1% level. Simply because In Uganda, government revenue, particularly non-tax revenue and tax, demonstrates a causal relationship with economic activity, which in turn influences domestic savings. Evidence suggests a unidirectional, long-run relationship where increased economic growth, often spurred by effective government revenue management, leads to increased domestic savings rather than vice-versa.

But LSAV is not found to granger cause domestic revenue probably because, some studies on economics, like Samuel and Abebe, empirically say in Uganda, domestic savings often do not Granger-cause government revenue due to a combination of a large, untaxed informal sector, the nature of savings being channeled into non-productive consumption, and structural issues in the tax system [48]. In Uganda, the causal relationship tends to run in the opposite direction—economic growth (GDP) and revenue collection drive savings, rather than savings driving government revenue. The study established that LGTR does at 5% significantly Granger-cause Population growth rate (LPOGR). This is probably government revenue, through several mechanisms, primarily centered on fiscal policy's impact on public health, social services, and economic infrastructure. Increased government revenue allows for higher public spending on healthcare, sanitation, and medical infrastructure, which reduces mortality rates and can lead to a higher population growth rate. Higher revenue enables governments to invest in education and social services. Improved access to education, particularly for women, can shift population dynamics. Revenue generation helps fund infrastructure (water, electricity, transportation) that supports a larger population, facilitating growth by improving living conditions. Revenue is used to create a conducive environment for development. A stable, funded economy can support higher population growth by enhancing overall economic security. But LPOGR was found not to granger cause government revenue. In addition, LGTR was found to Granger-cause domestic investment

(LDI). This is probably because the funds collected through taxes, duties, and other revenues act as the financial foundation for public capital expenditures like infrastructure, education and health that directly facilitate and stimulate private sector investment. In Granger causality terms, this means past levels of government revenue help predict future levels of domestic investment, indicating that revenue mobilization is a necessary precursor to public investment-driven economic growth. It was also established that LDI significantly granger causes government revenue at 10% level. This is so because Domestic investment Granger-causes government revenue because increased investment activity boosts economic growth, which in turn expands the tax base and raises non-tax revenue for the government. This relationship is often characterized as a unidirectional causality where private sector capital formation, such as investments in infrastructure and machinery, increases overall production and consumption, allowing governments to collect more taxes on profits, sales, and income.

The inflation (LINF) was found to significantly Granger-cause LGTR at 1%. This is probably because Inflation primarily because rising prices increase nominal tax bases (income, consumption, and asset values) faster than tax brackets or exemptions are adjusted, a phenomenon known as bracket creep or the Olivera-Tanzi effect. It is an economic phenomenon where high inflation leads to a significant decline in the real value of government tax revenue. The effect occurs primarily due to the collection lag, which is the delay between when a taxable event happens (like a sale or earning income) and when the government actually receives the tax payment. As inflation drives up nominal prices, sales tax revenues and nominal corporate profits rise, leading to higher tax collections, allowing inflation to serve as a form of implicit taxation. Also, LINF is found to Granger-cause LPOGR and LDI significantly at 1% respectively. Inflation Granger-causes population growth rate primarily because rising prices, particularly for food and basic necessities, force behavioral shifts in household planning, resource allocation, and, in some contexts, increased mortality or reduced fertility due to economic hardship. High, persistent inflation acts as a constraint on disposable income, influencing demographic decisions over time. In addition, Inflation Granger-causes domestic investment primarily because rising price levels signal economic instability, increase input costs, and erode purchasing power, which directly forces investors to adjust, delay, or reduce capital expenditures. High or volatile inflation creates uncertainty, reducing the profitability of long-term projects and shifting capital away from productive investment towards hedging. Inflation generally hurts domestic investment by reducing real returns, increasing costs, and creating uncertainty, although low, stable inflation can sometimes encourage it. High inflation erodes purchasing power, causes interest rates to rise, and discourages long-term projects due to increased risks. Key impacts include reduced value of fixed-income assets and a preference for real assets over financial ones (Table 8).

The study found out that foreign direct investment (LFDI) does Granger-cause LGTR significantly at 10%, because Foreign Direct Investment (LFDI) primarily by stimulate economic activity, which directly boosts tax bases through increased corporate income taxes, employee income taxes, and consumption-based taxes like VAT. LFDI inflows act as a catalyst for economic growth, generating employment and boosting productivity, which consequently leads to higher revenue generation for the host government. In addition, LFDI was found to Granger-cause domestic savings (LSAV) and domestic investment (LDI) significantly at 1% level respectively. This is so because domestic savings boosts economic growth, raising household incomes, and enhancing financial sector efficiency, which collectively increase the capacity for local savings. LFDI acts as a catalyst that stimulates productive economic activity and, in some contexts, directly drives capital accumulation. Foreign Direct Investment (FDI) boosts domestic investment because, by acting as a catalyst for local industrial growth through technology spillovers, knowledge transfers, and increased competition. FDI fills capital, technology, and skill gaps in host countries, encouraging domestic firms to invest in upgrades and expand capacity to remain competitive.

Residual and stability diagnostics tests

The Breusch-Godfrey (BG) test is a robust method for detecting serial correlation. The BG test uses residuals from the original regression as the dependent variable run against initial regressors plus lagged residuals and null hypothesis is the coefficients of the lagged residuals are zero. From the results in Table 9 the null hypothesis is accepted and concluded that there is no serial correlation in the model. This means there's no statistically significant relationship between successive values of a variable over time. It indicates that the current value of a variable is not influenced by its past values. A serial correlation value of zero suggests this independence. The current observation is not correlated with its previous observations, indicating no predictive power from past values. Residue stability tests determine how well a substance or residue maintains its integrity over time when stored under specific conditions. These tests are crucial for ensuring the accurate analysis of residues, demonstrating the stability of pesticides in crops, and verifying the stability of residues in various products (Table 9). The results as shown in Table 10 show that there is no heteroscedasticity since the null of no heteroskedasticity is accepted. No heteroskedasticity means the errors in a model have a constant variance, meaning the spread of the residuals is consistent across all values of the independent variable. In simpler terms, it means the variability of the dependent variable (the thing being predicted) is the same at all levels of the independent variable (Table 10).

The Ramsey Reset Test, also known as the Ramsey Regression Equation Specification Error Test, is a diagnostic tool used to test if the functional form of a regression model is appropriately specified. Specifically, it checks if non-linear combinations of the independent variables help explain the dependent variable, indicating potential model misspecification. In essence, it helps determine if a linear model is the best representation of the relationship between variables or if a non-linear model would provide a better fit. From the results in Table 11 the null is accepted and conclude that there is no misspecification in the model (Table 11). A CUSUM (Cumulative Sum) chart is a statistical quality control tool used to monitor a process and detect small shifts in the process mean. It works by plotting the cumulative sum of deviations from a target value, helping to identify changes that might be missed by traditional control charts. CUSUM charts is a valuable tool for monitoring processes and detecting subtle changes that might not be visible with other control chart methods, enabling timely corrective actions and improving process stability as shown in (Figure 3). The CUSUM of Squares test is a statistical test used to assess the stability of regression models, especially in time series analysis. It's designed to detect systematic changes in the model parameters, including the variance of the error term, over time. Specifically, it looks for sudden shifts or changes in the squared values of the residuals, which can indicate instability in the model's parameters as indicated in (Figure 4).

Conclusion and Policy Recommendations

This paper has discussed the link of Economic growth (LGDPR), Government revenue (LGTR), Foreign Direct Investment (LFDI), Domestic Investment (LDI), Population growth (LPOGR), Institution quality (LGNS) and Domestic savings (LSAV). Using the Toda-Yamamoto causality test and other relevant literature, this study provides the causal relationship among these variables. The Augmented Dickey-Fuller (ADF) and the Kwiatkowski–Phillips–Schmidt–Shin (KPSS) unit root tests show that all of these annual time series are integrated in level, I(0), first order, I(1).and second order, I(2) then Toda-Yamamoto causality test was applied. The relationship between economic growth and its determinants, government revenue, population growth, inflation, FDI, domestic savings/investment, and institutional quality is interactive, and often bidirectional, with institutional quality acting as a critical moderator for success. In Uganda, economic growth is positively driven by foreign direct investment (FDI) and improved institutional quality like controlling corruption, while high population growth rates have exerted pressure. Government revenue, when enhanced by institutional reforms, boosts growth, while inflation has generally been managed low between 3.2%–5% for a long time. Domestic savings remain low, necessitating reliance on FDI and external aid for investment. Gross domestic savings in Uganda have shown a significant upward trend, moving from low levels in the 1990s which averaged 5.27% to over 14.8% as percentage of GDP in 2024. For Economic Growth (GDPR) and Foreign Direct Investment (FDI), FDI is a major driver of growth in Uganda, facilitating technology transfer in sectors like agriculture, energy, and manufacturing. However, some studies like Wakyereza and Wol indicate that FDI may have a negative coefficient in the long run, suggesting challenges in absorption capacity [49,50]. Also, Institutional Quality and government Revenue, better institutional quality that specifically reduced corruption and increase government effectiveness, significantly enhances domestic revenue mobilization and improves tax compliance.

Population Growth and Economic Growth, high population growth has been found to have an adverse impact on economic growth in the broader region (SSA), directly impacting per capita GDP in Uganda. Inflation & Policy: The Bank of Uganda generally manages inflation successfully within a 5% target. Inflation shows a weak or insignificant relationship with GDP and tax revenue. Domestic Savings & Investment: Uganda has low domestic savings rates compared to investment needs, making FDI critical for capital accumulation. Government Revenue: Increased tax revenue, supported by improved administration (e.g., Uganda Revenue Authority), supports public expenditure, though the impact of tax on short-term inflation is minimal. For Uganda to maximize economic growth, it must improve institutional quality to boost domestic revenue, encourage domestic savings, and ensure that FDI acts as a positive force for development. Policy recommendations for Uganda focus on raising the revenue-to-GDP ratio to 18.2% by 2029/30 which was found to be low, enhancing institutional quality for better tax administration, boosting domestic savings for investment, managing inflation via stable monetary policy, and leveraging foreign direct investment (FDI) to boost productive sectors. On Government Revenue and Institutional Quality, there is a need to increase the revenue-to-GDP ratio from 14.5% to 18.2% by 2029/30 through improved tax policies, digitalization, and strengthening Uganda Revenue Authority. Enhance the tax-to-GDP ratio by improving compliance with the NDP IV. This can be done through strengthening digital tax administration (EFRIS, DTS), expanding the tax register to the informal sector, and improving tax morale through better public service delivery. Key strategies include reducing tax exemptions, enhancing compliance for high-net-worth individuals, and strengthening local revenue administration [51-54].

The Domestic Savings and Investment should promote financial inclusion, such as the Parish Development Model (PDM), to boost domestic savings and reduce lending rates, aiming for lower debt-to-GDP ratios. There is a need to attract Foreign Direct Investment (FDI) into priority sectors like manufacturing, agriculture, and mining by providing tax holidays and improve the investment climate by strengthening Uganda Investment Authority services. This involves enhancing its role as a one-stop center, digitalizing processes to reduce bureaucratic red tape, and improving investor aftercare. Key strategies include building staff capacity, developing industrial parks, leveraging diplomatic missions for FDI attraction, and promoting strategic sectors like agro-processing, ICT, and mineral development. Population Growth and Human Capital development can provide the demographic dividend by investing in education and health to ensure a skilled workforce, enhancing productivity and reducing the burden of dependency. The Inflation and Monetary Stability can maintain macroeconomic stability through disciplined monetary policy to keep inflation low and stable, which is necessary for long-term investment and growth. The overall Economic Growth can transit from debt-financed growth to growth driven by private sector investment, with a focus on improving the efficiency of public projects. These measures aim at shifting Uganda towards a higher, more sustainable, and inclusive growth path by fostering a better business environment and increasing domestic resource mobilization. To ensure that economic policies do not undermine competition and entry, it's recommended that the Government of Uganda should consider guidelines, principles and concrete policy actions when designing strategies targeted at raising the competitiveness of Ugandan companies. These may include working towards the goal of increased usage of locally produced products by emphasizing pro-competitive import substitution policies, Provide firms and investors with access to preferential treatment, Implement protectionist policies (e.g. import tariffs), prioritize commodities for interventions that have low import content (available domestic raw materials) and show strong backward and forward linkages for import substitution and later export promotion like milk, tiles, agro-processing, cement and pharmaceuticals.

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