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THE IMPACT OF THE COVID-19 PANDEMIC ON THE SELECTED COUNTRIES IN SUB-SAHARAN AFRICA IN TERMS OF GDP, INFLATION AND BALANCE OF PAYM ENT (BPM6)

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Abstract

This study examines the impact of the COVID-19 pandemic on selected Sub-Saharan African countries in terms of GDP, Inflation, and Balance of Payment (BPM6) The paper addresses a significant knowledge gap regarding the pandemic's influence on emerging financial markets in Africa. A longitudinal research design was adopted, analyzing data from Ghana, Kenya, Nigeria, and South Africa between 2017 and 2022. The study utilized GDP per capita growth, Inflation, and Balance of Payment as dependent variables, employing a repeated measure of ANOVA for analysis. The use of the 6th edition of the Balance of Payments Manual (BPM6) is an important macro-economic indicator significant in determining the performance of any country with the rest of the world. The results indicate substantial shifts in BPM6, GDP, and inflation rates before and after the pandemic. Specifically, there was a decrease in BPM6 deficits, an increase in inflation rates, and a slowdown in GDP growth post-pandemic, highlighting COVID-19's significant economic impact. The study recommends implementing policies to stabilize the economy, focusing on fiscal stimuli to boost GDP, controlling inflation, and managing external debts to improve the balance of payments. This research provides valuable insights for policymakers, investors, and stakeholders to effectively navigate financial market dynamics in Africa during and beyond the pandemic era.

Keywords

The COVID-19 pandemic, Economic impact, Gross Domestic Products, Inflation, and Balance of Payment (BPM6)

Introduction

The Covid -19 pandemic had a detrimental impact on the fragile economic frameworks of several Sub-Saharan African nations (Fuje, & Yao, 2022). According to Nicola, Alsafi, Sohrabi, Kerwan, Al-Jabir, Iosifidis, ... & Agha (2020), the implementation of containment measures, such as lockdowns and travel restrictions, had a profound effect on economies that heavily depend on commodities, tourism, and exports. Small and medium-sized firms, crucial for the functioning of several Sub-Saharan African economies, encountered unparalleled difficulties, resulting in job losses and reduced household incomes.

As reported by an IMF growth forecast (see Long, & Ascent 2020)., the current economic recession may have significant consequences for poverty rates in the area, undoing the progress made in reducing poverty over the past several years. This is because many governments imposed strict lockdowns, restricting the movement of people, and implementing stay-at-home orders to curb the spread of the virus. This had a significant negative impact on businesses, particularly those in the service and hospitality industries, leading to closures and job losses. The economic output of countries declined because of reduced economic activity. Surely, the world was not ready for that. This is clear, especially by the point that the crisis caused the greatest collapse in global economic activity since 1720 (McKibbin & Vines, 2020). Due to factors such as failing health systems, insufficient health infrastructures, and huge gaps in medical personnel, African countries were expected to have had more economic damage (Del Lo, Basséne, & Séne, 2022)

The World Bank's biannual economic analysis for Sub-Saharan Africa indicated that the region's economic growth declined by 2.0% in 2020, which aligned with the lower end of the forecast made in April 2020. However, there was optimism for a recovery as efforts were put all together to curb the pandemic threats. (Babajide, Osabuohien, Tunji-Olayeni, Falola, Amodu, Olokoyo, ... & Ehikioya, 2023) It has been anticipated that the economic growth after the Covid-19 pandemic will vary according to the strengths of each country's economic structure.

According to Ajeigbe, & Ganda, (2023) emerging markets present an exciting challenge for international finance and foreign investment. New markets hold both promise and peril. They have the potential for remarkably high returns, while simultaneously harboring substantial risks. The emergence of new markets is the most important aspect of foreign investment, finance, and economic development in contemporary Africa. Global investors and researchers have increasingly shown interest in developing economies in Sub-Sahara Africa. The markets exhibit notable attributes such as elevated average returns, substantial volatility, and exceptional opportunities for diversification (Tetteh, Amoah, Ofori-Boateng, & Hughes, 2022) Considering the current level of interest and importance placed on emerging markets, it is paramount to investigate the impact of the COVID-19 pandemic on some selected emerging economies in Sub-Sahara Africa.

II Statement of The Problem

The COVID-19 epidemic has caused substantial disturbances in the socio-economic structure of emerging market countries in Sub-Saharan Africa, a region already facing several pre-existing issues including economic instability, inadequate healthcare, and political vulnerability. The commencement of the COVID pandemic has intensified the pressure on the limited resources of these nations, worsening the existing economic and health inequalities. This study uses GDP, inflation, and Balance of Payment data economic variables to measure each African selected emerging countries in Sub-Sahara Africa: Nigeria, Ghana, South Africa, and Kenya. This analysis will concentrate on the impact of COVID-19 on the performance of the economic variables chosen for this analysis.

Purpose Statement

By addressing this knowledge gap, this research will provide valuable insights and understanding that can inform policymakers, investors, and stakeholders in effectively navigating financial market dynamics in Africa during and beyond the pandemic. This study will be structured as follows: Section2 will review of several relating to the impact of the pandemic on Sub-Saharan African countries, the role of the governments, and the effect of GDP, Inflation, and BOP, section 4 will present the methodology, data, and analysis technique used to analyses the data, section 5will discuss the results and section 5 will identify the research limitations/implications and provide a conclusion with an emphasis on future research that will need to be addressed.

Theoretical literature

Economic growth is viewed not only as an increase in the capacity of the economy to produce goods and services but also a contributing factor in poverty reduction. Some of the most cited models in the literature of economic growth are the Harrod growth model (Masoud, 2014)., the Domar growth model (Boianovsky, 2016)., the Solow Model or the new classical growth model (Hoeffler, 2002; Snowdon, 2009) This paper will primarily focus on the new school of economic growth.

The Harrod growth is the most widely discussed model. This Keynesian type of model argues that savings is the most important determinant of economic growth (Cesaratto, 1999). In this framework savings rate is constant while Investments depends on change in output, and labor force grows at a constant rate. In summary, this model implies that an economy's growth rate is determined by its saving rate. One of the limitations associated with this model is that it makes no assumption for technical progress, which have grown some criticism among economics notably Rober M Solow

The second well discussed model in literature is the Domar model. Although one can find some similarities with the Harrod model, these two models present some key differences (Halsmayer, & Hoover, 2016). For example, Domar's model includes Savings in his model, but introduces the Investment determinant. Dorma argues that Investment increases aggregate demand, and income in the economy through Keynesian multiplier principle and on the supply side Investments raises the productive capacity (Fazzari, 1994).

In other words, the implication is that if Investments is done more appropriately, it will be inflated by more than the investments capital. One of the policy implications in this model is that Investment–is a major driver of economic growth. In other words, given the productivity of capital, the economy will benefit from higher growth through higher investments financed with higher savings. Some drawbacks observed in this model is that Technology is not mentioned. Foreign Direct Investment (FDI) should play a role in economic growth (Dinh, Vo, The Vo, & Nguyen, 2019; Melnyk, Kubatko and Pysarenko, 2014; Oseghale and Amonkhienan 1987). Others have deposited that FDI has negative impact on economic development and growth (Agarwal, & Gangal, (2015); Firebaugh (1992); Pulstova (2016)). We will try to address COVID-19's impact as a contributor to the decrease in investment activities in SSA.

The third widely discussed model is the Solow's Growth Model or Exogenous Growth (Solow, 1962). A major argument of this model is that economic growth rate in the long run does not depend on the savings rate and labor force rather it is the technological. Solow (1962) argues that that there will be no growth in per capita output in the long run until technological progress exists. In summary, Solow's model implies that the growth of per-capita income can come only from technological progress. However, in this model technological progress must be exogenous. This indicates that investments and other factors cannot bring improvement in technology.

We will rely on the endogenous New Growth Theory Model (NGTM), often referred to as the New Growth Model to discuss the impact of COVID-19 in SSA. This model poses that economic growth is achieved through internal processes namely human, and investment capital rather than external forces. In other words, the addition of human capital is viewed as an investment capital that can have positive effects on economic growth. SSA countries need to ensure they maintain a level of investment strategies to continue their economic growth in the long run. While some authors argue that human capital investments have a positive impact in economic growth in the long run in Sub-Sahara Africa (Bolt, & Bezemer, 2008), others disagrees that human capital alone can contribute to economic development (Aslam, 2020; Rizki, 2023).

Wirajing, Nchofoung, & Etape, (2023) posit that economic growth in Africa is closely related to human capital while examining the impact of human capital on economic growth in 48 African countries using a GMM model Therefore, the element of research and development is crucial to attain economic growth Some of the implication one can observe will be that countries will have better benefit of investing in R&D. Therefore, policy makers should invest in education to enforce this economic sector.

III. Literature Review

Recent empirical studies have investigated the impact of COVID-19 on the African financial market (Al-Deehani, 2020; Bisong, Ahairwe, & Njoroge 2020; Ofori-Boateng, Ohemeng, Agyapong, & Bribinti, 2021; Segera, 2022); Takyi, & Bentum-Ennin, 2021; Zoungrana, & Toe, & Toé, 2023,). While numerous studies have investigated the impact of COVID-19 on the African financial markets using stock markets returns (Del Lo, Basséne, & Séne, 2022; Kamoet, 2022, Segera, 2022;Takyi, & Bentum-Ennin, 2021; and Zoungrana, et al., 2023), Other studies investigated the impact of COVID 19 in emerging markets using economic variables such as Balance of Payment, (Bortz, Michelena, & Toledo, 2020),. Inflation (Coulibaly, 2021), supply chain (Machingauta, Lungu, & Lungu, 2021), credit markets (Shipalana & O'riordan, 2020), and macro-economic factors (Alon, Kim, Lagakos, & Van Vuren, 2023)).

Despite this extensive literature on the global impact of the COVID-19 pandemic on financial markets, there is a dearth of research focusing specifically on the effects of the pandemic on African emerging financial markets. We also noted a lack of collaboration between or among researchers about the impact on COVID19 on the African financial market's literature. Consequently, little knowledge, exchange of ideas, and innovations of research. This literature also revealed a discord of how COVID-19 have affected economies at different levels (Del Lo et al 2022). This literature review was conducted through the analysis of keywords: Financial Markets, COVID-19, Herding Behavior; Sub-Saharan Africa, Ghana, Nigeria, Kenya, South Africa. From the thematic content analysis, we identified six common themes (1) market volatility (2) effects of foreign direct investment, (3) macroeconomics effects: GDP, inflation, and BOP, (4) financial contagion, and (5) government involvement**.**

1) Market volatility

There is a lack of studies exploring other important economic variables such as GDP, inflation, and exchanges rates (Del Lo, Basséne, & Séne, 2022; Takyi, & Bentum-Ennin, 2021). For example, Del Lo, Basséne, and Séne, (2022) found that African financial markets volatility during the period of January 2020 through October 2020 was attributed to fear related to COVID-19 pandemic using a panel data model. According to the authors, African financial markets were more concerned with the measures to control the disease such as social distancing, and lockdowns, than market fear and panic. They further argued that fatality rate, evidenced by low death rate hurts African financial market. Using daily time series stock market index data as a proxy for stock market performance for 13 African countries (Ghana, Nigeria, South Africa, Kenya, Tanzania, Tunisia, Mauritius, Morocco, Zambia, Namibia, Botswana, Cote D'Ivoire, and Uganda), Takyi, & Bentum-Ennin, (2021) found that there was a shout lived negative impact of COVID-19 on those countries stock market, suggesting that there was no significant impact of African financial markets.

The emergence of COVID-19 created panic and fear across entire financial markets across the globe. Investors showed hard behaviors that not only created volatility in the stock market but also caused COVID-19 to go down in many countries' economic growth rate. Several studies examined the effect of herding behavior that consequently affected negatively market returns in African financial markets **(**Boot, Carletti, Haselmann, Kotz, Krahnen, Pelizzon, & Subrahmanyam, 2020; Dalyop, 2019). Segera, 2022; Zoungrana,et al.. (2023). Del Lo, Basséne, & Séne, 2022 compiled daily market return with a ten-months' time (January 2020 to October 2020) to ascertain the effects of COVID19. The authors found the volatility of African financial markets is positively and

significantly affected both by fear linked to the COVID-19 pandemic and by the progression of the disease on the African continent. The fatality rate negatively affects the volatility of African financial markets, but the coefficient is not significant. Political responses aimed to slow the progression of the virus tend to reduce volatility while the fear of global financial markets exacerbates it. Another study by Zoungrana et al (2023) used also a short data span from January 23, 2020, to March 2, 2020, and applied the Wiclkcoxon's signed ranks test to identify the effect of the pandemic on the stocks returns of companies listed on the West African Economic and Monetary Union's. The authors found that there is minimal impact initially, with stability in market volatility before the first case. However, a notable increase in volatility occurs just three days after the first confirmed cases. Surprisingly, the research highlights that the number of death cases, rather than weekly confirmed cases, significantly influences market disruption. They also found that government anti-COVID measures exhibit a mixed impact on the BRVM stock market.

Using CAPM theory, Bello, Adekunle & Nwachukwu (2022) conducted a study to evaluate the impact of COVID-19 on the Nigerian Stock Market. Bello et al. found that the performance of the stock market was more sensitive to the total number of confirmed cases than the total number of confirmed deaths. South Africa experienced devastating effects of the pandemic, notably, on the domestic supply chains. Kamara, & Essien, 2022 in their work to ascertain the supply chain pressures caused by the pandemic posited that the supply chains disruptions lead to high unemployment, as many African countries needed set up develop trade agreements to alleviate and reduce the effect of this disruptions. Takyi and Bentum-Enninused (2021) use a greater period to measure the effect of COVID-19 which explored the stock market data using a period from October 1st, 2019, to June 30th, 2020. The authors used a Novel Bayesian structural time series approach to evaluate and quantify the short-term impact of the COVID-19 pandemic on stock market performance in the region, using thirteen African countries. The authors found that the COVID-19 pandemic has hurt stock market performance in Africa. Stick returns plummeted from -2.7% to -20%.

2) Effects of FDI Amid the spread of COVID-19

Amid COVID 19, many foreign investors withdrew their investments due to reasons such as lockdowns (implemented by governments to contain the spread of the virus). A study by Nwakoby, Manasseh , Abada, Okonkwo , & Akamike, (2021) clarifies that due to emergence of coronavirus pandemic, many foreign investors withdrew their investments from Nigeria, for example, due to economic hardship. This brought about decreases in foreign direct investment. Empirical literature finds mixed evidence for the effect of FDI on host countries. Some studies have found positive impact of FDI Effect of foreign direct investment on economic growth (Ayenew, 2022, John, 2016; Melnyk, Kubatko and Pysarenko, 2014; Nangpiire, Rodrigues, & Adam, 2018), Oseghale and Amonkhienan 1987)., while others have found weak support for positive effects of FDI. While some studies (Agarwal, & Gangal, 2015); Firebaugh (1992); Pulstova (2016)) have argued that FDI produces negative impact on economic development. Alfaro, Chanda, Kalemli-Ozcan, & Sayek, (2006) have argued that financially well-structured economies will experience a higher rate economic growth compared with countries poor financial ones.

3) Macroeconomics factors: GDP, Inflation, and BOP

Prior to the pandemic SSA countries have attained stable macroeconomic conditions: low inflation improved fiscal and external balances. These attractive fiscal policies have attracted the arrival of foreign investors (Adegboye, Osabohien, Olokoyo, Matthew, & Adediran, 2020). The privatization of state-owned enterprises played a role in attracting the influx of FDI. Research shows that principally, inflation has more of a negative impact to the economic development of a developing country. Inflation erodes the real value of savings. Savings are likely to be lower than under stable monetary conditions, and to take forms which lead to a lessening of the adaptability of the economy and to a lessening of the force of economic criteria in the choice of final investment (IMF (1963). The same report also highlights other negativities of inflation such as reduced inflow of foreign capital, domestic investment resources diversion and balance of payments difficulties in the sense that these difficulties arise because strong inflations encourage capital flight, strengthen import demands, and reduce export supplies (Osei-Assibey, E., Domfeh, & Danquah, 2018). They make large exchange rate depreciations necessary. It is due to these reasons that developing countries should strive to control inflation. Several studies have found that COVID 19 exacerbated the state of inflation in most countries. One study by Wolhuter (2020) for instance, underscores that the pandemic supply chains disruptions contributed to an acceleration in inflation due to, among other things, the ongoing mismatch between demand and supply, sharp increases in shipping costs and commodity prices as well as tighter labor market conditions. Several studies focused on macroeconomics factors to measure the impact of the pandemic (Alon, Kim, Lagakos, & Van Vuren, 2023; Nwakoby et al., 2021).

Alon et.al (2023) focused on Macroeconomic factors to understand why emerging markets were disproportionally more impacted by the pandemic than advanced economies and low-income countries. A study by (Nwakoby et al., 2021) concluded that COVID-19 affected the balance of payment negatively, as well as international trade. Using Nigeria as a sample, the study revealed that due to the pandemic, the current account diminished incredibly, and the level of competitiveness for Nigeria internationally was on a downfall, whereas

foreign remittances fell drastically. As a result, import was on the high side, while a study by Aguiar and Gopinath (2007) found that shocks to GDP have a more persistent effect on trend growth in Emerging Markets than in Advanced Economies The economic impact of COVID-19 varied across African nations and developed countries. Many African countries faced significant challenges due to the pandemic. Due to factors such as failing health systems, insufficient health infrastructures and huge gaps in medical personnel, African countries were expected to have had more damage economically (Dzinamarira, Dzobo, & Chitungo, 2020). In addition, work by (Alon et al 2021) shows extend the same idea that emerging markets experienced also the worst macroeconomic consequences. For instance, GDP per capita in emerging markets declined by 6.7 percent on average from 2019 to 2020, compared to 2.4 percent in advanced economies and 3.6 percent in low-income countries. Furthermore, research by Alon, et al. (2023) claims that the representation of the middle of the world income distribution (emerging financial markets) had the most severe macroeconomic impact of the COVID-19 pandemic. In contrary to this, research by Salisu, Adediran, & Gupta (2022) concludes that the impact of the pandemic was more aggressive and with more lasting impacts on the advanced economies than the emerging ones.

4) Financial Contagion

Research consistently highlights the vulnerability of African Markets to economic crises experienced by developed regions such as Europe, North and South America. When these established markets face downturns, the repercussions are felt in African economies. The interconnectedness of global markets plays a significant role, exposing African markets to external shocks and economic fluctuations beyond their control (Forbes & Rigobon, 2002).

Moreover, detailed investigations into cross-market linkages during crises periods reveal that the dynamics are often characterized by contagion rather than pure interdependence. In other words, the transmission of financial distress is not merely a result of healthy economic interactions but is instead marked by rapid spread of negative sentiments and shocks across borders (Forbes & Rigobon, 2002).

We can therefore explicate that the cross-market linkages observed during the COVID-19 crisis align with the findings on contagion rather than simple interdependence. The rapid transmission of economic shocks across borders, fueled by uncertainties and negative sentiments, highlighted the contagion effect. It is also true that African economies faced not only the direct health and economic challenges posed by the pandemic but also the indirect consequences of global economic downturn.

5) Government's economic interventions

Since no countries around the world was prepared to face the impact of this unforeseen pandemic, several negative economic predictions were issued about the African continent.

The United Nations projected a GDP contraction between 1.8% to 2.6%. The United Nations also estimated that about 30 million Africans could fall into poverty if measures were not taken to address the crisis.

Several SSA countries needed to either make use of national funding or use loans from international organizations to avoid an economic disaster. African policymakers opted to request over 100 billion dollars in loans. as predictions were looming catastrophic outcome on the continent. The African Union, at the eve of the pandemic. has warned the continent would see unprecedent human and capital catastrophe is not addressed.

Sub-Saharan African countries were expected to have had more damage economically (Del Lo et al 2022), due to factors such as failing health systems, insufficient health infrastructures.

To avoid and contain the spread of the virus, governments across the globe began to address the issues Among the most cited measures cited in the literature were: Monetary and fiscal Policy Interventions**, and** Vaccination Campaigns**,** to reduce the severity of the pandemic. Compared to developed countries which infused 27% of their GDP to alleviate the burden of COVID-19, SSA countries merely allocated three percent of theirs, making it a far reached disparities that have been questioned and raised in the literature. For example, in 2020, Kenya provided financial assistance through a first stimulus package geared at provided tax relief, reductions and refunds, and social protection for its citizens.

- **Fiscal Stimulus Packages:**

Several research found:

Many governments introduced fiscal stimulus packages to support individuals and businesses affected by the pandemic. This included direct payments, unemployment benefits, and financial aid to struggling industries. Stimulus measures aimed to prevent a deeper economic recession by providing financial support to businesses and households. However, the long-term impact depends on the effectiveness of these measures and the ability to control the spread of the virus (Raga & Bouba, 2020).

- **Vaccination Campaigns:**

Governments initiated vaccination campaigns to achieve widespread immunity and reduce the severity of COVID-19 cases. This as a matter of fact, was the first line of defense employed by most of SSA countries against the

pandemic. Successful vaccination campaigns were instrumental in controlling the virus's impact on public health, enabling a safer environment for economic activities to resume (Wollburg, Markhof, Kanyanda & Zezza , 2023).

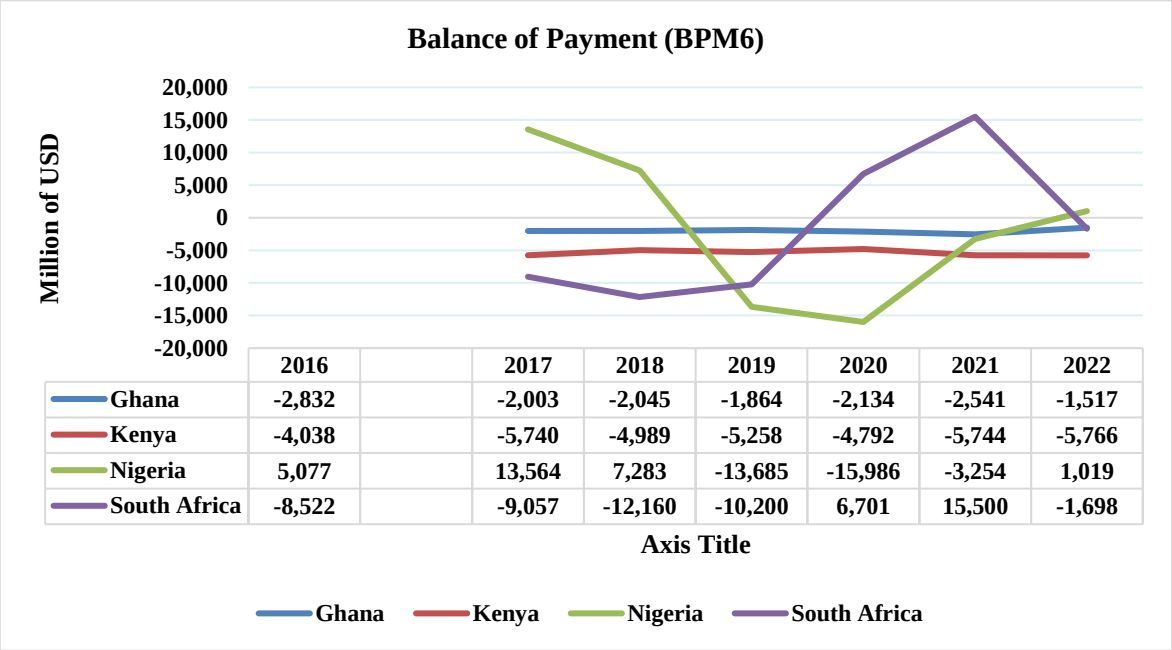
IV. Methodology

The study adopted a longitudinal research design to understand the impact of COVID-19 on the countries of Ghana, Kenya, Nigeria, and South Africa from 2017 to 2022. The study used GDP per capita growth, Inflation, and Balance of payment (BPM6) as dependent variables. These three macro-economic variables play a pivotal role in influencing the overall economic performance in comparison to the global landscape. These indicators also serve as crucial determinants of the economy's health, essential for sustainable economic growth. The Balance of Payments and International Investment Position Manual (BPM6), alongside the Balance of Payment (BOP), serves as a vital tool for comprehending a nation's international economic transactions and financial standing. A repeated measure of ANOVA was used to analyze the secondary data obtained from the International Monetary Fund website on macroeconomic and financial data. These data were continuous variables and were grouped as pre-COVID-19 (Factor 1) and post-COVID-19 (Factor 2) era of 2017 to 2019 and 2020 to 2022, respectively.

V. Results and Discussion

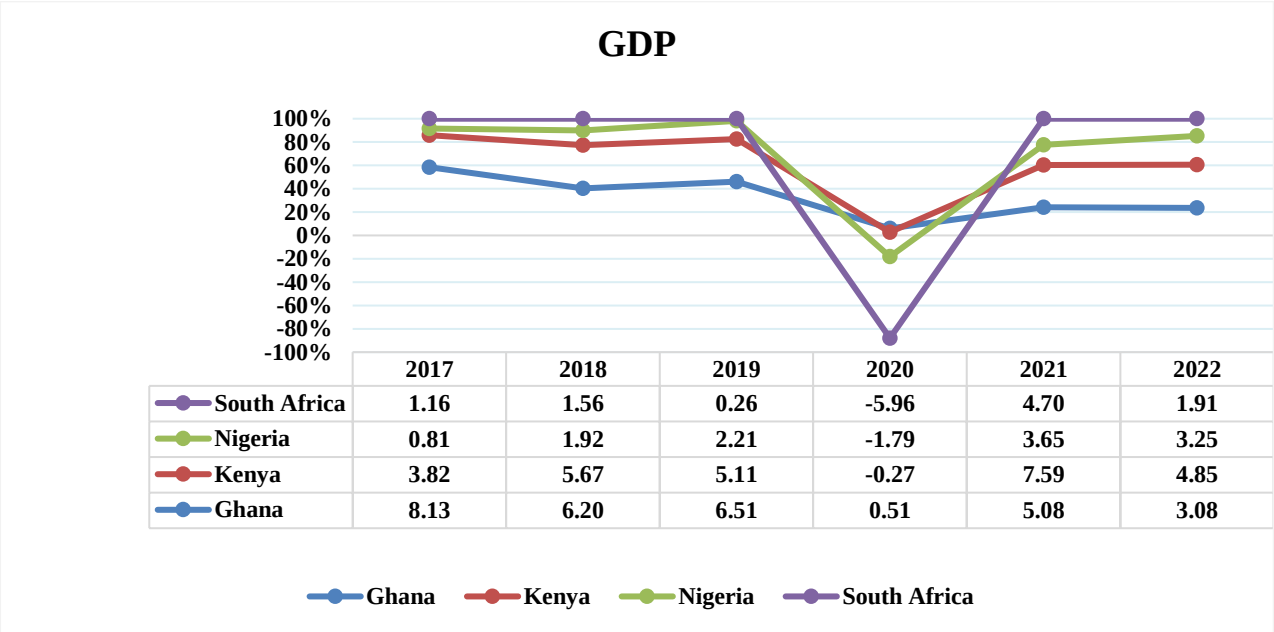
This section presents the analysis and the interpretation of the results obtained.

The presentation of results in this section is two-fold: the descriptive in a narrative form for each country under the analysis and a summary statistic of the data analysis in the form of tables and graphs we developed for each country under investigation. This analysis will derive from econometric results from the data obtained from the IMF, and the World Economic data we drafted for each economic variable: GDP, Inflation, and Balance of payment (BOP) for each country under revision.



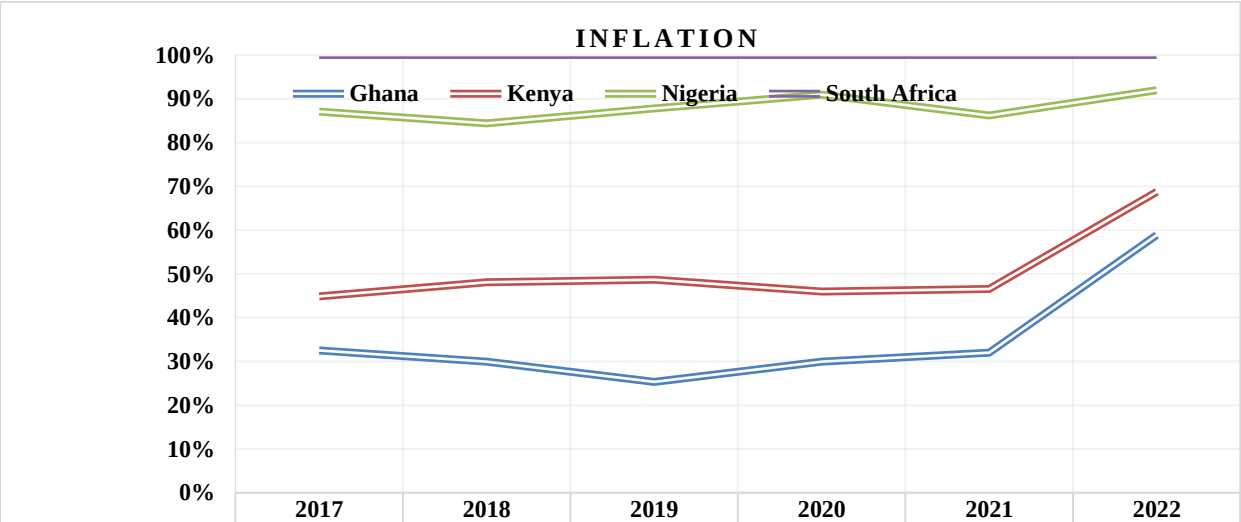
	2016		2017	2018	2019	2020	2021	2022
Ghana	-2,832		-2,003	-2,045	-1,864	-2,134	-2,541	-1,517
Kenya	-4,038		-5,740	-4,989	-5,258	-4,792	-5,744	-5,766
Nigeria	5,077		13,564	7,283	-13,685	-15,986	-3,254	1,019
South Africa	-8,522		-9,057	-12,160	-10,200	6,701	15,500	-1,698

Figure 1: Balance of Payment (BPM6)



	2017	2018	2019	2020	2021	2022
South Africa	1.16	1.56	0.26	-5.96	4.70	1.91
Nigeria	0.81	1.92	2.21	-1.79	3.65	3.25
Kenya	3.82	5.67	5.11	-0.27	7.59	4.85
Ghana	8.13	6.20	6.51	0.51	5.08	3.08

Figure 2: Gross Domestic Product



	2017	2018	2019	2020	2021	2022
South Africa	4.70	4.92	3.74	3.17	5.44	7.41
Nigeria	15.37	11.44	11.98	15.75	15.63	21.35
Kenya	4.50	5.71	7.16	5.62	5.73	9.06
Ghana	11.82	9.43	7.76	10.47	12.62	54.10

Figure 3: Inflation

V. Results and Discussion

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The primarily results of Sub-Saharan region revealed the followings facts: BOPM6 in Sub Sahara Africa, dropped about one percent throughout the crisis period, while inflation increased to four basis points from 11.4%, to 16%, and GDP growth remained constant with a 0.20% growth from 2016 to 2023 according to IMF Finance data. However, there was a decrease in GDP growth, and BOPM6 in 2020, and a major correction in inflation in 2021. We will go into more detail about the selected economic variables for each subject country.

Constant Growth in Kenya

Prior to the pandemic, Kenya was one of the fastest growing economies in the Sub-Sahara region with an annual average growth of 4.7% between 2016 and 2019 with an estimated GDP of $115.08 billion in 2024. According to our sample data, Kenya GDP revealed a stagnant growth from 2016 to 2023. During the pandemic Kenya saw a drop of about four bases in 2020 from 5.11% to negative 0.27 percent. The pandemic put a halt on growth from 2016 to 2019. Kenya however did resurface in GDP and came back to its 2016 level. During the same period Kenya's inflation saw an uptick of about one basis point. One can argue that Kenya's results saw a less volatile faith compared to the other countries under investigation. As a response to the pandemic, Kenya employed lockdown as one of the measures to curb the spread of the pandemic. This brought about a decrease in tourism, exports, and remittances. These factors were projected to cause a negative GDP impact of 6.4%. With further lockdown shocks, it meant that there would be a negative growth in GDP to 9.2% implying an economic contraction of around 3.8% in 2020 (Nechifor, Ferrari, Kihiu, Laichena, Omanyo, Musamali, & Kiriga, 2020). The results confirmed that the country was spared from these negative growth projections. Although there was an associated potential contraction of the GDP of approximately 0.8% during the period of investigation (2017 – 2022). It is for sure that the pandemic caused a significant downfall to Kenyan economy, but it is also true that even before being affected by the pandemic, Kenyan economy had decelerated. Kenya however, managed to contain the economic impact of the multiple COVID 19 waves in 2021 and this witnessed a rebound from the pandemic in 2022 (Mathenge, Ghauri, Mutie, Sienaert, 2022. According to the Kenya Economic Update (KEU) Kenya's GDP increased by 6.0% Year-on-year in the first half of 202 (KNBS, 2022). The economy continued getting even better, steering toward the country's long term growth rate. GDP expanded by 4.8%in 2022 (World Bank. Kenya Economic Update, 2023).

During the pandemic, the levels of inflation also proved high. Between June 2020 and June 2021 Kenyan consumers paid 8% more for food and beverage, 14% more for transport and 4% more for water, electricity, and housing. Inflation hit a 23-month high (6.91%) in September 2021 and by 2022 it was 5.8%. Kenyan inflation rate was tremendously alarming even before the pandemic. According to the Kenya National Bureau of Statistics (KNBS), prices of basic commodities increased by more than 46%since 2013. According to a 2022 Kenya National Bureau of Statistics the country was already on a downward spiral before COVID 19 as the proportion of people living in multidimensional poverty began rising as far back as 2013, increasing from 38.9% in 2014 to 53% in 2018 (KNBS, 2022).

Volatility and Spillover Effects in Ghana

Ghana was experiencing a constant GDP growth averaging seven percent from 2017 to 2019 inclusive of the preceding year. The emergency of the COVID-19 pandemic influenced the nation's Gross Domestic Product (GDP) growth and the financial markets. Real GDP started to take a nosedive in 2020 due to major macro-economic factors such as the impact of the pandemic, but also the effects of Ukraine invasion having a spillover effect through the whole region. Ghana GDP growth decreased to four percent on average during the post COVID period.-For the period spanning from 2017 to 2022, inflation rate hyped to relatively 10 percent. In 2022, the country experienced one of the worst inflation rates(54.1%) recorded in its history, driven by food, energy, and local currency depreciation.

In Ghana, financial market is a key lubricant that fuels Ghana's economic growth. Besides providing jobs to many, it is the main source for financing Ghana's industrialization growth. The emergence of COVI-19 pandemic influenced the nation's Gross Domestic Product (GDP) growth and the financial markets in general. Prior to the arrival of the COVID-19 in the economy, banking had started making impressive gains after a series of financial sector clean-up reforms.

We safely can say that Ghanaian economy was steering for the best before the pandemic. The sector registered a growth in total assets from GHS105.1 billion at December 2018 to GHS129.1 billion representing some 22.9% growth in total assets in December 2019, profit after tax (PAT) increased by 38% on year-on-year to GHS3.3 billion in 2019, 23.8% growth in gross loans between 2018 and 2019 while there was a general decline in non-performing loans by 5.2% between 2018 and 2019. The Total customer deposits in the banking sector also increased by 22.2% as at December 2019.

The coronavirus (COVID-19) pandemic was projected to affect Ghana's rate of inflation (see Graham, Dramani, & Frimpong,2023). The inflation rate was estimated at 8.5 percent for 2020 and 7.5 percent for 2021 before the virus outbreak. However, due to the pandemic, inflation projections in the country amounted to 11.2 percent and 9.3 percent for 2020 and 2021, respectively (under a baseline scenario). Furthermore, assuming the COVID-19 pandemic got worse, the inflation rate was revised at 10.6 percent in 2020 and 12.7 percent in 2021.

More socio-economic challenges in South Africa

With an annual average growth of shy of one per cent between 2017 and 2019 as depicted in our data, and with an estimated GDP of $401.57 billion in 2024. South Africa's growth has experienced several challenges: high unemployment at around 35%, rising prices, and two consecutive quarters of recession (Gern., Kooths, Reents,

Sonnenberg, & Stolzenburg,2022). Among the four countries under investigation South Africa was adjudged to be the most vulnerable country to combat the feared pandemic. The pandemic is the last straw, South African governments needed to deal with. Not surprisingly, the nation took some of the hardest measures to survive. Since South Africa was expected to experience a nosedive economically, complete lockdown, vaccinations, and other nonsocial tools were used to prevent the threat. A work by Fernandes (2020) predicted that the South Africa's economy would shrink by 3.2% due to the COVID-19 pandemic. Continuation of the lockdown up to mid-June 2020 would result in the economy shrinkage of 6.8%, with a 10.8% shrinkage when it continued up to July 2020. This is a clear indicator that indeed, COVID-19 played a role in deteriorating the economic state of South Africa if it lasted. However, compared to the other countries under review, South Africa was able to maintain its inflation rate. This variable did not surge during the period and stayed on average five percent before and after the pandemic period. At the same token, the country's account balance stayed on average negative five percent from 2017 to 2022. The average GDP growth throughout the whole ordeal did not fluctuate averaging 0.6 percent from 2017 to 2022, however influenced by some year(s) before and after this period. What lessons can be learned from the measures taken by the South African governments? Although the negative predictions did not occur, and the government did not put South Africa in worse shape, the country have not been able to sustain its economic growth. Policy makers will need to dig deep to find out about the real causes of their non-growth economic conditions. The pandemic policy lessons should help South African policy makers to enact better fiscal and monetary policies to improve the country economic growth policies and infrastructures that are not in line with the current economic potential this country can unleash. For example, the South African Rand and the South African stock market, like many other global financial markets were significantly impacted by COVID-19. The Rand experienced a significant depreciation against major currencies like the US dollar. These fluctuations in exchange rates affected overall inflation. The pandemic also disrupted supply chains production, leading to shortages of certain goods which is also a contributor to inflation. Producer price inflation for intermediate manufactured goods accelerated to 23.1% in November and December 2021 reflective of raw material shortages, before moderating only marginally to 21.0% in 2022, according a 2022 South African Reserve Bank (SARB) report. Furthermore, headline consumer price inflation quickened to 5.9% in December 2021 before slowing to 5.7%.

Economic Resilience amid high Inflation in Nigeria

Prior to the pandemic, Nigeria GDP growth was averaging 1.7 per cent from early 2017 to 2019. The country was able to maintain its GDP level to 2.87 %. This growth was sustained to 3.25 per cent by late 2022, indicating the country did recover steeply from the pandemic. Prior to the pandemic, Nigeria inflation was averaging 13%, while its BOPM6 stayed leveled at 2.39 per cent. Although the country's BOPM6 experienced a steep decline in 2020 (negative 16 percent, it rebounded to close the end of the period positively to one percent. The results also showed that Nigeria was on the decline prior to the pandemic. COVID19 just accelerated the downward trend of these variables. The fact that the BOPM6 recovered promptly after and during the pandemic, it may have been due to external factors that will need to be addressed. Lain, Vishwanath, Alik-Lagrange, Amankwah, Contreras-Gonzalez, Jenq, ... & Sagesaka, 2021). asserts that many of the primary effects of the COVID-19 pandemic on Nigeria have been economic, rather than health related. The pandemic caused a global drop in oil demand, leading to a sharp decrease in oil prices which tumbled more than 60% between February 2020.

The economic disruptions caused by the pandemic, such as supply chain disruptions and reduced consumer demand, contributed to rising inflation in Nigeria. The economic disruptions caused by the pandemic, such as supply chain disruptions and reduced consumer demand, contributed to rising inflation in Nigeria. The same Lain et al., (2021) stablishes that during the final stages of the pandemic, albeit the economic activity had begun to recover, inflation started to accelerate, especially for food items that are crucial for consumption among the poor and vulnerable. The pandemic disrupted global trade, affecting Nigeria's Balance of Payments. This decline in oil revenue, coupled with increased import costs, put pressure on the country's balance of payments, leading to a current account deficit. The real Gross Domestic Product, as per National Bureau of Statistics (NBS, 2020), declined by 6.10 % in the second quarter of 2020 owing to the impacts of the COVID-19 pandemic as well as the consequent decline in oil price.

A one-way repeated measures ANOVA was conducted to compare scores on the means scores of the Pre-COVID-19 era (2017-2019) and the Post-COVID-19 era (2020-2022) on average of Ghana, Kenya, Nigeria, and South Africa balance of payment (BMP6), gross domestic payment (GDP), and Inflation. As shown in Table 1, the sphericity is not met, therefore Greenhouse-Geisser or Huynh-Feldt are applied to adjust the degrees of freedom, ensuring the validity of the test results. The study presents the mean and standard deviation scores in Table 2. There was a significant effect for time-based on the Greenhouse-Gesser for the balance of payment $F(1) = 1.59$, $p = .717$, GDP $F(1)=2.362$, $p =.717$ and, inflation $F(1) = 2.495$, $p =.717$ as shown in Table 3. This is interpreted as that there was no significant difference over time in the measurement.

Mauchly's Test of Sphericity[a]							
Within Subjects Effect		Mauchly's W	Approx. Chi-Square	df Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Factor1	Balance of Payment	1	0	0	1	1	1
	GDP	1	0	0	1	1	1
	Inflation	1	0	0	1	1	1

Table 1. Mauchly's Test of Sphericity

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept
Within Subjects Design: factor1
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

	Mean	**Std. Deviation**	**N**
BPM6 Pre-COVID-19	-3846.193	5430.7948	4
BPM6 POST-COVID-19	-1684.238	5945.4478	4
GDP Pre-COVID-19	3.613	2.7941	4
GDP POST-COVID-19	2.216	1.6428	4
INFL Pre-COVID-19	8.210	3.8466	4
INFL GDP POST-COVID-19	13.862	9.6113	4

Table 2. Descriptive Statistics

Source			Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
factor1	Balance of Payment	Sphericity Assumed	9348098.392	1	9348098.392	.159	.717	.050
		Greenhouse-Geisser	9348098.392	1.000	9348098.392	.159	.717	.050
		Huynh-Feldt	9348098.392	1.000	9348098.392	.159	.717	.050
		Lower-bound	9348098.392	1.000	9348098.392	.159	.717	.050
	GDP	Sphericity Assumed	3.903	1	3.903	2.362	.222	.441
		Greenhouse-Geisser	3.903	1.000	3.903	2.362	.222	.441
		Huynh-Feldt	3.903	1.000	3.903	2.362	.222	.441
		Lower-bound	3.903	1.000	3.903	2.362	.222	.441
	Inflation	Sphericity Assumed	63.888	1	63.888	2.495	.212	.454
		Greenhouse-Geisser	63.888	1.000	63.888	2.495	.212	.454
		Huynh-Feldt	63.888	1.000	63.888	2.495	.212	.454
		Lower-bound	63.888	1.000	63.888	2.495	.212	.454

Table 3. Univariate Tests

In assessing the main effects, a TWO ANOVA with tables and making interpretations for the results interaction effects are presented with the aid of chart plotting. As shown in Table 4, the results of the main interaction effects of the COVID-19 pandemic had a large statistically significant effect on inflation F (1) = 11.945, p = 0.041, partial eta squared = .799. as shown in Figure 4. This shows that the COVID-19 pandemic specifically affected inflation rates in Ghana, Kenya, Nigeria, and South Africa. The COVID-19 pandemic caused prices of goods to increase at a faster rate.

The COVID-19 pandemic's main interaction effect on the balance of payment in Ghana, Kenya, Nigeria, and South Africa was large and statistically significant F (1) = 10.028, p = 0.05, partial eta squared = .770 as shown in Table 4 and Figure 5. This points to the fact that the COVID-19 pandemic specifically affected the balance of payments. This is seen in the decline in global trade and flow inflows of foreign direct investment. However, these countries experienced capital outflow.

However, the study did not find a statistically significant interaction main effect of the COVID-19 pandemic on the GDPs of Ghana, Kenya, Nigeria, and South Africa. As shown in Table 4 and Figure 6, F (1) = 7.673, p = 0.70, partial eta squared = .719. The large decline in the GDPs of these countries cannot be specifically attributed to the COVID-19 pandemic. This decline happened due to other factors which per chance it may include the pandemic effect.

Tests of Between-Subjects Effects Transformed Variable: Average							
	Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**	**Partial Eta Squared**
Intercept	Balance of Payment	61171335.24	1	61,171,335.24	10.03	0.05	0.77
	GDP	67.933	1	67.933	7.673	0.07	0.719
	Inflation	974.354	1	974.354	11.95	0.04	0.799

Table 4.

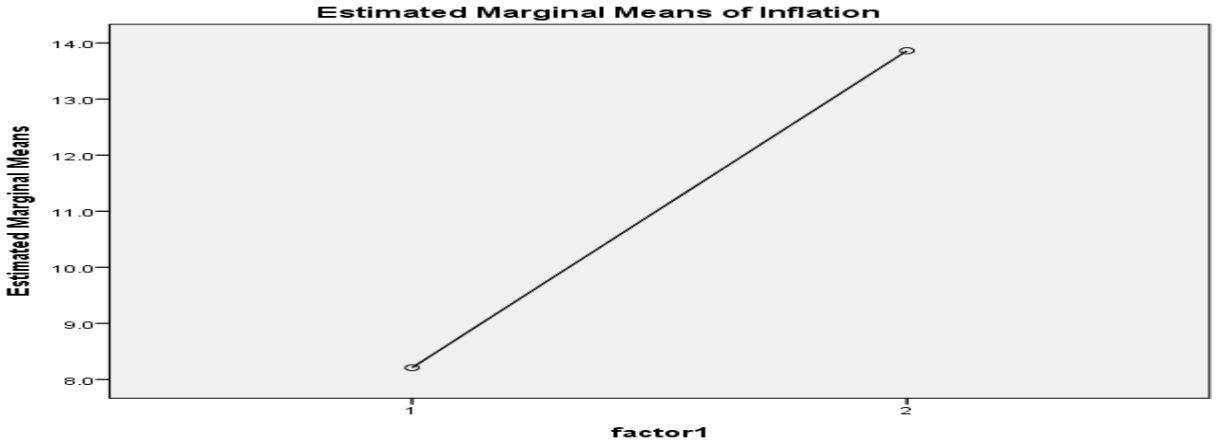

Figure 4.

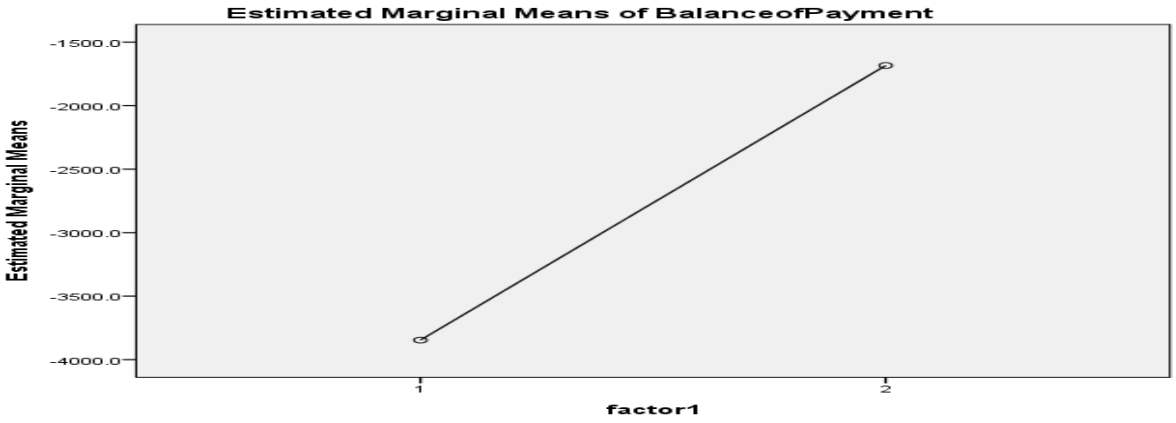

Figure 5.

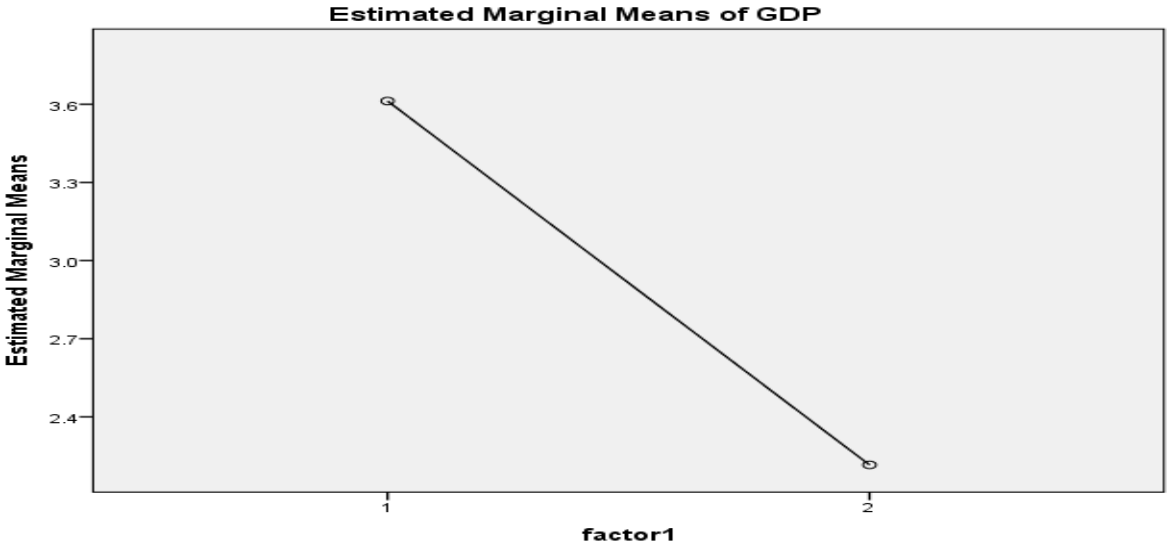

Figure 6

Conclusion and Recommendations

The analysis of the data reveals significant shifts in Balance of Payments (BPM6), GDP, and inflation rates pre- and post-COVID-19. The mean values indicate a decrease in BPM6 deficits and an increase in inflation rates post-pandemic, with GDP growth slowing down for Ghana, Kenya, Nigeria, and South Africa. The statistical tests suggest these changes are significant, implying COVID-19's substantial impact on economic indicators. Recommendations include implementing policies to stabilize the economy, such as fiscal stimuli to boost GDP and measures to control inflation, while also considering strategies to manage external debts and improve the balance of payments.

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