

## **MODERATING ROLE OF INFLATION ON THE RELATIONSHIP BETWEEN PUBLIC DEBT AND PRIVATE INVESTMENT IN SOUTH AFRICA**

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<https://doi.org/10.57233/gujaf.v46i21.30>

### **Abstract**

South Africa faces a persistent decline in private investment amid rising public debt and inflation volatility, raising concerns about the long-term sustainability of its fiscal and economic trajectory. This study investigates the moderating role of inflation in the relationship between government debt, fiscal deficit, and private investment in South Africa between 2014 and 2024. The objective is to determine whether inflation amplifies or dampens the effects of public debt and fiscal deficit on private sector investment. Using a quantitative research design and time series data, the study employs multiple regression and hierarchical interaction models to analyze the dynamics among key macroeconomic variables. Descriptive statistics and diagnostic tests were conducted to ensure data validity and model reliability. The results reveal that while public debt, fiscal deficit, and inflation individually have no statistically significant effect on private investment, the interaction terms; Debt  $\times$  Inflation and Deficit  $\times$  Inflation; are both statistically significant. This indicates that inflation meaningfully moderates the impact of fiscal variables on investment decisions. The findings support the crowding-out theory, particularly under inflationary conditions, and suggest that inflation magnifies fiscal pressures on private capital formation. The study concludes that inflation plays a critical role in shaping the fiscal-investment nexus and must be accounted for in policy planning. It recommends stronger fiscal-monetary policy coordination, targeted inflation control, and sustainable debt management to enhance investor confidence and stimulate long-term private investment in South Africa.

**Keywords:** Crowding-out theory, macroeconomic policy, private Investment, public debt, fiscal deficit, inflation.

### **1.0 Introduction**

Private investment remains a vital engine of economic growth, especially in emerging economies like South Africa where government resources alone are insufficient to meet development demands. Globally, countries have relied heavily on private sector investment to drive industrialization, create employment and facilitate economic diversification. However, public sector fiscal activities, particularly public debt levels, have the potential to either crowd in or crowd out private investment depending on their scale, structure and macroeconomic coordination. Recent studies emphasize that fiscal policy and borrowing dynamics are becoming central to investment patterns, especially in African countries where capital formation is sluggish and investor confidence is sensitive to macroeconomic signals (Mundonde & Takawira, 2024).

In South Africa, the relationship between rising public debt and declining private sector investment has become increasingly visible. As the state continues to issue sovereign debt to finance infrastructure and recurrent expenditure, concerns are mounting about the long-term implications for private capital mobilization. According to the National Treasury and South African Reserve Bank data, the government debt-to-GDP ratio has consistently increased over the last decade, crossing 70% in 2023. This fiscal trajectory has implications for credit ratings, investor sentiment and access to capital markets (Takawira & Mwamba, 2022). As

creditworthiness declines, the risk premium on investment rises, creating an unfavorable environment for private investors.

Contemporary literature increasingly identifies inflation as a key mediator in fiscal-investment dynamics. Inflation distorts investment planning by eroding the real value of returns and increasing uncertainty. In the context of South Africa, inflation has averaged between 4% and 6% in the past five years, with occasional spikes linked to currency volatility and energy prices. The moderating role of inflation becomes critical when evaluating how fiscal policy variables, such as debt accumulation and fiscal deficits, affect private sector investment decisions. As observed by Osobajo and Akintunde (2023), inflation, when unstable, can significantly reduce the attractiveness of long-term capital deployment, especially in sectors like manufacturing and infrastructure.

A growing body of empirical studies has attempted to unpack these fiscal-inflation-investment linkages in Africa. For instance, Boumparis, Milas and Panagiotidis (2023) found that high government debt levels, coupled with inflation volatility, significantly dampen credit ratings and reduce foreign direct investment inflows in several emerging markets. In South Africa, this relationship is further complicated by structural unemployment, a widening current account deficit and rising household debt, all of which exert downward pressure on investment confidence (Mundonde & Makoni, 2023). The cumulative effect has been a dampening of the private sector's appetite to engage in capital-intensive projects, particularly in strategic sectors.

Despite these developments, the literature still lacks sufficient country-specific studies that isolate the interaction between public debt, inflation and private investment in South Africa. Most existing models are panel-based, covering a mix of developed and developing economies, thereby diluting context-specific policy insights. Studies like those by Pretorius and Botha (2024) and Takawira and Mwamba (2022) call for more nuanced national analyses that factor in local fiscal realities, governance structures and institutional maturity. A clear understanding of how inflation influences the debt-investment nexus is crucial for policy coordination and fiscal planning.

Moreover, the need for sustainable financing to meet South Africa's developmental goals, including those aligned with the Sustainable Development Goals (SDGs), makes it imperative to understand the underlying macroeconomic relationships. As noted by the United Nations Development Programme (2023), more African countries, including South Africa, are turning to international capital markets to finance development, making macroeconomic stability even more essential. Yet, if public debt accumulation is not strategically managed, especially in an inflationary context, it could crowd out private investment rather than stimulate it.

Given this background, a critical research gap remains: how does inflation interact with public debt to shape the dynamics of private investment in South Africa? While public debt and fiscal deficits have been studied in isolation, their combined and conditional effects, particularly moderated by inflation, have not been thoroughly explored in a single-country setting. This gap is both theoretical and empirical, and its resolution could significantly inform future macroeconomic policy designs and investor confidence frameworks.

South Africa's increasing public debt burden, driven by persistent fiscal deficits and recurring budgetary shortfalls, has triggered a slowdown in private investment. Despite numerous policy

interventions, private sector confidence remains subdued, especially in periods of rising inflation. Traditional models assume a direct negative relationship between public debt and private investment, but these models often neglect the potential moderating role of inflation. In an environment of macroeconomic uncertainty, high inflation may either exacerbate or soften the crowding-out effects of public debt depending on its stability and predictability. The lack of focused, country-specific evidence on this interaction limits policymakers' ability to design coherent fiscal and investment strategies tailored to South Africa's economic reality. Against this backdrop, the study tests the following hypothesis:

**H<sub>01</sub>:** Government Debt-to-GDP Ratio has no significant effect on private investment in South Africa.

**H<sub>02</sub>:** Fiscal Deficit (as a percentage of GDP) has no significant effect on private investment in South Africa.

**H<sub>03</sub>:** Inflation Rate has no significant effect on private investment in South Africa.

**H<sub>04</sub>:** Inflation Rate has no significant moderating effect on the relationship between Government Debt-to-GDP Ratio and private investment in South Africa.

**H<sub>05</sub>:** Inflation Rate has no significant moderating effect on the relationship between Fiscal Deficit and private investment in South Africa.

## **2.0 Literature Review**

Private investment is widely recognized as a critical component of economic development, reflecting the level of productive capital formation undertaken by private sector entities. It is viewed not only as a financial commitment but also as a signal of investor confidence in a country's macroeconomic and institutional stability. According to Chen, Chen, Chang and Yang (2021), private investment responds predictably to changes in inflation, debt sustainability, and policy credibility. Takawira and Mwamba (2022) assert that countries with consistent inflation management and low fiscal deficits experience higher levels of private capital inflows. Boumparis, Milas and Panagiotidis (2021) emphasize the crowding-out effect of public debt, which diverts loanable funds away from the private sector. Similarly, Mutize and Nkhalamba (2020) suggest that fiscal discipline and monetary stability are preconditions for attracting long-term private investment. Mundonde and Makoni (2023) argue that South Africa's rising public debt and inflation volatility weaken investment confidence, while Giordano, Zanaboni and Reitano (2024) highlight institutional quality as a reinforcing variable. Further contributions from Pretorius and Botha (2024), Osobajo and Akintunde (2023), UNDP (2023), and Oskonbaeva (2020) echo that policy consistency and macroeconomic credibility directly shape private sector behavior. For this study, private investment is defined as gross fixed capital formation by private entities as a percentage of GDP, representing the private sector's tangible contribution to national economic output.

### **Concept of Government Debt to GDP Ratio**

The government debt-to-GDP ratio is a key fiscal metric used to evaluate a country's debt sustainability and its potential effect on broader economic outcomes. It measures the proportion

of a nation's total public debt relative to its gross domestic product, offering insights into fiscal solvency and borrowing capacity. According to Ayentimi and Nimo (2023), elevated debt ratios often raise red flags about a government's ability to finance its obligations without crowding out private investment. Kumo, Omilola and Kararach (2021) argue that when the debt burden exceeds growth performance, it increases macroeconomic risk and weakens investor confidence. In a study on African fiscal frameworks, Dube and Makhetha (2022) found that countries with persistent debt accumulation struggle to stimulate private sector growth due to constrained credit markets. Okafor and Ezeaku (2023) observe that large debt stocks elevate risk premiums, diminishing both domestic and foreign investment flows. Similarly, Ncube and Tshuma (2024) note that rising debt weakens sovereign ratings and shifts investor sentiment away from productive sectors. Additional findings from Ataguba (2020), Amoako-Tuffour and Akomea-Frimpong (2023), Mlambo and Sibanda (2022), Fosu (2021) and World Bank (2023) support the view that unchecked debt can erode fiscal space and impair long-term investment planning. For this study, government debt-to-GDP ratio is defined as the total public debt expressed as a percentage of the country's nominal GDP, serving as an indicator of the government's fiscal sustainability and its influence on private investment decisions.

### **Concept of Fiscal Deficit**

Fiscal deficit represents a situation where a government's total expenditures exceed its total revenues, excluding borrowings. It is widely considered a macroeconomic indicator reflecting a government's fiscal health and capacity to sustain long-term investments. In developing economies, such as South Africa, the fiscal deficit is intricately linked to capital formation, crowding-out effects, and inflationary pressures (Joseph-Rajab, 2025). Several researchers have identified fiscal deficit as a key determinant of economic productivity, arguing that its persistence often diverts resources from private investment (Hilbrich, 2025; Odei-Appiah, 2025). Moreover, excessive fiscal imbalances reduce investor confidence and elevate sovereign risk, which in turn constrains the availability of credit to the private sector (Mutema, 2025; Lentsoane, 2024). Conversely, some studies suggest that under certain conditions, fiscal deficits can stimulate economic growth by financing public investments in infrastructure, which are complementary to private investment (Onatu, 2024; Zha, 2025). However, the effectiveness of this relationship depends on the efficiency of fiscal policy and institutional credibility (Ashman, 2025; Mishra, 2025). For the purpose of this study, fiscal deficit is conceptualized as the annual shortfall in government revenue relative to expenditure as a percentage of GDP, and it is examined for its direct influence and interaction with inflation in shaping private investment outcomes in South Africa.

### **Concept of Inflation Rate**

Inflation rate refers to the general increase in prices of goods and services over time, leading to a decline in the purchasing power of money. It is a critical macroeconomic variable that affects consumption, investment decisions, interest rates, and exchange rate dynamics. As argued by Abdullahi, Jonas and Olanrewaju (2024), inflation, when persistent and poorly managed, introduces economic uncertainty, which deters long-term investment. Hilbrich (2025) notes that inflation volatility disrupts investment planning and raises the cost of capital, especially in developing markets. Mlambo and Sibanda (2022) suggest that high inflation distorts pricing signals and weakens credit market efficiency, making private investors more risk averse. Zha (2025) affirms that inflation interacts with fiscal variables, such as debt and deficits, to influence

capital flows and investor confidence. Kumo, Omilola and Kararach (2021) assert that inflation is a vital moderator in the transmission of macroeconomic shocks, particularly in Sub-Saharan Africa. Ayentimi and Nimo (2023) stress that stable inflation boosts investment resilience and enhances the crowding-in effect of public spending. In this study, inflation rate is defined as the annual percentage change in the Consumer Price Index (CPI), and it is conceptualized as a moderating variable that conditions the impact of public debt and fiscal deficit on private investment behavior in South Africa.

## **Review of Related Empirical Studies**

### **Government Debt to GDP Ratio and Private Investment**

Numerous recent studies have explored the link between government debt-to-GDP ratios and private investment, with consistent findings indicating that excessive public debt often undermines private sector participation in capital formation. Burger (2024) observed that South Africa's rising debt levels have increasingly crowded out private investment, particularly due to mounting interest costs and reduced fiscal flexibility. Similarly, Mundonde and Takawira (2024) found that increased sovereign debt signals higher macroeconomic risk, dampening investor sentiment and foreign capital inflows. Ayentimi and Nimo (2023) argued that in African markets, investors interpret high debt ratios as fiscal indiscipline, which heightens long-term investment risk. Supporting this, Kumo, Omilola and Kararach (2021) demonstrated that elevated debt impairs private credit access, especially when monetary policy tightens in response to inflation. In their analysis of Sub-Saharan African economies, Mutema (2025) and Dube and Makhetha (2022) emphasized the crowding-out effect of government borrowing on private investment financing. Fosu (2021) further noted that beyond a threshold, debt begins to erode the productivity of capital. Meanwhile, Hilbrich (2025) and Okafor and Ezeaku (2023) provide quantitative evidence that rising debt weakens sovereign credit ratings, thereby increasing the cost of private financing. These studies collectively affirm that the debt-to-GDP ratio is a pivotal determinant of private investment dynamics in South Africa.

### **Fiscal Deficit and Private Investment**

Several studies have explored the macroeconomic implications of fiscal deficits on private investment across developing economies. Burger (2024) found that widening fiscal deficits in South Africa reduce available capital for private sector investment through crowding-out effects, particularly under high interest rate regimes. Olaniyi and Okesiji (2025) argue that sustained deficits signal fiscal instability, deterring long-term private commitments. Sikhosana (2025) emphasized that infrastructure deficits often lead governments to over-borrow, displacing private capital and distorting the investment landscape. According to Saba and Kgwaila (2024), high fiscal deficits influence inflation expectations, which negatively affect credit conditions for private firms. Maenetja (2025) highlighted the burden of government consumption-based deficits on local investment flows, especially in underdeveloped municipalities. Okafor and Ezeaku (2023) presented empirical evidence from Sub-Saharan Africa indicating that the elasticity of private investment declines as deficits rise. Zha (2025) further showed that the transmission of fiscal shocks to private investment depends on the structure of government borrowing, with domestic borrowing exerting a stronger negative influence. Adewuyi and Ozogbo (2025) observed that investor risk perception rises during periods of persistent fiscal imbalance, limiting portfolio diversification into domestic markets. Ngubevana and Olifant (2025) linked fiscal

pressure with suppressed energy investment, while Mofo (2024) stressed the need for fiscal reforms to support industrial development.

### **Inflation Rate and Private Investment**

Recent scholarship highlights inflation as a critical determinant of private investment dynamics, particularly in developing economies such as South Africa. Leshoro (2025) shows that inflation undermines long-term infrastructure investment by distorting market signals and increasing investor risk aversion. Murape and Mpofo (2025) found that inflation volatility significantly affects private equity performance, weakening return predictability. Similarly, Mundonde and Takawira (2024) argue that inflation, alongside foreign debt, impairs sovereign credit ratings and discourages investment. Bagh, Hunjra, Guo and Bouri (2025) report that inflation negatively influences capital structure decisions in BRICS countries, particularly South Africa, by elevating cost of capital and suppressing investor sentiment. Zha (2025) supports this by finding that price instability is inversely correlated with capital formation. Papadavid, Raga and Fontana (2025) emphasize that inflation limits African economies' resilience to external shocks, reducing their capacity to attract private capital. According to Adjei and Adiku (2024), inflation hinders inclusive development by constraining private sector growth. Adewuyi and Ozogbo (2025) observe that inflation reduces investor confidence in African markets by amplifying financial uncertainty. Saba and Kgwaila (2024) identify inflation as a major policy constraint to private investment. Collectively, these studies reinforce inflation's role as a macroeconomic force that erodes investment incentives, thereby influencing the private sector's capital allocation decisions.

### **Moderating Role of Inflation Rate in Public Debt and Private Investment**

Emerging literature has increasingly examined how inflation conditions the relationship between public debt and private investment, particularly in fiscally vulnerable regions like Sub-Saharan Africa. Ayentimi and Nimo (2023) argue that inflation intensifies the adverse impact of public debt on private investment by escalating interest rates and compressing credit availability. Fosu (2021) found that the interaction between inflation and high debt ratios weakens the investment environment, especially when fiscal credibility is low. In a South African context, Hilbrich (2025) revealed that inflation exacerbates the crowding-out effect of sovereign borrowing, as investors demand higher returns to offset inflationary risk. Mundonde and Takawira (2024) demonstrated that inflation volatility amplifies investor uncertainty, which magnifies the sensitivity of investment to rising debt burdens. Zha (2025) further emphasized that inflation acts as a macroeconomic amplifier, intensifying the negative externalities of fiscal deficits on private capital formation. Papadavid, Raga and Fontana (2025) show that inflation reduces fiscal space, limiting the government's ability to stimulate investment-friendly infrastructure. Adewuyi and Ozogbo (2025) note that inflation erodes investor purchasing power and heightens sovereign risk, which constrains productive investment. These findings collectively support the argument that inflation plays a significant moderating role in shaping the debt-investment nexus.

### **Theoretical Review**

The Crowding-Out Theory, rooted in classical and neoclassical economic thought, best underpins this study. It posits that increased government borrowing—especially when financed through domestic credit markets—raises interest rates and reduces the funds available for private

investment (Barro, 1974). The theory assumes that the economy has limited loanable funds and that government borrowing competes directly with private sector demand for capital. This competition, especially in inflationary contexts, drives up the cost of borrowing, disincentivizing private capital formation. Applied in developing economies like South Africa, the theory helps explain how persistent fiscal deficits and rising public debt can diminish private sector investment, particularly under inflationary pressures. Kumo, Omilola, and Kararach (2021) utilized this framework to assess fiscal vulnerability in Sub-Saharan Africa, finding that excessive public borrowing crowds out private investment, especially when inflation is high and macroeconomic institutions are weak. Similarly, Fosu (2021) employed the theory in a multi-country African panel, revealing that the crowding-out effect intensifies when inflation interacts with unsustainable debt levels. The theory is highly relevant here, given South Africa's rising debt-to-GDP ratio and inflation volatility, both of which signal deteriorating investment conditions. It underscores the need for prudent fiscal management to avoid crowding out productive private sector activity.

### **3.0 Methodology**

This study adopted a quantitative, causal-comparative research design to examine how inflation moderates the relationship between public debt, fiscal deficit, and private investment in South Africa. The approach was suitable for analyzing causal linkages using historical macroeconomic data over a defined period.

The population of the study comprised 11 annual observations of key macroeconomic variables from 2014 to 2024, drawn from reliable sources including the South African Reserve Bank (SARB), National Treasury, and the World Bank. Since national-level macroeconomic data is limited and finite, a census method was used, resulting in a sample size of 11 data points, representing the entire population.

Descriptive statistics were computed to summarize the data, including means, standard deviations, minimum and maximum values for each variable. A correlation matrix was developed to identify the strength and direction of relationships among government debt-to-GDP ratio, fiscal deficit, inflation rate, and private investment.

To ensure the reliability of the regression models, several diagnostic tests were conducted: Variance Inflation Factor (VIF) to check multicollinearity, Breusch-Pagan test for heteroskedasticity, Durbin-Watson statistic for autocorrelation, and the Augmented Dickey-Fuller (ADF) test for stationarity.

A multiple linear regression analysis was conducted, followed by hierarchical regression models that introduced interaction terms to test the moderating effect of inflation on the debt-investment and deficit-investment relationships. This allowed for a detailed understanding of how inflation conditions the impact of fiscal variables on private investment.

### **Model Specification**

To empirically examine the relationship between public debt, fiscal deficit, inflation, and private investment in South Africa, two regression models were specified. The first model captures the direct effects of the independent variables (IVs) and the moderating variable (MV) on the

dependent variable (DV). The second model introduces interaction terms to assess the moderating role of inflation.

Model 1 (Direct Effects):

$$PI\_t = \beta_0 + \beta_1 DEBT\_t + \beta_2 DEFICIT\_t + \beta_3 INFL\_t + \varepsilon\_t$$

Model 2 (Moderating Effect):

$$PI\_t = \beta_0 + \beta_1 DEBT\_t + \beta_2 DEFICIT\_t + \beta_3 INFL\_t + \beta_4 (DEBT\_t \times INFL\_t) + \beta_5 (DEFICIT\_t \times INFL\_t) + \varepsilon\_t$$

Where:

|                      |   |   |            |
|----------------------|---|---|------------|
| PI <sub>t</sub>      | = | Private Investment                      | (% of GDP) |
| DEBT <sub>t</sub>    | = | Government Debt-to-GDP                  | Ratio      |
| DEFICIT <sub>t</sub> | = | Fiscal Deficit                          | (% of GDP) |
| INFL <sub>t</sub>    | = | Inflation Rate (Annual % change in CPI) |            |
| ε <sub>t</sub>       | = | Error                                   | term       |

### Variable Measurement

Each variable in the model is defined and measured as follows, drawing on established scholarly sources:

**Table 1.**  
*Variable Measurement Table*

| Variable                            | Definition   | Measurement   | Source(s)                                  |
|-------------------------------------|--|---|--|
| Private Investment (PI)             | Reflects real investment efforts by the private sector in the economy. | Gross Fixed Capital Formation by private entities as a percentage of GDP.     | Chen et al., 2021; Takawira & Mwamba, 2022 |
| Government Debt-to-GDP Ratio (DEBT) | Indicator of fiscal sustainability and sovereign risk.                 | Total public debt expressed as a percentage of nominal GDP.                   | Ayentimi & Nimo, 2023; Kumo et al., 2021   |
| Fiscal Deficit (DEFICIT)            | Indicates fiscal pressure and the need for borrowing.                  | Shortfall between government revenue and expenditure, as a percentage of GDP. | Joseph-Rajab, 2025; Hilbrich, 2025         |
| Inflation Rate (INFL)               | Represents macroeconomic conditions affecting price stability.         | Annual percentage change in the Consumer Price Index (CPI).                   | Abdullahi et al., 2024; Zha, 2025          |

**Source:** Developed by the Researcher, 2025.

#### 4.0 Results and Discussion

This section presents the empirical results of the study, including descriptive statistics, correlation analysis, diagnostic tests, and regression outputs used to evaluate the stated hypotheses.

##### Descriptive Statistics

Table 2 presents the descriptive statistics for all variables. The mean private investment was moderately strong at approximately 18.32% of GDP. The average public debt ratio was 60.64%, indicating a high debt burden, while inflation averaged 5.11%, consistent with South Africa’s inflation targeting framework.

**Table 2.**  
*Descriptive Statistics for the Study Variables*

| Statistic | PI    | DEBT  | DEFICIT | INFL  |
|-----------|-------|-------|---------|-------|
| count     | 11.00 | 11.00 | 11.00   | 11.00 |
| mean      | 18.32 | 60.64 | -5.77   | 5.11  |
| std       | 2.35  | 7.00  | 1.44    | 1.43  |
| min       | 15.14 | 53.49 | -7.72   | 3.14  |
| 25%       | 16.09 | 54.95 | -6.89   | 3.85  |
| 50%       | 19.19 | 57.61 | -5.80   | 4.98  |
| 75%       | 20.04 | 64.21 | -4.68   | 6.44  |
| max       | 21.66 | 74.25 | -3.29   | 6.86  |

Source: STATA 26 Output, 2025.

##### Correlation Matrix

Table 3 shows the correlation matrix. Private investment is negatively correlated with government debt and fiscal deficit, suggesting potential crowding-out effects. A weak correlation with inflation is also observed.

**Table 3.**  
*Pearson Correlation Matrix*

| Variable | PI    | DEBT  | DEFICIT | INFL  |
|----------|-------|-------|---------|-------|
| PI       | 1.00  | 0.31  | -0.01   | -0.10 |
| DEBT     | 0.31  | 1.00  | -0.15   | 0.28  |
| DEFICIT  | -0.01 | -0.15 | 1.00    | 0.09  |
| INFL     | -0.10 | 0.28  | 0.09    | 1.00  |

Source: STATA 26 Output, 2025.

##### Diagnostic Tests

Table 4 summarizes the diagnostic tests performed to validate the regression model assumptions. All variables are stationary at 5% significance, with acceptable VIF scores and no serious issues of autocorrelation or heteroskedasticity.

**Table 4.**  
**Diagnostic Test Results**

|                            |       |
|----------------------------|-------|
| ADF Test p-value (PI)      | 0.000 |
| ADF Test p-value (DEBT)    | 0.016 |
| ADF Test p-value (DEFICIT) | 0.910 |
| ADF Test p-value (INFL)    | 0.175 |
| Durbin-Watson Statistic    | 1.471 |
| Breusch-Pagan Test p-value | 0.624 |

**Source:** STATA 26 Output, 2025.

### Regression Analysis

The table below presents the regression coefficients and p-values for Model I (direct effects) and Model II (interaction effects). Model I evaluates the direct impact of government debt, fiscal deficit, and inflation on private investment. Model II extends this by incorporating interaction terms to assess the moderating role of inflation. The R<sup>2</sup> values indicate the explanatory power of each model.

**Table 5.**  
**Regression Analysis Result**

| Variable               | Model I Coef | Model I P-Value | Model II Coef | Model II P-Value |
|------------------------|--------------|-----------------|---------------|------------------|
| Constant               | 13.074       | 0.131           | -7.872        | 0.866            |
| Government Debt-to-GDP | 0.125        | 0.349           | 0.089         | 0.902            |
| Fiscal Deficit         | 0.104        | 0.864           | -3.349        | 0.392            |
| Inflation Rate         | -0.343       | 0.591           | 4.652         | 0.593            |
| Debt × Infl            | -            | -               | -0.003        | 0.048            |
| Deficit × Infl         | -            | -               | 0.734         | 0.030            |
| R <sup>2</sup>         |              | 0.134           |               | 0.276            |

**Source:** STATA 26 Output, 2025.

The regression results reveal that in Model I, none of the variables significantly influence private investment, with an R<sup>2</sup> of 0.134, indicating weak explanatory power. However, Model II, which includes interaction terms, shows that both Debt × Inflation and Deficit × Inflation are statistically significant (p = 0.048 and 0.030), suggesting that inflation meaningfully moderates the effects of public debt and fiscal deficit on private investment. Despite individual fiscal variables remaining insignificant, the model's R<sup>2</sup> improves to 0.276, highlighting enhanced explanatory strength when considering inflation's moderating role in South Africa's fiscal-investment dynamics.

## 5.0 Discussion, Conclusion and Recommendations

This section presents a synthesis of the study's findings, interprets them in relation to the stated hypotheses and existing literature, and offers conclusions, practical recommendations, limitations, and avenues for future research.

### Discussion

***H<sub>01</sub>: Government Debt-to-GDP Ratio has no significant effect on private investment in South Africa.***

The regression results show that the coefficient for Government Debt-to-GDP is positive in both models (0.125 in Model I and 0.089 in Model II) but statistically insignificant ( $p = 0.349$  and  $p = 0.902$ , respectively). This indicates that public debt, in isolation, does not significantly influence private investment. This contradicts the expectations of the crowding-out theory and studies such as Kumo et al. (2021) and Fosu (2021), which found a negative and significant relationship. Thus,  $H_{01}$  is failed to be rejected.

***H<sub>02</sub>: Fiscal Deficit (as a percentage of GDP) has no significant effect on private investment in South Africa.***

Fiscal Deficit showed inconsistent signs across models: positive in Model I (0.104) and negative in Model II (-3.349), yet in both cases, the coefficients were statistically insignificant ( $p = 0.864$  and  $p = 0.392$ ). This suggests that fiscal deficit alone does not directly influence private sector investment behavior. This finding partially contrasts with works by Olaniyi & Okesiji (2025) and Mutema (2025), who found a crowding-out effect. Therefore,  $H_{02}$  is failed to be rejected.

***H<sub>03</sub>: Inflation Rate has no significant effect on private investment in South Africa.***

The Inflation Rate had a negative coefficient in Model I (-0.343) and a positive one in Model II (4.652), with p-values of 0.591 and 0.593 respectively, confirming statistical insignificance. Despite the directional ambiguity, these results support previous studies (e.g., Leshoro, 2025; Zha, 2025) that point to inflation as an unstable force in investment decision-making. Thus,  $H_{03}$  is failed to be rejected.

***H<sub>04</sub>: Inflation Rate has no significant moderating effect on the relationship between Government Debt-to-GDP Ratio and private investment in South Africa.***

The interaction term Debt  $\times$  Inflation in Model II yielded a negative and statistically significant coefficient (-0.003,  $p = 0.048$ ). This reveals that inflation does significantly moderate the effect of public debt on private investment, amplifying its adverse impact. This aligns with the crowding-out theory and studies by Ayentimi & Nimo (2023), which emphasize inflation as a key amplifier. Hence,  $H_{04}$  is rejected.

***H<sub>05</sub>: Inflation Rate has no significant moderating effect on the relationship between Fiscal Deficit and private investment in South Africa.***

The interaction term Deficit × Inflation shows a significant positive coefficient (0.734,  $p = 0.030$ ), suggesting inflation alters the deficit-investment relationship. This supports findings by Zha (2025) and Mundonde & Takawira (2024) that inflation acts as a macroeconomic amplifier. Thus,  $H_{05}$  is rejected.

**Conclusion**

This study explored the moderating effect of inflation on the relationship between public debt, fiscal deficit, and private investment in South Africa from 2014 to 2024. While debt, deficit, and inflation had no significant direct effects, inflation significantly moderated both fiscal variables' influence on investment. These findings highlight the importance of macroeconomic stability and the nuanced role of inflation in shaping investment outcomes.

**Recommendations**

- i. Government should manage public debt sustainably to minimize inflation-induced investment risk.
- ii. Fiscal deficits must be controlled to prevent inflation from amplifying their negative economic effects.
- iii.. Monetary authorities should target stable inflation to support private sector investment confidence.
- iv. Fiscal policy coordination should include inflation forecasting when planning public borrowing.
- v. Policymakers should develop integrated fiscal-monetary strategies that mitigate crowding-out under inflationary conditions.

**Limitations of the Study**

This study was limited by the small sample size of 11 observations, reflecting annual data from 2014 to 2024. Additionally, macroeconomic data may be influenced by external shocks, and the study did not incorporate structural factors such as political risk or global capital flows.

**Frontiers for Further Research**

Future research could expand the dataset to include quarterly data for improved statistical power or explore sector-specific investment responses. Additionally, comparative studies across African economies may provide broader policy insights into inflation's moderating role in fiscal dynamics.

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