

Government Expenditure On Manufacturing, Infrastructure, Agriculture Components, And The Level Of Economic Growth In Kenya 1985-2021

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Abstract:

There is often contention and discussion regarding the optimal way to allocate public funds to different expenditure components and how they promote economic growth. Government spending has several importance; it raises aggregate demand, and increases employment levels. This eventually spurs a country's economic growth. Public expenditure also helps provide public goods due to market failures and economic exploitation. Public goods such as infrastructure (roads, bridges, airports), education, healthcare, and security are essential for economic growth. Public expenditure also improves the macroeconomy supply side, enhancing economic growth. In addition, the government can offer subsidies to sectors that might require financial assistance for their operations or expansion, which stimulates investment, promotes innovation, increases capital expenditure, and then job creation, which leads to economic growth. It also helps to redistribute income and promote social welfare. The study's main objective was to establish the effect of various public expenditure components on Kenya's economic growth. The specific objectives were to scrutinize the effect of the manufacturing component of government spending on Kenyan economic growth, assess the effect of the infrastructure component of government spending on Kenyan economic growth, and scrutinize the effect of the agricultural component of government spending on Kenyan economic growth. The study adopted a nonexperimental longitudinal research design. Secondary time series data between 1985 and 2021 from Economic Surveys, Statistical Abstracts, Economic reports, and public expenditure reports of the government of Kenya was used. The study conducted the stationary test, cointegration, and causality test on the data and employed the Vector Error Correction Model in data analysis. The results showed that public expenditure's manufacturing and agricultural components had a positive impact on Kenyan economic growth, while infrastructure had a negative impact in the long run. Manufacturing drives industrialization, which leads to economies of scale, technological advancements, and more efficient production methods. This conforms to endogenous growth theory. Agricultural investment helps sustain economic growth by supporting rural development, reducing poverty, and improving food security. The structural transformation theory suggests that as agricultural productivity improves, resources (e.g., labor and capital) are freed up to be employed in other, more productive sectors. The results of infrastructure negatively impacting economic growth align with fiscal sustainability theory, which states that infrastructure spending may eventually become unsustainable if it leads to persistent fiscal deficits. Governments might need to increase taxes or cut spending in other productive areas (e.g., social services and education), which could dampen economic growth in the long term. Overall, the outcome showed that government spending and potential Kenyan economic expansion are correlated through a sustained relationship. This is evidenced by the R squared, which is at 0.8975. This implies that public expenditure explains 89.75% of the variations in GDP. The study recommends that the government choose the critical area of infrastructure component to invest in. In the long run, the findings showed that infrastructure spending negatively impacts economic growth, which could suggest inefficiencies or corruption in the allocation or execution of infrastructure projects. However, poor infrastructure planning, corruption, cost overruns, or investments in non-productive or underutilized projects could explain the negative long-term impact. The Kenyan government should invest more in the manufacturing sector in areas like agro-processing, the textile industry, pharmaceuticals, healthcare products, automotive assembly, and parts manufacturing, which helps to reduce imports that tend to be high in Kenya. With the agricultural component having a positive effect on Kenyan economic expansion, the state could invest in agriculture sector's areas like Irrigation and Water Management, Sustainable Agriculture, Climate Resilience crops, Agricultural Research and Extension Services, High-Value Crops, agro-processing, and Value Addition

Keyword: Government Expenditure/Public Expenditure/Government Spending; Agricultural component; Manufacturing component; Infrastructure component; Economic growth; vector error correction model

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I. Introduction

Background of the study

Economic growth denotes the rise in a nation's overall production. A country's output is formed by its consumption, investment, government expenditure, and trade balance. Government expenditure is one of the components that contributes to a country's economic growth. It raises aggregate demand, which increases employment levels. This will eventually spur a country's economic growth. (Keynes, 1936). Public expenditure also helps provide public goods due to market failures and economic exploitation. Public goods such as infrastructure (roads, bridges, airports), education, healthcare, and security are essential for economic growth. Public expenditure also improves the macroeconomy supply side, enhancing economic growth. In addition, the government can offer subsidies to sectors that might require financial assistance for their operations or expansion, which stimulates investment, promotes innovation, increases capital expenditure, and then job creation, which leads to economic growth. It also helps to redistribute income and promote social welfare (Diamond, 1989).

The government's primary expenditure strategy has consistently involved reorganizing overall spending by reallocating resources to sectors that foster quicker economic growth (Maingi, 2017). Governments use various tools to boost economic growth, with public expenditure traditionally being a part of fiscal policy, a tool the state uses to influence economic expansion. (Lahirushan & Gunasekara, 2015).

Countries that have increased their public expenditures have seen their economies grow. For example, in 1964, Singapore had a \$0.89 billion GDP, lower than the Kenyan GDP of \$1.00 billion (World Bank Data, 2021). Singapore's Economic Development Board (EDB) developed policies to accelerate economic growth through manufacturing, encouraging mostly export-oriented products and value addition. In the 1960s and 1970s, Singapore attracted labor-intensive industries, with the government providing pre-built standard factories to enable quick establishment for companies. The main objectives of this industrialization phase were to eliminate unemployment and attract foreign investment (Mondeja, 2017). In Singapore, in the initial years 1965–1980 and 1980–1990, the initiatives to leverage an export-driven economy and swift wealth accumulation to stimulate numerical expansion (Vu, 2011). Pursuing an open, outward-oriented development tactic has achieved these economic successes. This approach allowed Singapore to transition from a labor-intensive export economy to one focused on higher capital and skill-intensive industries, such as electronics and chemicals. Additionally, Singapore has established a prominent role in the global financial services and business sectors (Pham, 2009). In terms of infrastructure, Despite facing intense competition, Singapore's port has undergone extensive modernization and expansion, becoming one of the world's premier sea freight trans-shipment hubs (Mondeja, 2017). In 2021, Singapore's GDP was \$396.99 billion, while Kenyan GDP was \$110.35 billion (World Bank Data, 2021).

The Rwandan economy has been doing well in recent years, with its GDP having an upward trajectory from 2002, with a value of \$1.96 billion to \$11.07 billion in 2021 (World Bank data, 2022). The Rwandan government allocated much financial planning to the academic and urban development sectors. Spending on academic components at first increased, then declined in two thousand seven, then began to rise again in two thousand nine, peaking ahead in 2011 then declining for the remainder of the period. Infrastructure expenditure increased until 2008, then decreased before rising again after 2009, reaching a peak in 2013 before falling (Ochieng et al., 2017). In recent years, the Rwandan government has heavily invested in Infrastructure, manufacturing, and agriculture.

Government spending is a crucial element of economic governance, and governments use effective governance instruments that foster robust, stable expansion in an economy (Ahuja & Pandit, 2020). The Kenyan government has been creating budgetary allocations for various components. In 1985, Kenya's public expenditure percentage of the GDP increased from 10.22 to 24.93 percent in 2021 (IMF-WEO, 2022). In agriculture, the government has initiated projects like Galana-Kulalu to boost food production in the country (National Irrigation Board, 2019). The government has also worked on the issue of value addition to agricultural produce to broaden manufacturing. Public expenditure on infrastructure components, specifically road transport, has created linkages in the economy, which in totality has led to economic growth (Tenai, 2020).

Public Expenditure in Kenya

The expenditure structure is capital and recurrent (Munene, 2015). Recurrent refers to less discretionary expenses and continuing programs. Development expenditure alludes to spending typically voluntary and allocated to innovative program initiatives yet to reach their final stage (Maingi, 2017). Figure 1.1 below shows manufacturing, infrastructure, and agricultural expenditures as a proportion of overall spending from 1985 to 2021.

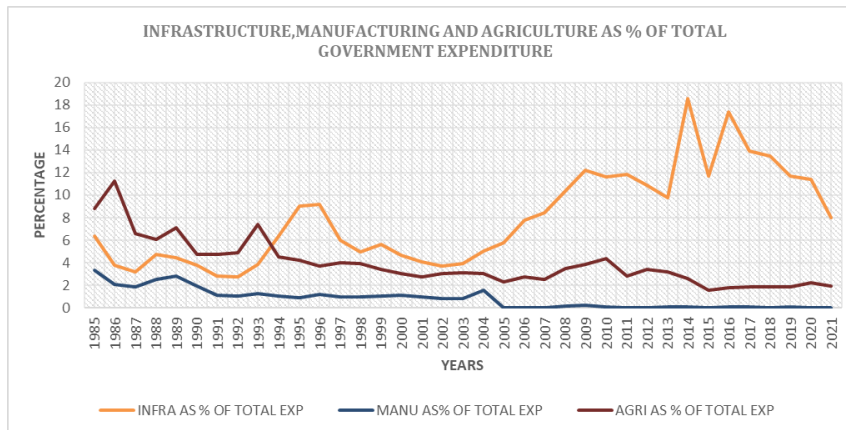


Figure 1.1: Infrastructure, Manufacturing, and Agriculture as a percentage of total government expenditure in Kenya. Data source: KNBS- ECONOMIC SURVEY 1985-2022

In Figure 1.1 above, from 1985 to 2003, Infrastructure expenditure to the share of total government expenditure depicts ups and down trajectory. From 1987 to 1989, the graph shows A surge in the ratio of Government expenditure outlay infrastructure like Moi International Sports Complex Kasarani, Moi University, and Turkwel Hydroelectric power station. University expansion on the account of 8-4-4 system implementation was initiated (Maingi, 2017). It started at 3.3 percent in manufacturing and then stagnated below 2 percent. This was due to the introduction of SAPs, where the government was advised to privatize government-owned industries, reducing government involvement in manufacturing (Swamy, 1994). The percentage of public expenditure on agricultural components remained downward except for 1989 and 1993. This was due to reduced loans given to coffee and tea industry farmers and reduced subsidies on agricultural farm inputs (D'Alessandro et al., 2015).

From 2004 to 2021, the ratio of public expenditure in infrastructure took an upward trajectory, moving from 5.06 percent in 2004 to 7.99 percent in 2021, 18.59% in 2014, and 17.39 percent in 2016. In this period, many projects were accomplished, for example, the Thika Freeway (2009-2012), the conventional gauge rail system (2014-2017), Jomo Kenyatta International Airport expansion, and several tarmac road expansions in Nairobi city and other areas in Kenya. Construction of Phase II, 2nd container terminal at Mombasa Port, and Phase I of Lamu Port (DCP Kenya,2019). In manufacturing, Figure 1.1 shows the stagnation in the percentage of total budgetary spending allocated to this component, which was below 0.5 percent from 2004 to 2021. However, with the minimal allocation of resources, the government invested in creating special economic zones (SEZ). Projects like Dongo Kundu SEZ, Naivasha Industrial Park, and the revival of the Revatex textile industry promote the manufacturing component (Kenya Institute of Planners, 2018). In agriculture, Figure 1.1 shows that the government expenditure in this component, compared to total expenditure, continued on a downward trajectory compared to the previous period. It stagnated at around 3 percent except for 2010. However, the government created some projects to develop drought- and pest-resistant seeds, the Galana Kulalu irrigation scheme, and investments in research (National Irrigation Board 2019).

Economic Growth in Kenya

After independence, the first three decades of Kenya's economy were dominated by agriculture, which boosted economic growth. Recently, manufacturing and the service industry have been doing well. The annual percentage change growth rate in Figure 1.2 shows this.

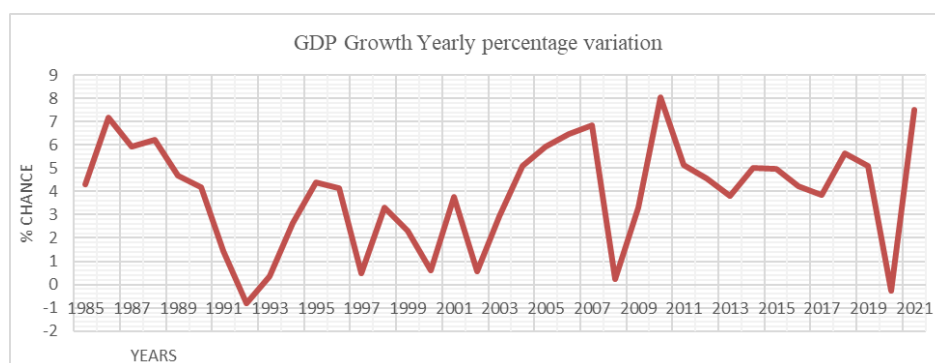


Figure 1.2: GDP Growth Rate Annual Percentage Change Data Source: World Bank, 2022

Economic growth stagnated in the late 80s and early 90s, ranging from \$6.14 to \$8.57 billion in GDP in 1985 -1993 (Swamy,1994). This was due to Structural Adjustment Programmes (SAPs) initiated by Britton Woods Institutions, whose target was abolishing Price capping, changes in government administration and Interest rate deregulation with commerce broadly, political instability in 1992 due to multipartyism and donation embargo (Muthui et al., 2013). In 1992, Kenya's economy hit rock bottom with an annual economic percentage change of negative 0.80, as shown in Figure 1.2 above.

As the 1990s drew to a close, the economy underwent further deterioration, capturing an annual percentage change of 0.47 in 1997 and 0.60 in 2000 growth pace. This stemmed from Economic sanctions from 1997 to 2000, The 1997 ethnic conflicts, and The 1997-98 El Niño storms (Masini, 2003). Between 2003 and 2021, the trend of economic growth was on an upward trajectory except for two thousand eight growth pace of 0.23%, which dropped on account of post-election violence (Muthui et al., 2013a). The GDP growth rate was operating slightly above 5 percent in 2018 and 2019, but with the world economy collapsing in 2020 due to the COVID-19 pandemic, Kenya's economy was not spared. The GDP annual growth rate dropped to (-0.25) percent for the first time in 28 years since 1992, when it dropped below zero percent, as shown in Figure 2 above. However, with the government's COVID-19 stimulus package and subsidies, the Kenyan economy showed resilience, and the GDP growth rate rose to 7.25 percent in 2021.

Keynesian macroeconomics indicates that various forms of public expenditure positively impact economic growth (Muguro, 2017), as evidenced by the spillover effects on aggregate market demand. Additionally, state spending can harm private equity investments, harmfully affecting economic expansion in a brief period and reducing capital expenditure in the long term (Stourmaras, 2010).

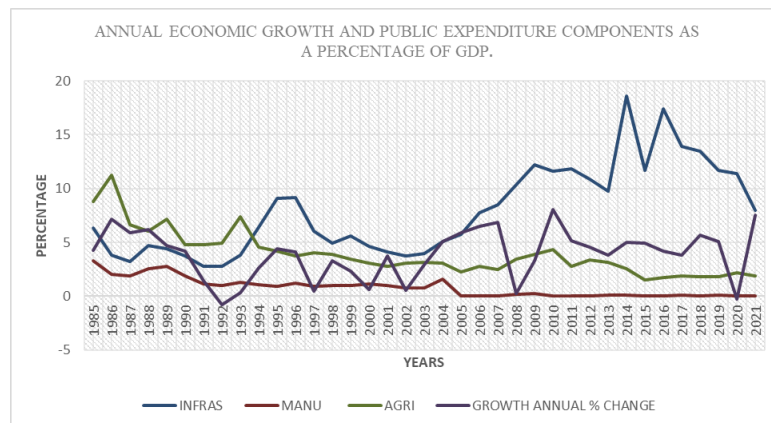


Figure 1.3: Infrastructure, Manufacturing, and Agriculture as a percentage of total government expenditure and annual growth rate in Kenya. Data Source: KNBS- ECONOMIC SURVEY 1985-2022

Figure 1.3 above shows the combined public expenditure components and annual growth rate. The trend shows that the GDP and infrastructure component expenditure pattern looks almost similar. Also, the investment in manufacturing components from 2005 to 2021 was minimal, below 0.25 percent, which raises questions about what would happen if more resources were allocated to this component.

Kenyan Economic Growth Policies

Post-independence, the Kenyan regime developed several government expenditure policies to promote economic growth. In 1965, in "Sessional Paper No. 10 of African Socialism", the manuscript delineated the primary goals of economic growth expansion. These goals included combating poverty, disease, and ignorance (Republic of Kenya 1965). This was further emphasized in Sessional Paper No. 01 of nineteen eight six on Economic Management for Renewed Growth. This strategy directs more government resources to the economy's productive sectors with the highest return. The Budgetary allocation for infrastructure like small towns uplifting in terms of roads, electricity, and water supply to encourage small industry development (Republic of Kenya 1986). In agriculture, additional funds were allocated to research and dissemination operations and tea and coffee growing programs. The initiative was to boost farm output. (Maingi, 2017).

In the 1990s, the Sessional Paper no. 01 of nineteen ninety-four on Sustainable Development and Recovery to the year twenty-ten. It provided an endorsement of a medium- to long-range strategy to sustain policies for socio-economic stability, which was to drive persistent development. With the restructuring of the public service force and freezing of hiring new employees due to the rollout of SAPs, the Kenyan state also concentrated its endeavors mainly on four focal areas: sustaining and expanding social services; The installation and maintenance of public physical infrastructure; Effective management of government services and justice and, the Environmental safeguarding (Republic of Kenya 1994).

2008, Kenya launched an extended national blueprint, Vision 2030. The plan was to guide Kenya to become a middle-income economy. A medium-term financial spending plan (MTP) from 2008 to 2012 was rolled out to increase real GDP growth. The infrastructure plans and measures to be executed over the Mid-range included reinforcing the institutional framework for infrastructure advancement (Republic of Kenya, 2008), upgrading the effectiveness and excellence of infrastructure while also expediting the execution of infrastructure projects to secure their finalization by the stipulated deadline. 1.2 million hectares were under irrigation in agriculture, and value addition on agricultural produce was to be pursued (Republic of Kenya, 2008).

In 2013-2017, the Second Medium Plan (2nd MTP) was initiated, with the main focus being on the implementation of devolution and socioeconomic development (Republic of Kenya, 2013). The national government established and funded forty-seven devolved governments. In 2018-2022, the Big 4 Agenda was launched, and the blueprint was to be implemented concurrently with the Third Medium Plan (3rd MTP) of Vision 2030. Four foundational elements of the schedule were food availability, cost-effective housing, comprehensive healthcare, industrial development, and employment generation. The schedule aimed to guarantee the employment of the average citizen, sufficient food, and access to comprehensive healthcare (Republic of Kenya, 2018).

The drawbacks of the policies above, for example, sessional papers no. 1 of 1986 and 1994, were supposed to increase productivity in the agricultural component and reduce the ballooning government wage bill. The increased productivity in agriculture was supposed to feed the nation and raise rural income, but until now, Kenya still faces starvation. In conjunction with adopting SAPs, the Kenyan administration reduced the wage bill (Republic of Kenya, 1996). Vision 2030, whose main purpose was to improve the infrastructure and manufacturing sector to shift the Kenyan economy into middle income, has recorded some successes. Though the implementation of infrastructures has been ongoing, the overborrowing to fund these projects has been enormous, and this has put pressure on the government to raise more revenue to pay the debt (Fedelino et al., 2021). This has led to retrogressive taxes like V.A.T on fuel, which hurts the economy (Kamande, 2021).

Statement of the Problem

A core value of public expenditure in any economy is increasing the employment level through the increase in aggregate demand. Public expenditures also help supply public services, which would lead to economic exploitation if made available by the private industry. Lastly, public expenditures, such as education spending, help improve the supply side, which improves labor productivity.

The Kenyan government allocates fiscally per annum to physical infrastructure, manufacturing, and agricultural components. The 1985 to 1992 and 2010 to 2013 can illustrate this issue. In Figure 1.3, the percentage of public expenditure of the GDP in 1986 was 10.025 percent, while in 1992, it was at 11.536 percent, not reflecting on annual GDP growth change as shown in Figure 1.3 above, wherein 1986 it was at 7.1776 percent, and in 1992 it was at (- 0.8). This shows that economic growth was not witnessed, though public expenditure increased around that period. The same happened in 2010, where the percentage of public expenditure was at 21.54 while the annual growth change was at 8.05, and in 2013, the percentage was at 23.23 the share of the GDP while the annual percentage change was at 3.7978. In 2020, all world economies collapsed due to Covid - 19 pandemic, where the Kenyan economy dropped to (- 0.5%), though it recovered in 2021 to around 3%. There is a literature gap and an economic gap to look at in this research.

With the literature gap, The analysis of how public spending affects Kenya's economic growth has been carried out across various periods and yielded varied results (Kimani & Maingi, 2021). According to (Kimani & Maingi, 2021; Maingi, 2017; G. Mukui et al., 2019; Muthui et al., 2013) In their findings, public investment in infrastructure demonstrated a positive impact on Kenya's economic progress. According to (Mudaki and Masaviru, 2012) Government spending on manufacturing has had a detrimental influence, though it is insignificant to economic expansion. Infrastructure positively impacted the economy, whereas government spending on agriculture hurt economic growth. According to (Ismail, 2013) Government outlay in physical infrastructure and agriculture has a constructive impact on Kenya's economic progress.

From 2017- 2021, the average contribution of manufacturing to GDP is 8 percent. The highest year of contribution was in 2007 at 12.79 percent. Between 2017 and 2021, the average contribution of agriculture to GDP was 21.25 percent; agriculture has been the major contributor to the GDP since independence, with the highest being 38.45 percent in 1963. With a high unemployment rate increasing to above 4% in 2018 and up to 5.64% in 2021, with a negative trade balance from 1995 to 2021 (data, Macrotrend), and food security issues in Kenya, the key components of public expenditure to assist in solving the problems mentioned above are agriculture, manufacturing, and infrastructure. Agriculture can provide raw materials for manufacturing and vice versa, while infrastructure boosts the connectivity of the other two components. Data from economic surveys of Kenya between 1985 and 2021 (Republic of Kenya, 1985-2021) shows that funds allocated to the three components mentioned above have been fairly low compared to the other components. Manufacturing has the

lowest percentage of the allocation compared to the total government expenditure, as shown in Figure 1.3, and this is the main reason why the percentage change is negligible from 2005 to 2021 in Figure 1.3. For infrastructure, the component is a fairly allocated resource, but the component's importance for interlinking other components is key to the economy. This raises a question on the economic gap of what happens if a higher percentage of the total government expenditure is allocated to these three components, namely agricultural, manufacturing, and infrastructure, help to mitigate the unemployment issue, the issue of the food crisis, improve the trade balance, value addition on agricultural goods and rural-urban connectivity.

Research Questions

Here are the research queries of the study:

- i. What effect does the manufacturing component of government spending have on Kenyan economic growth?
- ii. What effect does the infrastructure component of government spending have on Kenyan economic growth?
- iii. What effect does the agricultural component of government spending have on Kenyan economic growth?

Objectives of the Study

The main objective of the study is to establish the implications of various components of government spending on Kenyan economic growth. The specific objectives are:

- i. To scrutinize the effect of the manufacturing component of government spending on Kenyan economic growth.
- ii. To assess the effect of the infrastructure component of government spending on Kenyan economic growth.
- iii. To scrutinize the effect of the agricultural component of government spending on Kenyan economic growth.

Significance of the Study

The manufacturing component links other components regarding technological advancement and value addition to the other components' products.

The agricultural component provides raw materials for manufacturing and food security for the country. The infrastructure component offers the base for different components of government spending in an economy to flourish; physical infrastructure like road and airport network linkage enables various components to thrive. Hence, the finding helps academicians to contribute to literature and data for comparative studies; such research provides valuable data for academicians conducting comparative studies across different countries or regions. The research helps the International Organization for Aid Effectiveness and Program Design: International organizations often allocate financial aid and technical assistance to support specific sectors such as agriculture, manufacturing, or infrastructure and also for use in Targeted Investment Strategies. International organizations focused on development can use research to guide their investments in infrastructure, agriculture, and manufacturing. The research helps society understand how government expenditure affects sectors like manufacturing and agriculture, which can lead to policies that foster job creation.

Scope, Organization, Limitation, and the Justification of the Study

The research utilized time series data from 1985 to 2021. Chapter one entails the background of the study, public expenditure in Kenya, Kenyan economic growth policies, problem statement, research questions and objectives, significance, scope, organization, limitations, and justification of the study. Chapter two includes a review of the literature, covering both theoretical and empirical studies, along with a summary. Chapter three models the ramifications of several components of government funding on Kenyan economic expansion. Chapter four entails diagnostic tests, descriptive statistics, and long-run estimates via the VECM model to answer the objectives. Chapter Five includes a summary, conclusion, and recommendations. The study was limited solely to the funds allocated to these components, excluding market distortions such as fund misuse or leakages. This period was chosen due to the introduction of SAPs in Kenya's economy in the late 1980s, with policy implementation beginning in 1986 and execution around 1990. Though SAP's policies were scrapped later on, its effect is still felt today. The manufacturing component is important to an economy as value addition, diversification, and structuring policies like tax subsidies and amnesty promote a positive and enabling environment, all of which encourage job creation and trade balance. The agricultural component purpose was to achieve food security, export revenue, and also job creation. Infrastructure component's purpose was to improve other components' productivity, increase investor confidence, and increase rural-urban connectivity. This justifies the choice of these three components as the high unemployment rate in Kenya, low infrastructure network and less value addition, trade balance, and food security issues will be dealt with.

II. Literature Review

Introduction

This chapter reviews both theoretical and empirical literature on the effect of government expenditures on manufacturing, infrastructure, and agricultural components on economic growth in Kenya. It also presents a recap of the literature evaluated.

Theoretical Literature

Wagner's Theory of Organic State

This theory states that when an economy develops, there is a natural surge in demand for public commodities and services, leading to an upsurge in public expenditure. This is due to the increasing complexity of the economic framework, the expansion of government services, and the development of the demographic and income levels (Magableh, 2006). In this context, the Kenyan government has been increasing public expenditure in various sectors such as infrastructure, agriculture, manufacturing, health, education, and social protection, among others, to manage the heightened demand for public goods and services, the Kenyan administration has Adopted several policies and measures to boost public spending and improve the distribution of social goods and public provisions. For instance, in recent years, the government has allocated significant resources to infrastructure development, focusing on expanding transport networks, building new roads and bridges, and increasing access to electricity and water. The government has also increased spending on agriculture and manufacturing, focusing on improving agricultural production and increasing industrial production.

The theory lacks a well-articulated public preference framework. The law addresses public preference choice issues by adopting the Naturalistic theory of the nation, presuming the nation acts as an independent entity, making decisions separately from society's members. Its primary drawback is its exclusive focus on the need for state-run services, neglecting the necessary interconnection between demand and supply to determine the appropriate level. (Maingi, 2017)

Rostow's Theory of Economic Growth.

Formulated by economist Walt Rostow in 1960. A framework that suggests all economies progress through five distinct Phases of growth. "Traditional Society, Preconditions for Take-off, Take-off, Drive to Maturity, and the Age of High Mass Consumption". During the initial phase, boosting public expenditure within the economy is advisable. It also contends that in these early stages, market failures are prevalent, necessitating significant government intervention to address them effectively. Critics of this theory argue that it overlooks private industry's contribution to development, wrongly assuming that government expenditure alone drives economic expansion (Rostow, 1960)

Keynesian Theory.

(Keynes, 1936) wrote a seminal work, "The General Theory of Employment, Interest, and Money". Keynes stipulates that the government should constitute a budgetary expansionary policy to increase aggregate demand during severe economic contraction. The surge in government spending triggers an upsurge in employment, resulting in a rise in income and profit for the firms. In turn, the firms hire more people to yield more commodities and services needed in the economy. With the economy employing more people and increased liquidity, people will begin to invest, boosting the economy and GDP growth, which helps pull the economy from depression.

In this context, the Kenyan government has implemented various Keynesian-inspired policies to increase government spending on infrastructure, manufacturing, and agriculture to stimulate economic expansion and development. The government has been investing heavily in roads, railways, ports, and other key infrastructure projects to improve transport networks and enhance the country's competitiveness. In manufacturing, the government has provided tax incentives and subsidies, increased access to finance, and improved infrastructure. It has also established Special Economic Zones (SEZs) to attract investors and promote industrialization. In agriculture, the government has provided subsidies and incentives to farmers and improved irrigation and other agricultural infrastructure (Kenya Institute of Planners, 2018). However, a major limitation of Keynesian theory is that it does not sufficiently address the issue of inflation that may result from increased government spending (Muthui et al., 2013).

Peacock and Wiseman's Political Constraint Model

Professor A.T. Peacock and J Wiseman advanced this model in their UK government spending assessment (1890 – 1935). The model is founded on "the Political determinants of government spending"; the government tends toward fiscal expansion while the population is naturally tax-averse. During the period of social upheaval, the government will expeditiously increase the government expenditure to tackle the crisis in

question. To finance higher public spending, the government may opt to raise taxes, an agreeable approach for taxpayers; this is called "the displacement effect." With increased taxes, people keen to receive improved social services force the government to expand its scope of public goods and services; this is called "the inspection effect". The resultant impact of these two effects, which is occasionally a short-span phenomenon, naturally assumes a long-span trend (Peacock & Wiseman, 1961).

This illustrates how government spending in Kenya has persistently followed a soaring trend. Each time Kenya encountered crises like the 1984 food scarcity, the settlement of internally displaced people, and the enlargement of government structure to include multiple ministries set up to assist citizens (Muthui et al., 2013). The flaw is that the government finances its spending through domestic and foreign credit, grants, and revenue accrued from the transaction of commodities and services offered through government departments, as well as international sources (Maingi, 2017).

Endogenous Growth Theory.

(Romer & Robert Lucas, 1990) Engineered development of endogenous growth theory. This theory stipulates that for productivity to increase, resources should be continuously provided to the labor force: human capital, physical capital, and knowledge capital. Public expenditure in manufacturing, infrastructure, and agriculture can support these factors and contribute to long-term Kenyan economic growth.

In manufacturing, the spending can be directed toward supporting research and development, leading to the development of new products and processes and increased productivity. This can be achieved through investment in research institutions, funding innovation grants and initiatives, and tax incentives for research and development. In agriculture, public expenditure can be directed toward improving the quality and quantity of agricultural output through research and development, extension services, and investment in irrigation systems. In conclusion, public expenditures in manufacturing, infrastructure, and agriculture can contribute to Kenya's long-term economic growth by promoting innovation, improving transportation systems, and enhancing the productivity and output of key economic sectors (Mose, 2022).

Empirical Literature

Ali et al. (2013) Studied "the composition of public expenditure and economic growth in Pakistan from 1972 to 2009". The study generalized variables by using total fiscal deficits, recurrent expenditures, and development expenditures as fiscal policy variables. The current study differed from the study by using specific government expenditure components, particularly Manufacturing, Agriculture, and Infrastructure, to realize their impact on economic expansion. Also, the autoregressive distributive lag model (ARDL) was used in the methodology. This current study used VECM to compare the two. The VECM enables examining long-term relationships among variables, while the ARDL model does not. Also, the VECM model is more robust in measuring variable errors than the ARDL model. The findings of this study show that overall government expenditure negatively impacted economic growth. Even though current spending had a positive yet negligible impact on short-term economic growth, it negatively influenced economic growth over an extended period. On the other hand, developmental expenditure significantly and positively enhanced economic growth. Besides methodological differences, there are also geographical location differences.

Muthui et al. (2013) Time series data from 1964 to 2011 were used to study "the impact of public expenditure on economic growth in Kenya". VECM model was applied in the methodology to analyze data. The research adopted Keynes's National Income (NI or Y) model as a function of Public Expenditure (PE), where PE is a function of government expenditure in all components. The variables used were public expenditure on infrastructure, education, health, defense, public order, and security. The finding showed that public spending on education, infrastructure, public order, and security positively impacted economic growth. Public expenditure on health and defense Induced a negative effect on economic growth. The current study borrowed methodology from this study but differed in public expenditure components under consideration, that is, manufacturing, agriculture, and except for infrastructure. Also, the time frame under consideration differs.

Mose (2014) Using secondary fixed balanced panel data between 1980 to 2010, a disaggregated study on "the effect of public expenditure on economic growth in East Africa". The countries under study were Kenya, Burundi, Rwanda, Tanzania, and Uganda. The methodology used in the study was the balanced fixed effect model of the panel estimation technique, and the findings showed that government expenditure on health, defense, and investment positively influenced economic expansion. Government expenditure on education, agriculture, and consumption spending negatively affected the economic development of the East African community economy. The current study used the VECM model in data analysis with different variables compared to this study, except for agriculture, which only focused on Kenya.

Maingi (2017) researched "the impact of government expenditure on economic growth in Kenya from 1964 to 2008". The Vector Autoregression model (VAR) was applied in the methodology. The study found that in the long run, government spending on economic affairs, defense, education, government investment, general

administration, services, and physical infrastructure positively impacted economic growth. Healthcare, public order, and national security positively influenced Kenya's economic development in the short run. This current study differed by using the VECM model, which allows for modeling both long-run relationships between variables and short-run dynamics, leading to more efficient parameter estimations. Additionally, the variables analyzed differed, focusing on manufacturing and agriculture instead of infrastructure, and the time frame also differed.

Ochieng et al. (2017) Carried out research on "the effect of government expenditure on economic growth in Rwanda from 2005 to 2015," applying quarterly time series data. The study applied the VAR model for data analysis. Public expenditure on agriculture, education, and health positively affected Rwanda's economic growth. Public spending on infrastructure negatively influenced economic expansion. The current study differed from this study by using the VECM model in data analysis, yearly data instead of quarterly data, and the period in consideration is long (1985-2021) compared to the short period (2005- 2015) of this study and the geographical location difference.

Mukui et al. (2019) Examined "the impact of public expenditure on Kenyan economic growth using data from 1980 to 2014". The analysis applied the ARDL model. The findings indicated that public spending on education and infrastructure significantly boosted economic growth, while developmental expenditure had a positive effect. However, public spending on health and consumption negatively impacted economic expansion. The current research differed by utilizing the VECM model for data analysis and focusing on manufacturing, agriculture, and infrastructure variables.

Overview of Literature.

The correlation between public expenditures and economic expansion has been a persistent issue. According to the literature reviewed, public expenditures are fundamental to countries' development. Ali et al. (2013) The previous study focused on generalized variables of public expenditure in terms of developmental and current expenditure instead of examining an individual component of public spending to examine its impact on economic growth. This study differed from Alis' study by examining individual government expenditure components (agriculture, manufacturing, and infrastructure).

Mose (2014) The study used panel data for the East African community, which is wide in terms of geographical location. This study only focused on Kenya and used time series data, borrowing agriculture as a variable of interest. (Maingi, 2017; Ochieng et al., 2017) The VAR model was adopted for data assessment, and this study used VECM, which is superior in terms of long-run relationship analysis and, hence, more efficient parameter estimations. (G. Mukui et al., 2019) The study used the ARDL model for data analysis. The current study used VECM for data analysis while borrowing infrastructure as a variable of interest. This study utilized VECM as a model for data analysis and infrastructure, agriculture, and manufacturing as variables.

III. Methodology

Introduction

This chapter contains the research design, theoretical framework, model specification, and methodology used to examine the effect of various components of public expenditure on economic growth in Kenya. It also presents the measurement and definition of variables, sources of data, and diagnostic tests employed.

Research Design

The research adopted a non-experimental longitudinal framework to examine the effect of different components of government expenditure on Kenyan economic growth. Data from 1985 to 2021 was used, focusing on infrastructure, manufacturing, and agriculture. Time series property tests were conducted before applying the VECM model for data analysis.

Theoretical Framework.

The study adopted the Keynesian theory, which asserts that "public expenditure leads to economic growth. During the recession, expansionary policies Should be enacted to stimulate aggregate demand in the economy, thereby enhancing Gross Domestic Product (GDP)". Increased employment levels and rising incomes and profits for businesses prompt firms to expand their workforce to meet the government's and economy's demands for goods and services.

$$Economic\ Growth(Y) = f (Public\ Expenditure (PE)) \quad \dots \dots \dots 3.0$$

Empirical model specification

The Keynesians viewed economic growth as a function of public expenditure.

$$Economic\ Growth (Y) = f (Public\ Expenditure (PE))$$

And borrowing from (Muthui et al., 2013) Total public expenditure was defined as the sum of all components of government expenditures. Therefore, $PE = f(\text{all components of government expenditure})$
 Therefore, public expenditure (PE) is defined as Infrastructure, Agriculture, and Manufacturing. Hence equation 3.1

$$PE = f[(PE_{\text{manu}}, PE_{\text{infra}}, PE_{\text{agri}}), U_t] \dots\dots\dots 3.1$$

But $Y = f(PE)$

$$Y = f[(PE_{\text{manu}}, PE_{\text{infra}}, PE_{\text{agri}}), U_t] \dots\dots\dots 3.2$$

Adding inflation rate and Foreign Direct Investment (FDI) as the control variables to equation 3.2, hence

$$Y = f[(PE_{\text{manu}}, PE_{\text{infra}}, PE_{\text{agri}}, \text{Infla}, FDI) U_t] \dots\dots\dots 3.3$$

Using the general VECM Model and substituting 3.3 above in it yields equation 3.4

$$\begin{aligned} \Delta Y_t = & \alpha + \beta_1 \Delta PE_{\text{manu}_t} + \beta_2 \Delta PE_{\text{infra}_t} + \beta_3 \Delta PE_{\text{agri}_t} + \gamma_1 \Delta \text{Infla}_t + \gamma_2 \Delta FDI_t \\ & + \theta(Y_{t-1} - \beta_0 - \beta_1 PE_{\text{manu}_{t-1}} - \beta_2 PE_{\text{infra}_{t-1}} - \beta_3 PE_{\text{agri}_{t-1}} - \gamma_1 \text{Infla}_{t-1} - \gamma_2 FDI_{t-1}) \\ & + \varepsilon_t \dots\dots\dots 3.4 \end{aligned}$$

Where;

Δ denotes the first difference.

$Y_t, PE_{\text{manu}_t}, PE_{\text{infra}_t}, PE_{\text{agri}_t}, \text{Infla}_t, FDI_t$ are the levels of the variables.

$\alpha, \beta_i, \gamma_i, \theta$ are coefficients to be estimated.

ε_t This accounts for the factors influencing economic growth that are not represented by the variables in the model.

Definition and Measurement of Variables

Economic growth represents a percentage increase in GDP, reflecting the change in the value of goods and services produced in an economy over a specific period. It will be calculated as the percentage rate of change in GDP.

Public Expenditure on Manufacturing (PE_{manu}): The amount of money that a government allocates toward supporting and promoting manufacturing. This includes spending on manufacturing infrastructure, research and development, and programs to encourage investment in manufacturing. Budget allocation by the Kenyan government to the manufacturing, mining, and construction in Kenya shilling.

Public Expenditure on Infrastructure (PE_{infra}): This refers to the money that the government spends on building and maintaining various types of infrastructure such as roads, bridges, public transportation systems, airports, ports, and public buildings. Budget allocation by the Kenyan government to the transport, telecommunication, housing, and community amenities in Kenya shilling.

Public Expenditure on Agriculture (PE_{agri}): This is the proportion of public funds relative to the entire government spending allocated to operations like supplying fertilizer to farmers, research and extension services, veterinary care, educational workshops, developing cereal ports in Kenya, investing in the blue economy, and forestry, among others, in Kenya shillings.

Inflation (Infla): The yearly inflation rate in Kenya is assessed as the annual percentage change in the Consumer Price Index (CPI).

Foreign direct investment (fdi): the investment across the border (s) where an investor in a the nation develops interest and business involvement in a venture measured in the us dollar.

Data Type and Source

Secondary time series data for the period 1985-2021 will be drawn from economic surveys, Statistical Abstracts, and economic reports.

Diagnostic Tests.

Testing for Stationarity:

Non-stationary time series data has posed challenges in empirical analysis. A unit-root test was performed on both dependent and independent variables to assess stationarity before proceeding with the analysis. This ensures that the series has a stable mean and variance, preventing misleading results. Variables identified as non-stationary were differenced to achieve stationarity. The study used the Augmented Dickey-Fuller (ADF) test to detect unit roots. The ADF test ensures that lags in the data are removed, thereby avoiding misleading results

Testing for Co-integration:

The study examined a long-term equilibrium relationship (co-movement) between the variables in a non-stationary series. The Johansen test was conducted to check for co-integration. "Before testing for co-integration, it is crucial to ascertain the order of integration of the individual time series. A variable X_t is integrated of order d (I(d)) if it becomes stationary for the first time after being differenced d times" (Ochieng et al., 2017).

Granger Causality Test:

This study tested for Granger causality of GDP on PE (manufacturing, infrastructure, and agriculture) by conducting a linear regression with GDP as the predictor variable and PE as the response variable, followed by an F-test to assess the joint significance of the variables. If significant, the study inferred that GDP Granger causes PE, indicating a long-term relationship where past values can forecast current or future GDP values. A similar test was performed in reverse to determine if PE Granger causes GDP. If both variables Granger cause each other, PE Granger causes GDP, and GDP, in turn, Granger causes PE to be bidirectional.

Data Analysis

The research tackled the general and specific objectives. The general objective was achieved by calculating the economic growth equation based on total public expenditure. Specific objectives were to establish the effect of public expenditure on the components, manufacturing, infrastructure, and agriculture on Kenyan economic growth through the modelling technique VECM with STATA. After VECM modelling and data analysis, the main objective was examined based on the overall influence of public expenditure as assumed in the methodology. The specific objectives were justified by the weight of the coefficient of each distinct component of public spending mentioned above and how they economically affect the GDP in the modelling.

IV. Empirical Findings And Discussion

Introduction

This chapter introduces the dataset utilized in this research. The analytical findings are derived from the empirical model formulated in chapter three. Data transformation was performed, and the time series characteristics of the data were assessed before estimation.

Diagnostic Tests

The diagnostic tests were performed before VECM analysis. The findings are presented and discussed herein.

Stationarity Tests:

A stationarity test was performed on these variables: GDP, infrastructure expenditure, agriculture expenditure, manufacturing expenditure, inflation rate, and FDI. Table 1 shows the p values for the Dickey-Fuller test for unit root at the level and the first difference for the variables that were nonstationary at the level.

Table 1: Dickey-Fuller Test Results for Unit Root

Variable	P Value (I (0))	P (I(1))
GDP	0.0001	-
Infrastructure Expenditure Component	0.7865	0.000
Agriculture Expenditure Component	0.8599	0.000
Manufacturing Expenditure Component	0.028	
Inflation Rate	0.0246	
FDI	0.1179	0.000

The test results indicated that GDP was stationary at level ($p=0.0001$). Manufacturing expenditure and inflation rate variables were also at ($p=0.028$ and 0.0246 , respectively). However, the variables infrastructure expenditure, agriculture expenditure, and FDI were nonstationary at levels ($p=0.7865$, 0.8599 , and 0.1179 , respectively). However, upon first differencing, the variables were stationary. This necessitated using the data to perform VECM.

Cointegration Test

Johansen's cointegration test was executed to evaluate whether a sustained correlation exists among the study variables. The t statistic was observed against the 5% significant threshold. In instances where it exceeded the 5% significance threshold, the null hypothesis of no cointegration was dismissed. Table 2 shows the outcome.

Table 2: Johansen tests for cointegration

Trend: Constant			Number of obs =33		
Sample: 1988 – 2021			Lags = 4		
Maximum			5%		
Rank	parms	LL	Max eigenvalue	Critical statistics	value
0	114	-1032.6325	.	215.6249	39.37
1	125	-924.82005	0.99855	55.8822	33.46
2	134	-896.87896	0.81611	40.6680	27.07
3	141	-876.54499	0.70840	21.8380	20.97
4	146	-865.626	0.48406	6.3463	14.07
5	149	-862.45287	0.17495	0.4186	3.76
6	150	-862.24355	0.01261		

The results showed that the t statistic was greater than the 5% critical value for a maximum rank of 0, 1, and 2 but less at the maximum rank of 3, 4, and 5. This implied that the null hypothesis of no cointegration was rejected. Further, the null hypothesis that there are at least 1 or 2 cointegrating equations was rejected. However, the null hypothesis that there are at least 3 cointegrating equations was not rejected. It was therefore confirmed that there is cointegration, hence a long-run equilibrium relationship between the dependent and independent variables.

Granger Causality Test

The Granger causality test was used to determine if any of the variables are useful in forecasting another. The findings are presented in Table 3.

Table 3: Granger causality Wald tests

Equation	Excluded	Chi2	Df	Prob>Chi2
GDP	Infrastructure	11.738	2	0.003
Infrastructure	GDP	0.767	2	0.681
GDP	Agriculture	12.259	2	0.002
Agriculture	GDP	0.440	2	0.802
GDP	Manufacturing	2.237	2	0.327
Manufacturing	GDP	2.062	2	0.357
GDP	FDI	1.053	2	0.591
FDI	GDP	1.095	2	0.578
GDP	Inflation Rate	1.204	2	0.548
Inflation Rate	GDP	1.139	2	0.566

The findings revealed that infrastructure and agriculture granger cause GDP (P=0.003 and 0.002 respectively). The direction of the causality is from both the infrastructure expenditure component and agriculture expenditure component to GDP. Infrastructure and agriculture are often foundational to economic growth, especially in developing or emerging economies. Infrastructure development (roads, bridges, utilities) facilitates trade, improves productivity, and enhances access to markets, while agriculture may be a major source of income, employment, and exports.

The results showed that the manufacturing component, FDI, and inflation rate do not Granger cause GDP (P=0.327, 0.591, and 0.548, respectively). The lack of causality from manufacturing might indicate that the sector, while potentially important for GDP, may not be growing fast enough to have a measurable short-term effect or that other factors (like productivity, labor issues, or market conditions) may play a larger role. FDI not causing GDP could imply that the foreign investments are not immediately effective in stimulating growth, possibly because of inefficiencies, the nature of the investments, or long gestation periods. The inflation rate, not Granger-causing GDP, suggests that price fluctuations do not directly influence economic output in the short run, which might occur if inflation is stable or the economy has mechanisms to mitigate its impact on real production.

Descriptive Statistics

The descriptive statistics were analyzed in the study to summarize the data for the study variables. The statistics examined included mean, standard deviation, minimum, and maximum. Table 4 presents the results of the descriptive analysis.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	37	2723760.2	3566600.7	4993.1	12098200
Infrastructure Expenditure	37	99855.475	149757.39	71.68	397029.86
Agriculture Expenditure	37	20847.142	23659.844	146.6	73214.37

Manufacturing Expenditure	37	1037.097	1157.72	41.82	4486.3
Total Government Expenditure	37	859650.7	1082909.6	1665.1	3373823
FDI	37	0.31	0.43	0.00039	1.45
Inflation Rate	37	11.382	8.758	1.554	45.979

According to the findings of the descriptive analysis, the average GDP was 2723760.2 million and ranged between 4993.1 million and 12098200 million Kenya Shillings. The percentage of change in GDP was averaging at 0.745%. The minimum change was 0.05%, and the maximum was 3.095%. Total expenditure on infrastructure ranged between 71.68 million and 397029.86 and averaged 99855.475 million Kenya shillings. This represented, on average, 7.973% of expenditure. The mean agricultural expenditure was 20847.142 Million, the minimum value was 146.6, and the maximum was 7314.37 million Kenya shillings. This averaged 3.744% of total expenditure. Manufacturing expenditure was allocated between 41.82 and 4486.3 million Kenya shillings and averaged at 1037.097 million Kenya shillings. This represented, on average, 0.803% of total expenditure. The value of FDI ranges between Kenya shillings 390 million and 1.45 billion, with an average value of 0.31 billion. The range of the inflation rate was between 1.554 and 45.979, and the mean was 11.382.

Vector Error Correction Model

VECM analysis was done to show how variables relate in a long span and the summary.

Table 2: Summary

Sample 1989-2021				Number of Obs =33	
Log likelihood = -90.25323				AIC = 13.04565	
Det (sigma_ml) = 9.57e-06				HQIC = 14.95296	
				SBIC = 18.71424	
Equation	Parms	RMSE	R-sq	Chi2	P>chi2
D_lnGDP	20	0.680037	0.8975	113.8416	0.0000
D_lnInfrastructure	20	0.597808	0.5519	16.01298	0.7158
D_lnAgriculture	20	0.577264	0.6142	20.6983	0.4151
D_lnManufacturing	20	0.88129	0.6043	19.85116	0.4673
D_FDI US BILLION	20	0.30223	0.7016	30.56122	0.0613
D_INFLATION RATE	20	9.6822	0.4780	11.9052	0.9193

The R square for the equation of GDP was 0.8975, and the overall P value was 0.000<0.05. This implied that public expenditure explains 89.75% of the variations in GDP. The R square for all other variables was also significant, indicating causality. The overall model was also statistically significant, implying that public expenditure significantly affects GDP.

Table 6: Long Run Dynamics

Cointegrating equation						
Equation	parms	Chi2	___P>chi2			
_cel	5	365.84	0.0000			
Identification: beta is exactly identified						
Johansen normalization restriction imposed						
Beta	Coef.	Std. Err.	Z	P>/z/	[95% Conf. Interval]	
_cel						
lnGDP	1	.	.	.	.	.
lnInfrastructure	0.347592	0.069148	5.03	0.0000	0.2120643	4831196
lnAgriculture	-0.2195916	0.0925935	-2.37	0.018	-0.4010715	-0.0381117
lnManufacturing	-0.3863169	0.0280553	-13.77	0.000	-0.4413042	-0.3313295
FDIUSBILLION	-0.9349175	0.0681202	-1372	0.000	-1.068431	-0.8014045
INFLATIONRATE	-0.0408094	0.0028296	-14.42	0.000	-0.0463554	-0.0352635
_cons	-0.3785127	.	.	.	.	.

Every value in the column of the “Coef” should be multiplied by -1 because of the negative feature of the error correction in the VECM model except for lnGDP.

The first objective was to scrutinize the effect of the manufacturing component of government spending on Kenyan economic growth.

The findings revealed that the manufacturing component has a positive coefficient of 0.386, indicating that for each additional unit of the manufacturing component (e.g., investment, output, or contribution to GDP), GDP is expected to rise by 0.386 units, holding other factors constant. This suggests a positive correlation between the manufacturing sector and economic expansion. Statistical Significance: The P-value falls within the 5% confidence threshold, meaning that there is a less than 5% chance that the observed relationship is due to random chance. In other words, the effect of manufacturing on GDP is not likely to be the result of statistical noise but rather a genuine, statistically significant relationship. Since the coefficient is positive and significant, the implication is that increased investment or development in the manufacturing sector has a measurable, positive impact on GDP. This would suggest that in the long run, policies or strategies aimed at bolstering manufacturing might stimulate stronger economic expansion. This finding is consistent with (Tenai, 2020), whose finding showed that Manufacturing exhibited a favorable correlation with economic expansion.

To assess the effect of the infrastructure component of government spending on Kenyan economic growth;

Findings in Table 6 show that the coefficient in relation to the long-term connection between the infrastructure component and GDP showed a negative coefficient of -0.348, indicating that for every unit increase in the infrastructure component (e.g., spending or development), GDP is expected to decrease by 0.348 units, holding other factors constant. This suggests an inverse correlation between infrastructure investment and economic expansion in the long term. Statistical Significance: The P-value falls within the 5% confidence threshold, meaning that there is strong evidence to suggest that the observed negative correlation between infrastructure and GDP is not due to random chance. This establishes that the negative impact of infrastructure investment on economic growth, the outcome is statistically relevant. The negative and statistically significant coefficient suggests that increased expenditure on infrastructure is correlated with a decline in long-run economic expansion. This result is counterintuitive, as infrastructure investments are typically seen as growth-enhancing. However, it might imply issues such as inefficiencies in infrastructure spending, poor quality of projects, or misallocation of resources, where the investments do not yield the expected growth outcomes. The statistical significance of the coefficient reinforces the conclusion that, in this case, infrastructure investment is detrimental to long-term economic growth. It suggests a need to reevaluate how infrastructure projects are planned and executed. This finding contrasts with (Maingi, 2017; G. K. Mukui, 2022; Muthui et al., 2013b), whose analysis revealed a positive correlation between infrastructure components and economic growth.

To scrutinize the effect of the agricultural component of government spending on Kenyan economic growth;

Findings reveal that the agriculture component exhibits a favorable coefficient on GDP, a positive coefficient of 0.22, indicating that for every unit increase in the agriculture component (e.g., investment, output, or contribution to GDP), GDP is expected to rise by 0.22 units, holding other factors constant. This suggests there is a strong correlation between the agriculture sector and economic expansion. Statistical Significance: The P-value falls within the 5% confidence threshold, meaning there is a less than 5% chance that the identified correlation between the agriculture component and GDP is due to random chance. This confirms that the positive relationship is statistically significant, reinforcing confidence in the finding. The positive and statistically significant coefficient indicates that increased investment or focus on the agriculture sector is expected to influence economic expansion in the long term positively. Policies promoting agricultural development, such as investment in technology, infrastructure, and subsidies for farmers, could foster higher long-term growth. The statistical significance of the coefficient ensures that this positive relationship is robust, implying that greater expenditure on agriculture can be a driver of long-term economic expansion. This outcome aligns with the results of (Ochieng et al., 2017; Tenai, 2020), but it differed slightly with (N. G. Mose, 2014) where it had a positive relationship but was statistically insignificant.

The control variables; FDI and Inflation Rate.

The findings further showed that FDI has a positive coefficient on GDP of 0.935. The P-value remains significant at the 5% level; this indicates that a positive correlation between FDI and GDP is not due to chance and is statistically reliable. This implies that increased FDI would result in increased long-run economic expansion. A favorable statistically significant would imply that increased FDI contributes positively to long-term economic expansion. This aligns with traditional economic theory, where FDI boosts growth by enhancing capital formation, creating jobs, and improving productivity through the transfer of technology and skills.

Finally, the inflation rate exhibits a favorable coefficient on GDP of 0.08. The P value was also significant at a 5% confidence level. This revealed a favorable and statistically significant effect of the inflation

rate on economic expansion, which implied that an increased inflation rate would result in increased economic growth in the long term. The coefficient's statistical relevance of the coefficient strengthens the conclusion that inflation, in this context, positively influences long-run economic growth. This could imply that, under certain conditions, inflation might be beneficial, especially if it reflects growing demand or investment in an expanding economy. However, it's important to consider that this effect may vary depending on the inflation level, the economic structure, and the phase of the business cycle.

V. Summary, Conclusions And Recommendations

Introduction

This chapter presents the summary, conclusions, and policy implications. It also highlights the policy inferences drawn from the results and research gaps.

Summary

This research aimed to scrutinize the effect of the manufacturing component of government spending on Kenyan economic growth. To assess the effect of the infrastructure component of government spending on Kenyan economic growth. To scrutinize the effect of the agricultural component of government spending on Kenyan economic growth. The research used the data from 1985 to 2021 Kenya macroeconomics to achieve the objectives. The unit root stationarity test was performed on the data, and the result shows the stationarity level of integrated order one. The cointegration test was performed on the data, confirming cointegration, hence a long-term equilibrium correlation between the response variable and the explanatory variables.

Research has shown that public spending boosts economic growth. Government expenditure is one component of a country's economic expansion. Applying the data collected, the study outcome shows that the manufacturing component of government spending has no effect on short-term economic expansion but exhibits a favorable effect on economic expansion in the long term. Manufacturing drives industrialization, which leads to economies of scale, technological advancements, and more efficient production methods. These benefits accumulate over time, improving overall economic productivity and sustaining long-term growth. This perspective aligns with endogenous growth theory (Romer & Robert Lucas, 1990). Also, the agricultural component of government spending positively affects economic growth in the short and long run. Agricultural investment helps sustain economic growth by supporting rural development, reducing poverty, and improving food security. The structural transformation theory suggests that as agricultural productivity improves, resources (e.g., labor and capital) are freed up to be employed in other more productive sectors, such as industry and services, thus driving broader economic growth (Syrquin, 2010). The infrastructure component of government hurts economic growth in the long run. This aligns with fiscal sustainability theory, which states that infrastructure spending may eventually become unsustainable if it leads to persistent fiscal deficits. Governments might need to increase taxes or cut spending in other productive areas (e.g., social services and education), which could dampen economic growth in the long term (Chalk & Hemming, 2000).

Conclusions

Overall, the outcome showed that, on average, government spending and potential Kenyan economic expansion are correlated through a sustained relationship. This is evidenced by the R squared, which is at 0.8975. This implies that public expenditure explains 89.75% of the variations in GDP. Even so, the holistic ramifications of potential growth on the future trajectory of government fiscal balances depend on other factors not explained in the research, such as good political will, effectiveness, and emphasizing the critical sectors of the economy. The study analysis showed that the infrastructure component needs to combine with another component to impact economic growth positively. The agricultural component and manufacturing components directly affect economic growth positively.

Policy Implications

Though it is known worldwide that infrastructure is key to developing Kenya's economy, the study recommends investing in key components like manufacturing and agriculture for Kenya's economic growth. This helps to create employment opportunities and increase exports, hence solving the issues of a high unemployment rate and the deficit in the trade balance. The study recommends that the government choose the critical area of infrastructure component to invest in. In the long run, the findings showed that infrastructure spending negatively impacts economic growth, which could suggest inefficiencies or corruption in the allocation or execution of infrastructure projects. Keynesian theory and growth accounting models suggest that infrastructure, when properly managed, should boost productivity by improving transportation, connectivity, and the delivery of public services (Keynes, 1936). However, poor infrastructure planning, corruption, cost overruns, or investments in non-productive or underutilized projects could explain the negative long-term impact.

The positive long-term impact of manufacturing on economic growth aligns with the endogenous growth theory, which emphasizes the role of innovation, human capital, and industrial development as key drivers of sustained economic growth (Romer & Robert Lucas, 1990). The Kenyan government should invest more in the manufacturing sector in areas like Agro-Processing to avoid exporting agricultural products that act as raw materials to the manufacturing sector, which enables value-addition. Textiles and apparel promote the clothing industry, pharmaceuticals, and healthcare products, which helps reduce imports that tend to be high in Kenya. Automotive Assembly and Parts Manufacturing: Developing local automotive assembly and parts manufacturing helps to reduce import costs and stimulate the local economy.

The positive impact of government spending on agriculture is supported by structural transformation theory, which explains that developing economies typically shift from an agrarian-based economy to industrialization as they grow (Syrquin, 2010). However, in economies like Kenya, where a large portion of the population is employed in agriculture, public spending in this sector can significantly boost productivity, rural development, and poverty reduction.

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