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Dual Gap Model And Africa's Debt Crisis: A Theoretical Perspective

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Abstract
Sustainable development in Africa requires the reduction of limiting factors in the domestic savings and foreign exchange gaps. This can be done through foreign direct investment, improvement in income levels, and reduction in the rate of poverty. Trade liberalization policies, appropriate exchange rate policies, and export diversification are veritable ways to reduce the limiting gaps in foreign exchange. The inflow of foreign technology, skills, and expertise are necessary ingredients for economic growth and development. This paper highlights the importance of improving the limiting factors to the two-gaps, and reducing the growing debt to GDP ratios, of African countries, since 2000. High debt is an obstacle to economic growth and development, and African countries must adopt trade, fiscal, and exchange rate policies that are directed at reducing the dual gaps in domestics savings and foreign exchange.
Keyword: *Savings Gap, Debt-to-GDP, Foreign Exchange Gap*

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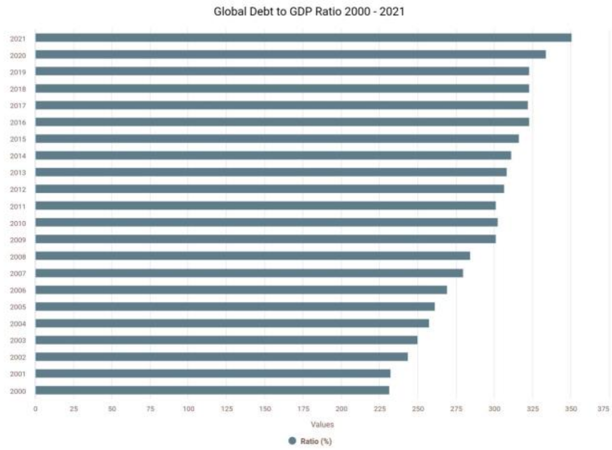
I. Introduction

The global debt stock has reached an unprecedented levels, with total debt amounting to $300 trillion (2023), and this represents 349 percent of world GDP. IMF (2022) observed that the global debt has peaked the world in dangerous and precarious times. Pre-2020 Covid-19, the global debt profile showed a record high levels, and as the pandemic emerged, the erstwhile financial and economic stabilization efforts by economies to ease financial markets, gradually reduced liquidity and credit conditions around the world. As of 2023, it is reported that the whole world is facing a debt crisis occasioned by economic slowdowns and rising inflation, and countries around the world are compelled to borrow more to maintain a healthy balance in their foreign exchange reserve. UN (2022) has identified 54 developing countries with severe debt challenges, accounting for more than half of the world's poorest people, and contributing over 3 percent of the global economy. Most of these countries are spending more of their annual GDP on debt servicing than on health, education, and other safety-nets. However, the global pandemic is not to blame for the crippling debt problems. World Bank (2022) noted the these debt problems were there long before Covid-19, and chronic in most developing countries resulting from slowing growth rates, spiraling inflation, and rising interest rates.

Debt is a crucial factor for the growth of the world economy. Deficit financing drives economic growth, this results from expenditure exceeding revenue levels, and the major indicator of the financial health of any nation. National budget deficit negatively impacts the national debt and ultimately, the total debt owed to creditors.

Figure 1. Global Debt as % of GDP 2000 to 2021



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In figure 1, global debt rose by about 34 percentage between 2000 and 2021, from 231 percent in 2000 to 350.8 percent in 2021. This figure represent a staggering $300 trillion. According to S&P Global (2023) this is equivalent to $37,500 of average debt for each individual in the world, when compared to an average of $12,000 GDP per capita. It is projected that global debt as percentage of GDP will increase by about 5 percent by 2030. Most developing countries are plagued with poor debt management, coupled with inefficient fiscal, monetary and trade policies. It is estimated that over 80 percent of external loans are for consumption purposes.

Figure 2. Africa Debt to GDP Ratio 2000 - 2021

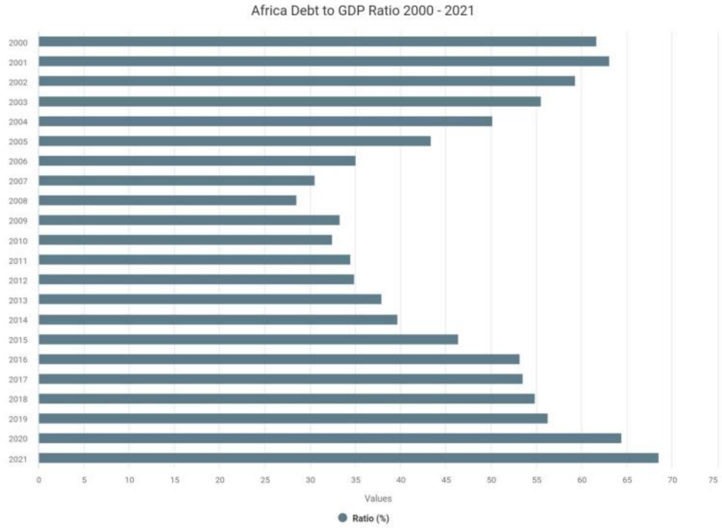


Figure 2 depicts the debt to GDP ratio in Africa. Most African countries are faced with recurring fiscal challenges resulting in low tax revenues, and inefficient monetary policies through unstable interest rate regimes. During the Covid-19 pandemic, Africa total debt rose to a staggering $625 billion, which also rose significantly worldwide. However, Africa's debt challenges predates the pandemic as she continues to face increasing debt repayments and lower GDP growth rates. Generally, debt challenges are not Africa-specific or low-income countries. It is estimated that about 60 percent of low-income economies and 25 percent of emerging markets are at risk of, or in debt distress.

II. Theoretical Perspectives

Chenery(1969) posited that the Gap Analysis is a outcome of attempt to ascertain the actual policy options facing developing countries. The Two-Gap or the Dual Gap Model is an extension of Harrod-Domar growth model which argued that the economic growth and development of developing countries are faced with two gaps.

1. Where domestic savings are insufficient in supporting the desired level of growth: The gap between savings and investment. (S - I)
2. Where imports purchasing power is inadequate to support the desired level of growth: The gap between export revenues and imports = Foreign Exchange gap (X - M).

Harrod-Domar model defines growth as:

$g = s/k$

where g = growth rate, and

s = savings rate

k = capital output ratio

Therefore, the Two-Gap model defines growth as:

$g = s/k + c/k$ (c = foreign exchange inflow rate)

However, the extended Harrod-Domar model expressed

c = Import - Export / National Income (M - X/GNI)

The extended version simply implied that the growth of exports in the developing countries is limited. In this case, import could outpace export if foreign aids or loans was available for these countries to obtain the foreign exchange needed to import the desired capital goods. Since the domestic savings and foreign exchange from loans and FDIs, are not perfect substitutes, the domestic savings would be insufficient to achieve the investment for the target growth rate. That is, countries experiencing savings gap cannot use its excess domestic savings to overcome it, and since foreign exchange gap is mainly for achieving a desired level of growth, therefore, foreign exchange revenues are inadequate for supporting higher growth rates allowed by their savings rate. Most developing countries are faced with this gap where enough domestic savings but lack adequate foreign exchange to import the desired industrial raw materials. In most developing countries, availability of domestic savings would drive investments in new projects if there are sufficient foreign capital inflows, through loans, aids, or FDIs.

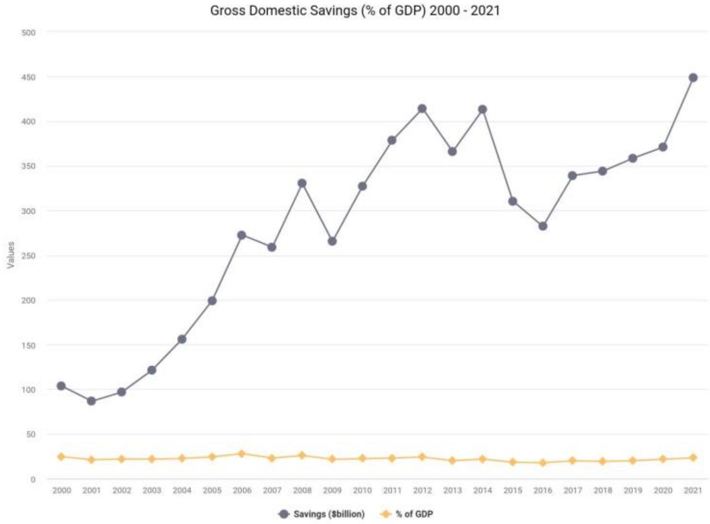
Given the national income of an open economy:
Y = C + I + X - M …………(1)
where:
Y = National Income
C = Consumption
I = Investment
X - M = Net Exports
Recall that
Y = C + S
Y - C = I + X - M
Since S = Y - C = national savings
⇒ S - I = X - M ………….. (2)

The Dual-Gap model is used to show the importance of foreign assistance and FDIs to finance persistent deficits in the developing countries. Equation (2) shows that Savings Investment Gap equals Import Export Gap. As an identity, it shows that domestic savings gap is financed by foreign exchange inflows. The Dual-Gap Model was postulated to relieve the foreign exchange gap constantly faced by developing countries. This model also laid emphasis on foreign assistance in form of loans and grants from developed countries. Since 2000, FDIs capital inflows have become the dominant foreign investment option for developing countries in driving growth. However, most of these countries have resorted to financing their development projects through loans from the advanced countries at concession rates that has led to high indebtedness. Overall, this model stressed a development strategy rather than the debt challenges resulting from filling the huge gaps.

III. Domestic Savings Gap

Bruton (1968) argued that if there is no trade gap distinction between savings gap for foreign aid to make up for it, the savings gap is sufficient. In most developing countries, growth is constraint or limited by the availability of the factor that is limiting the growth, either domestic savings or foreign exchange. In this context, if the growth rate allowed by foreign exchange constraints, the country will be foreign exchange constrained and the proportion available domestic savings will go unused. Most developing countries are plagued with resource-waste due to the dominance of one resource constraint. In this case, if foreign exchange is the dominant constraint, these countries must drive growth and development by utilizing dormant domestic savings to generate more foreign exchange to raise the level of imports for capital goods needed for growth and development. Conversely, if domestic savings is the dominant resource. Dovi (2008) opined that in financing the much needed growth and development. Africa countries should source finances from domestics savings and sources. These domestic savings could utilize these savings to generate the much needed foreign exchange for further growth.

Figure 3. Gross Domestic Savings (% of GDP) 2000 to 2021



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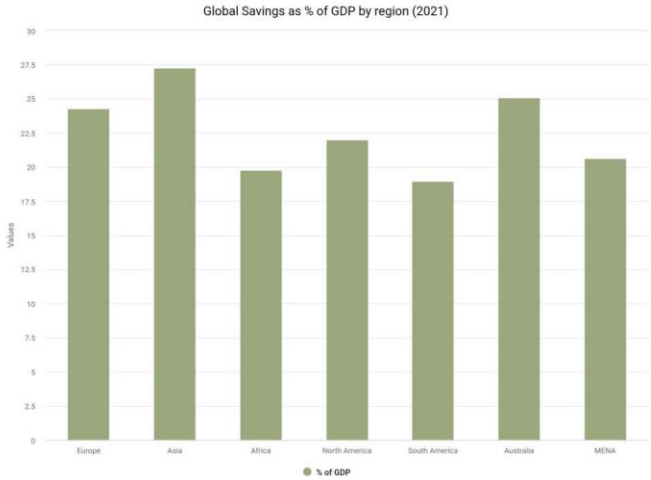
In figure 3, In sub-Sahara Africa, the percentage of total domestic savings, as a function of GDP averaged 19.1 percent between 2000 and 2021. The low level of domestic savings is a growth-limiting factor in most developing countries. Countries with higher savings rate tend to achieve higher economic growth. The global savings as a percentage of GDP (2021) was estimated at 23.47. Domestic savings is a precondition for growth and development. It is a major determinant for innovation, economic growth and development. It allows domestic savings to finance the growth that will attract foreign investment. In order for developing countries to achieve sustained growth over time, continuous increase in the levels of aggregate savings will raise investment levels and, ultimately, higher GDP growth rates. United Nations (2023) is a crucial factor in providing the needed resources for inclusive growth, financial independence, and liberalization in sub-Sahara Africa. It is observed that most of these countries have made little or no effort in adopting the necessary strategies for raising domestic savings. These strategies would change the domestic financing capacity for improving economic well-being and reducing poverty.

Figure 4. Global savings as % of GDP by region (2021)



Source: The Global Economy.com (2021)

In figure 4, two regions have the highest number of developing countries in the world, South America and Africa have the lowest savings as a percentage of GDP with 18.98 and 19.82 respectively. Domestic savings is the best indicator for gauging financial stability and internal growth of any country, and gross national savings (GNS) is usually expressed as a percentage of GDP. In comparison, European Union averaged 27 percent savings rate as percentage of GDP. South Asia averaged 26.4 percent, North America with 21.6 as at 2021 was lower than Australia at 25 percent. Savings are important sources of economic growth and development. Most sub-Saharan Africa countries are faced with huge trade deficits which results in importation of essential capital goods for growth. To boost savings, therefor, and close the savings gap, aid could be used for investments to take place and ultimately results in high growth rate.

IV. Foreign Exchange Gap

The Harrod-Domar model ($g = s/k$) was a closed economy model where exports (X) and import (M) were not integrated in the analysis. However, in developing nations, the demand for capital goods and raw materials is a sufficient condition for import-substitution strategy necessary for economic growth and development. The extended Harrod-Domar model introduced Export and Import to analyse the role of foreign exchange required for capital goods and raw materials required for industrial growth.

$g = s/k + b/k$

where, $b = \dfrac{\text{Import - Exports}}{\text{Gross National Income}}$

This model showed the significance of the gap in Exports and Imports, as the growth in exports varies significantly with the increase in imports, and this growth, in exports, was limited. Consequently, the growth of imports could exceed exports if foreign aid, and direct investments where available to source for the required capital and industrial raw materials. Conversely, given a target growth rate, if domestic savings rate is sufficient, developing countries would still require foreign exchange needed for importing these capital goods and raw materials for rapid industrialization. Foreign Exchange sourcing is a veritable way of supplementing domestics savings needed for further growth. Manasseh *et al* (2022) opined that developing countries are faced with low level of domestic savings and are often faced with making borrowing from external sources a necessity. The dual-gap analysis is based on the assumption that the domestic savings and foreign exchange gap are not equal in size, and are not substitutable.

Recall, $g = s/k$

$\Rightarrow \quad g = c$, where c = capital-output ratio

The relationship between growth and and the capital-output ratio (c) is given by the incremental capital-output ratio (c), and this can be expressed as the product of the incremental-import ratio and investment-good imports to income.

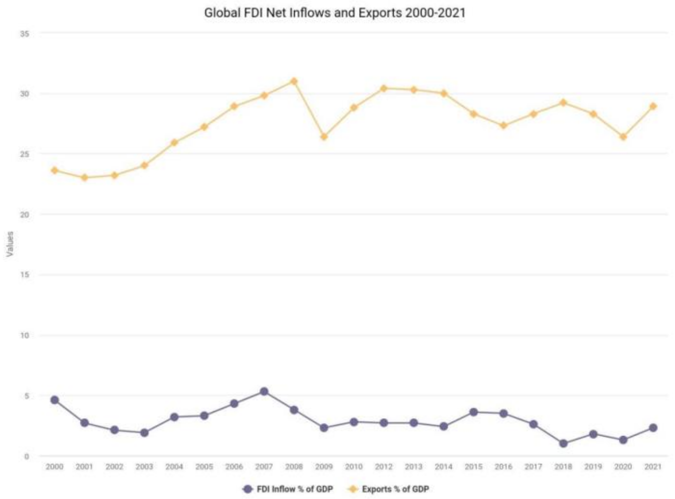
$\Rightarrow \quad \Delta y/M = m^* \times M/Y = i$

$\Rightarrow \quad g = im^*$

In this analysis, **i** is the ratio of import to output allowed for export earnings.

To achieve target growth rate capital inflows from foreign sources is required to fill the larger of the two gaps. Most developing countries of Africa are plaqued by larger import-export gap, and have resorted to foreign borrowing to fill the gap which also, often times, fills the investment-savings gap.

Figure 5. Foreign Direct Investment and exports of goods and services as % of GDP 2000 to 2021



The impact of foreign direct investment on economic growth and development cannot be overemphasized. FDI assist in human capital formation, helps entrepreneurial growth, contributes to export and import trade integration. In economic growth, GDP growth rates is dependent on the growth of foreign direct investment, and growth in the economy of any country attracts foreign direct investment. More FDI inflows is associated with more exports, and a sustained growth in FDI would raise investment levels, and ultimately raise GDP and per capita incomes. Higher FDI levels would raise domestic savings rate, and gradually closing the savings gap. FDI inflows raise the level of economic activities in an economy. With higher levels of economic activities, income and savings levels will rise, and ultimately close the investment and foreign exchange gap.

V. Africa's Debt Crisis

IMF (2023) estimated that the average debt ratio in sub-Sahara Africa has doubled in the last ten years. From 30 percent of GDP in 2013 to about 60 percent as at 2022. Debt to GDP ratio in most African countries has averaged 56 percent between 2000 and 2021. Debt repayment has been a challenge to most African countries, and this trend is a sign of a looming debt crisis. The ratio of interest payment on these debts have doubled since 2000. UNCTAD (2023) estimated that as of 2022, public debt in Africa reached $1.8 trillion, and this has increased by over 180 percent since 2010. It is also estimated that countries in North Africa holds 40 percent.

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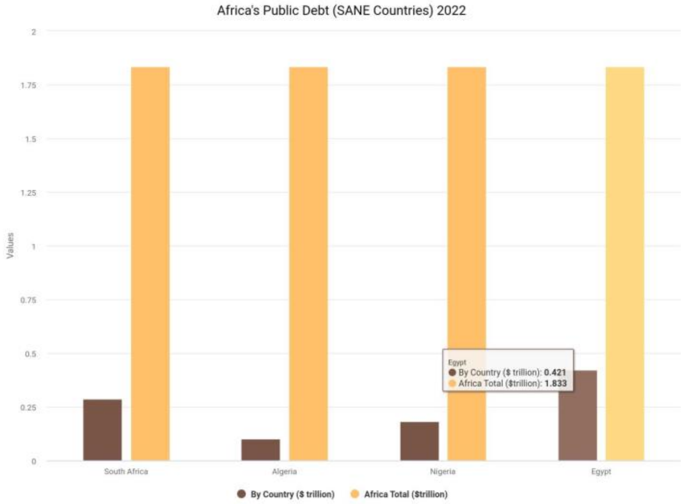
Figure 6. Africa Public Debt for SANE Countries 2022



Source: IMF/UNCTAD, World Economic Outlook Database 2022

SANE Countries contributes about $1.5 trillion of Africa's GDP of $2.98 trillion (2022). Estimates showed that 27 countries in Africa had a Debt to GDP ratio above 60 percent. Compared to the other regions of Africa, Central Africa has the ratios lower than the 60 percent threshold. In figure 6, Egypt has the highest public debt in Africa, and its external debt reached $164 billion as of 2023 when compared to $165 billion in the first quarter of 2023. World Bank (2022) estimates show that 49 African Countries owe 39 percent of their debt to multilateral institutions, 35 percent to private creditor, and 12 percent is owed to China and Chinese lending institutions. In comparison to other developing countries, Africa lag behind in reducing their levels of debt. The incidence of higher public debt burdens results in higher interest and service cost, that diverts much needed resources from health care, education, and infrastructure. Selassie (2018) opined that sub-Sahara Africa is faced with a stress-test levels of high public debt, and the current rise is a challenge to economic growth and development of the region. Studies have shown that high public debt has a negative effect on economic growth when the threshold grows beyond 30 percent debt to GDP.

The dual gap theory emphasizes the important role of imports and foreign exchange in the growth and development of nations. This extension of Harrod-Domar growth model highlights the constraints faced in the developing countries with the gaps in domestic savings and foreign exchange which are inadequate to support the desired levels of growth. The gap analysis was developed to highlight the important role of FDIs to relieve the foreign exchange gap faced by developing countries. However, with Africa rapidly expanding its developmental objectives, through borrowing, this has led to the persistent problems of indebtedness. Foreign loans and credits must be paid back through debt servicing, and the dual gap model did no take into cognizance the debt challenges faced by African countries. Africa depends largely on FDIs and foreign development assistance to finance the gap between investment and savings, which is lower than the world's average. High poverty levels, coupled with low incomes, make it difficult to generate sufficient savings needed to finance investment projects, and this results in over reliance on borrowing from overseas.

VI. Conclusion

Africa is challenged with high debt to GDP levels, and there has been a steady rise in debt to GDP growth rate, between 2000 and 2021. Higher debt is an obstacle to economic growth and development. As of 2022, average public debt in sub-Sahara Africa was estimated to be 60 percent. Public debt in Africa reached an all-time high of $1.8 trillion as of 2022. By the end of 2019, Brookings (2019) estimates that 15 African countries were at the risk of debt distress, and the major cause was the deteriorating terms of trade, and fall in commodity prices. Invariably African countries can close domestic savings gap through fiscal policy restructuring by raising their tax to GDP ratios. Foreign Exchange gap can be reduced by diversifying exports, trade liberalization by removing trade barriers, and adopting appropriate exchange rate policies.

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