**Impact of Public Debt on Private Investment in Kenya during 1978 — 2020**

**Abstract**

This study investigates the effect of public debt on private investment in Kenya using a causal effect research design of time series data of 43 years (1978 — 2020). Private investment plays a crucial role in economic growth by fostering employment, capital accumulation, and technological advancement. Private investment is extremely important to growth, development, and employment. Excessive borrowing, however, results in debt accumulation which retards the pace of sustainable economic progress. Kenya is one of the most highly indebted countries in Africa. Statistical software SPSS and E-Views packages were used for data analysis. As a result, based on an error correction model, external debt, internal debt, and debt interest rates have a statistically significant negative effect on private investment. Concretely, every additional unit of external debt induces a decrease of 0.012410 units in private investment, and every additional unit of internal debt leads to a reduction in private investment by 0.057316 units. Also, debt interest has a negative effect on private investment, whose impact is 0.010017. The results of this study indicate that excessive public debt crowds out private investment by raising its liability for interest and diminishing funds available for the private sector. The results indicate that in Kenya, rising public debt has been detrimental to private investment and that there is a need for prudent borrowing and sound fiscal policies. To cushion the effects of these conditions, the government should focus on debt sustainability, expand the tax base and encourage fast growth of the private sector through the promulgation of favorable policies and provision of investment incentives. Investor confidence and long-term economic stability will be strengthened through mechanisms for strengthening institutional frameworks and fiscal transparency. Transparency in fiscal policies and improving the outlook of institutional aspects will increase investor confidence as well as growth. With this recommendation in place, Kenya will balance their debt with the need for investment in the private sector hence balancing economic growth and development.

Keywords: External debts, internal debts, debt interest, private investment.

**Introduction**

Borrowing in developing countries is often seen as a crucial source of revenue, particularly when tax revenues fail to cover government expenditures (Ohura, 2012). Governments can borrow domestically or externally, and when managed prudently, borrowed funds can catalyze economic growth and development. However, excessive borrowing can lead to debt accumulation and increased interest liabilities, potentially crowding out private investments and reducing economic dynamism. While borrowing enables governments to finance essential infrastructure, stabilize economies, and bridge fiscal deficits, its impact on private-sector investment remains a critical concern. Kenya has achieved significant political and economic reforms over the past decade, leading to strong economic growth, social development, and political stability. However, the country still faces key development challenges, such as poverty, inequality, youth unemployment, and a lack of quality jobs, transparency, and accountability. Private investment plays a critical role in the growth of the economy and sustainable development in Kenya (Otieno, 2024; Frimpong et al., 2024; Chepkorir et al., 2024). However, private sector investment is weak, and the economy is vulnerable to internal and external shocks (Bahtiar et al., 2024). There is the tendency that private investment could react differently, to rising public debt, than it would, to falling public debt, indicating an asymmetric effect of public debt on investment. For instance, a reduction in government debt could boost investor confidence, resulting in a significant increase in private investment. On the other hand, an increasing stock of domestic debt could lead to an increase in interest rate which ultimately leads to a decrease in investment (Abubakar and Mamman, 2021 ).

Public debt encompasses contractual obligations with fixed terms directed to the government, representing the entire stock at a specific date (Chowdhury, 2001). These debts can be either external or internal (IMF, 2011). External debts are obligations owed to foreign entities, including multilateral creditors such as the International Monetary Fund (IMF), World Bank, and African Development Bank (AFDB), as well as bilateral creditors from countries like China, France, and Germany . Internal debts, on the other hand, are obligations that the government owes domestic agents. When managed effectively, public debt can facilitate economic stability and capital inflows, which in turn stimulate domestic savings and investment (Burnside & Dollar, 2000). Most of the countries focus on public investment-driven growth and try to exert control over private investments. Focus on human capital development is substantial for economic growth, but the countries have less concentration on that sector. The evidence suggests that countries need to improve the public sector productivity and develop an analytical framework to stimulate private investment. Policy support to facilitate the private investment and skilled labor force can ensure a stable macroeconomic environment and sustainable economic growth (Meka'a et al., 2024; Mose et al., 2024).

In Kenya, public debt has risen sharply over the years. As of 2020, the country's total public debt stood at Ksh 6.7 trillion, comprising Ksh 3.2 trillion in domestic debt and Ksh 3.5 trillion in external debt (Central Bank of Kenya, 2020). This growing debt burden raises concerns about its potential impact on private investment by increasing interest liabilities and reducing funds available for private-sector borrowing (Khar et al., 2010). The country's public debt has escalated from Ksh 1.78 trillion in February 2013 to Ksh 6.7 trillion in July 2020, with external debt proportions rising from 46.7% to 67.5% during this period. While government borrowing is essential for financing development, excessive borrowing can lead to higher interest rates, increased taxation, and reduced private sector participation in economic activities (Sen & Kaya, 2013).

Private investment plays a crucial role in economic growth by fostering employment, capital accumulation, and technological advancement (Ahuja, 2007). When the government borrows prudently to finance productive investments, private investment thrives. However, borrowing primarily for recurrent expenditure or debt servicing can deter private sector growth by raising domestic interest rates and discouraging private investment (Saeed, 2006). Kenya’s Vision 2030 aims to enhance private sector investment to achieve sustainable economic growth, yet high public borrowing threatens this objective by potentially crowding out private investment opportunities.

The impact of public debt on private investment can be analyzed through economic theories. Keynes (1936) argued that high public debt levels could lead to increased taxation, reducing private investment by lowering consumption, growth, and employment. Modigliani (1951) posited that while national debt might benefit current generations, it imposes a burden on future generations by diminishing private capital accumulation. However, Modigliani (1961) also suggested that public investments, if productive, could mitigate this burden by enhancing future income streams.

Despite the importance of private sector investment in Kenya’s economic development, its contribution has fluctuated over the years. Since the 1970s, domestic investment has ranged between 7% and 16% of GDP—substantially lower than countries like Nigeria and Botswana, which have recorded investment levels between 14% and 22% (World Bank, 2014). Public debt has grown significantly and issues of the sustainability of this debt, and debt's crowding out of local investment have been raised. According to the World Bank (2020), Kenya's debt as a percentage of GDP in 2020 stood at 65.7% which is above the IMF-recommended 50% ratio for frontier economies. This creates key questions as to how public debt, especially the external and domestic debts as well as the debt interest costs affects the private sector investment in Kenya.

The purpose of this paper shall be to analyze the impact of public debt on private investment in Kenya between the years 1978 to 2020. More so, it seeks to establish the relationship between external debt, internal debt, and debt interest on private investment in the country. The following hypotheses are proposed for the study: (H01) External debt has no impact on private investment in Kenya; (H02) Internal debt has no impact on private investment in Kenya; (H03) Debt interest has no impact on private investment in Kenya. Acknowledging these issues, this research helps to enhance the understanding of Kenya's debt sustainability and offers policy suggestions on public borrowing and private sector development.

**2. Literature review**

**2.1 Theoretical Literature**

**2.1.1 Keynesian View of Public Debt**

According to Keynesian economic theory, high levels of public debt are expected to lead to increased taxation, which can negatively affect public spending and investment (Ferreira, 2009). Higher taxes reduce disposable income, leading to lower consumption, reduced economic growth, and declining employment levels. However, Keynesians argue that when debt levels remain moderate, public debt can stimulate economic growth by financing productive investments. During periods of unemployment, government borrowing can be used to invest in capital formation, thereby boosting national income and economic growth (Varughese, 1999).

**2.1.2 Modigliani’s Theory on Debt**

Modigliani (1961) posited that rising national debt benefits the current generation but shifts the burden to future generations by reducing private capital stock. Conversely, reducing national debt imposes a burden on the present generation while benefiting future generations. The impact of national debt on future generations depends on government borrowing interest rates and the marginal productivity of private capital. If government borrowing leads to productive public investments that enhance future income, the burden may be offset or even reversed, benefiting future generations. This theory highlights the importance of prudent debt management to balance economic growth and intergenerational equity.

**2.2 Empirical Review**

**2.2.1 External Debt and Private Investment**

Muhdi and Sasaki (2009) examine the capacity of external and internal debts for the Indonesian economy using the OLS regression equation. From their research, external debt was found to enhance levels of investment as well as economic growth but at the same time was also found to have a negative effect on private investment because it competes for funds with the private sector. The study therefore suggested that the Indonesian government should avoid contracting foreign debts and increase tax revenues. Nonetheless, such results may not always be interpreted for the Kenyan context since the study was conducted in Indonesia, and different economies, and policies may be in place.

Were (2001) investigated the impact of external debt on economic growth and private investment in Kenya using a cointegration test. The study established that external debt affects the level of private investment negatively, with increased public investment leading to the dominance of the non-governmental sector for capital. From the analysis, the author concludes that Kenya's government should avoid borrowing up to the level where spending overwhelms the country and provides adequate capital to private residents.

**2.2.2 Internal Debt and Private Investment**

The effects of public debt on investment in Nigeria were determined by Akomolafe et al., (2015) relying on Johansen Integration Test. From their findings, they evidenced the fact that internal debt credited the private investment, meaning that it is more favourable to borrow domestically to finance deficits as compared to foreign debts. This suggests that domestic borrowing could be less burdensome for the funding of expenditures and at the same time is not likely to harm the private investments.

On the other hand, King'wara (2014) examined the relationship between public debt and private investment in Kenya using stationary and co-integration analysis. The research established that internal borrowing has a negative impact on private investment in Kenya. The evidence provided in this paper also shows that high domestic borrowing has a negative impact on the funds that are available for investment in the private sector. This calls for the Kenyan government to consider other forms of sourcing funds for its needs other than through domestic borrowing.

**2.2.3 Debt Interest Rates and Private Investment**

Muhammad (2014) examined the relationship between debt servicing and private investment in Pakistan using a simple regression model and the Ordinary Least Squares method. The study concluded that investment levels were not significantly affected by debt servicing practices. However, debt servicing to multiple creditors, especially private creditors, had a negative impact on Pakistan’s gross private capital investment. Since this study was conducted in Pakistan, the results may differ if replicated in Kenya due to variations in financial institutions and economic conditions.

Otieno (2015) investigated the relationship between total debt servicing and macroeconomic performance in Kenya using the Vector Error Correction Model. The study provided evidence of private investment crowding out due to excessive debt servicing. It also highlighted Kenya’s vulnerability to external economic shocks due to weak policy institutions. The findings underscore the need for stronger fiscal policies and institutional frameworks to mitigate the adverse effects of debt servicing on private investment.

**3. Methodology**

**3.1 Research Design**

In this research, the quantitative research approach was used to inform the analysis of external debt, internal debt, interest rates on the debts, and private investments in Kenya. Consequently, the purposive sampling technique of data collection covered a long period of 43 years from 1978 to 2020 to establish macroeconomic trends. This was considered the period of choice due to the availability and relevancy of the data about Kenya's debt and investment. Time series data were used in the study to demonstrate statistical correlations between the variables thus making the results more objective.

**3.2 Data Sources and Processing**

The study used only secondary data collected from reliable sources such as the Central Bank of Kenya (CBK), The World Bank, the African Development Indicators (ADI), and the International Monetary Fund (IMF). These institutions offer internationally accepted and comparable macroeconomic data and information to avoid a biased dataset. These macroeconomic variables used in the study are private investment ratio to gross domestic product, external debt, internal debt, and public debt interest rates.

The data was cleansed through pre-processing where all features were examined and unnecessary elements were removed especially missing values and outliers. Due to the skewness issue, all the independent variables were log linearized in order to make it easy to interpret. However, the transformation was instrumental in reducing variance and making the data more appropriate for regression analysis.

**3.3 Model Specification**

To assess the relationship between external debt, internal debt, debt interest rates and private investment, it becomes necessary for the study to estimate a linear relationship between the dependent and the independent variables. The specified econometric model is therefore as follows:

$logPI\_{t}=β\_{0}+β\_{1}logEXD\_{t}+β\_{2}logIND+β\_{3}logINTR\_{t}+μ\_{t}$(1)

Where $logPI\_{t}$ is the natural logarithm of Private investment expressed as a percentage of GDP at time t, $logEXD\_{t} $is the natural logarithm of External public debt stock level at time t, $logIND$ is the natural logarithm of Internal debt stock level at time t, $logINTR\_{t}$ represents the natural logarithm of the public debt interest rate at time 𝑡, The parameter ​$β\_{0} $is the steady state investment which is autonomous when the independent variable are held constant.

While $β\_{1}, β\_{2},$ and $β\_{3} $capture the effects of external debt, internal debt and interest rate respectively on private investments. The disturbance term $μ\_{t}$ incorporates all other variables affecting private investment that are not otherwise accounted for in the model.

**3.4 Data Analysis and Estimation Technique**

The study employed Ordinary Least Squares (OLS) regression as the primary estimation technique to determine the relationships between the variables. The analysis was conducted using SPSS and EViews statistical software. To ensure the reliability and validity of the results, various diagnostic tests were conducted. Descriptive statistics were used to assess the normality of the data distribution. The Augmented Dickey-Fuller (ADF) test was applied to check for stationarity in the time-series data, and in cases where non-stationarity was detected, first-differencing was used to transform the data.

To detect multicollinearity among independent variables, the Variance Inflation Factor (VIF) test was performed. The Durbin-Watson test was used to check for autocorrelation in the residuals, while the Breusch-Pagan test was conducted to identify potential heteroscedasticity. The Granger causality test was employed to establish the direction of causality between private investment and the independent variables. Any variable that exhibited neutral causality with private investment was excluded from the final regression model.

**4 Results and Discussion**

**4.1 Normality Test**

A normality test was carried out on the time series data to ensure accurate and reliable conclusions. Skewness was used as the normality test criterion. According to Aczel & Sounderpadian (2002), data is considered normal and unbiased when the Skewness statistic falls within the range of -3 to +3.

**Table 1: Skewness Statistics**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **N Statistic** | **Skewness Statistic** | **Std. Error** |
| logPIt | 40 | 0.281 | 0.374 |
| logEXDt | 40 | -0.498 | 0.374 |
| logINDt | 40 | 0.035 | 0.374 |
| logINTRt | 40 | -0.606 | 0.374 |

Table 1 confirms normality, as the Skewness statistics fall within the acceptable range of -3 to +3, making the data suitable for further analysis.

**4.2 Stationarity Test**

Time-series data is often non-stationary, which may lead to unreliable results. To address this, a unit-root test was performed using the Augmented Dickey-Fuller (ADF) test. The null hypothesis was accepted if the ADF t-statistic was greater than the Mackinnon critical value, indicating non-stationarity. Otherwise, the null hypothesis was rejected, implying stationarity.

**Table 2: Stationarity Test Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | ADF Statistic | Significance Level | Critical Value | Status |
| logPIt | -3.955772 | 5% | -2.93899 | Stationary |
| logEXDt | -0.479548 | 5% | -2.93899 | Not Stationary |
| logINDt | -0.592435 | 5% | -2.93899 | Not Stationary |
| logINTRt | -3.12035 | 5% | -2.93899 | Stationary |

As shown in Table 2, external and internal debt data were non-stationary. To correct this, the first difference was taken to determine stationarity.

**Table 3: First Difference Stationarity Test**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | ADF Statistic | Significance Level | Critical Value | Status |
| logEXDt | -6.768122 | 5% | -2.941145 | Stationary |
| logINDt | -5.899609 | 5% | -2.945842 | Stationary |

After first differencing, external and internal debt became stationary and were deemed suitable for further analysis as shown in Table 4.

**4.3 Autocorrelation Test**

Autocorrelation was tested using the Durbin-Watson (DW) statistic. A DW value between 0 and 4 suggests the absence of autocorrelation.

**Table 4: Autocorrelation Statistics**

|  |  |
| --- | --- |
| Variable | Durbin-Watson Value |
| External Debt | 2.3192 |
| Internal Debt | 1.9583 |
| Gross Fixed Capital | 1.4771 |
| Debt Interest | 1.9346 |

Table 4 confirms that the Durbin-Watson values fall within the acceptable range, indicating the absence of autocorrelation, making the data suitable for further analysis.

**4.4 Multicollinearity Test**

Multicollinearity was tested using the Variance Inflation Factor (VIF). Multicollinearity is considered absent when the VIF is less than 10.

**Table 5: Collinearity Statistics**

|  |  |  |
| --- | --- | --- |
| Variable | Tolerance | Variance Inflation Factor |
| ΔlogEXDt | 0.994 | 1.006 |
| ΔlogINDt | 1.000 | 1.000 |
| logINTRt | 0.994 | 1.006 |

As shown in Table 5, multicollinearity is absent since all VIF values are less than 10 and tolerance values are greater than 0.1, confirming the reliability of the data.

**4.5 Heteroscedasticity Test**

The Breusch-Pagan-Godfrey test was used to detect heteroscedasticity. If the p-value is greater than 0.05, heteroscedasticity is absent.

**Table 6: Heteroscedasticity Test Results**

|  |  |  |
| --- | --- | --- |
| Statistic | Value | Probability |
| F-statistic | 0.421677 | 0.7918 |
| Obs\*R-squared | 1.852604 | 0.7628 |
| Scaled Explained SS | 1.014039 | 0.9077 |

Table 6 presents the results for heteroscedasticity. Since all p-values are greater than 0.05, heteroscedasticity is absent, confirming constant variance in residuals.

**4.6 Cointegration Test**

The Engle-Granger (EG) approach was used to determine long-run relationships between variables. The residuals' stationarity was tested using the ADF test, yielding a value of -4.2877, which is less than the critical value of -1.95 at a 5% significance level. This confirms a long-run relationship between dependent and independent variables.

**4.7 Granger Causality Test**

The Granger causality test determines the direction of the relationship between variables (Kaur & Malhotra, 2014). If the p-value < 0.05, the null hypothesis of non-causality is rejected.

**Table 7: Granger Causality Statistics**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  Null Hypothesis: |  | F-Statistic | Prob.  |
|  |  |  |  |
|  |  |  |  |
|  DLOGEXD does not Granger Cause LOGPI |   |  0.02752 | 0.9729 |
|  LOGPI does not Granger Cause DLOGEXD |  1.25154 | 0.2997 |
|  |  |  |  |
|  |  |  |  |
|  DLOGIND does not Granger Cause LOGPI |   |  1.05656 | 0.3595 |
|  LOGPI does not Granger Cause DLOGIND |  5.27884 | 0.0104 |
|  |  |  |  |
|  |  |  |  |
|  LOGINTR does not Granger Cause LOGPI |   |  2.26933 | 0.1193 |
|  LOGPI does not Granger Cause LOGINTR |  3.48984 | 0.0422 |
|  |  |  |  |
|  |  |  |  |
|  |

Based on Table 7, neutral causality was found between external debt and private investment, while unidirectional causality existed between internal debt, debt interest, and private investment.

**4.8 Coefficient Estimation of the Model**

**Table 8: Model Coefficient Estimation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 2.953527 | 4.44E-16 | 6.65E+15 | 0.0000 |
| DLOGEXD | -0.012410 | 4.99E-16 | -2.49E+13 | 0.0000 |
| DLOGIND | -0.057316 | 4.89E-16 | -1.17E+14 | 0.0000 |
| LOGINTR | -0.010017 | 2.18E-16 | -4.59E+13 | 0.0000 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.987567 |     Mean dependent var | 2.925890 |
| Adjusted R-squared |  0.954563 |     S.D. dependent var | 0.111921 |
| S.E. of regression | 1.05E-15 |     Sum squared resid. | 3.77E-29 |
| F-statistic | 1.07E+29 |     Durbin-Watson stat | 0.794244 |
| Prob(F-statistic) | 0.000000 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

With an R-squared value of 0.987567, 98.76% of variations in private investment were explained by external debts, internal debts, and debt interest. The F-statistic p-value (0.000 < 0.05) confirms the model's significance as shown in Table 8. The model was presented as follows;

$LNPI=2.953527-0.012410∆LNEXD-0.057316∆LNINDT-0.010017LNINTR$ (2)

The constant term has a coefficient of 2.953527, indicating its influence on private investment in the absence of other variables. This suggests that private investment as a percentage of GDP remains positive even when other factors are not considered.

External debt exhibited a negative coefficient of -0.012410, with a p-value of 0.0000˂0.05, signifying a statistically significant negative relationship between external debt and private investment. This means that a one-unit increase in external debt stock reduces private investment by 0.012410 units. Consequently, the null hypothesis—stating that external debt has no significant effect on private investment in Kenya—was rejected. The findings support the argument that a heavy external debt burden crowds out private investment. These results align with those of Were (2001), who also found that external debt negatively affects private investment. However, they contradict the findings of Muhdi and Sasaki (2009), who observed a positive impact of external debt on private investment in Indonesia.

Similarly, internal debt had a negative coefficient of -0.057316, with a p-value of 0.0000˂0.05, indicating a significant inverse relationship between internal debt and private investment. An increase of one unit in internal debt stock leads to a 0.057316-unit decline in private investment. Accordingly, the null hypothesis that internal debt has no significant effect on private investment was rejected. These findings contrast with those of Akomolafe et al. (2015), who reported a positive correlation between internal debt and private investment in Nigeria. However, they are consistent with King'wara (2014), who found that internal debt negatively impacts private sector investment.

Debt interest also exhibited a negative coefficient of -0.010017, with a p-value of 0.0000˂0.05, confirming a significant negative relationship between debt interest rates and private investment. This implies that a one-unit increase in debt interest leads to a 0.010017-unit decline in private investment. As a result, the null hypothesis—stating that debt interest has no statistically significant effect on private investment—was rejected. These findings align with those of Muhammad (2014) and Otieno (2015), both of whom concluded that debt interest and servicing negatively affect private investment.

**5. Conclusion and Recommendation**

From the findings of the study, it can be concluded that public debt has a statistically significant negative relationship with private investment in Kenya from 1978 to 2020. External and internal debts were also shown to increase the extent to which private investment was crowded out, whereas debt interest also inhibited the growth of the private sector. The findings of this study are coherent with past studies showing that if borrowing is done inappropriately, specifically for wasteful causes, it results in high-interest costs and lowered credit access for private investors which in turn slows economic activities.

In this regard, the government should consider rigorous debt management policies that will help it to avert high borrowing from domestic and foreign institutions. Enhancing debt ratios is important to ensure that borrowed resources are properly utilized for productive activities that will lead to increased growth, not for recurrent expenses.

Furthermore, the government should broaden the tax system to be able to obtain sufficient domestic revenues to fund expenditures instead of borrowing. Favourable tax policies, better business climates and infrastructure development for instance are some of the measures that attract private investment, which would check the adverse impacts of public debt. Additionally, transparency in fiscal policies and improving the outlook of institutional aspects will increase investor confidence as well as growth. With this recommendation in place, Kenya will balance their debt with the need for investment in the private sector hence balancing economic growth and development.

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