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Recurrent Government Expenditure and its effect on Public investment in Kenya.

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Abstract

This study analyzed how various components of recurrent public spending influence public investment in Kenya. Specifically, it measured the effects on public investment. Despite significant efforts to reduce recurrent expenditure, Kenya's public spending remains heavily dominated by operational costs, hindering its ability to achieve targeted investment levels. In the 2020/21 fiscal year, recurrent expenditure accounted for 81% of the total budget, while debt servicing and compensation of employees took up 14% and 18% respectively. This allocation of resources has limited the government's capacity to invest in critical areas for economic growth, as evidenced by the shortfall in investment compared to the Vision 2030 goals. The study relied on time series data extracted from the Economic Surveys, Kenya National Bureau of Statistics' various Statistical Abstracts, and the World Bank database covering the period from 1970 to 2022. Subsequently, a Bound test identified a long-run equilibrium relationships among the variables. Finally, an autoregressive-distributed lag (ARDL) model was utilized to analyze the causal relationships between recurrent public spending components and public investments. The results showed that the recurrent expenditure component on general public administration had significant negative effect on public investment in the short run but its first lag crowds in public investment in the long run. Recurrent expenditure on operation and maintenance costs was found to have positive effect on public investment both in short run and in long run. Lastly, the recurrent expenditure component on debt Servicing Charges was found to crowd in public investment.

Keywords: Recurrent expenditure, public investment, Operation costs, Vision 2030, Public-private partnerships (PPPs).

Introduction

Government investment is crucial for fostering sustained economic development and improving societal welfare by allocating resources to essential infrastructure, such as roads, schools, hospitals, housing, and communication networks. These public investments lay the groundwork for long-term growth and improves living standards (Sindani, 2020). Despite the significance of public investment, global trends indicate a reduction in its share of government expenditures. In OECD countries, the share of government investment fell from 9.3% in 2007 to 8.1% in 2019 (OECD, 2023). In contrast, between 2000 and 2015, sub-Saharan Africa saw a 3.5% increase in its total investment rate as a percentage of GDP, with public and private investments growing by 3% and 2%, respectively (Barhoumi, Vu, Nikaein Towfighian, & Maino, 2018). Despite these increases, the region still lags behind

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other regions like Latin America and the Caribbean in terms of investment rates.

Government expenditure, as defined by Gillis et al. (1987), encompasses all spending by the public sector on acquiring goods and services, servicing debt, and making development investments. It is broadly classified into recurrent and capital (development) expenditure. Public investment falls under development expenditure, which focuses on achieving socio-economic goals such as poverty reduction, human capital enhancement, and improved living standards (Miyamoto et al., 2020). Recurrent expenditure, on the other hand, refers to government spending that is essential for daily operations and services but does not involve the acquisition of fixed assets. It includes salaries, administrative costs, and debt servicing.

In Kenya, recurrent expenditure has been increasing steadily over the years, taking up the largest share of the national budget. By the end of the 2020/21 fiscal year, recurrent expenditure accounted for 81% of the total government budget, with debt servicing and compensation of employees constituting 14% and 18%, respectively (KNBS, 2021). This rise in recurrent expenditure has often come at the expense of capital investments in critical infrastructure sectors such as transportation, energy, and communication (Okolo et al., 2018). In resource-constrained developing nations like Kenya, fiscal policy plays a pivotal role in shaping economic growth trajectories. The complex relationship between government expenditure and investment means that excessive recurrent expenditure can crowd out public investment, diverting resources from much-needed capital projects and potentially hindering economic development (Amusa & Oyinlola, 2019). However, the impact of recurrent expenditure on public investment is not entirely negative. Some scholars argue that certain forms of recurrent expenditure, such as those directed toward human capital development through education and healthcare, can have positive spillover effects. These investments may enhance the productivity of public capital in the long run. While empirical evidence specific to Kenya is limited, studies from other emerging economies have shown that government spending can have long-term benefits. For example, research by Amusa and Oyinlola (2019) in Botswana suggests that although total public expenditure may negatively affect economic growth in the short term, its long-term effects are positive, reflecting the trade-offs between recurrent and capital spending.

Furthermore, the Kenyan government's recent initiatives aimed at improving infrastructure—such as the Standard Gauge Railway and the Lamu Port-South Sudan-Ethiopia Transport (LAPSSET) Corridor—underscore the need for a balanced approach to budgeting. Policymakers must navigate the trade-offs between recurrent and capital expenditure to ensure that public investment is not compromised. As Kenya strives to achieve its Vision 2030 goals, understanding the implications of recurrent expenditure components is vital for creating effective fiscal strategies that promote sustainable development.

In conclusion, this research aims to fill the existing knowledge gap by analyzing the impact of various components of recurrent expenditure on public investment in Kenya. By examining the relationships between different expenditure categories and their effects on capital investment, this study will contribute to a deeper understanding of the fiscal challenges facing the Kenyan government. Ultimately, the findings will provide valuable insights for policymakers seeking to optimize budget allocations in a way that supports both immediate government functions and long-term economic growth.

Recurrent expenditure and public investment trend in Kenya: 1970-2022

Figure 1: Recurrent expenditure and public investment trend in Kenya: 1970-2022

The trends in public and recurrent investment in Kenya reveal a shifting focus aimed at stimulating and sustaining economic growth through various fiscal policies. Initially, public investment was prioritized over recurrent spending to stimulate sectors like electricity, agriculture, and manufacturing. From 1974 to 1978, the government aimed to increase development expenditure by reducing recurrent spending. However, the second oil crisis (1979/80) caused a notable decline in public investment as economic growth slowed (Gitonga, 2020). In the mid-1980s, public investment rebounded due to reforms that promoted trade liberalization and reduced import controls.

In 1990s, international lending institutions introduced Structural Adjustment Programmes (SAPs), which sought to enhance the efficiency of public spending, privatize state-owned enterprises, and restructure public services (Muguro, 2017). High inflation (28% in 1992) caused by political instability led to increased domestic borrowing to finance public investments. The political events of the early 1990s and 1997 elections further contributed to a decline in public investment.

The government adopted the Economic Recovery Strategy (ERS) (2003-2007) to stimulate economic growth, which resulted in increased public investment through infrastructure development (Republic of Kenya, 2009). However, with the establishment of the grand Coalition Government in 2008, recurrent expenditure increased as civil service expanded, reducing public investment levels (Republic of Kenya, 2012). The introduction of a devolved system of government in 2013 increased public investment, with funds allocated to projects like the Standard Gauge Railway. However, public investment as a share of GDP began to decline after 2014 due to rising public debt, an expanding public wage bill, inefficiency, and corruption. Recurrent expenditure represented 78 percent of total government spending, up from 68 percent in the 2009/10 financial year (Republic of Kenya, 2012). In 2020/2021 debt servicing charge increased as the public investment dropped. This was likely caused by high levels of public debt and COVID-19 Response Strategy (Gitonga, 2020).

Throughout these decades, Kenya's fiscal policies aimed at balancing public investment and recurrent expenditure have fluctuated due to economic, political, and external factors, including debt service, wage pressures, and the need for public infrastructure development.

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Statement of the Problem

Public spending in Kenya has increased from 53.03 billion Kenyan shillings in 1964 to nearly 2.75 trillion Kenyan shillings in the 2020/2021 fiscal year (KNBS, 2021; KNBS, 1970). A pressing concern is that recurrent expenditure has consistently dominated government spending, comprising 70.62 percent of the national budget as of June 2022. Within this recurrent expenditure, debt servicing accounted for 12 percent, primarily driven by substantial investments in capital-intensive infrastructure projects financed through loans. Additionally, the public wage bill rose by 5.5 percent, hitting a record Ksh 520.03 billion in the financial year 2020/21 (KNBS, 2021).

Faced with budget constraints aggravated by rising recurrent expenditure, the government has opted to reduce development spending. In the 2020/21 fiscal budget, development expenditure was limited to just Sh351.6 billion, representing only 15 percent of the total budget. This decline from Sh477.5 billion in the previous fiscal year falls short of the 30 percent target set by the Public Finance Management Act of 2012 (Government of Kenya, 2021).

Kenya's Vision 2030 aims for the country to become a middle-income nation with a target GDP growth rate of 10 percent (Republic of Kenya, 2007). To achieve this vision, the government sought to increase the investment level to 31.3 percent of GDP by the 2012/2013 fiscal year and maintain it above 32 percent through 2030. Public investment was expected to increase from 4.3 percent to 9.8 percent of GDP between 2006/07 and 2012/2013, yet recurrent expenditure continues to obstruct these targets. In the year 2020/2021, public investment as a share of GDP stood at a mere 0.86 percent, significantly lower than the desired rates (KNBS, 2021).

The ongoing tradeoff between recurrent and public investment not only hampers the achievement of economic objectives but also threatens overall socio-economic progress. Addressing this issue is critical for formulating effective fiscal policies that can enhance public investment and support sustainable economic growth in Kenya.

Objectives of the Study

The general objective was to establish the effects of recurrent public expenditure components on public investment in Kenya.

The specific objectives were:

To measure the effects of recurrent public spending components on public investment in Kenya.

To develop a set of policy recommendations to optimize the allocation of public resources between recurrent expenditure and public investment in Kenya.

Literature Review

Theoretical literature

The theoretical literature explores key theories related to the relationship between the government expenditure and investment, starting with the life Keynesian Theory of investment. The theory posits that government intervention is necessary to stabilize the economy, especially during recessions. It argues that increased government spending can stimulate aggregate demand, leading to job creation, increased income, and higher investment (Keynes ,1936). This theory is based on assumptions like a fixed price level, lump-sum taxation, and a relationship between income and savings. While effective in addressing recessions, a potential weakness is the risk of inflation if not managed properly. The study applies Keynesian theory to explore the relationship between government spending on recurrent expenditure and investment levels in Kenya, considering factors like adjustment rates and interest rates.

Bacon and Eltis (1970) developed the Crowding out theory The theory argues that government intervention in the economy can negatively impact investment. This can occur directly when government activities compete for resources with the public sector or indirectly when government actions reduce incentives for investment. The study applies this theory to explore the potential crowding out effects of increased recurrent expenditure on investment in Kenya.

The Neo-Classical Theory of Investment focuses on a firm's profit maximization behavior. It suggests that firms aim to maximize their capital stock to achieve the highest profits. The theory assumes perfect substitutability between capital and labor and considers factors like output, user cost of capital, and output price in determining the desired level of capital stock (Sindani,2020). The model highlights the influence of fiscal policies on the price of capital and investment. The theory's investment equation was used in the research to analyze the effects of public recurrent spending and private investment.

Empirical literature

The theories discussed above offer differing perspectives on the impact of government spending on investment. Empirical studies also reflect these differing perspectives, as outlined below.

Turrini (2004) evaluated the factors affecting public investment in the European Union utilizing panel data. The independent variables included various economic variables namely; trend GDP, public debt, real long-term interest rates, the output gap, total revenue cyclically adjusted budget balance and an EMU dummy variable. The study concludes that an increase of the GDP per capita growth rate reduces public investment. Simultaneously, public investment declines as the cyclically adjusted primary balance worsens and public debt increases. The study indicates that the European Monetary Union has significantly influenced public investment.

Marinescu, Spanulescu, Craiu, & Noica (2019) examined the determinants of public investment in European Union members employing panel data from 1995 to 2017. The findings showed that revenues, population change and output gap, positively affect public investment. However, GDP growth rate, total government expenditure, Total lending, gross public debt, active population, and interest rate negatively affect public investment.

Sindani (2020) conducted a time series analysis using the ARDL model to examine the impact of the public sector wage bill on public investments and the fiscal deficit in Kenya from 1980 to 2018. The regressors used in the public investment

model were the public sector wage bill, fiscal deficit, private investment, gross domestic product, total debt, lending Interest rate, and output gap. The findings show that public sector wage bill, fiscal deficit and private investment positively effects public investment, whereas total debt, output gap, and interest rate negatively affects public investment. The analysis examines the impact of wage bills on public investment exclusively. It is important to look at other components of recurrent expenditure, as each is likely to affect public investment differently.

Tilahun (2021) investigated the factors driving public investment in Ethiopia using the ARDL model over the period 1985–2019. The study concluded that real per capita income, debt servicing, the urbanization rate, private sector investment, and foreign aid increase the public investment. However, the effect of debt servicing was found to be insignificant.

Methodology

Theoretical Framework

Following the Bacon and Eltis (1970) crowding-out theory, the specific objective measured the potential negative impact of government expenditure on public investment. According to Devarajan, Swaroop, and Zou (1996), Public expenditure is classified into productive and non-productive expenditures. Productive expenditure encompasses expenditure related to development, whereas non-productive expenditure covers recurrent costs. The model adopted by Devarajan et al. (1996) assumes that labor is in excess supply and thus not a limiting factor in the production function. Consequently, the production function depends on private capital stock and both public development and recurrent expenditure, as expressed below:

$$Y = f(k, g\_1, g\_2) \quad (1)$$

y denotes output, k represents private capital stock, g_1 denotes public recurrent expenditure and g_2 represents public capital expenditure.

Assuming constant returns to scale, equation (1) is reformulated as a constant elasticity of substitution (CES) function.

$$y = [\delta k^{(-\gamma)} + \theta g\_1^{(-\gamma)} + \vartheta g\_2^{(-\gamma)}]^{(-1/\gamma)}, \text{where } \delta > 0, \theta \text{ and } \vartheta \geq 0, \text{and } \delta + \theta + \vartheta = 1 \quad (2)$$

proportions of private capital stock, public recurrent expenditure, and government capital expenditure in relation to output are indicated by δ, θ, and ϑ respectively. The elasticity of substitution is represented by γ.

Barro (1997) assumes that government spendings are financed through flat income tax rates, τ.

$$\tau y = g\_1 + g\_2$$

The share of public expenditure allocated to recurrent and development The expenditure is shown in equation (3.13):

$$g\_1 = \beta\tau y \text{ and } g\_2 = (1-\beta)\tau y \quad (3)$$

The private capital growth is illustrated in equation (4):

$$\dot{k} = (1-\tau)\, y - c \quad (4)$$

c denotes private consumption, consequently, equation (5) represents the government's development.

$$g\_2 = (c, g\_1, y) \quad (5)$$

Since Public investment (PI) is a subset of development expenditure, g2 is replaced with PI to meet the study objective. Sindani (2020), Marinescu (2019), and Tilahun, (2021) established that determinants of public investment are; total debt, output gap, real interest rate, private investment, fiscal deficit and GDP growth per capita. Equation (3.15) was adapted to incorporate these determinants as presented in equation (6):

$$PI = f(RTDSC, RGPA, ROMC, y, Debt, gap, r, Prinv, FD) \quad (6)$$

Where: y is GDP growth in per capita, $Debt$ is Total public debt, gap is the output gap, r represents the real interest rate, $Prinv$ denotes private investments and FD is the fiscal deficit.

Model Specification

An ARDL model was applied in this study. The ARDL model is chosen over static models because it can account for dynamic relationships between the dependent variable and its own past values, plus the past values of other regressors. This model is particularly suitable for small samples like the one used in this research (Nkoro & Uko, 2016). Additionally, ARDL provides valid t-statistics despite presence of potential endogeneity. Furthermore, ARDL is suitable for time series analysis with variables of different integration orders (Pesaran & Shin, 2001). A Bound test of cointegration was conducted and the ARDL (p, q1-qn) models specified below were estimated. The Akaike Information Criterion (AIC) was applied to choose the appropriate lag structure for the ARDL model. In order to address the challenges of a small sample and a large number of variables in the models, the ARDL model was limited to two lags.

The ARDL (p, q1-q10) model showing relationship between recurrent expenditure and public investment is specified as below:

$$\Delta \ln PI_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta \ln PI_{t-i} + \sum_{i=1}^{q1} \beta_2 \Delta \ln ROMC_{t-i} + \sum_{i=1}^{q2} \beta_3 \Delta \ln RGPA_{t-i} + \sum_{i=1}^{q3} \beta_4 \Delta \ln RTDSC_{t-i} + \sum_{i=1}^{q4} \beta_5 \Delta Prinv_{t-i} + \sum_{i=1}^{q5} \beta_6 \Delta Y_{t-i} + \sum_{i=1}^{q6} \beta_7 Dbt_{t-i} + \sum_{i=1}^{q7} \beta_8 \Delta gap_{t-i} + \sum_{i=1}^{q8} \beta_9 \Delta r_{t-i} + \sum_{i=1}^{q9} \beta_{10} \Delta FD_{t-i} + Ut \quad (7)$$

Where Δ is the difference operator, $\beta 0$ is intercept. βi are the related coefficients, p denotes the lag of the dependent variables, q1-qn represent lags for explanatory variables, PIt-i is the past values of the dependent variable while RTDSCt-i, RGPAt-i, ROMCt-i, Yt-i, Debtt-i, gapt-i, rt-i, FDt-i, Prinvt-i are lagged values of independent variables and Ut is the residual.

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Variables definition and measurement

Table I : OPERATIONALIZATION OF VARIABLES

Variable Symbol Definition Measurement

Public investment

PI The total government expenditure on non-financial fixed assets in a given fiscal year. The total government expenditure on non-financial fixed assets in a given fiscal year as a GDP percentage.

Private investment

Prinv Private sector accumulation of fixed assets like buildings, machinery and equipment, for productive purpose. Calculated as the difference between gross fixed capital formation and public investment, expressed as a percent of GDP.

Recurrent expenditure on debt repayment charge

RTDSC This is the annual amount (Ksh) paid as interest on both current and long-term government debt. Measured In terms of GNI percentage.

Recurrent expenditure on general public administration

RGPA Recurring costs on salaries and allowances for civil service employees Measured as a share of GDP.

Recurrent expenditure on operation and maintenance costs

ROMC Expenditure related to the administration and maintenance of the day-to-day government operations. These costs include office and general supplies costs, fuel oil, and lubrication costs, domestic and foreign travel, routine vehicle maintenance, and many more Measured as a percent of GDP.

Total Debt Stock

Debt Total financial obligations of a country to both foreign entities and its own citizens.

Aggregate external and domestic debt relative to GDP

Real Interest rate

r A measure of the true cost of borrowing or the real yield on an investment, adjusted for inflation Measured as a percentage

Output gap

Gap The shortfall or excess of an economy's actual output compared to its full capacity output Calculated as actual output minus the potential output presented as a percentage.

Fiscal deficit

FD The discrepancy between government spending and the revenues it generates. Government revenues minus government spending, relative to GDP

GDP growth rate per capita

Y The percentage change in the GDP divided by the total population over a specified period Annual percentage change.

Empirical Findings

Unit root test

Estimation of raw data without any transformations or unit root tests results to spurious regressions (Enders, 2009). The study used the augmented Dickey Fuller (ADF) to test for the presence of unit roots.

Table I shows that recurrent expenditures on; operation and maintenance costs and debt Servicing charge, public investment, total debt stock and fiscal deficit, were non-stationary using intercept only and using both intercept and trend at 5% significance level. Private investment and recurrent expenditures on general public administration were stationary using intercept only but non-stationary using both intercept and trend at 5% significance level. At 5% significance level, GDP growth rate per capita, real interest rare and output gap were found to be stationary using intercept and using both intercept and trend. All variables were stationary at first difference.

Table II: UNIT ROOT TEST

Variable	Intercept	Intercept and Trend	Decision
PI	-1.706**	-2.850	-
D(PI)	-5.184***	-5.133***	I (1)
Prinv	-2.856***	-3.024	-
D(Prinv)	-6.588***	-6.568***	I (1)
RTDSC	-1.497*	-2.165	-
D(RTDSC)	-5.566***	-5.517***	I (1)
ROMC	-1.055	-3.157	-
D(ROMC)	-4.819***	-4.879***	I (1)
RGPA	-2.296***	-2.260	-
D(RGPA)	-3.825***	-3.790***	I (1)
Debt	-2.320 **	-2.299	-
D(Debt)	-5.543 ***	-5.485 ***	I (1)
R	-3.580***	-3.903 **	I (0)
Gap	-2.788***	-2.788 ***	I (0)
Y	-6.540***	-6.338***	I (0)
FD	-1.653*	-1.542	-
D(FD)	-7.713***	-7.762***	I (1)

Source: Author's computations (2024)

*, ** and *** denote significance at ten, five and one per cent, respectively

Cointegration test

Cointegration test is important to establish the relationship among the variables and to establish whether to estimate the long run model or the short run model. The stationarity results indicated a combination of integration at level, I (0), and integration at first difference I (1). Therefore, the Bound test of cointegration is recommended for such series (Gitonga, 2020). Null hypothesis (Ho) was that there is no cointegration equations while the (H1) alternative hypothesis showed cointegrating equations in the series. The decision criteria are; accept Ho if F statistic is less than critical value for I (0) regressors and reject Ho if F statistic is greater than critical value for I (1) regressors. If the F Statistic values lie between the lower and the upper bound, the conclusion is inconclusive (Pesaran and Shin, 2001). Narayan (2004) critical values were useful for small sample size study. The optimal lag length was selected using the Akaike Information Criteria (AIC) automatic lag selection. Because of the limited sample size in this study and many variables in the models, the number of lags contained into the ARDL dynamic equations was restricted to only two periods.

To test for cointegration, the optimal lag length selected was (1,2,2,1,0,0,0,1,2,2). The values (1,2,2,1,0,0,0,1,2,2) represent the lags of public investment, recurrent expenditures on; operation and maintenance costs, general public administration and debt Servicing charge, private investment, GDP per capita growth rate, Total debt stock, output gap, real interest rates and fiscal deficit.

Table III: THE BOUNDS TEST

Test Statistic	Value	Number of independent variables
F-statistic	5.712	10
Significance	I (0) Bound	I (1) Bound
5%	2.962	3.910

Source: Author's computations (2024)

The F statistic is greater than the upper I (1) bound at 5 percent levels of significance therefore the null hypothesis was rejected and the study concluded that there exist cointegration equations in the series therefore both the long term and the short term Autoregressive Distributed Lag (ARDL) models were estimated.

Long run ARDL regression results

Table IV: LONG RUN ARDL RESULTS

Dependent variable is PI

Regressors	Coefficient	Standard Error	T-Ratio	Probability
ROMC	.2717 **	.1182	2.30	0.029
RGPA	-.7235 ***	.1952	-3.71	0.001
RTDSC	.4016 ***	.1022	3.93	0.000
Prinv	-.1029	.1012	1.02	0.318
Y	.1338 **	.0545	2.46	0.020
Dbt	-.0854 ***	.0165	-5.18	0.000
Gap	-.0596 ***	.0218	-2.73	0.010
R	-.0592	.0470	-1.26	0.217
FD	.3228 ***	.1063	3.04	0.005

Source: Author's computations (2024)

*, ** and *** denotes stationary at ten, five and one per cent statistically significant levels, respectively.

The long-run results indicate a positive relationship between recurrent expenditure on operation and maintenance costs and public investment. A one percent increase in the former leads to a 0.2717 percent increase in the latter. Conversely, recurrent expenditure on general public administration exhibits a negative and statistically significant impact on public investment. A one percent increase in this expenditure results in a 0.7235 percent decrease in public investment, as expected. Higher general public administration costs tend to reduce resources available for public investment. The long-run coefficient of debt servicing charges is positive and statistically significant. A one percent increase in debt servicing charges leads to a 0.4016 percent increase in public investment. These findings align with Tilahun (2021), who reported a positive, but insignificant, impact of debt servicing on public investment in Ethiopia.

Private investment and public investment appear to be substitutes rather than complements, supporting the crowding-out theory. GDP per capita growth rate has a positive effect on public investment, while total debt stock and output gap have negative effects. Real interest rate was found to be insignificant in determining the long-run relationship between recurrent expenditure components and public investment. Finally, fiscal deficit has a positive impact on public investment.

Short run ARDL regression results

Table V: SHORT RUN ARDL REGRESSION RESULTS

Dependent variable is D_PI

Regressors	Coefficient	Standard Error	T-Ratio	Probability
D_ROMC	.0282	.1285	0.22	0.828
D_ROMC (-1)	.3955 ***	.1422	2.78	0.009
D_RGPA	.1281	.1614	0.79	0.433
D_RGPA (-1)	.2843 **	.1393	2.04	0.050
D_RTDSC	.2483 **	.1008	2.46	0.020
D_Prinv	-.0870	.0826	-1.05	0.301
D_Y	.1132 **	.0466	2.43	0.021
D_Dbt	-.0723 ***	.0166	4.35	0.000
D_gap	-.1601 ***	.0489	-3.28	0.003
D_r	-.0569 **	.0271	-2.10	0.044
D_r (-1)	-.0597 ***	.0213	-2.80	0.009
D_ FD	-.2631 **	.0896	-2.94	0.006
D_ FD (-1)	-.1284	.0758	-1.69	0.101
C	9.8188 ***	1.9617	5.01	0.000
ecm (−1)	-.8461 ***	.1383	6.12	0.000
R Squared	0.7198			
Adjusted R Squared	0.5330			
Prob (F Statistics)	0.0000			

Source: Author's calculation (2024)

D denotes first difference.

*, ** and *** denotes stationary at ten, five and one per cent statistically significant levels, respectively.

The short-run analysis reveals a mixed relationship between recurrent expenditure and public investment. While certain components of recurrent expenditure positively influence public investment, others exert a negative impact. Increased spending on operation and maintenance costs can stimulate public investment, with a 1 percent increase leading to a 0.3955 percent increase in public investment. Similarly, a 1 percent increase in general public administration expenditure can boost public investment by 0.2843 percent. However, similar to long run effects, a 1 percent increase in debt servicing charges reduces public investment by 0.2483 percent. Similarly, an increase in total debt, output gap, real interest rates, and fiscal deficits can crowd out public investment. These findings emphasize the importance of a balanced approach to recurrent expenditure, prioritizing efficient allocation and debt management to ensure sustainable public investment.

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The error correction model (ECM) indicates a strong and significant adjustment towards equilibrium. Approximately 84.61 percent of any disequilibrium in the previous period is corrected in the current period. The overall model is statistically significant, with the independent variables explaining 71.98 percent of the variation in the dependent variable.

Diagnostic tests

Table VI: DIAGNOSTIC TESTS

Diagnostic Test	Hypothesis tested	P-Value
Jarque-Bera test for Normality	H0: Residuals have normal distribution	
	H1: Residuals do not have normal distribution	0.6229
Breusch-Godfrey LM test for Serial Correlation	H0: No serial correlation	
	H1: Autocorrelation present	0.1943
Breusch-Pagan for Heteroskedasticity	H0: Homoskedasticity	
	H1: Presence of heteroskedasticity	0.2212
Ramsey Reset Test Model Specification	H0: Model is well specified	
	H1: Presence of specification error	0.0930

Source: Author's calculation (2024)

Jarque-Bera test was employed to test whether the residuals had a normal distribution. The obtained p-value (0.6229) was greater than the 0.05 significance level hence the null hypothesis cannot be rejected implying that the residuals show normal distribution. To detect serial correlation, Breusch-Godfrey LM test was employed. Since the p-values for model, 0.1943 was greater than 0.05 significance level, the null hypothesis of no serial correlation was accepted. Breusch-Pagan test was used to test whether the residuals had a constant variance. From the table, the p-values obtained in the model was 0.2212. Since the p-value is greater than 0.05 the chosen significance level, the null hypothesis was accepted and concluded that the residuals had a constant variance. Finally, to test whether the model was correctly specified, Ramsey Reset test was employed. The p-value obtained (0.0930) was greater than 0.05 significance level therefore the model was correctly specified.

Conclusion

The overall objective of this study was to determine the effect of recurrent public expenditure components on public investment in Kenya. The study employed an exploratory research design to meet its objectives, utilizing annual time series data from 1970 to 2022, sourced from the Kenya Economic Surveys and various statistical abstracts. To analyze this data, the ARDL model was applied, followed by ARDL bounds testing to check for cointegration. This approach was necessary due to the presence of both stationary and non-stationary variables at the level. The study established presence of long run relationship between recurrent expenditure components and public investments. The recurrent expenditure component on general public administration which mainly consist of salaries, wages to government employees and benefits such as pensions and health insurance had significant negative effect on public investment in the short run but its first lag crowds in public investment in the long run. The second component, recurrent expenditure on operation and maintenance costs was found to have positive effect on public investment both in short run and in long run. Lastly, the recurrent expenditure component on debt Servicing Charges was found have positive effect on the public investment, both in the long run and in short run.

Policy Recommendations

Based on the findings, the study recommends that the national and county governments of Kenya should allocate a higher proportion of the budget to operational and maintenance costs to ensure that public infrastructure and services remain effective and attractive for investors. The government should also Implement regular audit to ensure that these funds are used effectively. Secondly, the study established that while the recurrent expenditure component on general public administration has a short-term negative impact on public investment. The study recommends that the county and national government public service board should explore mechanisms to optimize the impact of this expenditure on public investment, such as aligning workers compensation with performance outcomes or efficiency metrics and elimination of ghost workers. Moreover, both levels of government should implement the proposed policies such as the Public Financial Management Act, 2012, to tackle the rapidly growing public sector administration costs such as the wage bill.

Finally, given that the total debt stock had a negative impact on public investment both in the short and long run, it is essential for both county and national governments to develop policies that leverage public-private partnerships (PPPs) to mitigate this effect. The government can implement this by developing a debt reduction plan that includes refinancing, restructuring, and prioritizing debt repayments while utilizing PPPs towards high-impact projects that can generate substantial economic and social benefits, thus enhancing public investment outcomes. In order to encourage PPPs, the government can offer incentives to private investors such as tax breaks, co-financing opportunities, or guaranteed returns on investment.

Areas of further study

The study proposes further research on:

The effect of recurrent public expenditure components on public investment in Kenya focusing on a more recent period in both national and county levels, preferably using quarterly data from 2002. This period is notable for significant increases in investments and recurrent public expenditure compared to earlier years. Quarterly data is recommended to avoid the aggregation bias that can occur with annual data. Moreover, understanding how recurrent expenditures impacts investment at the county level is crucial for evaluating the effects of devolution on local investment environment.

The effect of recurrent public expenditure components public investment by incorporating effects of structural breaks. Structural breaks happen due to significant changes in the relationship between variables over time, often due to major

economic, political, or policy shifts. In Kenya, recurrent public expenditures (such as salaries, pensions, and administrative costs) and their impact on public investment can be influenced by structural changes such as policy reforms, shifts in government priorities, or macroeconomic shocks. Identifying and understanding effects of these breaks can provide deeper insights into how recurrent expenditures affect investment dynamics.

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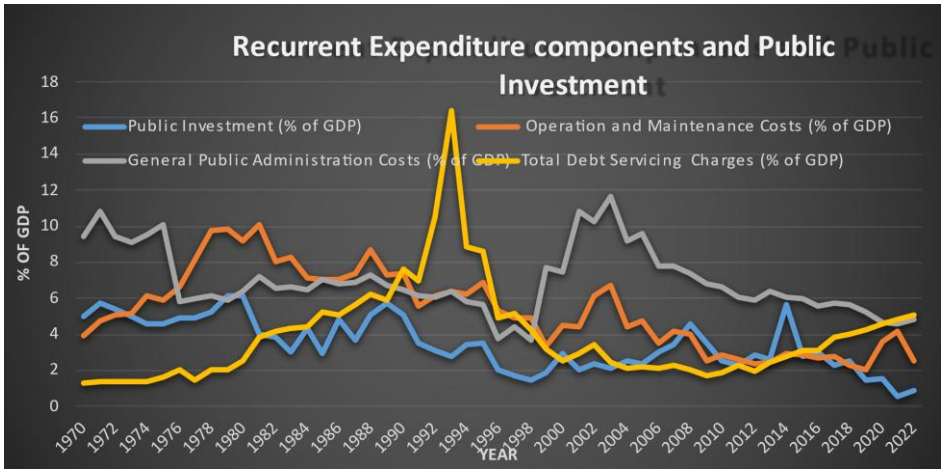

Figure 1: Recurrent expenditure and public investment trend in Kenya: 1970-2022

Table I : OPERATIONALIZATION OF VARIABLES

Variable	Symbol	Definition	Measurement
Public investment	PI	The total government expenditure on non-financial fixed assets in a given fiscal year.	The total government expenditure on non-financial fixed assets in a given fiscal year as a GDP percentage.
Private investment	Prinv	Private sector accumulation of fixed assets like buildings, machinery and equipment, for productive purpose.	Calculated as the difference between gross fixed capital formation and public investment, expressed as a percent of GDP.
Recurrent expenditure on debt repayment charge	RTDSC	This is the annual amount (Ksh) paid as interest on both current and long-term government debt.	Measured In terms of GNI percentage.
Recurrent expenditure on general public administration	RGPA	Recurring costs on salaries and allowances for civil service employees	Measured as a share of GDP.
Recurrent expenditure on operation and maintenance costs	ROMC	Expenditure related to the administration and maintenance of the day-to-day government operations. These costs include office and general supplies costs, fuel oil, and lubrication costs, domestic and foreign travel, routine vehicle maintenance, and many more	Measured as a percent of GDP.
Total Debt Stock	Debt	Total financial obligations of a country to both foreign entities and its own citizens.	Aggregate external and domestic debt relative to GDP
Real Interest rate	r	A measure of the true cost of borrowing or the real yield on an investment, adjusted for inflation	Measured as a percentage
Output gap	Gap	The shortfall or excess of an economy's actual output compared to its full capacity output	Calculated as actual output minus the potential output presented as a percentage.
Fiscal deficit	FD	The discrepancy between government spending and the revenues it generates.	Government revenues minus government spending, relative to GDP
GDP growth rate per capita	Y	The percentage change in the GDP divided by the total population over a specified period	Annual percentage change.

Table II: UNIT ROOT TEST

Variable	Intercept	Intercept and Trend	Decision
PI	-1.706**	-2.850	-

D(PI)	-5.184***	-5.133***	I (1)
Prinv	-2.856***	-3.024	-
D(Prinv)	-6.588***	-6.568***	I (1)
RTDSC	-1.497*	-2.165	-
D(RTDSC)	-5.566***	-5.517***	I (1)
ROMC	-1.055	-3.157	-
D(ROMC)	-4.819***	-4.879***	I (1)
RGPA	-2.296***	-2.260	-
D(RGPA)	-3.825***	-3.790***	I (1)
Debt	-2.320 **	-2.299	-
D(Debt)	-5.543 ***	-5.485 ***	I (1)
R	-3.580***	-3.903 **	I (0)
Gap	-2.788***	-2.788 ***	I (0)
Y	-6.540***	-6.338***	I (0)
FD	-1.653*	-1.542	-
D(FD)	-7.713***	-7.762***	I (1)

Source: Author's computations (2024)

*, ** and *** denote significance at ten, five and one per cent, respectively

Table III: THE BOUNDS TEST

Test Statistic	Value	Number of independent variables
F-statistic	5.712	10
Significance	I (0) Bound	I (1) Bound
5%	2.962	3.910

Source: Author's computations (2024)

Table IV: LONG RUN ARDL RESULTS

Dependent variable is PI				
Regressors	**Coefficient**	**Standard Error**	**T-Ratio**	**Probability**
ROMC	.2717 **	.1182	2.30	0.029
RGPA	-.7235 ***	.1952	-3.71	0.001
RTDSC	.4016 ***	.1022	3.93	0.000
Prinv	-.1029	.1012	1.02	0.318
Y	.1338 **	.0545	2.46	0.020
Dbt	-.0854 ***	.0165	-5.18	0.000
Gap	-.0596 ***	.0218	-2.73	0.010
R	-.0592	.0470	-1.26	0.217
FD	.3228 ***	.1063	3.04	0.005

Source: Author's computations (2024)

*, ** and *** denotes stationary at ten, five and one per cent statistically significant levels, respectively.

Table V: SHORT RUN ARDL REGRESSION RESULTS

Dependent variable is D_PI				
Regressors	**Coefficient**	**Standard Error**	**T-Ratio**	**Probability**
D_ROMC	.0282	.1285	0.22	0.828
D_ROMC (-1)	.3955 ***	.1422	2.78	0.009
D_RGPA	.1281	.1614	0.79	0.433
D_RGPA (-1)	.2843 **	.1393	2.04	0.050

D_RTDSC	.2483 **	.1008	2.46	0.020
D_Prinv	-.0870	.0826	-1.05	0.301
D_Y	.1132 **	.0466	2.43	0.021
D_Dbt	-.0723 ***	.0166	4.35	0.000
D_gap	-.1601 ***	.0489	-3.28	0.003
D_r	-.0569 **	.0271	-2.10	0.044
D_r (-1)	-.0597 ***	.0213	-2.80	0.009
D_ FD	-.2631 **	.0896	-2.94	0.006
D_ FD (-1)	-.1284	.0758	-1.69	0.101
C	9.8188 ***	1.9617	5.01	0.000
ecm (−1)	-.8461 ***	.1383	6.12	0.000
R Squared		0.7198		
Adjusted R Squared		0.5330		
Prob (F Statistics)		0.0000		

Source: Author's calculation (2024)

D denotes first difference.

*, ** and *** denotes stationary at ten, five and one per cent statistically significant levels, respectively.

Table VI: DIAGNOSTIC TESTS

Diagnostic Test	Hypothesis tested	P-Value
Jarque-Bera test for Normality	H0: Residuals have normal distribution H1: Residuals do not have normal distribution	0.6229

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Breusch-Godfrey LM test for Serial Correlation	H0: No serial correlation H1: Autocorrelation present	0.1943
Breusch-Pagan for Heteroskedasticity	H0: Homoskedasticity H1: Presence of heteroskedasticity	0.2212
Ramsey Reset Test Model Specification	H0: Model is well specified H1: Presence of specification error	0.0930

Source: Author's calculation (2024)

