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Ghana and the IMF: Policy Shifts, Economic Bailouts and Macroeconomic Outcomes

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Ghana and the IMF: Policy Shifts, Economic Bailouts and Macroeconomic Outcomes

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Abstract

Ghana has a long history of engagement with the IMF. Successive governments of Ghana have sought economic bailouts from the IMF due to worsening domestic macroeconomic stability. This paper examines Ghana's historical engagement with the IMF and the associated macroeconomic outcomes, and offers lessons for economic restructuring and growth beyond the bailouts. The paper explores the common patterns of the key macroeconomic variables and possible latent causal effects. The results reveal intermittent and short-term effects of the IMF programs. The bailouts often have a short-term impact on macroeconomic stability and growth, but the effects are unsustainable in the long term, especially after the IMF program ends.

Keywords: IMF bailouts; macroeconomic stability; economic restructuring; Ghana; dynamic factor models.
JEL Classification: E65; H12; H60.

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1. Introduction

On July 1, 2022, the Government of Ghana (GoG) announced a decision to seek a financial bailout from the International Monetary Fund (IMF) to help manage economic crises caused by both global and local factors. On May 17, 2023, the IMF Executive Board approved a 36-month extended credit facility (ECF) of Special Drawing Right (SDR) 2.242 billion (about USD 3 billion) for Ghana (IMF, 2023). This is the 17th IMF program for Ghana. The Ghanaian economy like most African economies is chronically fragile (African Economic Research Consortium, 2019; Holden and Pagel, 2012). There have been periods of economic bliss and stability (World Bank, 2021). However, Ghana has persistent symptoms of macroeconomic instability and has in many instances sought IMF financial bailouts, solutions to policy credibility, and a cure for macroeconomic instability.

As in the global economy, Ghana is experiencing rising costs of living, mounting public debts, struggling private sector, and worsening social outcomes like unemployment, poverty, and increasing food prices (Heitzig et al., 2021). Asante and Mills (2020) note that Ghana's approach to dealing with Covid-19 was associated with a rising cost of living and increasing hardship. The GoG has consistently cited the effects of the COVID-19 pandemic and the Russian-Ukrainian war as the key causes of the rising living costs and economic vulnerability. The contributions of local factors to the economic crises are hardly acknowledged, especially the resultant effect of public expenditure and other public policy choices. For instance, the government spent millions of Ghana cedis on projects such as the one-village-one-dam which aimed at providing the rural areas in Northern Ghana with sources of water for year-round farming. Despite the huge expenditure on this project, the benefit to the Ghanaian economy is very minimal. Agriculture has not significantly transformed in the North, some of the dams dry up quickly during the dry season, and many of the communities still face acute water problems.

There have also been excessive expenditure leakages and corruption (IMF, 2023; United Nations Office of Drugs and Crime (UNODC), 2022). For instance, expenditures relating to the management of Covid-19 were fraught with corruption and misappropriation. Public school conditions, especially the primary and secondary levels, are worsening despite the increased public expenditure on free senior high education annually (UNICEF, 2022). There are similar increases in public expenditures in other sectors with disproportionate results. For instance, the health insurance system is facing mounting financing challenges, and there are structural deficits in health infrastructure. Thus, there is scepticism as to whether the huge government public expenditures are commensurate with benefits. This also raises questions about the ability of the country to efficiently invest borrowed funds and pay them back.

This paper takes a journey through Ghana's engagement with the IMF to draw some lessons on growth, macroeconomic stability, debt vulnerability management, and the associated policy implications. The analysis focuses on the trends of some forefront macroeconomic variables: annual real GDP growth, debt to GDP ratio, inflation rate, the exchange rate, public and private investments, and public capital stock. The paper employs the Markov-switching model and descriptive patterns of the key macroeconomic variables to analyze the possible effects of the IMF bailouts on Ghana's macroeconomy.

The next section presents Ghana's historical engagement with the IMF and descriptive patterns of key macroeconomic variables. Section 3 presents a brief review of related literature, 4 presents the model, and 5 presents the results. Section 6 concludes with some policy recommendations.

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2. Ghana's Historical Engagement with the IMF: Some Trends and Outcomes

On May 17, 1966, Ghana signed its first IMF bailout. This was a few months after the overthrow of the Kwame Nkrumah regime, the first post-colonial civilian government. Then within a very short period of 4 years, Ghana had 4 different Standby Agreements with the IMF: May 17, 1966 - May 16, 1967; May 25, 1967 - May 24, 1968; May 28, 1968 – May 27, 1969; and May 29, 1969 - May 28, 1970, with agreed SDRs of 36,400; 25,000; 12,000, and 5,000 respectively. Thus, the cumulated bailout over the four years was SDRs78,400 (see IMF Ghana: History of Lending Commitments).

In 1965, Ghana's deficit on the current account was $228 million, and public foreign debt was almost $700 million (IMF, 1966). According to data from the World Bank, the annual inflation rate (consumer prices) was 26.4 % in 1965, and annual GDP growth was 1.4%, and -4.3% in 1966. By 1970, after the 4th consecutive bailout, GDP growth had improved tremendously to 9.7% (from -4.3% in 1966). Inflation declined to 3.0% in 1970, but the debt as a percent of GDP remained almost the same at 24.5%, closer to the 1966 figure. Thus, the IMF bailout may have helped improve some of the key macroeconomic indicators during this period, and anchored the economy, but debt levels were least impacted in the short term.

By 1979, the debt as a percent of GDP declined to 11.2%, and GDP growth was -2.5%. Indeed, the average GDP growth between 1971 and 1979 was 0.5%. Thus, apart from the debt to GDP ratio which consistently declined after the consecutive IMF programs (long-term impact), it appears GDP growth and inflation did not witness any significant improvement in the medium term after the four consecutive bailouts. By 1979, the annual inflation rate skyrocketed to 54.4%. Indeed, 1975-1983 was a period of severe inflationary pressures with the ever-highest annual inflation rate of 122.9% recorded in 1983.

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Table 1 presents the descriptive statistics of the key macroeconomic variables during the periods of consecutive IMF programs, and a relatively long period without an IMF program. The table shows that Ghana has always performed badly in terms of the macroeconomic variables when it is without an IMF program. The economy also experienced a sustained deterioration of macroeconomic stability after the IMF program ended.

From January 1979 to May 1992, Ghana sought seven additional IMF bailouts. It is important to note that most of these IMF interventions were during military regimes, and that each support may have resulted from peculiar macroeconomic challenges. By 1992, the debt as a percent of GDP was 34.1%, the inflation rate was 10.1%, and GDP growth was 3.9%. However, the average inflation rate between 1979 and 1992 was 45%. This also means that the seven bailouts during the period may have helped improve average GDP growth marginally, but other key indicators like inflation and debt level still worsened over the period.

Ghana's 4th Republic started in 1993 and may be regarded as the recent period of IMF bailouts. Out of the 30 years of the 4th republic, it is only in 9 years (1993, 1994, 2007, 2008, 2013, 2014, 2020, 2021, and 2022) that the economy has not been under an IMF program. In the other years, either a new IMF facility began, there was a running program, or a program ended in the year. Thus, the Ghanaian economy has mostly been under an IMF program since independence.

From 1995 to 2015, the government sought five IMF bailouts. In 1995, when the first IMF extended program under the 4th republic ended, the debt as a percent of GDP was 76%, the annual inflation rate was 59.5%, and GDP growth was 4.9%. Thus, GDP growth, the debt to GDP ratio, and inflation were not in good condition. In 1998, the debt as percent of GDP was 87.4%, and reached a record high of 111.9% in 2000.

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Table 1. Patterns of key macroeconomic variables

	Public debt (% of GDP)		*Inflation, consumer prices (annual %)*		*GDP growth (annual %)*		*Official exchange rate (GHC per US$, period average)*		*Exports of goods and services (% of GDP)*		*Imports of goods and services (% of GDP)*	
Period	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**	**Mean**	**Standard deviation**
1966-1970 (Under IMF program)	26.29	1.77	4.61	7.28	2.98	4.77	9.27E-05	1.23E-05	18.69	2.41	20.69	1.085
1971-1978 (Not under IMF program)	13.97	3.74	58.72	34.72	0.33	7.62	0.007	2.45E-05	14.45	4.32	15.50	4.43
1982-1992 (Under an IMF program)	37.74	6.09	24.39	9.60	4.64	0.88	0.032	0.01	17.20	0.52	25.71	1.67

Source: Author's construction based on Data from the World Bank and IMF.

Table 2: Distribution of pre-tax national income (average income) for the total population, top 10%, and bottom 40% of Ghana

	1982-1992 (IMF program)	*1993-1994 (no IMF program)*	*1995-2006 (IMF program)*	*2007-2008 (no IMF program)*	*2009-2012 (IMF program)*	*2013-2014 (no IMF program)*	*2015-2019 (IMF program)*	*2020-2022 (no IMF program)*
Total population average income growth	16.11	1.03	14.04	6.71	20.54	-1.08	9.76	3.37
Top 10% average income growth	24.16	0.61	22.30	6.27	19.02	-0.81	10.05	3.37
Bottom 40% average income growth	6.24	0.08	2.05	6.80	20.84	-2.05	8.66	3.37

Source: Author's construction based on Data from the World Inequality Database.

Table 3. Summary statistics of macroeconomic variables (1965-2015).

	1965-1970	*1971-1980*	*1981-1990*	*1991-2000*	*2001-2010*	*2011-2015*	*1965-2015*
Public debt (% of GDP)							
Mean	26.10	16.63	25.93	66.46	52.26	59.19	40.50
Standard Deviation	1.82	7.03	16.91	24.81	22.16	12.86	25.53
Minimum	24.30	9.02	5.04	27.43	26.22	42.61	5.04
Maximum	28.43	28.68	46.55	111.96	87.22	72.15	111.95
Annual inflation rate (%)							
Mean	8.25	43.54	46.99	27.16	18.30	12.84	28.89
Standard Deviation	11.51	33.81	39.39	17.10	10.12	3.41	27.90
Minimum	-8.42	9.56	10.31	4.87	9.36	8.73	-8.42
Maximum	26.45	116.45	122.87	56.36	41.51	17.15	122.88
Annual growth GDP (%)							
Mean	2.71	0.52	2.28	4.30	5.78	7.13	3.55
Standard Deviation	4.82	6.11	5.25	0.59	1.64	4.90	4.60
Minimum	-4.26	-12.43	-6.92	3.30	4.00	2.12	-12.43
Maximum	9.72	8.48	8.65	5.28	9.15	14.05	14.05
Exchange rate (USD/GHC)							
Mean	8.91e-06	1.54e-04	0.01	0.18	0.99	2.39	0.466
Standard Deviation	1.51	6.68	0.01	0.15	0.24	0.90	0.795
Minimum	7.14e-06	1.03e-04	2.75e-05	0.04	0.72	1.52	0.00007
Maximum	1.20e-05	2.75e-04	0.03	0.53	1.43	3.72	3.715
Import (% of GDP)							
Mean	21.70	14.97	15.92	41.71	51.26	43.16	31.07
Standard Deviation	2.70	4.44	9.25	12.60	9.38	7.91	17.21
Minimum	19.63	9.16	2.98	25.52	40.73	35.32	2.98
Maximum	26.74	21.80	26.19	67.25	64.81	52.81	67.25
Export (% of GDP)							
Mean	18.43	14.99	12.04	28.67	33.78	32.96	22.88
Standard Deviation	2.49	5.02	6.24	9.64	7.96	6.13	11.02
Minimum	14.62	8.36	3.34	16.96	24.53	25.44	3.34
Maximum	21.34	21.45	19.66	48.80	45.23	40.36	48.80
Government capital stock (Billions of USD)	12.12	16.16	18.53	22.26	35.91	53.51	24.75
Mean	0.87	1.39	0.34	2.65	5.69	4.90	12.53
Standard Deviation	10.99	14.00	18.24	19.25	28.27	47.24	10.99
Minimum	13.69	18.27	19.29	26.99	45.48	59.44	59.44
Maximum							

Source: Author's construction based on Data from the World Bank, UN National Account, and IMF Databases.

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By 2006, about 10 years after the first three IMF extended facilities under the 4th Republic ended, the debt as a percent of GDP declined impressively to 26.5%, the inflation rate was 11.1%, and GDP growth was 6%. However, the average debt as a percentage of GDP from 1995 to 2006 was still 70.9%, GDP growth was 4.8%, and the inflation rate was 26.6%. This means that despite achieving some relative stability between 2006 and 2007, the average trends (in terms of debt to GDP ratio and inflation rate) over the period were not impressive, even with the IMF programs in place. It is important to note that other external economic policies such as the Heavily Indebted Poor Countries (HIPC) initiative may have helped anchor the economy in the middle 2000s period before the 2008 global financial crisis.

By 2009, the public debt (as a percent of GDP) began to rise again, GDP growth reduced by almost half from 9.1% in 2008 to 4.8% in 2009, and the inflation rate also increased to 19.2% in 2009. Thus, in July 2009, Ghana returned to the IMF for another extended credit facility which ran until July 2016. The most recent bailout (before the current one (May 2023)) started in April 2015 and ended in April 2019. In 2015, debt as a percent of GDP was 70.8%, GDP growth was 2.1% and inflation was 17.1%. However, even with the extended facility in place, the debt as a percent of GDP increased from 55.6% in 2015 to 56.9% in 2016, and only reduced marginally to 55.6% in 2017. From 2019, when the recently extended facility ended, the debt as a percent of GDP increased sharply from 62.4% to 76.1% in 2020, and further to 80.1% in 2021.

In 2015, the IMF approved an SDR 664.20 million for Ghana to help restore macroeconomic stability, ensure debt sustainability, and improve economic growth. Were these objectives achieved? In the short term, some of these objectives were achieved. Figure 1 presents the trends of debt as a percent of GDP over the period 1960-2021 which shows that the debt to GDP ratio reduced marginally during the IMF program period but increased sharply after the

program. This suggests that in terms of debt sustainability, the IMF programs usually have a short-term impact and no long-term effect.

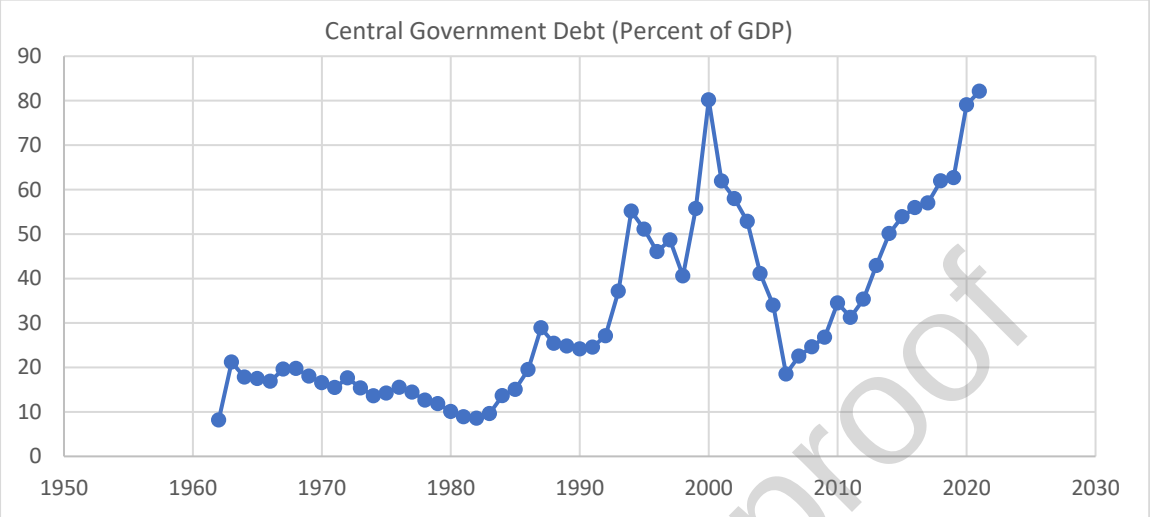

Figure 1: Trends of Ghana's public debt (% of GDP), 1960-2021
Source: Author's elaboration based on data from the IMF Global Debt Database.

Table 3 shows that the debt as percent of GDP averaged around 40% over 1965-2015 and has been particularly higher over 1991-2015. Debt forgiveness by the HIPC initiative helped reduce the debt to GDP ratio but this has not been sustainable; GDP growth has been unimpressive averaging around 3.5% from 1965-2015. The highest GDP growth was recorded in the post-2010 period, possibly due to the impact of crude oil production. Thus, minus crude oil, average growth across the sub-periods could be less than 5%. Also, the trade deficits have been increasing since the 1980s. This puts the Ghana cedi under intense pressure. The redenomination of the Ghana cedi in 2007 helped with some artificial stability.

The key points here are that a major contributory factor to the macroeconomic instabilities is the structural deficits of the economy and public policy choices. Production and growth appear not to be strongly aligned with expenditures. Increasing public expenditures don't also appear to strongly support growth. Overrunning budgeted expenditure targets by governments, and sometimes untransparent public deficit financing by the Bank of Ghana (BoG) will necessarily lead to high debt levels, instabilities, and eventually an IMF bailout.

The IMF programs can also have some unintended consequences beyond the core objective of macroeconomic stability. For example, Table 2 shows that it is only between 2009-2012 (period of an IMF program) that the income growth of the bottom 40% is not lower compared to the top 10% and the total population. In the long periods of the IMF program (1982-1992 and 1995-2006), the bottom 40% recorded the lowest growth in average income compared to the top 10% and the total population. However, the difference in the growth of average income of the top 10%, total population, and bottom 40% is relatively minor during periods without the IMF program. For instance, between 2020-2022 when there was no IMF program, there was no difference in the growth of average income across the top 10%, total population, and bottom 40%. Thus, the IMF program could have unintended consequences on social outcomes such as increased poverty and vulnerability, and hurt shared prosperity.

The IMF programs in Ghana have mostly focused on achieving fiscal discipline, stability and growth and implemented under different contexts. For instance, the IMF (2009, 2015) programs focused on fiscal consolidation, restoring stability and medium-term growth. The IMF (2020) program focused on addressing external shocks caused by the Covid-19 pandemic, worsening exchange rates, and slowing growth. The financial bailout often supports government expenditure in critical sectors of the economy while conditions associated with the bailouts help to achieve fiscal discipline (IMF, 2015; 2003).

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3. Brief review of related literature

The effectiveness of IMF bailouts in developing countries remains debatable. Key issues in this debate include bailout conditions that don't align with the recipient country's unique macroeconomic conditions, moral hazards, effectiveness, and the long-term impact of the bailout.

The IMF has argued the conditions attached to the loans are crucial for addressing the macroeconomic imbalances, economic restructuring, and ultimately returning the recipient economies to stability (Khan and Sharma, 2001; Buira, 2003; Jeanne and Zettelmeyer, 2010). However, Li et al. (2015) find that IMF bailouts are often ineffective because the conditions are not aligned with the recipient-country unique economic and social conditions. Biglaiser and McGauvran (2022) argue that IMF loans and associated conditionalities may even constrain structural reforms and worsen social outcomes such as poverty in developing countries. For example, Li, Sy and McMurray (2017) suggest that IMF bailout conditionalities constrained the efforts of some African countries that were struck by Ebola to effectively deal with the pandemic because of the constraint on their health expenditure. This is consistent with the findings of Stubbs et al. (2017) that the IMF programs in West African countries reduce fiscal space for health expenditure and make the health system more vulnerable. Consistent with the findings of Garuda (2000), Addo et al. (2010) report that IMF stabilization objectives in Ghana are often achieved at a high cost of rising unemployment, poverty, and inequality.

The IMF is often the last resort for developing countries in debt crises. The bailout also strengthens fiscal credibility and improves access to external sources of funding such as the international capital market (Balima and Sy, 2019). Gündüz (2016) finds that short-term bailouts can improve the macroeconomic outcomes for lower income countries experiencing external shocks or substantial macroeconomic imbalances. However, experiences in some countries show that the effect of the bailout is often short-lived and the trickledown effect on the real factors and macroeconomy can be slow. Dreher (2006) finds no significant impact of IMF bailouts on the growth rates of recipient countries; indeed, the overall effect could be negative. Evrensel (2004) and Voyvoda and Yeldan (2005) argue that the IMF fiscal program in Turkey had only a short-term impact and was characterized by significant inertia of key macroeconomic variables such as the public debt. Harrigan and El-Said (2010) argue that the

growth associated with IMF and World Bank programs in Jordan, Egypt, Morocco and Tunisian was not sustainable.

Another side of the argument is that countries that have consistently participated in IMF programs don't appear to be relatively better than non-participants (Conway, 1994). Barro and Lee (2005) find that a high IMF loan participation rate may reduce economic growth, while IMF lending may not have a significant effect on inflation, government consumption, investment, and international openness. Some studies also report inconclusive findings (e.g. Dicks-Mireaux et al., 2000).

4. The model

The study adopts the Markov switching regression (MSR) for three main reasons. First, as observed from the descriptive statistics and historical trends of the macroeconomic variables, it is not very clear which of the variables influences the other. While worsening debt situations have been the main reason for IMF interventions, the factors which have accounted for such high debt levels have been difficult to measure. In most instances, political governance, public sector mismanagement, declining growth, worsening exchange rates, and high inflation have also been associated with government decisions to seek IMF interventions. These variables are only indicators of reinforcing factors which contribute to the worsening macroeconomic stability. The reinforcing factors are often latent, which means they are unobserved and may influence the covariance of the macroeconomic variables such as public debts, aggregate growth, inflation rates and exchange rates.

The second reason for adopting the MSR is the data limitations which results in a small sample size for the study. The application of traditional regression analysis may not offer plausible results due to the low degree of freedom. The best option in this instance is to avoid some of

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the many restrictions that may limit the plausibility of the analysis and results. MSR is flexible and can accommodate multivariate relationships with autoregressive structures.

Supposing the latent factors that influence the movement of the macroeconomic variables are dependent on the state of the economy, say whether Ghana is under an IMF program (when the macroeconomic variables are well-behaved) or when Ghana is not under an IMF program (when the macroeconomic variables deteriorate). This means the latent variables are dynamic and can be represented by two-regimes Markov chain, $Z_t \in \{1, 2\}$ for all t. Therefore, the latent factors are a function of the state of the economy which evolves cyclically depending on whether Ghana is with or without an IMF program (say $(Z_t = 1)$ when Ghana is without an IMF program or Ghana is with IMF program ($Z_t = 2$)). The parameters vary according to the two states which are unobserved and follow a Markov switching process. The model for a single macroeconomic variable with two states may be defined as:

$$y_t = \pi_{Z_t} + \varepsilon_z \tag{1}$$

where π_{Z_t} is the state parameter of interest, $\pi_{Z_t} = \pi_1$ if $Z_t = 1$; $\pi_{Z_t} = \pi_2$ if $Z_t = 2$. Regressors may be included in (1) to form a Markov switching regression in the form:

$$y_t = \pi_{Z_t} + \theta_{Z_t} S_t + \varepsilon_z \tag{2}$$

In terms of an autoregressive (AR) Markov switching model, (2) may be modified as:

$$y_t = \pi_{Z_t} + \theta_{Z_t} S_t + \sum_{i=1}^{2} \varphi_{i,Z_t} (y_{t-1} - \pi_{Z_t-1} - \theta_{Z_t-1} S_{t-1}) + \varepsilon_z \tag{3}$$

where y_t is the dependent variable (e.g. debt to GDP ratio), π_{Z_t} is the state-dependent constant term, S_t is a vector of regressors (e.g. inflation rate, exchange rate, imports, exports, GDP growth, and government capital stock) which are considered state-dependent. φ_{i,Z_t} is the ith AR term in state, Z_t. ε_z is an *iid* with zero-mean term, and with state-dependent variance, σ_z^2.

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We consider a model with a gradual adjustment process across regimes which is suitable for low-frequency data as in the case of annual series. Also, due to the small sample size, φ_{i,Z_t} is not allowed to be state-dependent, and regressors are not included. Two AR terms are included which appear to fit the data well. Experiments with high AR terms produce either statistically insignificant estimates or cause convergence problems.

Data

The paper analyzes the data of key macroeconomic variables which are measured annually. Data on debt to GDP ratio, private and government investments, and public capital stock are obtained from the IMF databases. The debt to GDP ratio is from the *Historical Public Debt Database* (Abbas et al., 2010). Private and government investments, and public capital stock are measured based on the perpetual inventory method (Arslanalp et al., 2010; Gupta et al., 2014). Government and private investments are measured in billions of constant 2011 international dollars. Government capital stock is the general capital stock based on the investment flow of government which is measured in constant 2011 international dollar prices.

Data on real GDP growth rate, imports, exports, exchange rate, inflation rate, interest payment as a percentage of total revenue, and tax revenue are obtained from the World Bank Indicators database. Inflation is measured by the consumer prices index. Real GDP growth is measured as the annual percent change in GDP in local currency in 2015 prices. The exchange rate is measured as annual averages of the Ghana Cedi per USD based on monthly averages. Imports and exports of goods and services are measured as a percentage of GDP. Data for the average income shares are obtained from the World Inequality Database.

Due to the constraints of the small sample size, simulated data is used for robustness checks of the baseline results. This is necessary to crosscheck the consistency of the results, especially with the inclusion of regressors which may not be possible with the actual data as a small

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sample. The simulated data is a randomly generated 500 observations based on the means and standard deviations of the actual variables over the period 1965-2015.

5. Results

Table 5 presents the estimates of the Markov switching regression. The key interest in the results is to determine whether the macroeconomic variables have two states/regimes, and switch between them (i.e., a period during an IMF program (state 1) and a period without an IMF program (state 2)). All the variables indicate two regimes except the exchange rate which is statistically significant for only the second regime. The estimates of the actual data show the debt to GDP ratio, GDP growth rate, and exchange rate are likely to be highly persistent in the first regime. However, the inflation rate may be persistent in both regimes, especially in the first regime. As shown in Figure 2, the variables fluctuate between two states (periods of low values and periods of high values), consistent with the results.

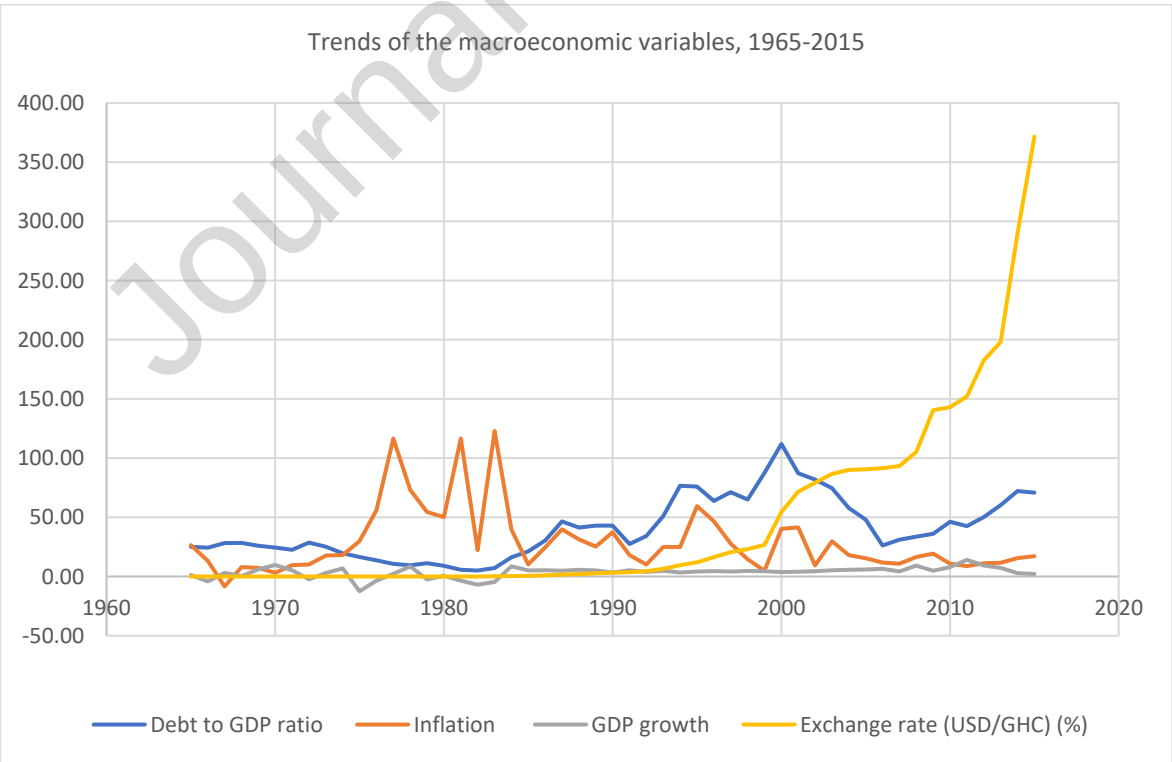

Figure 2. Trends of macroeconomic variables, 1965-2015
Source: Author's construction based on Data from the World Bank Databases.

	Actual data				*Simulated data*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Debt to GDP ratio	Annual inflation	Growth of GDP	Exchange rate	Debt to GDP ratio	Annual inflation	Growth of GDP	Exchange rate
L.ar	1.236***	0.504***	0.132	2.088***	0.158*	0.022	0.152**	0.004
	(0.165)	(0.145)	(0.130)	(0.103)	(0.093)	(0.058)	(0.074)	(0.337)
L2.ar	-0.316*	0.091	0.251*	-1.036***	-0.037	-0.113**	-0.149**	-0.038
	(0.167)	(0.135)	(0.138)	(0.122)	(0.078)	(0.053)	(0.067)	(0.070)
State1	47.004***	25.207***	-4.974***	0.095	16.279***	26.614***	1.403***	-0.024
	(15.921)	(4.925)	(1.101)	(0.178)	(3.423)	(2.842)	(0.426)	(0.174)
State2	66.456***	102.695***	5.527***	0.387**	52.167***	45.771***	6.556***	0.832***
	(17.382)	(8.541)	(0.630)	(0.179)	(2.411)	(10.090)	(0.596)	(0.214)
Sigma	8.145	13.573	2.528	0.058	19.556	27.819	3.625	0.657
	(1.243)	(1.390)	(0.273)	(0.006)	(1.320)	(1.214)	(0.231)	(0.075)
p11	0.964	0.929	0.607	0.959	0.341	0.969	0.336	0.442
	(0.044)	(0.039)	(0.175)	(0.029)	(0.094)	(0.053)	(0.128)	(0.568)
p21	0.586	0.999	0.069	0.224	0.337	0.203	0.797	0.460
	(0.613)	(0.001)	(0.039)	(0.177)	(0.069)	(0.210)	(0.111)	(0.276)
Observations	49	49	49	49	498	498	498	498

Table 5. Markov chains estimates (single variables)

The interpretation of the regimes depends on the variables. For example, with regards to the debt to GDP ratio and inflation rate, low values are generally preferred and deemed good for macroeconomic stability. These variables will be low or stable during IMF programs. For GDP growth, exports, government and private investments, and government capital stock, high values are preferred, and this could correspond with the period of an IMF program.

When an IMF program elapses, the variables switch to *bad* values. The trends and switch across the regimes depend on how long it takes for the country to move on to the next IMF program and the level of persistency of the variable. For instance, inflation appears to respond relatively slowly to the IMF programs, and remains persistently higher during prolonged periods without an IMF program.

The debt to GDP ratio also responds slowly to the IMF programs. This is so because it takes time for the government to reduce borrowing and for the effect of increasing debt (due to worsening macroeconomic conditions) to wane. The debt to GDP ratio tends to decline slowly

or remain stable over time if the country engages in successive IMF programs. The slow lag effect of an IMF program on inflation and GDP growth reflects the structural rigidities in the economy. When seeking economic interventions, the government needs to be aware of these slow lag effects on the path of economic recovery, and that there could be high chances of slippage to worsening macroeconomic conditions.

Table A (in the appendix) presents the estimates which include the macroeconomic variables as regressors using the simulated data. The results show that some of the macroeconomic variables could be correlated. For example, increased government capital stock could be positively correlated with increased debt-to-GDP ratio which is consistent with the second regime of the variable. This is possibly because government capital expenditures are mostly financed with sovereign loans.

6. Conclusions

This paper explored Ghana's historical engagements with the IMF and the associated macroeconomic effects based on the trends of key macroeconomic variables and using the Markov switching regression analysis. The results suggest that the patterns of key macroeconomic variables such as the debt to GDP ratio, GDP growth, inflation rate, and exchange rates could be influenced by latent variables or unobserved factors, and could be associated with the effects of the IMF programs.

The paper highlights three points about Ghana's historical engagement with the IMF and the associated macroeconomic outcomes. First, IMF bailouts are helpful, but persistent and perennial bailouts of successive governments are a demonstration of inefficiency in the economy. Second, the positive effects of the IMF bailout are often realized from the conditionalities imposed on the government to be financially prudent, and not only the fiscal stimulus. Government often moves back to irresponsible expenditures after the bailout; thus,

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the effects of the bailout are short-lived. Successful governments could continue to seek support in even more precarious situations if the structural problems, high expenditure slippages, and corruption in the governance system are not addressed. Over time, IMF bailouts will just become a periodic cycle.

Third, are the IMF programs useless in terms of the historical trends of the Ghanaian economy? Certainly not. Rather, the IMF bailouts have been the last resort to saving the economy and have played a significant role in relative economic stability and growth over time. The situation could have been worse without the programs. However, based on the analysis above, an IMF program can only help in the short run; but in the medium to long run, the economy may likely slide into difficulties. The structural difficulties of the economy such as excessive borrowing (which are not backed by strategic and efficient public investments), and high budget deficits have usually contributed to these fragilities and have underlying effects in future difficulties. These are, however, addressed by the IMF bailout only temporarily because of the discipline forced on the public purse. Thus, in most instances, the bailouts only succeed in delaying the effect of these structural difficulties.

Key policy recommendations

We conclude with some recommendations based on the main findings. The key factors for the GoG to consider when seeking the IMF bailout are: (i) the timing of the bailout, (ii) the implications of the bailout beyond macroeconomic stability and growth to social outcomes such as poverty and inequality, (iii) the IMF conditionalities, and (iv) policy credibility and inconsistencies. Based on these factors, the paper offers policy prescriptions in two parts. The first part looks at maximizing the gains of the current and future bailouts. The second part concentrates on alternative financial management, strengthening institutional accountability, and domestic revenue mobilization policies for macroeconomic stability.

First, the timing of the IMF bailout is very important for achieving and maintaining macroeconomic stability. As indicated by the results, the trends of the key macroeconomic variables may change in response to the IMF program. However, when the macroeconomy deteriorates, it may be difficult to achieve stability due to the inertia and persistence of some of the variables. This means bailouts may not fully stabilize the economy or have only short-term impacts. The GoG needs to be decisive and timeous when seeking the bailout.

The IMF program is often preferred because of the enhanced policy credibility it brings to recipient developing countries (Bird, 2002; IMF, 2023). However, there could also be some degree of domestic policy inconsistency and indiscretion when countries engage with the IMF program. The GoG proposes measures for dealing with economic crises when engaging the IMF, but the final decision is often taken by the IMF with some adjustment to the proposed policies in most instances. This sends mixed signals to the market and distorts business/investment decisions of the private sector. For instance, the GoG had to undertake the Domestic Debt Exchange Program (Ministry of Finance (MoF), 2023; Ofori-Atta, 2023) as part of measures to secure the recent bailout which sent strong signals of policy inconsistency and credibility problems with the IMF program. The signal to the domestic market is that the GoG ownership of the IMF program is restricted, and the implementation process has always been to tick some boxes to secure the funding rather than ensure any long-term sustainable growth and stability. Ghanaians appear skeptical about the ability of the program to sustain policy credibility. Thus, it is important for the IMF programs to factor in domestic policy credibility and consistency issues, and only agree to conditions that reinforce recipient countries' ownership of the program. This is important for sustaining the long-term impact of the program. Recipient countries' ownership of IMF programs is crucial for effective implementation and long-term impact. Public confidence in the program matters.

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The analysis shows the IMF has often focused on achieving and maintaining stability and growth because these are often the reasons why the GoG engages the IMF. However, evidence shows that the overall effects of the programs could have unintended consequences for social outcomes such as increased poverty and inequality. Thus, the IMF programs should explicitly identify these possible negative impacts and have clear guidance for measuring and addressing them as part of the requirements for implementation and achieving a more inclusive positive impact.

Finally, it is time for the GoG to take bold steps towards domestic revenue mobilization for fiscal stability during periods of crisis. The government introduced the Fiscal Stabilization Levy (FSL) in 2013 to help stabilize the economy (Parliament of the Republic of Ghana, 2013), which has now been replaced by the Growth and Sustainable Levy (GSL) (Parliament of the Republic of Ghana, 2023). However, the IMF bailouts are also the result of fiscal indiscipline not just due to crises or external shocks. Thus, the paper proposes the following policies to streamline revenue mobilization and public expenditure based on the GSL to ensure policy credibility and fiscal discipline during periods of crises. The propositions aim to modify the GSL Act to serve as a special vehicle for macroeconomic stability, address fiscal indiscipline, and ensure policy credibility and consistency during crises.

1. The GSL Act should be modified to serve as a special vehicle for macroeconomic stability and growth during crises, and an alternative to the IMF bailouts. Revenues from the levy should be held in a specific Fiscal Stabilization Fund (FSF) held at the BoG and separated from the Consolidated Fund. This is important to create a specific role for the fund, offer clear guidance for utilization, and ensure fiscal discipline. The FSF should also be different from the Ghana Heritage Fund (GHF) and Ghana Stabilisation Fund (GSF) whose functions are specifically related to oil revenues.

2. To increase the capacity of the FSF to address macroeconomic stability, the coverage should be widened to increase yield. Specifically, 15-25% of new revenues accruing from the discovery of new resources such as oil fields could be allocated to the fund.
3. The GoG should only access the fund during periods of crisis characterized by significant economic instability with at least two of the following conditions: actual or projected GDP growth of less than 1%, annual inflation of more than 20%, and debt-to-GDP ratio of 70%+. Special provisions may be made for emergencies such as the Covid-19 pandemic.
4. To access the fund, the Minister of Finance should present to the Parliament of Ghana satisfying the conditions of the FSF which should be approved by not less than 2/3 of the Members of Parliament forming the quorum.
5. The utilization of the FSF and an IMF program should be mutually exclusive and not concurrent. The GoG should assess the nature of the crises and determine whether to go for an IMF bailout or use the FSF subject to the conditions above.
6. The GoG should not use more than 75% of the total amount in the FSF within four fiscal years.

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Table A. Results of Markov chain regressions using simulated data (regressors included)

	Debt to GDP ratio		Annual inflation		GDP growth rate		Exchange rate	
VARIABLES	State1	State2	State1	State2	State1	State2	State1	State2
Debt to GDP ratio			0.236	-0.124**	0.015	3.14e-04	-0.003	5.54e-05
			(0.213)	(0.058)	(0.011)	(0.012)	(0.003)	(0.002)
Annual inflation rate	-0.049	-0.042			-0.017	0.012	0.001	-0.002
	(0.087)	(0.073)			(0.011)	(0.013)	(0.003)	(0.001)
GDP growth rate	1.204*	-0.634	2.972***	-0.842*			-0.071***	0.024**
	(0.619)	(0.518)	(1.002)	(0.447)			(0.021)	(0.010)
Exchange rate	6.309*	-6.039*	0.718	-3.231	-0.469	0.331		
	(3.695)	(3.333)	(5.067)	(1.967)	(0.392)	(0.392)		
Exports	0.363	-0.068	-0.239	-0.075	-0.006	0.013	0.002	-0.004
	(0.225)	(0.190)	(0.439)	(0.145)	(0.029)	(0.025)	(0.007)	(0.004)
Imports	-0.443***	0.288**	-0.078	-0.134	-0.002	0.019	0.015***	-0.006**
	(0.172)	(0.146)	(0.218)	(0.090)	(0.019)	(0.018)	(0.005)	(0.003)
Government of capital stock	-0.650***	0.630***	0.043	-0.197	-0.005	-0.011	0.002	0.001
	(0.250)	(0.207)	(0.594)	(0.167)	(0.024)	(0.031)	(0.007)	(0.004)
L.ar	0.140**		0.051		0.150*		-0.009	
	(0.055)		(0.052)		(0.086)		(0.050)	

L2.ar	-0.045			-0.123**			-0.142**			-0.001		
	(0.057)			(0.052)			(0.070)			(0.051)		
lnsigma	23.007			26.655			3.664			0.730		
	(1.042)			(1.003)			(0.296)			(0.025)		
p11	0.522			0.854			0.296			9.916		
	(0.147)			(0.068)			(0.161)			(0.054)		
p21	0.384			0.386			0.781			0.039		
	(0.158)			(0.032)			(0.118)			(0.023)		
Constant		53.007***	25.665***		4.505	52.085***		1.818	5.212***		0.114	0.742***
		(9.823)	(8.273)		(21.827)	(7.528)		(1.295)	(1.509)		(0.318)	(0.203)
Observations	498	498	498	498	498	498	498	498	498	498	498	498

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Note: Tests of variances against zero are one-sided, and the two-sided confidence intervals are truncated at zero.

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