

Theoretical and Practical Research in Economic Fields

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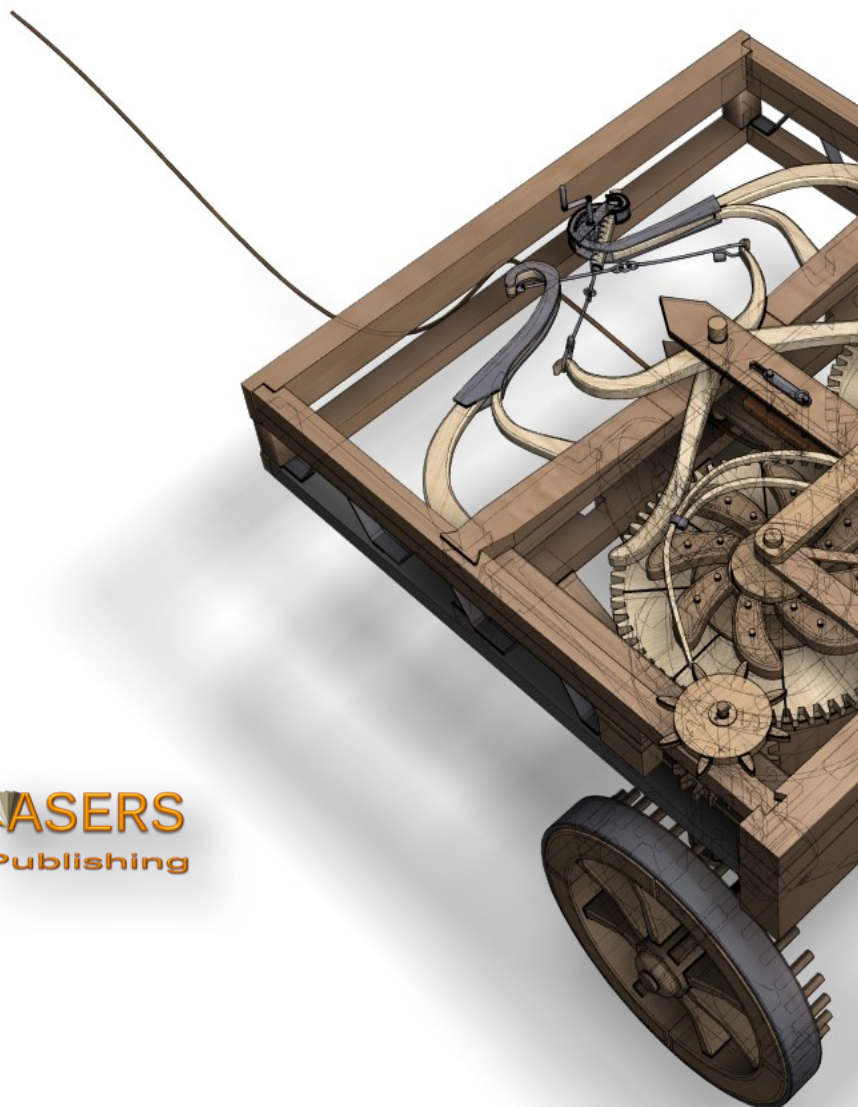
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Call for Papers

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Many economists today are concerned by the proliferation of journals and the concomitant labyrinth of research to be conquered in order to reach the specific information they require. To combat this tendency, **Theoretical and Practical Research in Economic Fields** has been conceived and designed outside the realm of the traditional economics journal. It consists of concise communications that provide a means of rapid and efficient dissemination of new results, models, and methods in all fields of economic research.

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Budget Deficit, Debt, and Inflation in Ghana (1960-2022): The Fiscal Theory of Inflation Case?

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Abstract: *This study follows the approach in Kehoe and Nicolini (2021) in order to analyse and interpret the historical performance of Ghana's economy over the period 1960-2022 in terms of deficits, public debt accumulation, monetary policies and their relationships to inflation, exchange rate etc. The paper explores the link and similarities between Ghana's economic cycle from pre- and post-military rule. In both cases, excessive borrowing, leading to a large accumulation of public debt, and accompanied with burdensome debt interest payments, has been one of the major challenges that the country must wean itself from.*

The study also documents that the underlying reason for the deficits is the low domestic revenue mobilisation, i.e the fiscal capacity of Ghana is lower compared to the one of developed countries. Finally, the positive interaction between money supply and inflation has also been established in this study. However, the increase in money supply (and thus inflation) is a result of fiscal imbalances: by printing money, the Central Bank of Ghana is effectively using inflation as a tax and trying to generate a seigniorage revenue to "cover" at least part of the budget deficit.

Keywords: inflation; seigniorage; budget deficit; debt; fiscal theory of inflation.

JEL Classification: E62; R11.

Introduction

Has Ghana lived up to her name as the "black star" of Africa after six decades of independence? The purpose of this study is to outline and find the major macroeconomic setbacks that has rocked the Ghanaian economy between the periods of 1960-2022. Often described as the gateway of Africa due to its position and shape on the continent, Ghana is a country located in West Africa with a population of over 30 million and a GDP of about \$77.59 billion as at 2021 (World Bank, 2021). After gaining independence from the British in 1957, the country has gone through the pain of dealing with four successful coups leading to economic upheavals that has derailed economic growth and development. The story has however changed since 1992 when the country finally returned to a democratic rule. The country began to experience stability post 2000. As compared to its peers in the sub-Saharan Africa, Ghana is now seen as a beacon of democracy where human rights and freedom of the press is valued despite its numerous economic challenges.

Throughout history, Ghanaian leaders have had an insatiable appetite for excessive borrowing to the point of not being able to pay back. As a result of this excessive borrowing, Ghana has been to the IMF 17 times for economic bailout with the year 2023 being the current as negotiations are still in progress. The country's first engagement with the IMF was in 1967 after it experience its first ever Coupe Detat that left the economy in shambles. Ever since then, it has become the fifth highest country in the sub-Saharan Africa to seek assistance from the Fund. This comes after Liberia with 21 programmes, Kenya with 19 and Sierra Leone and Mali with 17 programmes respectively (Mynewsgh, 2022).

With regards to electricity, the country at a point had to grapple with power crisis which began in the early 2000s. Ghana has always relied on one dam (Akosombo) for electricity since independence. Due to increase in population and without corresponding expansion of electricity supply, the country had to face over 2 years of

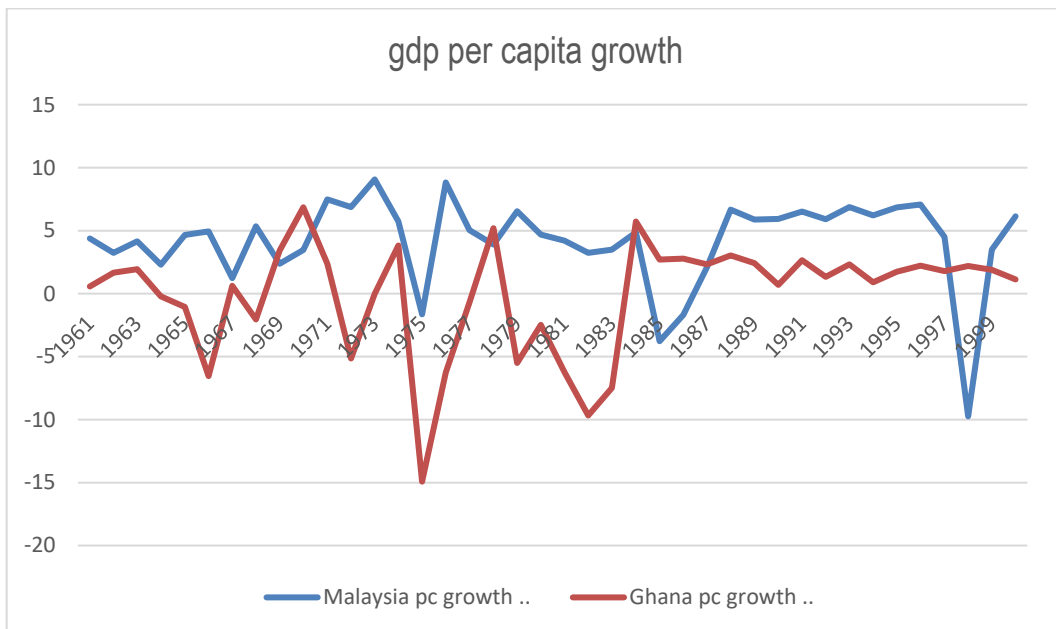
power crisis in 2010. It was partially resolved and later got worse in 2012 where the country had to rationed power supply for 4 years. This affected the growth of the economy within this period and led to high unemployment. Private businesses were one of the biggest hits within this period.

1. Historical Comparison with Malaysia

To put things into better perspective and understand the country's growth, let's consider a country like Malaysia that gained independence with Ghana within the same period. Malaysia currently has the same population with Ghana and has a GDP of over \$400 billion which is over five times that of Ghana's GDP. In terms of other development indicators such as infrastructure, education, health etc, Malaysia is far advanced than Ghana. According to Prof. Bokpin, a Ghanaian economist, one is 78 times better off living in Malaysia than in Ghana considering the current economic indicators (twitter, 2023).

From Figure 1, it can be acknowledged that Ghana has experience sporadic and inconsistent negative growth since independence. It was able to maintain stability in the late 90s. However, Malaysia has had positive and consistent economic growth post-independence. Therefore, the impact of political stability cannot be underestimated in achieving economic prosperity. As Ghana was grappling with over three decades of instability, its counterpart was setting up institutions to achieve economic growth. It is not surprising that Malaysia is more developed and has a stronger and better economy than Ghana.

Figure 1. Per-Capita GDP comparison between Ghana and Malaysia post-independence



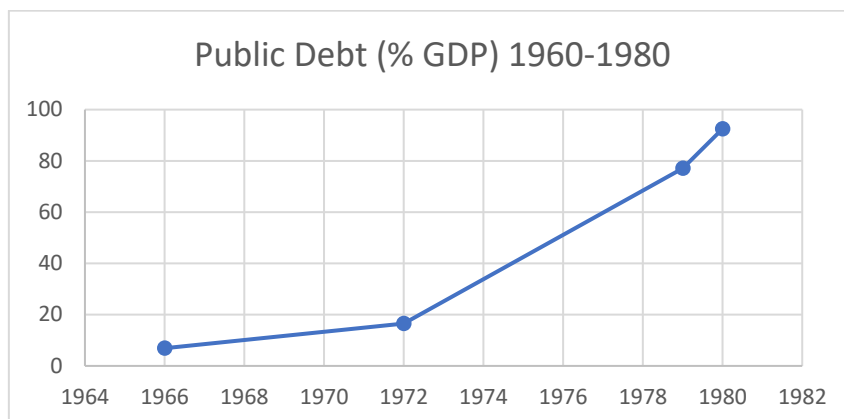
Source: World Bank (2024)

2. Evolution of Public Debt and IMF Bailout

Prior to the country's first ever coup after independence, Ghana's public debt stood at 6.9% of GDP in 1966 (see Figure 2). The then government was accused of reckless spending by wanting to help other countries gain independence and investing hugely into these country's which will not benefit Ghana in any way. Since then, the country's debt to GDP has continued to balloon.

It is important to note that during this period, the country went through various economic and political changes. In 1966, a military coup occurred, which led to a change in the government's policies. In 1970, Ghana went through a period of economic decline as inflation and falling commodity prices led to a decline in the country's GDP. As mentioned in the previous paragraph, the country was basically stagnant during this period (1960-1990) with a growth rate hovering in the negatives. In 1979, a second coup occurred, which resulted in a significant increase in the country's debt-to-GDP Ratio at unsustainable rate of over 90%. By 1983, the country had finally collapsed. Inflation was rampant and over 100%, there was widespread famine, and the country displayed all the attributes of a collapsed economy. This continues to be one of the dark periods in Ghanaian history. In other to help the country recover from this shock, the IMF provided a total of \$200 million in loans from 1983-1986.

Figure 2. Growth of public debt after first military takeover.



Source: World Bank data (2024)

Speaking of economic nightmare, as documented in Table 2 below, year 2022 has shown similar characteristics of what Ghana went through in 1983.

Table 2. Worst economic performance in Ghana's history

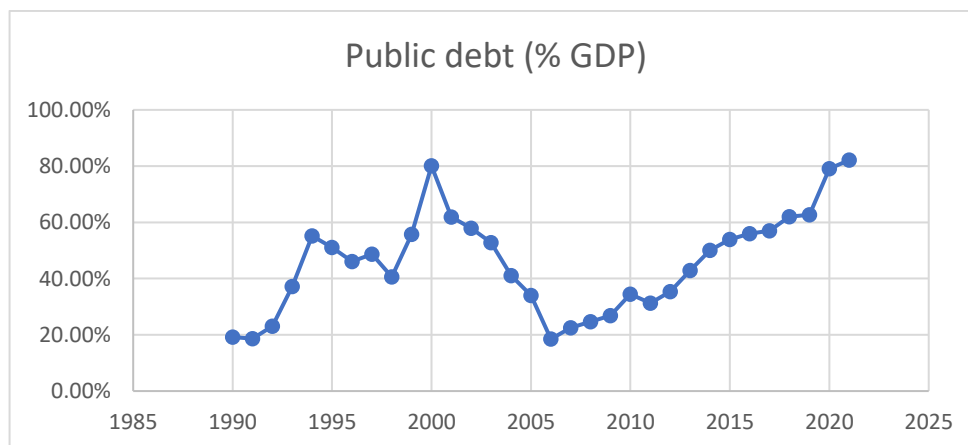
Year	Debt-GDP	Inflation	Credit rating
1983	93%	122%	Junk
2022	105%	55%/ 102% (unofficial)	S/D (- outlook)

The country is currently facing debt crisis leading to a debt restructuring which is first of its kind in history. This has become necessary and a condition for an IMF program.

During the 1990s, Ghana implemented various economic reforms with the help of international organizations to tackle the debt problem in order to have fiscal space. These reforms helped reduce its debt-to-GDP ratio from over 90% in the previous years to about 20%. However, the country still faced various challenges in terms of economic development, child malnutrition and widespread poverty. By the year 2000, the country's debt had quadrupled to over 80% of its GDP. Thus, derailing the achievements checked in the 90s. Fortunately for the country, the IMF introduced an enhanced debt relief scheme under the Highly Indebted Poor Countries (HIPC) initiative. Ghana joined the program in 2001 that led to half of its debt being cancelled.

The country had already received a combined amount of over \$550 million between 1991-1995. Prior to joining HIPC in 2001, the country received an additional \$290 million. Instead of paying back the old loans, IMF directed Ghana to invest the loaned monies into education, healthcare, good governance, and other developmental projects. This brought huge relief to the country as it got the fiscal space to invest and embark on developmental projects. After this period, Ghana has enjoyed and experienced a high economic growth up until now where it is expected that the public debt to be over 100% of GDP per expected 2022 figures. Figure 3 below shows the trend of Ghana's public debt from 1990-2021.

Figure 3. Public debt evolution (1990-2022)



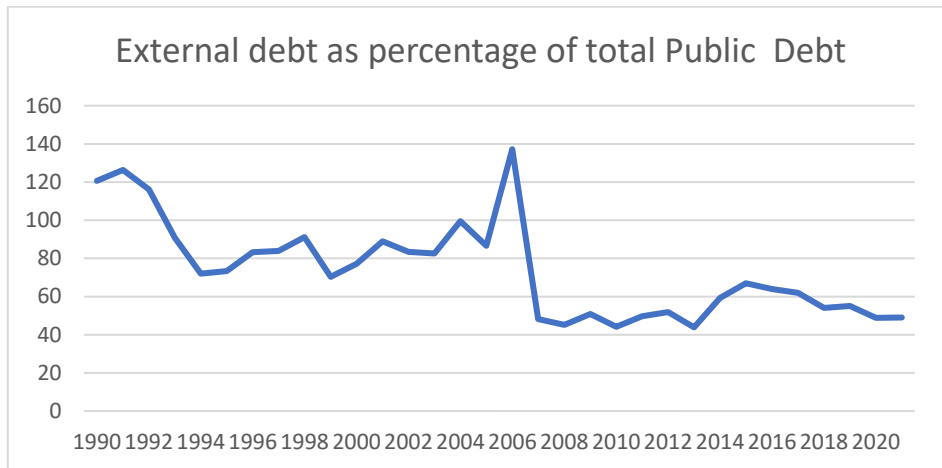
Source: World Bank data (2024)

This cyclical graph is typical of most developing countries and their appetite for excessive expenditure. After recovering from the 1983 crises where debt to GDP was over 90%, the country returned to normal levels of debt in the 90s after several domestic and international interventions. It got worst in the 2000s before it subsequently reduced to sustainable levels.

3. External Debt Growth

The debt evolution is shown in Figure 4. In addition, the correlation between Total public debt and External debt structure is 0.99, as Ghana borrows exclusively in foreign currency. External debt has been a major source of financing the government’s budget deficit for a very long time. The peak was in 1990 and 2005 where external debt consisted of 120% and 140% of total public debt respectively.

Figure 4. Foreign debt accumulation (1990-2020)



Source: World Bank data (2024)

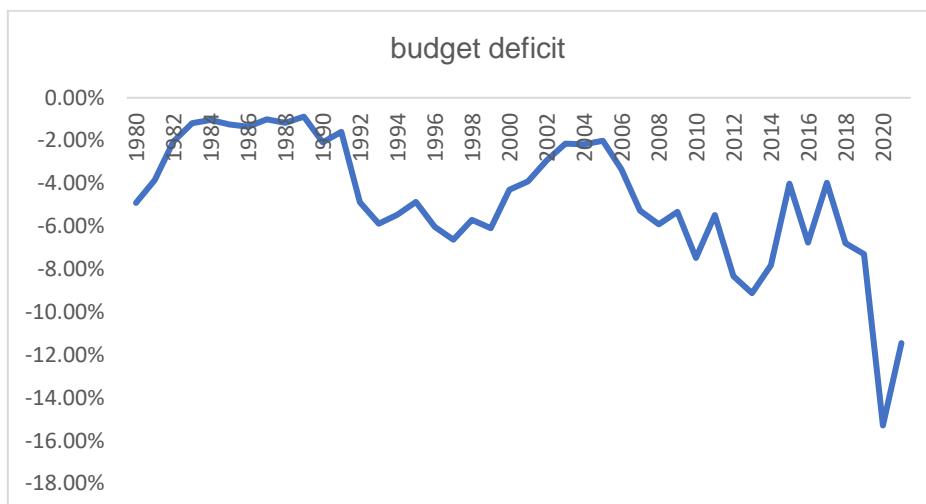
The sharp decline in 1990 and 2005 were because of debt relief after reaching unsustainable levels of over 60%. The graph shows a cycle that repeats itself after 15years. It is therefore safe to say that the optimum external debt stock should not be more than 60% of total public debt. This is because, the lack of credibility of the country to repay its loans leads to higher interest rates. Since most external debt are financed in foreign currencies, it puts pressure on the local currency leading to depreciation and inflation (imported inflation) which has been a major problem for the country.

4. Budget Deficit

Consistent running of budget deficit has grave consequences for any economy like Ghana. Firstly, budget deficit can lead to crowding out the private sector. Since government is a safe borrower, everyone prefers to lend to government. Therefore, a large amount of government borrowing could result in higher interest rates which would deter private investment and limit economic growth. Budget deficit can also lead to debt crisis which has been proven throughout history. The Ghanaian government has consistently had to take out more debt to finance its spending.

This has led to a rise in public debt which has led to high cost of borrowing and decreased investor confidence. Budget deficit has also led to severe inflation where the government resorts to printing money to finance excess spending leading to a loss of value in the local currency. Excessive budget deficit put the government in a tight corner and affects its ability to respond to shocks in periods of crisis. As shown in the graph, in 2019 during covid, the government run a budget deficit of negative 15% despite receiving over a billion dollars from the world bank and IMF. In order to have a positive impact on growth, monies borrowed must be invested in capital and infrastructural projects that can pay off these debts in the future.

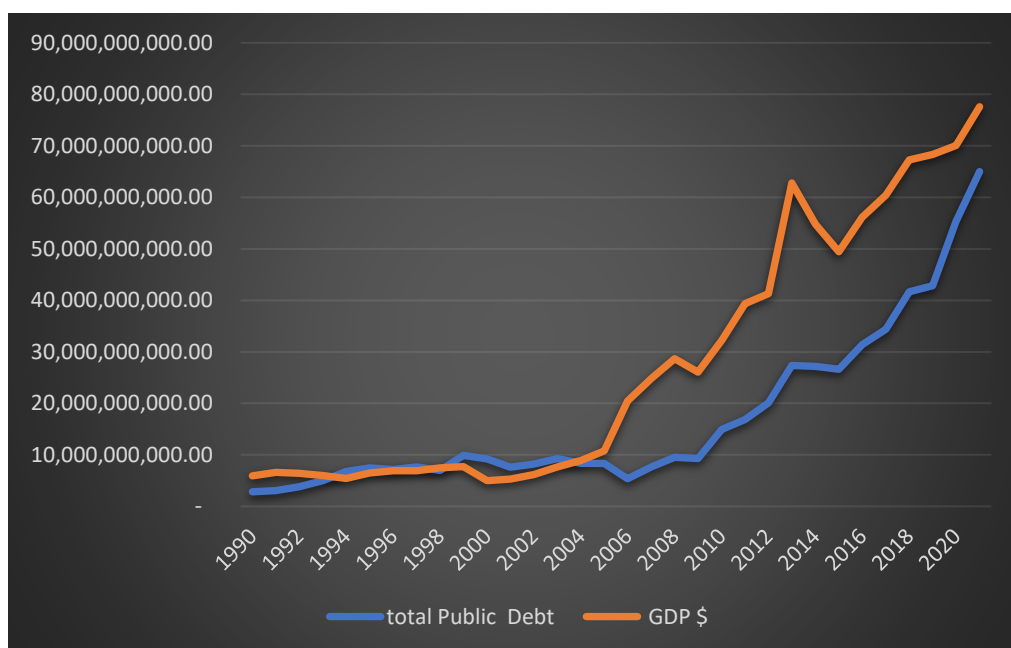
Figure 5. Budget balance/GDP in Ghana (1980-2020)



Source: World Bank data (2024)

However, most of these monies are used to finance consumption part of the budget which adds zero growth to the economy. There has been situation where monies have been borrowed to pay for salaries. Compensation and interest payment part of the budget will be dealt in the subsequent paragraphs. Figure 6 shows the growth of the country relative to its total debt stock. It is important to note that the Ghanaian economy stabilized after 1990 and began to expand and experience real growth after 2001 when it signed up to the IMF HIPC program.

Figure 6. GDP and total debt in US dollars



Source: World Bank data (2024)

From Figure. 6, we could see that actual GDP began to grow parallel with the debt stock. The massive jump in 2011 was attributed to the discovery and production of crude oil in the mining sector which grew at 225.4% (Ghana statistical service , 2011). The graph also proves my previous assertion that debt to GDP is nearing 100% as the two lines begin to meet.

Table 3. Public debt growth (10 year intervals)

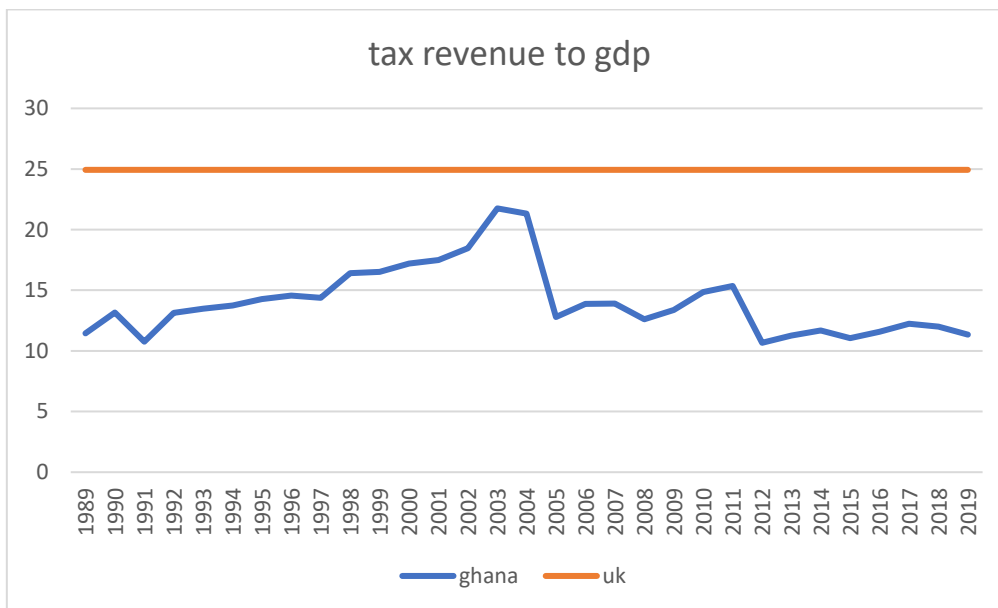
	1960-1980	1981-1991	1991-2000	2001-211	2012-2022
Change in debt	1433%		225%	122%	223%

Source: World Bank (2024) and Ghanaian Ministry of Finance (2024)

5. Tax Revenue

Due to the informal nature of many developing countries, one of the major challenges they face is internal revenue mobilisation. Comparing the United Kingdom that has perfected its tax collection system has consistently maintain an average of 25% tax revenue to GDP for over four decades. Meanwhile, the tax-to-GDP for Ghana as of 2021 was 13% which was well below the over ambitious target of 20% by 2023. This has largely led to the country's overdependence on borrowing and foreign aid. Looking at the UK system, it is observed that tax revenue has been consistent with modern days growth. This is because as at 1972, the UK had a tax revenue to GDP of 22.7% whereas Ghana had 11%. Maybe 13% is the optimum tax-GDP for Ghana unless there are structural changes to the economy. Because further taxation leads to a fall in tax revenue. According to the OECD, the average tax-to-gdp of the 31 African countries stands at 17.9% which is far more than the current performance of 13%. Even though Nigeria has the lowest tax-to-GDP ratio of 6% in Africa, it is a large producer of crude oil that makes up the shortfall in tax revenue and has a bigger economy than Ghana.

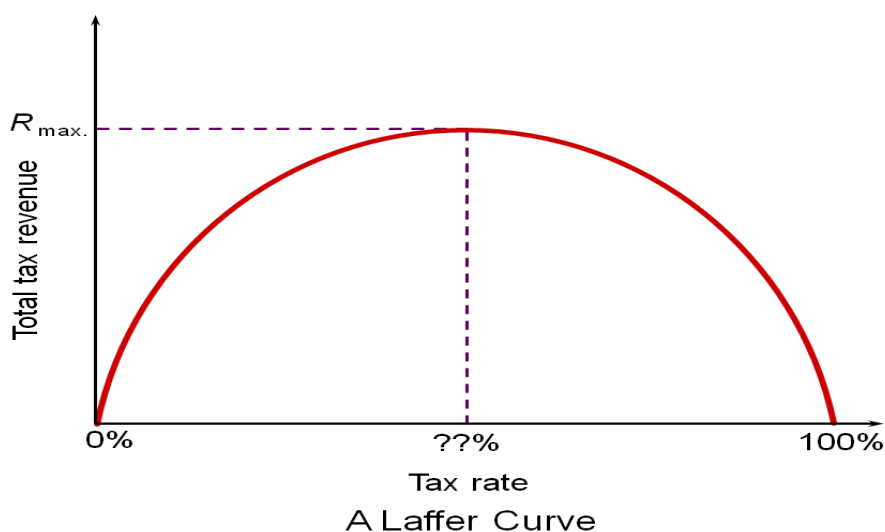
Figure 7. Tax revenue of Ghana to UK average.



Source: World Bank data (2024)

From Figure 7, we can observe that the 2003 HIPC deal with the IMF continues to be consistent throughout our analysis. Most of the country's good performance was experienced during this time and then began to relapse. According to the country's finance ministry, since 2000, higher corporate and personal income taxes, as well as VAT and other similar taxes, have contributed significantly to Ghana's growth in tax revenues; however, the growth of these two taxes has more recently slowed. Over 70% of all collections in 2019 came from these fees, up from 57% in 2000 (Ministry of Finance, 2021). Instead of finding innovative ways of broadening the tax net to capture the informal sector, governments continue to overburden the already existing taxpayer. This has led to a decline in tax-to-GDP ratio from 2000 as predicted by the Laffer curve (as depicted in Figure 8). As tax rate continue to increase, revenue also increases and then begins to fall at a certain maximum tax rate. People naturally begin to find ways of evading taxes when they feel they have paid enough or not getting the value of their taxes. The tax-to-GDP percentage in Ghana is on average for sub-Saharan African nations. Ghana's tax revenue collections, however, are relatively low when compared to nations around the globe with comparable income levels: in 2018, Ghana was ranked 26th out of 36 lower middle-income nations for which data were available (Ministry of Finance, 2021).

Figure 8. Laffer Curve

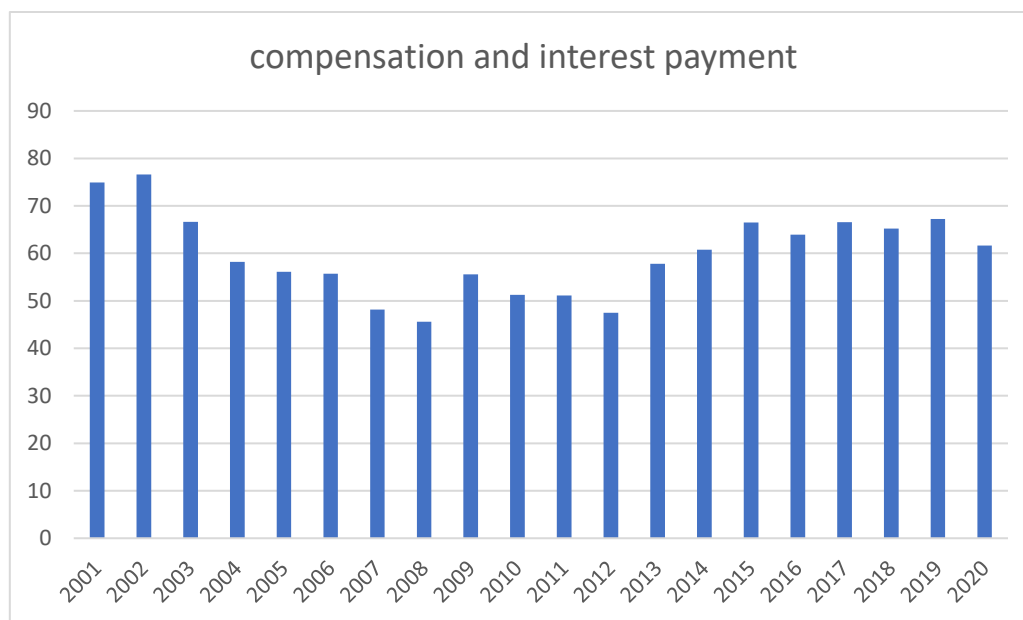


Source: Morton and Blair (2020)

6. Interest Payment and Compensation

Interest payment is one of the major components of Ghana’s expenditure along with compensation of employees. Due to persistent borrowing and a history of default, the country tends to borrow at a very high interest rate which has further compounded its debt situation. Over the past decade, interest payment and compensation of employees has taken a chunk of the country’s domestic revenue. For instance, in 2022 the government anticipates spending a total of GH¢70 billion out of the estimated domestic Revenue of GH¢90 billion on interest payment and compensation alone. This means 73.6% of government’s budgeted domestic revenues will be consumed by interest payment and compensation of employees (vaultnews, 2021).

Figure 9. Compensation and interest payment as a percentage of total expenditure



Source: World Bank data (2024)

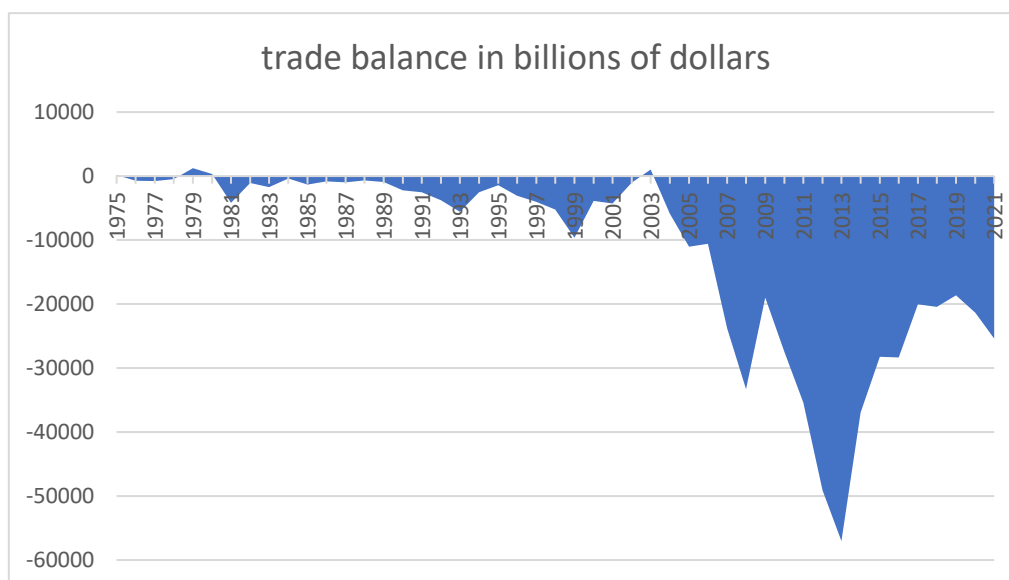
This situation created, gives the government tight fiscal space to operate. In 2014, the IMF proposed a freeze on public sector wages as a condition before a staff level agreement could be achieved. However, it was a net freeze in the public sector employment that was agreed on (myjoyonline, 2014). Similarly, in 2023, as the government negotiates with the IMF, the government has decided to put a total ban on public sector employment before an agreement could be reached (Annang, 2022). Even at 60%, it is clearly unsustainable for a small country like Ghana to develop and invest in infrastructure.

7. Balance of Payment and Exchange Rate

Balance of Payment (BoP) measures the total import and export of goods and services between one country and other countries. As an import driven economy, Ghana has consistently maintained a negative BoP. The effect of negative trade balance on local currency depreciation however cannot be discounted. Since most international transactions are done in foreign currencies like the dollar and the British pound, the local currency has continued to depreciate against these major trading currencies due to trade imbalance. Consistent depreciation of the cedi and hyperinflation led to a redenomination in 2007.

For instance, in 1982, the US dollar was exchanged for 2.78 cedis, two decades later, it was exchanged for 9100 cedis (Mansa, 2007). In the redenomination exercise, the government decided to knock off four zeros off the currency in order to allay fears of excessive depreciation and restore investor confidence. One U.S dollar was then set at 0.91 Ghana Cedi. Since the redenomination exercise, the Cedi has lost value of about 150%. According to (International trade administration, 2022), since the beginning of 2022, the Ghanaian cedi's value relative to the U.S dollar has fallen sharply. Between January and October 2022, the cedi fell more than 55%, one of the biggest drops of any currency in history. It has also been reported by the Chamber of Bulk Oil Distributors that the Central Bank has been unable to provide its members with enough forex to import petroleum products. This tends to put pressure on the local currency as demand for dollar increases. The fall in the value of the Cedi has negative impact on the general macroeconomic indicators of the country. For instance, once the cedi falls, imported goods become more expensive leading to inflation and the value of accumulated debt also increases.

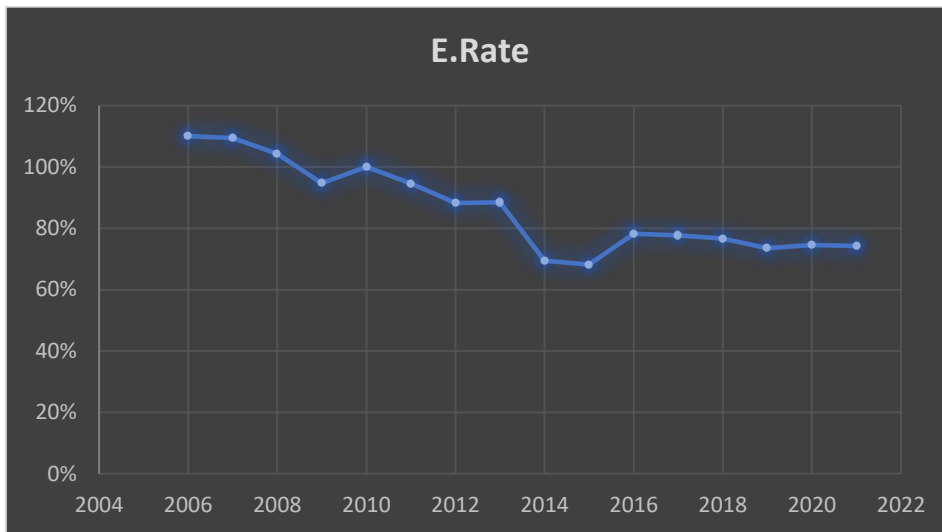
Figure 10. Trade balance (1975-2021)



Source: World Bank data

From the above graph, the country reached an all-time low of BoP in 2013. This has been partly attributed to the 2013 fall in world commodity prices (Frankel, 2014). The two major export commodities of the country, gold and cocoa were also affected. Ghana has been a net exporter of crude oil which was one of the major hits of the global crisis. These together affected the income receipts as opposed to payments in that year. The country has however taken measures to address its balance of payment deficits. For instance, the Bank of Ghana stated that importation of rice, poultry, vegetable oil, toothpicks, pasta, fruit juice, bottled water, ceramic tiles, and certain other products will no longer receive foreign exchange support since same products are produced locally. We can acknowledge that the worse depreciation recorded in 2015 can partly be attributed to the huge trade imbalance in 2013 and 2014 from Figure 11. As BoP improves in the subsequent years, depreciation has also been relatively stable (Figure 11).

Figure 11. Cedi Depreciation (2010=100)

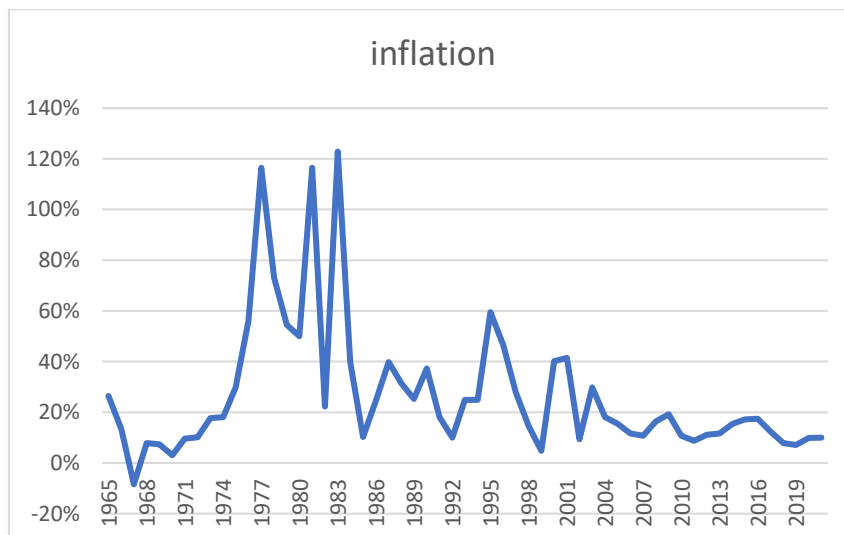


Source: Bank of Ghana data (2024)

8. Inflation

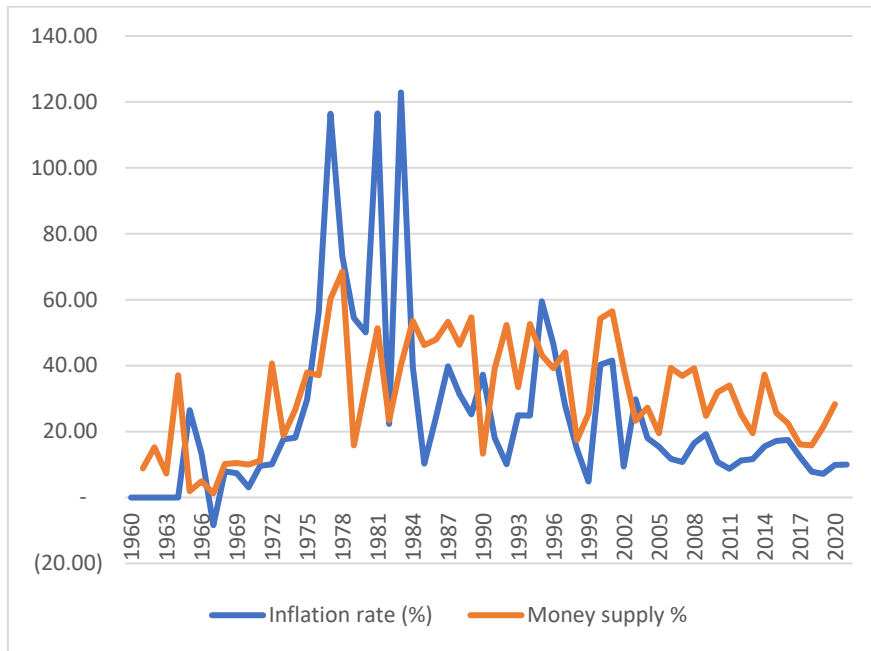
Even though double-digit inflation might be unfamiliar to many developed countries, for many developing countries, it is the norm. In severe economic downturns, it gets even worse to three digits. In Ghana's case, the country has experienced three-digit year on year inflation in three separate periods since independence. First was in 1977 during the country's military rule when inflation reached a peak of 116%. The country was mostly unstable during this time with negative economic outlook. Inflation reduced since then but was mostly over 50%. In 1980s, the country returned to three-digit inflation in 1981 and 1983 with inflation rate of 117% and 123% respectively. The country was still grappling with consequences of the military takeover from 1970s through to 1980s. 2001 was the most recent time Ghana experienced a three-digit inflation. The economy was crippled with huge debt and poor governance. Despite all these, inflation has been relatively stable in the 2000s but has been double digit. Similarly, even though unofficial, there have been reports of inflation reaching 100% in 2022 by various news portals. This is because, the government over spent their budget by over 15% in 2019 which was more than the average budget deficit of its neighbouring countries of 5%.

Figure 12. Inflation performance



Source: World Bank data (2024)

Figure 13. The relationship between broad money growth and inflation rate.



Source: World Bank data (2024)

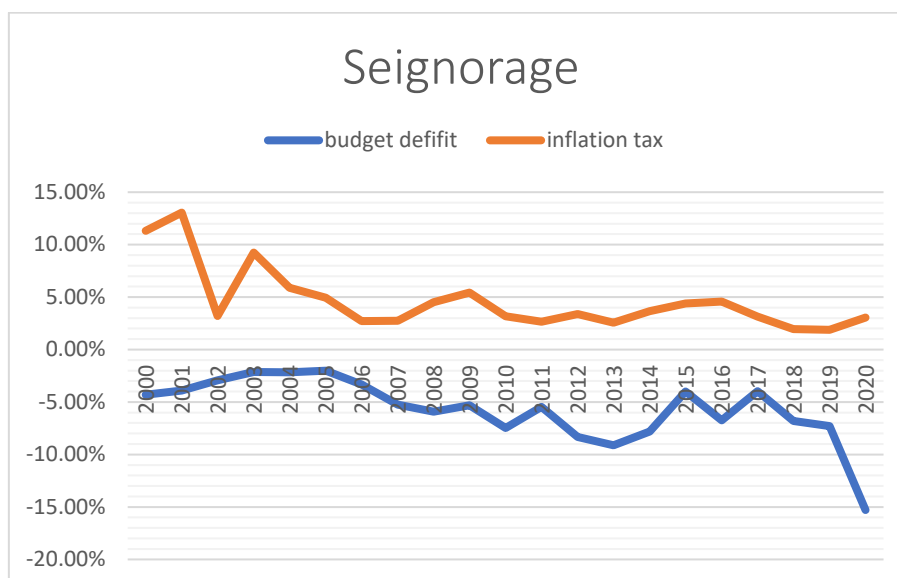
9. Seigniorage (Inflation) Revenue

Due to the instability characterized by the 1970s through to 1990s in Ghana, we will only limit our discussion on seigniorage taking data from 2000s in other to better understand the concept. Seigniorage as defined by (Majaski, 2022) is the difference between the face worth of currency and its production costs. To put it another way, the expense of creating a currency within a specific economy or nation is less than the actual exchange value, which typically benefits the governments that print the money. Many governments around the world especially developing countries have use this mechanism to finance their budget deficit by printing and circulating money in the system. A well-known example will be the situation in Zimbabwe during Robert Mugabe’s era. During this period, the annual rate of price growth in 2008 was 11.2 million percent resulting in citizens abandoning the local currency and adopting the dollar (Kadzere, 2008). The government of Zimbabwe at that time decided to consistently print money to finance its budget deficit. The short run objective was achieved. However, the long run effect of this policy on the economy has proven to be devastating.

Even though the situation in Zimbabwe was a special case, Ghana on the other hand has also experienced its worse form inflation since independence. Just like many other developing countries, Ghana has in times past printed money to finance its budget with the most recent one being August 2022. By responding to allegations made by a section of the public and some opposition in parliament, the Bank of Ghana stated that the support of about \$2 billion it supported the government budget with wasn’t new currency printed but represented net claims on government bonds and stocks (ghanaweb, 2022). In other to understand the impact of money supply on inflation, we use the seigniorage equation below also known as inflation tax.

$$\text{Seigniorage} = \frac{\text{inflation Rate} \times \text{Money Supply}}{\text{Actual GDP}}$$

Figure 14. "Tax" revenue through printing of money



Source: Ghana ministry of finance and World Bank data

From the above figure, between the periods of 2006 to 2010, we can see that an increase in budget deficit led to corresponding increase inflation tax. Same thing can be said for 2011 to 2015. We can therefore conclude that there is a positive relationship between budget deficit and inflation tax. As government attempts to print money to finance its deficit, it creates inflation by doing that and subsequently gains revenue from it as an inflation tax.

In data, we can see that there is a strong correlation between inflation, seigniorage, money supply and trade. 57% correlation between trade and inflation proves our earlier analogy that part of the country's inflation is imported due to trade imbalance. We can also conclude on the negative effect of money supply on inflation. Even though the correlation isn't that strong, it might be because of the use of M2 equation of money in our analysis which takes into consideration the use of electronic money, credit card etc. However, most transactions in Ghana are done in cash. Therefore, using M1 equation of money would have shown a strong correlation with inflation. Another interesting fact is that there is a 72% strong correlation between the budget deficit and trade. This shows that as budget deficit increases, trade deficit also increase and vice versa. It is also important to note that, public debt correlates strongly with compensation and interest payments at 77%. This means that due to the country borrowing at high interest rates, it also compounds our debt levels.

Conclusions and Further Research

By combining historical data with modern economic challenges, this study on Ghana's budget, debt, and inflation cycle takes a fresh perspective and offers a thorough understanding of the nation's economic dynamics from 1960 to date. Its uniqueness is in the way it examines these interrelated aspects in Ghana's particular setting in detail, providing insightful information for policy makers. This study is important because it reveals trends and correlations that policymakers had previously overlooked or missed, which will help them make better decisions regarding debt management, inflation targeting and fiscal policies.

Even though the challenges listed above are peculiar to many developing countries, it is evidently clear that there are structural problems with the Ghanaian economy that needs to be looked at before economic prosperity can be achieved. Many analysts and politicians have identified the problem but have done little to tackle it or perhaps, the political will is lost. Ever since independence, governments have been unable to wean themselves from the Guggisberg economy it inherited in the colonial era. Nothing gets produced in the country. The country has been exporting raw gold and cocoa for centuries which brings very little foreign exchange as compared to the amount it spends on import.

According to (Akorlie & Aboa, 2022), being the second-largest producer of cocoa in the world after Ivory Coast, Ghana annually uses loans from foreign banks mostly to finance bean purchases. In 2022, Cocobod, Ghana's cocoa sector regulator, signed a \$1.13 billion cocoa syndicated loan with some foreign banks. These further burdens the accumulated debt and the interest on these loans are repaid in dollars which tends to put pressure on the local currency. In other to tackle the consistent fall in the local currency and put an end to

imported inflation, the government must tackle the root cause by improving its manufacturing sector. This will tackle the unemployment and inflation problem in the country. The continuous tax increment on existing ones have proven futile and unproductive. Therefore, in other to improve revenue mobilisation, it is important for the government to invest hugely in areas that are not captured in the tax net. This will rake in more revenue and reduce reliance on foreign donors and printing of money to finance budget deficit. There is certainly hope for Ghana, however it needs strong commitment and hard decisions.

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Credit Authorship Contribution Statement

Abdul Majeed Saidu: Investigation, Formal analysis, Writing – original draft, Data curation, Validation, Visualisation

Aleksandar Vasilev: Conceptualization, Investigation, Methodology, Project administration, Supervision, Writing – review and editing

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

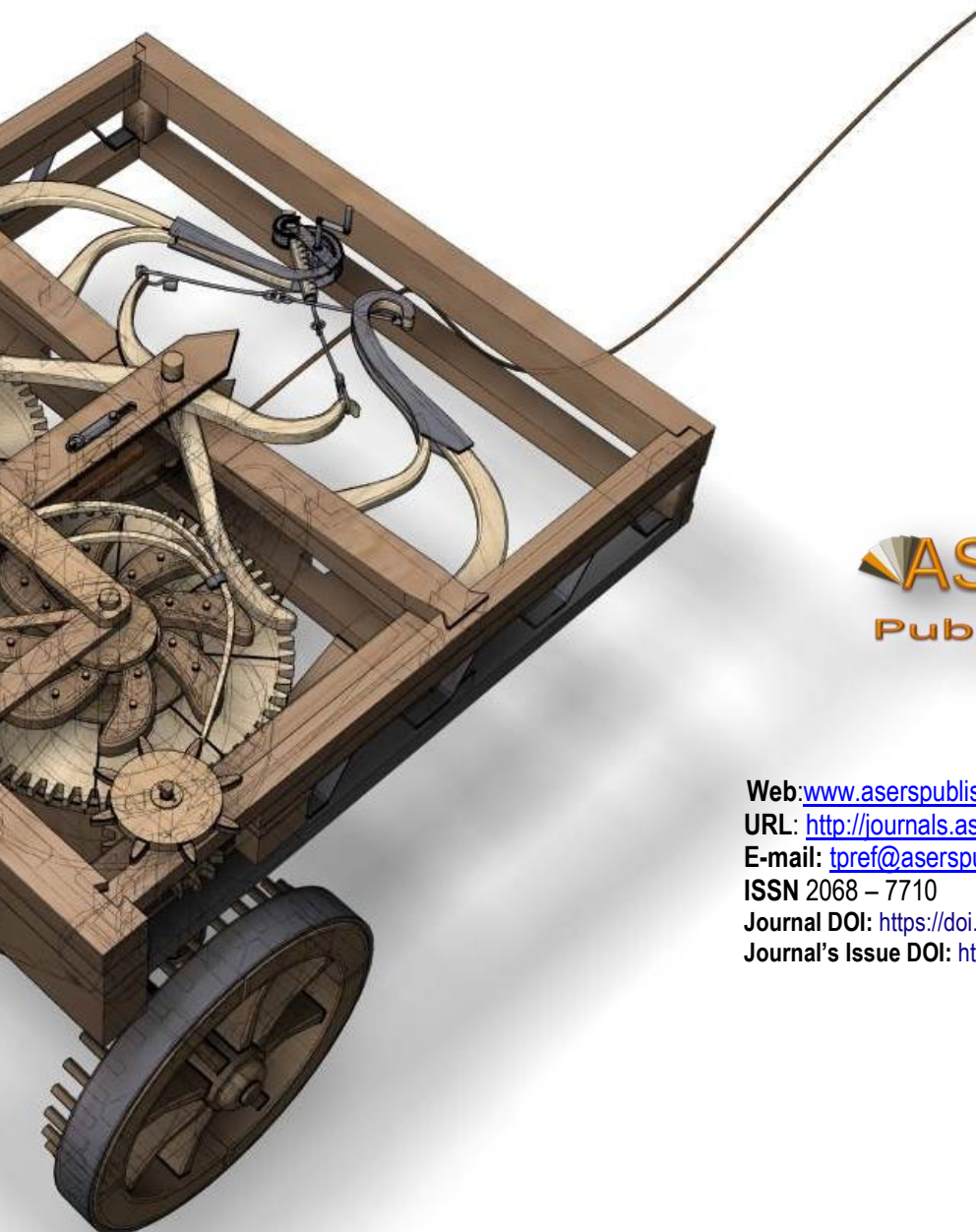
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Appendix: The major fiscal and monetary events in Ghana between the period of 1960-2022

- 1967 Ghana experienced its first Coupe leading to years of political unrest.
- 1983 Ghana enters its first IMF program to address severe economic problems including high inflation and debt.
- 1986 Because of declining commodity prices, excessive inflation, and significant debt, Ghana's economy was having trouble.
- 1991 Economic Crisis due to fall in commodity prices leading to high inflation.
- 1995 Fall in commodity prices leading to economic decline.
- 1998 Large public debt accumulation leading to economic crisis.
- 2001 Ghana decided to join Heavily Indebted Poor Countries (HIPC)
- 2009 Debt crisis
- 2010 Power crisis
- 2013 Fiscal Crisis (IMF)
- 2014 Power Crisis
- 2015 Fiscal Crisis (IMF)
- 2017 Banking Crisis
- 2018 Debt Crisis
- 2019 Debt Crisis
- 2020 present Economy struggling due to COVID-19 and excessive borrowing

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