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The Effect of National Public Debt on Economic Growth in Kenya

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Abstract

Kenya being a lower middle income country compliments tax revenue with government borrowing to finance its national development plans. In an attempt to add to available domestic resources, successive governments have relied on both domestic and external debt to finance the country's budget. In light of the growing concerns over Kenya's national public debt sustainability and its potential effect on the economy, this study aimed at analyzing the effect of national public debt on economic growth in Kenya. Specifically, the study sught to establish the effect of domestic debt and external debt on Kenya's economic growth. Gross Domestic Product was used as the proxy for economic growth while domestic debt, external debt, inflation rate, exchange rate, capital stock and labor force are the explanatory variables. The study used time series data for the period 990 to 20 9. The data was extracted from the World development indicators and this data was harmonized with data extracted from the data bases of the Kenya National Bureau of Statistics. The data was analyzed through the Ordinary Least Square (OLS) regression technique. The findings indicated that domestic debt had an insignificant negative effect on Kenyan economy while external debt has insignificant positive effect. The study concluded that internal debt

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has deleterious while external debt has positive effect on growth.

Keywords: Public debt, sustainable debt, and economic development

Introduction

The subject of public debt remains a topic of great interest today, as much as it has been, even in the past. In almost every economy globally, whether developed or developing, authorities are in a race to control rising fiscal deficits, with most resorting to public borrowing to plug the fiscal gaps. This in turn has seen public debt levels of many countries rising to worrying levels leading to calls for governments' action to reduce public debt (Aybarç, 2019). However, the question of how financing via public borrowing influences a country's economic growth remains hotly contested among economic policymakers (Lee & Ng, 2015). Those who support massive government expenditure via deficits-spending financed through government borrowing, domestically or externally, cite their huge benefits economically. However, that opposition points to the serious problems that excessive public debts may have on the economy (Woo & Kumar, 2015).

The amounts of publicly borrowed funds constitute a significant of modern-day governments' funding. Public debt portfolio1is a mix of financing resources that are often complicated and if not properly managed can put into jeopardy a country's financial-wellbeing and resource base (Ndieupa, 2018). Public authorities have a responsibility of ensuring that the country's public debt level and how it expands remain within manageable levels and that its associated repayment conditions can be met within a country's affordable means (Ahlborn & Schweickert, 2018). A country has to ensure that it has sound strategies of controlling its debt levels. Sound public debt policies and measures can assist public authorities to keep an eye on their economies' exposure to a wide range of financial risks (Égert, 2015).

As observed by Fincke and Greiner (2015), most of the financial-related problems faced by nations and that have arisen in the course of history have been occasioned by poorly managed public1debts, especially with respect to the costs of the loans and inappropriate maturing durations as well as holding huge inadequately funded contingent liabilities. It's therefore argued that for nations to reduce their susceptibility to the dangers of excessive public1debts holdings including disrupting the growth of the private sector, public authorities must exercise prudence in managing the public debts levels by instituting necessary policies and strategies that keep the public's debt-level at manageable levels (Chudik et al., 2017). Given the increasing growing concern on Kenya's public debt levels and a stagnating economy, and in light of the mixed findings on the public debt and economic growth nexus, the current research sought to offer insights into how Kenya's international

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public1debt affects the country's economic1growth. It is hoped that the findings of this study inform the review of existing national fiscal policies.

Managing a country's public debt level constitutes an important task within its general aggregate economic context as it affects its level of public spending and directly affects how stable the economy is (Teles & Mussolini, 2014). The Government of Kenya has a considerable portfolio of public debt dating back to the 1960s. This debt has been acquired from international circles (multilaterally, bilaterally, and commercially) as well as from internal sources via the issuance of treasury bills and bonds, respectively. The mix and magnitude of Kenya's public debt have grown and varied have time as the country seeks to acquire funds that are within its ability to repay, and which carry lesser risks so as to fund its capital for the attainment of its long-run developmental agenda (Mupunga & Le Roux, 2016). Furthermore, the risks attributed to expense of Kenya's debt mix have been evolving during the same period, as a result of efforts to diversify its avenues for funds, especially in light of decreases in funds concessional acquired as the country has been reclassified into the lower-middle-income status and considering dynamics in international funds markets (Makau, Njuru & Ocharo, 2018).

For the period from Kenya's independence to 1970, the proportion of the country's debts sourced externally was at 21% of its total national output while debts sourced internally represented 7.2% making the country's debt to total national output average 28.1% over the period. Debts acquired in these early periods were all sourced externally as existing market circumstances were not favorable for sourcing the funds internally. For the period 1971 to 1980, relative to the GDP, debts sourced externally were at 15.3% while loans acquired internally were at 13% making the average loans to total national output ratio average 28.3% in that period. The 1970s-80s period was marked by global oil crises and booming coffee returns. There was a remarkable upsurge in Kenya's debt levels for the period 1981 - 1990. Relative to the country's total national output, loans acquired externally accounted for 35.8% while loans acquired internally represented 15.5% with the country's aggregate loans to total national output ratio averaging 51.3% with the remarkable growth in Kenya's debt to GDP ratio during this period being the result of 1982's political crisis as well as Structural Adjustment Programme (SAPs) suggested by the Breton Woods institutions, IMF and World Bank from 1988. There were further increases in 1991 - 2002 with loans acquired externally and internally respectively accounting for 44.8% and 16% of Kenya's gross national output - a time marked by instabilities in the economy attributable to the multiparty electoral processes of 1992 and 2002, Kenya's currency seriously depreciating against global major currencies occasioning sharp rise in the country's nominal debt, the multimillion Goldenberg-Scandal

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and financial help from donor nations being canceled (International Energy Agency, 2017).

An improved aggregate economic context in the 2003-2007 interval shows Kenya's debt position improved with the gross loans to total national output ratio averaging 49% with loans acquired externally accounting for 27.7% while those acquired internally accounting for 21.3% of the country's gross national output. This was helped by low levels of interest rates and inflation, an exchange rate that was stable, and controlled budgetary gaps. In the succeeding interval of 2008-2019, the country's gross loans ratio relative to the total national output has been at an average of 49% with monies borrowed internally accounting for 26.5% of gross national output while funds borrowed externally account for about 22.5% of the nation's total national output. What is evident is that the country's debt position has been on an upward trajectory from 2008 to date, driven largely by increased spending on government-owned/led capital projects, the consequences of the electoral chaos of the 2007 polls as well as the crisis of the global financial system (IEA, 2017).

A closer look at the pattern of the country's debt situation depicts that in the immediate intervals after independence from 1963-1977, the ratio of gross public loans to total national output remained somewhat stable and thereafter it fluctuated. From the analysis, it is evident that, in the years after independence, funds borrowed externally formed the main constituent of the country's total public debt. This however began to change in the 1990s with the component of funds borrowed internally beginning to rise with this continuing all the way to 2013 in which funds borrowed by the government accounted for 55.5% of the country's total public debt. This aligned with suggestions made in the 2010 Medium-Term Debt Management Strategy (MTMDS) which advocated for increasing the component of funds borrowed internally in the country's debt portfolio. The logic behind minimization of being exposed to foreign exchange rate risks that come with borrowings is made externally by increasing the maturing duration/term of funds borrowed locally while supporting greater growth of the local financial sector and markets (Wanjuki, 2016).

That Kenya's level of public borrowings has consistently remained higher than anticipated by the MTDMS, is a clear illustration of non-adherence to set fiscal rules. Of concern is that the increase in Kenya's acquired loans is likely to remain in the intermediate interval due to significant infrastructural and energy-related capital-intensive projects envisioned under Vision 2030. A key characteristic of the rising debt levels has been raising Kenya's debt ceiling (Makau et al., 2018). What is required to reign on the country's ever-rising debt position is for the authorities to enhance revenue mobilization to meet government spending requirements for a prolonged time period. A

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country's aggregate economic context and its fiscal policy constitute important elements for reigning on a nation's public debt menace, though, in the case of Kenya, this seems not to be working, largely because of indiscipline in adhering to existing public-debt management policies (Gicheru & Nasieku, 2016).

To guide decisions on acquiring public borrowings and managing the country's fiscal gaps, Kenya has been implementing the Medium-Term Debt-Management Strategy since 2009. In addition, to reduce the challenges and risks that come with public debt, a Debt Policy and Borrowing Framework, or simply 'the Debt Policy' has been developed. Its main aim is to make sure that the country meets its financing requirements and repayment conditions cost-effectively in the intermediate and long-run intervals while maintaining reasonable levels of risk. The debt policy's subsidiary aims being to further develop the local financial sector and markets while ensuring that the burden and gain of the country's debts are equitably shared by generations of today and later (Wanjuki, 2016).

Kenya's debt policy acts as a guiding framework for managing the country's public loans level and guides the treasury in debt-issuing processes, managing the country's debt mix, and adhering to set laws and regulations on how loans are contracted and managed. The policy hoped to lead to improved decision-making allowing policymakers to better articulate policy objectives, providing better clarity in relation to regulations of loan acquisition modalities, and offering a clear illustration of the government's commitment to long-run planning financially and capital-wise (Putunoi & Mutuku, 2013). Mwaniki (2016) observes that the policy places emphasis on adhering to laid down guidelines and regulations on managing the national loans by concerned parties. This is a good signal to the credit/debt rating agencies and capital markets that the authorities are serious about keeping the country's debt at sustainable levels and hence that the country is unlikely to fail on its loan-repayment obligations.

According to the International Monetary Fund, the guiding fiscal rule is that a country's gross debts/loans shouldn't surpass half the value of its current total national output. This is the same threshold set in the EAC Monetary Union Protocol. Further, the EAC protocol places limits regarding fiscal deficits at 3% of total national output, at 8% for general price increases, and four and a half months of imports as the lowest reserve maintained (Assenmacher & Krogstrup, 2018). Kenya's public debt has tremendously grown over the recent past largely due to investments in capital projects with a view of addressing a growing budget deficit and providing impetus to the economy's growth. Though much of Kenya's debts have concessional conditions, the country's much recent1 loans from commercial sources have considerable repaying requirements in immediate periods, 2017-2024.

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Further, the proportion of the country's total debts to its total national output has significantly grown touching 56.4% in 2018, and remains on the incline though it's expected to fall to about 54 – 55% in 2017–19 and then decrease in subsequent periods. The IMF proposes that for low-resource nations, their national public debts to GDP ratio shouldn't pass 40% (Assenmacher & Krogstrup, 2018).

Central Banks of Kenya's and World Bank's data indicate that Kenya's annual economic growth rate has fluctuated from 4.2% in 1990 to lows of -0.8% and 0.2% in 1992 and 2008 respectively to highs of 6.9% in 2007 and 8.4% in 2010 to the most recent of 6.3% in 2018. However, over the same period, Kenya's national public debt has consistently risen to currently stand at Kshs. 5.3 trillion in 2019, with the percentage of public1 debt1to1nominal GDP increasing from 134.8% in 1990 to 56.4% in 2018 (Central Bank of Kenya, 2019). Of greater concern is that, most recently, the National Assembly of Kenya approved the raising of the national public debt ceiling from 50% of the country's GDP to a fixed value of 9 trillion Kenya Shillings to enable the government to meet its financing requirements in the near-term (Ngugi, 2019). This might end up escalating the level of the country's indebtedness to detrimental levels.

Over the years, Kenya has experienced rapid growth in its national public debt. To manage the repayment of maturing loan obligations as well as financing of government expenditures, the government has turned to debt rescheduling and the use of costly short-term financing. Whereas the acquired debt funds are hoped to help improve Kenya's economic growth through infrastructure development, there is growing concern that the high level of public debt in Kenya may occasion a debt crisis injuring Kenya's prosperity prospects economically and financially (Ngugi, 2019). There is growing concerned that the national public debt has reached critical levels and questions over Kenya's ability to meet its repayment obligations are beginning to gather momentum (Wanjuki, 2016). In addition, there are concerns that high public debt risks lowering the country's spending on capital projects and social programs as larger parts of the government's revenues go to debt repayment (Ombuya, 2017).

World over, the level of a country's national public1debt is instrumental to its development1economically, yet little emphasis has been accorded to this subject. The traditional sources of countries' expansion economically have been its human and physical capital, advancing technologies, competence and productivity1of its workforce, and their openness to international1trade, and though these variables remain important, a country's public debt position is now regarded as also being key to its economic growth (Lartey et al., 2018).

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Public debt in Kenya has been on an increasing trajectory, especially in the past decade. The Central Bank of Kenya has cautioned that continued escalation of public debt could adversely affect the country's economy as growing debt negatively affects the level of investments attributable to high-interest rates. The CBK has also warned that excessive domestic borrowing risks crowding out the private sector. Increased level of country indebtedness also reduces the country's creditworthiness hence scaring off potential investors and foreign lenders (CBK, 2018). There has also been a concern that Kenya's public debt has reached critical levels putting at risk the attainment of crucial goals of the nation including expansion of the economy by 10% annually and a stable fiscal policy as envisioned in the country's Vision 2030 (Makau et al., 2018).

Despite the extensive literature available on this study subject, the findings as to how a country's borrowings affect its economic growth remain inconclusive, with some1studies1reporting a positive relationship (Egbetunde, 2012; Antony & Broer, 2015); others reported a negative relationship (Tchereni et al., 2013; Yusuf & Said, 2018) and others reporting no significant association between these two variables (Owusu-Nantwi & Erickson, 2016; Hussain et al., 2015). This highlights the need for more research on this study subject.

Literature review

Theoretical Literature Review

The Debt Overhang Theory

This theory emanated from the work of Stewart C. Myers in 1977 as he looked at how financing via debts affected the value of entities in corporate finance. Myers examined the reluctance by corporates to maximally utilize borrowed funds to cater to their business operations despite the use of debt being advantageous in regards to benefits as costs of borrowing are treated as allowable expenses. His explanation for this behavior was that accumulating borrowed funds adversely impacted the firms' abilities to make future investment decisions optimally (Kadiu, 2015). The argument is that loan accumulation makes businesses to be reluctant in engaging in ventures/undertakings with future potential positive yields given that part of realized gain would accrue to creditors/lenders in form of loan repayments (Chudik et al., 2017). The theory, as ably described by Joy and Panda (2019), thus describes a case where the rising public1debt adversely affects individuals' decisions on investing.

The theory, therefore, espouses that a country's public-debt level with its associated/accompanying repayment costs impacts a country's expansion economically as it discourages investing by private individuals as well as alters a nation's public spending plan (Jibran et al., 2016). Ahlborn and

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Schweickert (2018) explained that debt overhang is evident in instances where a nation's burden of servicing its borrowed funds is high to the extent that a significant proportion of its immediate revenues goes to its lenders hence creating a disincentivizing investment. The theory thus hypothesizes that any future possibility of the burden of externally sourced funds exceeding a country's1repayment ability implies that accruing loans-servicing costs are likely to disincentivize any additional local and foreign investments in turn harming economic1growth (Woo & Kumar, 2015). Servicing of loans may adversely impact a country's growth by reducing public revenues that could instead have been allocated to developing needed infrastructural developments and advancing human capital (Owusu-Nantwi & Erickson, 2016). With debt overhang, there are fears among potential investors that any increased investments or growth in productive capacities is likely to be met with increased taxation to pay up national debts, making them reluctant to invest further currently for future gains (Woo & Kumar, 2015).

The theory's applicable to the Kenyan situation and hence is relevant to the current study. This is in light of the appreciation that as Kenya's public debt continues to grow to unprecedented levels, "debt overhang" will become "a leading cause of distortion in turn slowing down Kenya's economic growth". Kenya's growth1economically would slow down because the country's economy could lose its attractiveness among potential investors. There's also the risk that the loan repayments could exhaust a significant part of Kenya's public financial resources making it harder for the country to get back to growth (Gicheru & Nasieku, 2016; Wanjuki, 2016). As suggested by Lee and Ng (2015) as well as by Saifuddin (2016), even with governments' institution of structural adjustment programs high public debt adverse effects would still be experienced by many via a country's deteriorating economic outlook. The adverse effects of "debt overhang" are largely seen via decreased investments not just in physical capital but as well in human and technological areas which also have huge implications on a country's expansion economically.

The Crowding-Out Effect Theory

A leading theory in economics, espoused by Buiter in 1976 in his paper "crowding out and the effectiveness of fiscal policy". The theory espouses the view that growing/expanding expenditure in the public sector leads to a decrease in private sector expenditures. It, therefore, suggests an increment in government expenditures suppresses expenditures by the private sector (Balcerzak & Rogalska, 2014). As pointed out by Omitogun (2018), the perspective regarding the existence of crowding-out and its attendant problems to the economy lies at the heart of free markets economists' postulation that a large public sector indeed results in poor utilization of

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available resources. Crowding-out effect of government spending on non-public investing can be direct or indirect. Upsurges in interest rates and general price levels constitute the indirect form of crowding out while a decrease in the private sector's available physical resources denotes the direct form of crowding out (Kandil, 2017). When the government takes up substantial loans amounts, this in turn occasions increases in real interest rates, adversely impacting an economy's lending capacity, thereby disincentivizing enterprises from investing in long-term capital projects that would have been done with borrowed funds given the increases in interest rates, which makes viable projects that would have been funded by borrowed monies extremely expensive, therefore unprofitable (Fincke & Greiner, 2015). The argument is that as the cost of borrowing escalates, there's a reduction in interest-sensitive1spending1like investments and consumption, and in this way, and public sector's borrowing "crowds out" investment (Mwakalila, 2020).

The crowding-out effects concept assumes that rising public debt utilizes a larger section of a nation's savings. The competition for limited loanable funds between the government and private investors occasions an increase in the cost of money in turn adversely affecting levels of private investment as individual borrowers are crowded out due to their inability to afford the cost of available limited funds. Limited available funds cause interest rates to significantly rise to a level that individual entities and persons are not able to compete with the government and/or its agencies leading to their crowding out from the funds market. The economy, in turn, suffers due to not being able to adequately provide the resources needed to spur investments (Checherita & Rother, 2010). Maghyereh, Omet, and Kalaji (2005) argue that crowding out happens if governments over-participate in capital markets to a point in which it adversely impacts other players in terms of access to financial resources. The chains of events are excessive borrowing by the government leading to scarcity of available financing. This leads to a rise in interest rates which occasions a cut in funds borrowed privately which in itself lowers/impedes private1investment (Ostry et al., 2015).

Qureshi and Ali (2010) argued that the macroeconomic environment determines the extent of the crowding out effect. The economic situation controls the extent of crowding out. Any increase in government expenditure with the economy at full production usually results in the upward movement of interest rates as public and private entities compete for limited resources accessible for application in investment, which occasions cut in private investment and consumption. However, increases in government spending when the economy is operating under full production don't lead to competition with the private sector, hence no crowding out effect. Hence, in sum, changing public expenditure patterns has the greatest effect on a country's economy when it's operating under full production (Égert, 2015). This theory is relevant

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to the current study since increased levels of government domestic borrowing may lead to crowding out of the private sector in turn reducing levels of private investment in the economy which in turn adversely affects a country's economic growth.

Keynesian Theory

According to the Keynesian theory formulated in 1936, a country's expansion economically relies on the level of investments and savings therein. Keynes's argument is that low rates of savings in a country have a direct impact on the investment levels in that nation in turn adversely impacting its level of economic growth (Al-Zeaud, 2014). The theory states certain decisions and actions carried out together by a significant proportion of private persons and enterprises may distort total macroeconomic results, leading the economy to operate under full production, hence a sub-optimal growth rate. As such, proponents of this theory support active interventions by authorities to address problems in the economy occasioned by business cycles (Lartey et al., 2018). The argument by Keynes was that the Great Depression's troubles would be resolved via stimulation of the economy by combing 2 approaches, these being lowering the level of interest rates and increasing the level of government spending in the economy. Increased government investment in the economy spurs increased expenditures by the general public, which is accompanied by further increases in production and investment, resulting in a series of increased economic1activities whose effects end up being larger than the initial government's-investment (Moussa & Shawawreh, 2017).

This theory thus holds that low resource settings marked by inadequate levels of capital stocks at the start are likely to experience higher growth rates as they begin at a point where they can accumulate large, introduced capital goods. This theory thus emphasizes the need for nations to enhance their investments and savings levels, as higher savings levels boost the level of investments, which in turn drives economic growth. However, owing to inadequate internal revenue mobilization in low- and middle-income countries coupled with the desire to improve their economies' growth prospects, the need for acquiring public debt is inevitable (Jibran et al., 2016). The theory is very much relevant to current research since debt-servicing costs arising from huge public debts imply fewer resources available for investing in the economy in turn adversely affecting economic growth.

Ricardo's Modern Theory on Public Debt

This theory was postulated by David Ricardo in the early 1820s. The outlook of Ricardo's theory on public debt from the traditionalists' viewpoint is that the theory does not lend support to governments' uptake of loans. Classicals, including David Ricardo, in their support of the free market forces,

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were of the view that governments shouldn't interfere with the economy (Bilan, 2016). Hence, this theory's central premise is that expenditures by public authorities are unproductive and that the private sector tends to utilize resources more effectively than the public sector. To Ricardo and their compatriots, the accumulation of public debt impairs private capital by taking resources away from productive uses, negatively impacting capital-stock accumulation, in turn slowing an economy's growth (Tsoulfidis, 2017).

Ricardo's policy recommendations on the subject of national borrowings were, first, at no point should public authorities fund their spending through public debts, and second, immediate actions should be initiated to retire current public debts. Ricardo's opposition to using taxation to service public debt was based primarily on his own economic arguments. Ricardo and proponents of the theory worried that high taxes charged for the aim of servicing government loans could scare away potential investments in the economy, hence their recommendation for immediate debt resettlement/retirement. In addition, gains arising from capital growth made Ricardo advocate for public spending financed through taxes rather than one financed through public loans (Churchman, 2001).

Therefore, to achieve maximum growth1in capital stocks, the theory argues that public spending should be kept at the lowest possible level. The theory holds the proposition that funding government spending using taxes is far better than doing so using borrowed funds as it helps reduce government inefficiency and wastage. Ricardo's argument was financing government activities via acquired loan funds postpones the tax burden allowing public authorities to conceal the real magnitude of their expenditure from the public. Thus, public debt tends to spur unwarranted extra spending by the government unproductively which harms capital growth.

This theory is applicable to the Kenyan case given Ricardo's valuable reflections on tax burden allocation impacts that arise from the public sector's borrowed funds. As espoused by Ricardo, the issue of public debt in Kenya should be addressed based on how it impacts the country's capital stock as well as on its effect on the country's rate of economic growth which reflects the country's future. In the prism of this theory, Kenya's high public borrowing may harm capital by not giving a true picture of the government's profligacy and distorting individuals' own level of personal wealth. Consequently, managing the country's national debts in a better way and keeping public spending at sustainable levels now and in future periods will help enhance the country's economic prospects significantly. The theory is in support of the current research as currently, ongoing arguments regarding Kenya's debt policy and its influence on the country's economic growth reflect similar arguments made in the times of Ricardo.

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Empirical Review

This section reviews empirical studies done relating to the effect of public funds borrowed domestically and externally on countries' economic growth. The countries focused on in this review were selected on the basis of having an economic system and public debt structure that was close and comparable to the Kenyan situation at the time the empirical studies were done. Many of the studies reviewed were also conducted in developing countries as is the case of Kenya. The countries reviewed public debt position was characterized by high debt service, growing debt ratios, and declining debt repayment capacities, at the time of the reviews.

Rabia and Kamran (2012) did a study that looked at how public loans sourced internally and externally influenced Pakistan's economic growth. The effects of the public loans sourced internally and externally on the nation's expansion economically covered the duration of 1980 - 2010 and were estimated through the application of the Ordinary-Least-Squares (OLS) method. The suitability of the study data was gauged using various time-series-related diagnostics. According to the results, public debts sourced domestically were found to negatively relate to the country's economic growth. Similarly, externally sourced public loans were also found to negatively relate to the country's economic growth. However, the adverse effects of funds borrowed from outside the country on the country's expansion economically were greater than those of the loans acquired internally.

Ali and Mustafa (2010) undertook a study whose intention was to explore how public debt impacted Pakistan's economic growth between 1970 and 2010. To achieve this, the researchers developed a function that measured the country's total national output against several proxies that included spending levels on education, formation of capital, available workforce, and financing acquired externally. This research evaluated the effects of these variables both in the short run and in the long term. The main finding of the review was that financing acquired externally significantly and in a negative way influenced Pakistan's expansion economically both in the intermediate and long-term intervals. However, the immediate and long-term influence of growth in human capital as well as growth in capital formation was found to positively impact the country's total national output.

Maghyereh et al. (2005) undertook a study that evaluated how national debt affected a country's expansion in an economic sense. The study was based on Jordanian data and employed an endogenous-growth model. Study results showed that national loans acquired externally positively related to the nation's economic growth when the externally borrowed funds were below a given threshold, the said threshold being at 53% of the country's total national output. Beyond the threshold, growth in amounts of funds borrowed externally was seen to negatively correlate with the nation's total economic level.

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Similarly, in an investigation performed by Sheikh, Faridi, and Tariq (2010) in Pakistan covering the period 1972 - 2009, funds borrowed domestically were found to negatively impact the country's economic growth.

In an empirical study based on select advanced and emerging economies for an interval stretching between 1970 and 2007, Kumar and Woo (2010) sought to find out how elevated levels of national debts affected the countries' expansion economically in the long term. The variables were public debt, population size, investment, and government size as independent variables while economic growth was the dependent variable. A time series regression model was applied to data analysis. The study's findings suggested that public debt is negatively related to nations' growth economically, with the adverse effects of national debts being more pronounced among emerging economies compared to their effects on the economies of developed countries. Similar observations were made in the study by Qureshi and Ali (2010) who utilized the time series OLS regression model to assess the effects of public1debt on Pakistan's economy between 1981 and 2008. The study established that public debt significantly and negatively impacted the country's economy.

Kibui (2009) did a study that explored how national loan funds sourced externally impacted Kenya's level of investment and its economy's1growth for the duration between 1970 and 2007. In the research, time series data for the said period was utilized touching on the varied study variables. It was established that Kenya's public debt has been over/beyond set critical levels since 1982. Kenya's ratio of debt servicing was found to constitute a large part of the country's total national output. It was further established that the level of investing done publicly is negatively related to the country's level of public loans sourced externally as well as with its ratio for debt-servicing. The study suggested that debt relief could be utilized to help improve the level of investments in the economy and to stir the country's economic growth. The study suggested that there was a need for government action in areas of poverty eradication, and economic growth-supportive initiatives such as export promotion, an investment-friendly operating context, and working to improve investor confidence in the economy's prospects.

Adofu and Abula (2010) undertook a study to investigate the implications of national loan funds sourced domestically on the expansion of Nigeria's economy. The study covered the duration from 1986 to 2005. The study reported that loan funds sourced domestically had a negative effect on the national economic status of the country, hence required to be demotivated. The study argued that expansion of the country's tax net should be the way forward. A similar study was executed in Kenya by Maana et al. (2008) who also sought to know how national loans acquired domestically interacted with the country's economy using data from 1996 to 2007. It was established that

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the government's sourcing of public loans internally did not occasion crowding out of local investors largely due to the advanced state of the country's financial markets. According to the study, loans acquired domestically by the government seemed to positively correlate with the growth of the economy, albeit insignificantly.

An empirical study performed by Abbas and Christensen (2010) looked at what was the optimum level of national loans sourced domestically in low-resource settings that included countries in the Sub-Saharan African region as well as those representing emerging economies for the duration 1975 to 2004. The study established that national loans sourced internally and maintained moderately did significantly impact the said countries' level of expansion economically in a positive way. However, higher levels of public debts were found to adversely affect these countries' level of expansion in an economic sense. Cholifihani (2008) studied the association of national loan funds and the level of total national output within the Indonesian economy through the application of the models that utilized time series data between 1980 and 2005. The proxies for the adopted model included the nation's total national output as the outcome variable run against servicing of loans, capital stock, workforce as well as human capital. The study showed the country was experiencing a "debt overhang problem" as its loan position seemed to adversely impact its expansion economically in the long term.

Umaru, Hamidu, and Musa (2013) did a study on the levels of Nigeria's development economically in the context of national loans sourced internally as well as externally, for the duration running 1970 - 2010. Results of the study revealed that national loans acquired domestically and externally had a negative association with the country's actual total national output albeit not in a significant way. Likewise, Shabbir (2009) looked at how loan funds acquired externally affected the expansion economically of select countries from Africa. Twenty-four countries were included for review and data on their loan accounts and GDP levels between 1976 and 2003 was analyzed. Panel data regression models were used to estimate the link between the variables of the study. Results showed that public loans externally sourced seemed to negatively relate to the country's level of economic growth.

An Indian study on how loan funds acquired by the country's government related to the country's economy showed that monies borrowed externally positively impacted the country's expansion economically though up to a certain extent. The study however noted that as the proportion of externally borrowed funds rose, this had negative effects on the country's level of activity economically, and particularly on the level of individual firms' investing, as more and more public resources became committed to resettling the foreign debts. It was also observed that high servicing costs of foreign debts reduced government expenditure on crucial social services such as

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health and education. As such high costs associated with foreign debt repayments slowed down the country's developing potential in turn hindering the growth of its economy (Bal & Rath, 2014).

On their part, Ajayi and Oke (2012) investigated the implications of government borrowing from foreign sources on the expansion of Nigeria's developing economy. The results clearly demonstrated that national loans acquired from external sources indeed hurt the country as they negatively impacted the level of the country's total national output in turn decreasing income per capita for the country's residents. The consequences of high public debt sourced externally in Nigeria included loss of value for the country's currency, workers' go-slows, and regular strikes as well as a deteriorating education system and physical infrastructure. Huge external loan payments, therefore, impeded the growth of that nation's economy. According to the study, public debts especially when inappropriately utilized drain public resources which adversely impacts a country's ability to expand economically. Reinhart and Rogoff (2010) worked on an empirical investigation regarding the effects of financial resources acquired via borrowing at a national level with the economic growth in 44 nations over a 100-years period. Results provided evidence of the effects that rising public debt levels were seen to negatively influence the levels at which both advanced as well as emerging nations were able to expand their economies. This became more pronounced as the countries' foreign-sourced national loans reached 60% of their total national output. In a similar way, Putunoi and Mutuku (2013) evaluated how domestically acquired public debts affected Kenya's level of growth economically between 2000 and 2010. Through the application of various econometric tests, they observed that government borrowings acquired domestically played an influential role in helping Kenya's economy to grow. The research found evidence of the effect that domestically acquired loans positively and significantly influenced the growth of the economy.

Wanjuki (2016) also at how Kenya's public debt impacted its ability to grow economically between 1980 and 2013. He used variables such as total debt1service, inflation, the actual cost of borrowing, and real exchange rate using data from the CBK. He found that there was a negative association between repayments of loans, level of loans acquired domestically, cost of borrowing, inflation, and the lagged PIGR and Kenya's expansion economically. They however found a positive relationship between funds externally sourced, the actual rate of exchange and level of investing and the country's level of economic growth. On their part, Gicheru and Nasieku (2016) evaluated public debts' effects locally covering 1996 to 2015, utilizing external debt, domestic debts and1 productive debts as the main variables. The study established a statically significant adverse association between debts sourced externally and the nation's economic growth, as well as a significant

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positive correlation existing between internal public and productive debts with economic growth.

Methodology

Theoretical Framework

Theories on public debt and economic growth posit that debt can contribute positively or negatively to economic growth. Debt overhang theory indicates that debt has positive effects on economic growth and if it exceeds a certain threshold, it turns negative. The GDP growth, for example, is influenced by productivity which is affected by capital and labor.

It is argued that the choice of the indicators to represent the outcome as well as the predictor variables of a given research varies largely depending on individual scholars' assessment of what elements best represent the phenomenon under study. Kadiu (2015), for example, insisted that the level of real total national output is influenced by funds borrowed externally, costs of servicing borrowed funds, the value of goods sold outside the country, general price level, capital stock, and human productivity level. Rabia and Kamran (2012), on the other hand, shared the view that a country's total national output level varies according to gross internal consumption, investments, aggregate externally borrowed funds, costs of borrowed funds as well as aggregate internally borrowed funds. Therefore, it follows that any time a researcher wants to analyze the growth of a nation or nations, chooses the variables deemed to best to represent the phenomenon. Reinhart and Rogoff (2010), for example, suggested the following model depict the relationship between economic growth and its determiners.

$$\gamma = \alpha + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n + \varepsilon \quad (1)$$

In which, γ is the proxy of the level of economic growth while $x_1 \cdots, x_n$ represents indicators of possible predictor elements which depend on particular research.

The model (1) above was modified to include selected national public debt proxies to achieve the objectives of the study.

Empirical Model Specification

Applying Reinhart and Rogoff (2010) suggestion on economic growth representation model, the current research modeled total national output as being influenced by funds externally borrowed, funds internally borrowed, settlement of the loans, general price level, exchange rate, stock of capital and labor-force. This relationship was represented in function form as stipulated below.

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$$GDP_t = f(ED_t, DD_t, Inf_t, EXR_t, CS_t, LF_t) \quad (2)$$

Where, GDP is Gross domestic product as percentage change annually; ED – External debt in gross funds externally sourced (in Kshs. billions), DD - Domestic debt gross funds domestically sourced (in Kshs. billions); inf - Inflation rate expressed as annual percentage change in Consumer Price Index(CPI); EXR - Exchange rate measured as Kshs - US dollar exchange rate , CS - Capital stock measured as gross fixed capital formation (in Kshs. billions); and LF - Labor force measured as gross workforce in a country; and . Linear specification of model (2) above was stated as follows in terms of logarithmic.

$$lnGDP_t = \alpha_0 + \alpha_1 lnED_t + \alpha_2 lnDD_t + \alpha_3 lnInf_t + \alpha_4 lnEXR_t + \alpha_4 lnCS_t + \alpha_5 lnLF_t + \varepsilon_t \quad (3)$$

The time series data was analyzed through the Ordinary Least Square (OLS) regression technique. However before estimation, the data were subjected to rigorous econometric tests. This research applied secondary annual time series data running from 1990 - 2019. The data was extracted from the World Development Indicators and Kenya National Bureau of Statistics database.

Emperical findings and discussion or results

Descriptive Statistics and diagnostic tests

LnGDP had a mean of 3.187986 and its standard deviation is 0.7837565. Its minimum value is 2.054979 while the maximum value is 4.575846. Overall, LnDD had the highest mean value of 7.079243 amongst the variables expressed in logarithm form while EXR has the highest value of 72.59213 amongst the variables not expressed in their logarithm form.

After conducting the unit root test using the ADF test, all variables except inflation were integrated into order one, I (1). Therefore, the variables that were stationary after the first difference was differenced once to avoid spurious regression because this study adopted the OLS model for estimation. Multicollinearity tests indicated that all the variables had a mean VIF of 1.78, indicating the absence of multicollinearity.

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OLS model results

Table 1. OLS results

	OLS Model
D1. lnED	0.0193259
	(0.0959553)
D1.lnDD	-0.0039602
	(0.0171081)
D1.lnCS	0.304114***
	(0.0761024)
D1.lnLF	2.134865***
	(0.7489918)
D1.EXR	-0.0108671***
	(0.0021086)
D1.Inf	-0.0014624
	(0.0010905)
Constant	0.0211942
	(0.0253241)
Obs	29
R-squared	0.9165
F(6, 22)	40.25
Prob > F	0.0000

Standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In table 1, the probability of the F-statistic is highly significant indicating that this model is suitable. Also, a measure of goodness of fit which is denoted by R2 is 0.9165. This indicates that model is well fitted because 91.65% of disparities of the dependent variable can be explained by independent variables used in this study. LnCS, LnLF, and EXR are statistically significant at all levels of significance while other variables, which are LnED, LnDD, and INF, are statistically insignificant. The coefficient of LnED is 0.0193259 and that of LnDD is -0.0039602. This means that increasing ED by US $ 1 billion increases the GDP by US $ 0.0193259 billion while increasing DD by Kshs. 1 billion reduces the GDP by US $ 0.0039602, ceteris paribus. Similarly, the values of the coefficients of LnCS, LnLF, EXR and Inf are 0.304114, 2.134865, -0.0108671, and -0.0014624, respectively. This implies that increasing CS by US $ 1 billion increases GDP by US $ 0.304114 billion while increasing LF by US $ 1 billion increases GDP by US

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$ 2.134865 billion, other variables being constant. On the other hand, EXR and Inf coefficients are -0.0108671 and -0.0014624 respectively, implying that increasing them by 1% reduces GDP by 1.08671%, and 0.14624% respectively, ceteris paribus.

The results for OLS regression indicate that external debt does not have a significant effect on GDP. Its coefficient was found to be positive and statistically insignificant meaning that it affects Kenyan economic growth positively. This indicates that borrowing from outside the country is favorable in Kenya. However, its insignificant effect means that these debts are not generating enough returns to enable them to cover the cost of borrowing. It can also be argued that there is much wastage either in consumption or corruption of the borrowed funds because of these insignificant effect results. However, its positive effect indicates that at least a proportion of these borrowed funds from external sources are utilized in funding ventures that are generating some income. These results agree with that of Maghyereh et al. (2005) whose findings indicate that externally sourced funds in Jordan have a positive effect on its economy. Also, research work carried out in the Kenyan context by Gicheru and Nasieku (2016) and Wanjuki (2016) indicates that externally borrowed finances exert a significant positive effect on its economic expansion. However, these results contradict the findings of various researchers who found borrowing from other nations had adverse effects on the economic growth in nations where research was conducted. For example, Ali and Mustafa (2010) and Rabia and Kamran (2012) findings in Pakistan show that external debt negatively affects its economic growth. Another study carried out in Nigeria by Umaru, Hamidu, and Musa (2013) indicates that borrowed funds from other countries have insignificant negative effects on the Nigerian economy. Also, Shabbir (2009) did conduct a study in 24 African economies and realized that external debt exerted a negative effect on the economic growth of these countries.

The coefficient of domestic debt is negative and statistically insignificant. This implies that domestic debt has a negative effect on GDP. This shows that there is too much borrowing internally in Kenya. Hefty domestic borrowings increase pressure on the interest rate and so on investments (Ongeri, 2021). Thus, making bank lending rates shot up. In effect, the cost of borrowing escalates hence lowering private sector investment and, in the end, slowing economic growth (Ongeri, 2021). These results are in line with the crowding out effect theory that indicates when a country results in massive borrowing internally, then this leaves little resources for private sector borrowing hence causing liquidity constraint in the country leading to the crowding out effect on private sector investment. The results agree with several works carried out by various researchers in different countries facing different economic situations. To begin with, research work

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by Sheikh, Faridi, and Tariq (2010) and Rabia and Kamran (2012) in Pakistan yielded similar results to the current study that borrowing internally exerts a negative impact on the economy. Adofu and Abula (2010) and Umaru, Hamidu, and Musa (2013) research, on the other hand, found an insignificant negative effect of domestic debt on the Nigerian economy. Wanjuki (2016) findings in Kenya indicate that domestic debt negatively affects its economy. In the same breadth, these results are opposite to the findings of Maana et al. (2008), Mutuku (2013), and Gicheru and Nasieku (2016) in Kenya who indicated that internal borrowings positively influence economic growth. Also, these results refute Abbas and Christensen (2010) whose findings indicate a positive effect of internal borrowings in SSA and other emerging economies.

Conclusion

This research work was geared toward establishing the effect of public debt on economic growth in Kenya. It narrowed down to investigating the effect of domestic debt and external debt on economic growth in Kenya. The first objective of this research work was to examine how internal debt affects Kenya's economic growth. The results indicate that internal debt negatively affects economic advancement in Kenya. More so, the negative effects are insignificant. The second objective was to assess how external debt affects Kenya's economic growth. The results show that borrowings from abroad have an insignificant positive effect on Kenyan economic growth. The study concludes that internal public debt influences economic growth negatively in Kenya. On the other hand, External public debt has an insignificant positive effect on economic growth in Kenya.

Policy Implications

It was discovered that borrowing internally in Kenya poses an adverse effect on its economic growth. The findings also indicated that borrowing externally poses a positive effect on economic expansion. These effects, however, were insignificant. This begs for government to explore various avenues of funding its budget deficit which can be done through improvement of the current revenue base other than resulting in massive internal or external borrowings. There is a need for government to diversify its sources of revenue to scale down borrowings from within and outside the country. To reap the benefits of funds borrowed from other countries, the Kenyan government needs to ensure that the debt management systems are accurate. This can be done by incorporating information technology in debt management systems. The body mandated to manage public debt should be ran with utmost accountability and transparency. Also, the external debt should be utilized in

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better ways and in development initiatives that would enhance future streams of national income.

This study has laid focus on the effects of public borrowing both domestically and externally. There is a need to ascertain the effects caused by servicing these domestic and external debts. Therefore, in future further studies ought to be carried out particularly focusing on domestic and external debt servicing. Also, these studies can incorporate domestic and external debt by the private sector.

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