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Budget Deficits, Monetary Accommodation and Inflation-Output Dynamics in Ghana

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Abstract

This study examines how fiscal policies interact with monetary policies using the dynamic behaviour of a reduced-form vector autoregression (VAR), as opposed to using structural impulse responses or fiscal multipliers. Using data from 164 quarterly observations over the period 1980Q1–2020Q4, the study assesses four equations for inflation, the policy interest rate, broad money and international reserves. An increase in the previous quarter's budget deficit raises current inflation by 0.017655 ($p = 0.017$), an increase in net taxes lowers inflation (-0.021496, $p < 0.001$), and an increase in real GDP growth raises inflation (0.014086, $p < 0.001$). Government expenditure lagged two quarters is associated with a lower policy rate (-0.613298, $p = 0.038$), which indicates accommodative monetary policy. However, the budget deficit has no statistically significant effect on broad money ($p = 0.975$), and there is only weak evidence that it affects international reserves ($p = 0.095$). Therefore, monetary accommodation in Ghana is indirect and selective, operating through the policy rate, reserves and financing conditions rather than through the automatic conversion of deficits into broad money.

Keywords: *Budget Deficits, Monetary Accommodation, Inflation Persistence, Broad Money, Ghana*

1.0 Background to the Study

Budget deficits present a macroeconomic policy dilemma with both positive and negative dimensions. On one hand, budget deficits can be used to enhance aggregate demand and improve employment and private sector net worth when the economy is operating under capacity. On the other hand, the use of budget deficits can lead to higher levels of inflation, reduce the amount of resources available for private economic activities and threaten the long run sustainability of government debt if financing becomes constrained. Tanaka (2024) has recently provided a theoretical explanation for why budget deficits provide governments with a tool to maintain full employment in a growing monetary economy. Conversely, the fiscal-dominance literature emphasises that persistent budget deficits will eventually limit the ability of monetary policymakers to influence interest rates and/or prices (Hooley et al., 2024; Sargent & Wallace, 1981). Thus, the critical policy issue does not lie in whether deficit spending is always expansionary or contractionary. Rather, it lies in determining how different methods of funding budget deficits affect the timing and type of macroeconomic impacts.

This financing problem is particularly important for developing and emerging economies. Their relatively small domestic financial markets, their dependence on the currency in which they borrow, and their generally limited ability to raise taxes all limit their options for how to fund large deficits, which could raise their borrowing costs, lower the value of their currencies, or require them to use central bank money to cover budget shortfalls. Hooley et al. (2024) found that in Sub-Saharan Africa, when countries experience pressures on their public finances, central banks will extend additional loans to those countries' governments; they also find that these loans lead to inflation partly as a result of the devaluation of each country's currency. Similarly, Abdel-Latif et al. (2026), while finding that fiscal adjustments in Sub-Saharan African countries produce significant impacts on the level of economic activity, report that fiscal adjustments produced greater negative impacts during periods of recession than during periods of expansion and that the magnitude of these impacts was greater if government expenditures were cut. Together, these two sets of research indicate that the macroeconomic impact of a deficit depends upon both the size of the fiscal shock associated with the deficit and the nature of the institutional framework within which the deficit is financed.

Ghana is an especially important example of how these elements interact. Fiscal imbalances, debt accumulation and instability in the exchange rate have all interacted at some point with the actions taken by monetary authorities resulting in a severe macroeconomic crisis and, ultimately, debt restructuring. According to the World Bank (2025), weak control over expenditures, inefficient use of funds collected through taxation, poor performance in collecting taxes and high costs associated with borrowing were all factors that contributed to weakness prior to the crisis. The IMF (2025) cites the generation of persistent primary surpluses, debt restructuring, and restrictions on monetization of budget deficits as key to Ghana's ongoing program for recovery. Bank of Ghana (2024) reports provide examples of how fiscal activity, the availability of liquidity and developments in the external sector affect the central bank's ability to implement monetary policy. Therefore, Ghana illustrates why the nominal fiscal balance should not be examined without regard to its implications for monetary policy and external financing.

1.1 Statement of the Problem

Recent evidence from Ghana on the nature and direction of the relationship between the deficit and inflation remains divided. Obeng and Abotsi (2024) used an autoregressive distributed lag (ARDL) model with data covering the period 1976–2019. They found a short-term and long-term inverse relationship between inflation and the fiscal deficit. Additionally, they established causality from inflation to the fiscal deficit. On the other hand, Leshoro (2024) found that long

term determinants of inflation include both fiscal policy and monetary policy. However, the study concluded that, in the short run, monetary policy is more likely than fiscal policy to determine inflation. Luciani and Asamoah (2026) further demonstrate that government spending multipliers for Ghana exhibit substantial variation depending upon expenditure type and financing method. These conclusions may seem inconsistent, but they can be reconciled. For instance, a deficit may arise endogenously from inflation and weak tax collection, whereas a separate deficit shock can lead to money creation, changes in GDP and price level impacts.

Another limitation of the existing literature relates to the timing of the relationships among fiscal and monetary variables. Equilibrium relationships between fiscal and monetary variables can be estimated using annual and long-run models. However, these models do not indicate which fiscal variable enters into an equation representing inflation, interest rates, reserves or money supply with what time lag. A reduced-form vector autoregression (VAR) is useful for investigating this issue because it treats the variables as jointly endogenous. In addition, VARs allow researchers to identify whether accommodation is immediate, delayed or countered by other policy actions (Lütkepohl, 2005; Sims, 1980).

1.2 Purpose and Contribution of the Study

This article addresses this gap by analysing reduced-form VAR equations relating fiscal imbalances to inflation, the monetary policy rate, international reserves and broad money growth in Ghana. The study's empirical estimates do not represent a government spending multiplier, a tax multiplier or a structural impulse-response function. Rather, the paper analyzes whether a deficit term and associated fiscal terms show consistent accommodative behavior across all four policy equations.

The article makes several contributions. First, it distinguishes between a price-fiscal relationship due directly to fiscal policies versus one generated mechanically by deficit monetization. Second, it provides evidence of policy accommodation through lagged interest-rate responses rather than through an output multiplier. Third, it distinguishes broad money creation from reserve and liquidity management. Finally, it demonstrates that both the revenue performance of the government and the output pressure influence inflation, providing a more nuanced view of what constitutes "fiscal dominance" in a small open economy.

1.3 Ghana's Fiscal and Monetary Policy Context

Ghana's fiscal structure reflects strong development-expenditure ambitions alongside persistent revenue and financing constraints. Over the 164 quarters analysed, average government expenditure was 22.55% of GDP; average net taxation was 13.12% of GDP; and average budget balance was −6.35% of GDP. Average public debt was 64.91% of GDP. In line with the World Bank's (2025) analysis of recurring fiscal slippage, weak spending controls and underdeveloped domestic tax collection systems, the IMF (2025) highlighted the need to restore primary surpluses and ensure sustainable public debt levels.

The financing method determines how a fiscal deficit becomes part of the overall monetary system. A fiscal deficit financed by borrowing from markets can increase sovereign yields, create a mechanism for banks to acquire excess liquidity, and therefore reduce the availability of funds for private-sector credit. On the other hand, central-bank financing injects reserve money directly into the economy. Although the legal ability to use direct financing may be limited, fiscal stress can continue to affect liquidity via government deposits, government arrears, banks' holdings of public securities and expectations of future accommodation. According to Sargent and Wallace (1981), the constraint arising from this scenario is referred to as "unpleasant monetarist arithmetic". Furthermore, Leeper (1991) demonstrates that a highly active fiscal authority can lead to passive adjustments in monetary policy. Hooley et al.

(2024) provide recent evidence that these mechanisms remain relevant across sub-Saharan Africa.

In a small open economy (SOE), the exchange rate amplifies these effects; monetary easing can increase demand for foreign currency and weaken confidence. Depreciation of the exchange rate increases the domestic price of imports such as fuels, foods, capital equipment and materials used in production. In Ghana, Leshoro (2024) found that both fiscal policy and the exchange rate are key elements influencing inflation, while the Bank of Ghana (2024) has made repeated references to the inflationary threat posed by currency movements and liquidity conditions. Therefore, a deficit may raise inflation only after a lag, even if the first-round effect of the fiscal stimulus increases output.

The current policy framework aims to prevent such a feedback loop. Ghana's programme agreement with the International Monetary Fund involves structural reform including fiscal adjustment; debt restructuring; revenue reform; and a consultation mechanism on monetary policy. The World Bank (2025) further recommends strengthening fiscal rules and commitment mechanisms, along with independent oversight. The Fifth Review Report of the IMF states that overall program implementation has been largely successful and that there have also been continuing developments in the area of debt restructuring (International Monetary Fund, 2025). These reforms make the historical relationships between deficits, reserve money, output and inflation highly relevant to how future fiscal anchors should be developed.

2.0 Literature Review

2.1 Theoretical Framework

2.1.1 Fiscal Theory of the Price Level and Inflation Persistence

The Fiscal Theory of the Price Level illustrates how fiscal imbalances can influence inflation even when the central bank does not mechanically increase the money supply. In a non-Ricardian regime, the price level will adjust to ensure that the actual purchasing power of government liabilities is equivalent to what is expected from the primary surplus generated over time (Woodford, 2001). Similarly, Leeper (1991) showed that an active fiscal authority can limit the set of monetary policies consistent with equilibrium. Under these models, one should therefore expect a direct relationship between fiscal policy and prices when deficits do not have credible revenue and/or a believable path for paying off debt. The presence of persistent inflation will further strengthen this link since current prices depend partly on past inflation, inflation expectations, indexation and adjustment costs. Hence, a budget imbalance that increases financing risk or depreciation pressure may affect prices well beyond the period in which it occurs. Leshoro (2024) indicated that Ghana's long-term inflation process reflects the interaction of fiscal and monetary conditions. Likewise, Hooley et al. (2024) demonstrated that fiscal dominance in Sub-Saharan Africa is more inflationary where fiscal systems and monetary institutions are weaker.

2.1.2 Monetary Accommodation as a Policy Reaction

Monetary accommodation is not limited to direct lending from a central bank, nor is it simply a matter of creating additional money. It can also exist where the monetary authority keeps its policy rate below the level that inflation conditions would warrant in the absence of fiscal pressure. In addition, the monetary authority may provide liquidity to maintain proper functioning of markets, and/or delay increases in interest rates in response to the output effects of fiscal expansion. Sargent and Wallace (1981) show that persistent fiscal pressure limits the long-term monetary policy options available for a nation. Hooley et al. (2024) document central bank financing of, and support to, governments across many Sub-Saharan African countries.

The broadened definition above allows researchers to distinguish empirically between policy-based monetary accommodation and mechanical monetisation. The former requires evidence that fiscal variables influence the monetary authority's decisions or reserve management, whereas the latter requires a direct, positive relationship between the size of the deficit and various monetary aggregates.

Therefore, a lower policy rate following large fiscal expansions is compatible with an insignificant deficit coefficient in the broad money equation. Such a combination would provide evidence that the monetary authority was providing selective monetary accommodation based on considerations surrounding sterilization, portfolio decisions of banks within the financial system, and maintaining market liquidity, rather than through an expansion of M2.

2.1.3 Reserve, Exchange-Rate and Revenue Channels

In a small open economy, reserves and the exchange rate mediate the relationship between monetary and fiscal policy. Exchange-rate pressures increase the demand for foreign exchange, raise sovereign risk and weaken the currency, while reserve intervention and higher interest rates can later mitigate these pressures. The Bank of Ghana (2024) finds exchange-rate and liquidity conditions to be critical to managing inflation, while Leshoro (2024) found that external factors and fiscal variables jointly determine Ghana's price dynamics.

Ghana's revenue performance provides an offsetting channel. Improved net taxes reduce borrowing requirements, absorb liquidity from the private sector and improve confidence in debt sustainability; they therefore contribute to lower inflation and support reserve accumulation even when expenditure is high. The IMF (2025) and the World Bank (2025) place domestic revenue mobilisation, expenditure control and transparent financing at the centre of Ghana's adjustment programme. The empirical analysis therefore tests the deficit, policy rate, broad money, reserve and net tax coefficients as an integrated system.

2.2 Empirical Literature and Research Gap

Evidence from Ghana does not support a single unconditional deficit-inflation relationship. Obeng and Abotsi (2024) report negative short- and long-run associations and causality from inflation to the fiscal deficit using annual ARDL and vector error-correction methods. Leshoro (2024), by contrast, identifies fiscal policy as an important long-run determinant of inflation, with monetary policy playing a stronger short-run role. These findings suggest that annual equilibrium relationships may combine reverse causality, revenue erosion and policy reactions, making equation-level dynamic evidence necessary.

Regional evidence lends stronger support to the financing mechanism. Hooley et al. (2024), for example, provide evidence that, as fiscal pressures rise, central banks lend more to governments and that this process contributes to higher inflation owing to currency depreciation and weak institutional settings. Abdel-Latif et al. (2026) argue that fiscal adjustments lead to different real economic effects depending on the state of the economy, whereas Bondzie et al. (2026) show how informal economies weaken the standard transmission of fiscal policy. Taken together, these studies suggest that deficits cause higher prices primarily via mechanisms related to finance, credibility and foreign trade instead of a consistent increase in money supply.

Luciani and Asamoah (2026) provide further evidence that, in Ghana, the impact of government spending depends significantly on its composition (consumption versus investment) and its financing. They found that financing instruments have varying impacts on the real economy, but did not examine whether similar fiscal imbalances are significant in

policy rate, broad money, reserves and inflation equations. This is key to determining whether there was selective monetary accommodation in response to the fiscal imbalance.

Tanaka (2024) presents a theoretical alternative to the idea that deficits result in a "fiscal collapse" within a growing monetary economy. A crucial aspect of this theory is that it distinguishes between the existence of a deficit and the conditions under which such a deficit would contribute to increased inflation. Ultimately, the critical empirical question is whether fiscal liabilities are backed by productive capacity, tax revenues and credible funding alternatives or whether they restrict monetary policy options and weaken the nominal anchor (Hooley et al., 2024; Woodford, 2001).

3.0 Research Methodology

This study adopted a quantitative secondary-data design, re-analysing the macroeconomic estimates from the author's doctoral research, consistent with the view that quantitative designs are suitable for examining theoretical relationships using numerical data (Creswell & Creswell, 2023; Saunders et al., 2023). The dataset comprises 164 quarterly observations from 1980Q1 to 2020Q4, drawn from the Bank of Ghana, Ghana Statistical Service, Ministry of Finance, International Financial Statistics and World Development Indicators. An unrestricted five-lag reduced-form vector autoregression was estimated (Sims, 1980; Lütkepohl, 2005). Its four policy equations take CPI inflation, the monetary policy rate, broad money and international reserves as dependent variables. Explanatory variables include the budget deficit, government expenditure, net taxes, public debt, real GDP growth, the call-money rate and exchange rates. Variables with stochastic trends were logged, differenced or expressed as growth rates, while interest rates were modelled in levels. The augmented Dickey–Fuller test, correlation and variance inflation factor diagnostics, residual checks and model-fit measures were used to validate the estimates (Hair et al., 2019). Because the model imposes no contemporaneous restrictions, the lagged coefficients are interpreted as conditional dynamic associations rather than fiscal multipliers or structural impulse responses (Hamilton, 1994; Enders, 2015). Monetary accommodation was assessed through cross-equation comparison of five channels: direct price, policy rate, mechanical monetisation, reserve-mediated and revenue offset. Coefficients with $p < .05$ were treated as strong evidence and those with $.05 \leq p < .10$ as suggestive evidence. A significant coefficient was read as evidence of fiscal dominance only when related monetary equations showed a consistent transmission mechanism (Wooldridge, 2020).

4.0 Findings and Discussion

4.1 Fiscal Conditions, Output Pressure and Inflation Persistence

The inflation equation provides strong evidence that fiscal conditions enter Ghana's price process. The first lag of the budget-deficit term is positive at 0.017655 and statistically significant ($p = .017$). By contrast, the first lag of net taxes is −0.021496 ($p < .001$), indicating that stronger revenue performance moderates inflation. Real GDP growth has a positive coefficient of 0.014086 ($p < .001$), showing that stronger activity adds demand pressure. Government expenditure itself is insignificant at the first lag, suggesting that the inflationary effect is more closely associated with the financing imbalance than with expenditure changes in isolation.

Inflation also displays a marked autoregressive structure. Its first lag is positive at 0.221366 (with a t-statistics of 472.870 and p-value of 0.000), while the second lag is negative at −0.037317 (with a t-statistics of -80.786 and p-value of 0.000), indicating persistence followed by partial correction. The first-lag estimate is accompanied by an unusually small reported standard error and an exceptionally large t-statistic in the thesis; this value should therefore be

interpreted with caution. The substantive result is nevertheless that inherited inflation is the dominant short-run predictor in the price equation.

Table 1: Selected Coefficients from The Inflation Equation

Predictor	Lag	Coefficient	Std. error	p value	Interpretation
Inflation	1	0.221366	0.000468	< .001	Strong price persistence
Inflation	2	−0.037317	0.000462	< .001	Partial correction
Real GDP growth	1	0.014086	0.001912	< .001	Output pressure raises inflation
Net taxes	1	−0.021496	0.001386	< .001	Revenue performance moderates inflation
Net taxes	2	−0.003866	0.001239	.002	Revenue effect persists
Budget deficit	1	0.017655	0.007355	.017	Fiscal imbalance raises inflation
Government expenditure	1	0.000404	0.001276	.752	No direct first-lag effect

Source: Reduced-form inflation equation reported in the doctoral model.

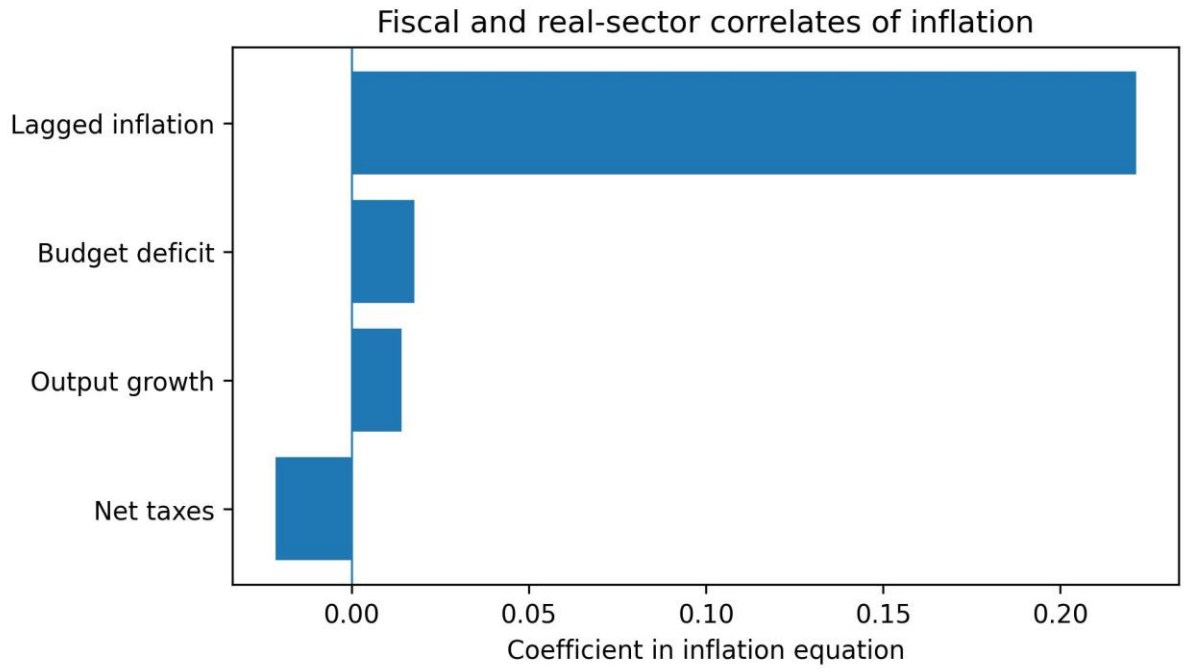


Figure 1: Fiscal and Real-Sector Correlates of Inflation

4.2 Policy-Rate Accommodation after Fiscal Expansion

The policy-rate equation suggests accommodation through delayed rate setting. The first lag of the budget deficit has a coefficient of −0.538904, which is suggestive at the 10% level (p =

.057). More convincingly, government expenditure lagged two quarters has a coefficient of −0.613298 (p = .038). Therefore, earlier increases in fiscal spending are associated with lower subsequent policy rates after controlling for the other variables in the VAR; this outcome is consistent with the actions of a central bank that accommodates fiscal activity or responds to the effects of those fiscal activities on output and liquidity.

The policy rate also responds to monetary and external factors over longer horizons. For example, broad money three quarters before had a negative coefficient (−7.456953, p = .012), suggesting a delayed liquidity effect. In addition, exchange-rate depreciation two quarters previously had a positive coefficient of 1.867690 (p = .059). Therefore, while the initial impact of expanded liquidity may be to reduce the policy rate, increased pressures from the exchange-rate may create a later incentive to tighten.

Table 2: Selected Coefficients From The Policy-Rate Equation

Predictor	Lag	Coefficient	Std. error	p value	Policy reading
Inflation	1	−0.229773	0.085147	.007	Rate responds to prior price movement
Budget deficit	1	−0.538904	0.283476	.057	Suggestive accommodative response
Government expenditure	2	−0.613298	0.295318	.038	Fiscal expansion precedes easing
Broad money	2	5.101440	3.074389	.097	Near-term liquidity may raise rates
Broad money	3	−7.456953	2.967258	.012	Delayed liquidity effect lowers rates
Exchange rate	2	1.867690	0.988944	.059	Depreciation creates tightening pressure

Source: Reduced-form policy-rate equation reported in the doctoral model.

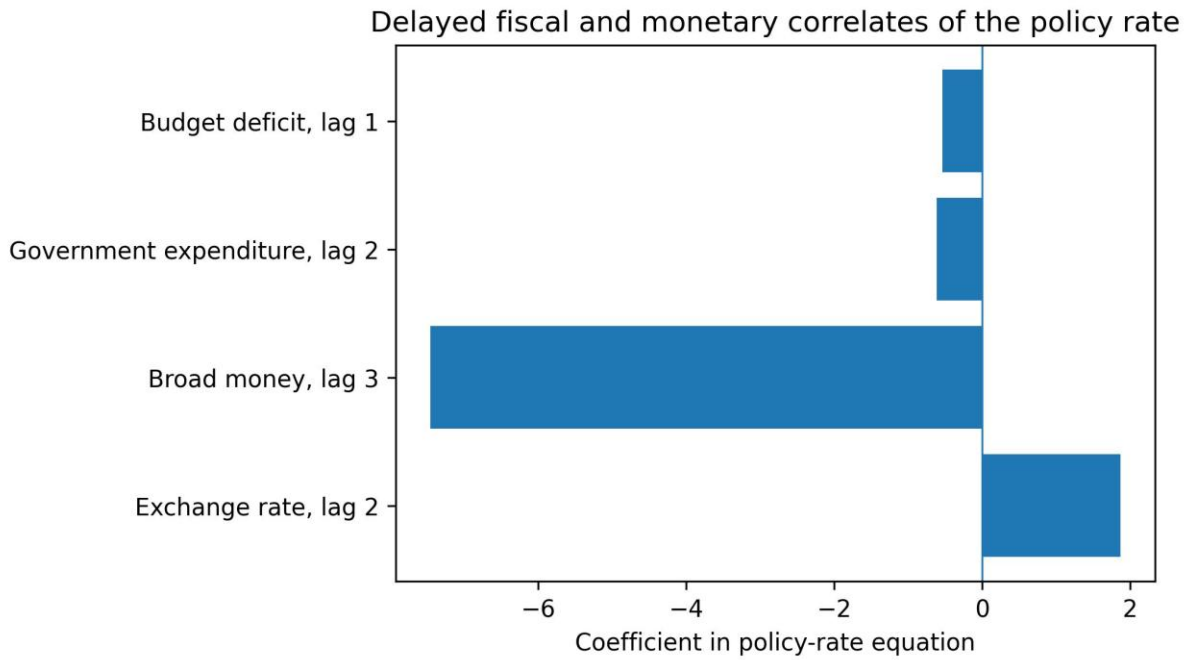


Figure 2: Delayed Fiscal And Monetary Correlates of The Policy Rate

4.3 Broad-Money Dynamics and Deficit Monetisation

The broad-money equation does not support a mechanical one-quarter conversion of the deficit into M2. The first-lag deficit coefficient is only 0.002024 and is statistically insignificant ($p = .975$). Broad money is instead dominated by its own first lag, with a coefficient of 1.184355 ($p < .001$), and by the policy rate, whose coefficient is −0.144006 ($p < .001$). Inflation also reduces broad money at the first lag (−0.021954, $p < .001$), while government expenditure has a negative coefficient of −0.046548 ($p < .001$). These results qualify a simple monetisation narrative. Fiscal pressure may still influence monetary conditions, but the effect is mediated by policy-rate decisions, sterilisation, portfolio shifts and the persistence of existing liquidity. The negative expenditure coefficient is consistent with crowding out or monetary sterilisation, while the insignificant deficit term indicates that the accounting deficit alone is a poor proxy for short-run broad-money creation.

Table 3: Selected First-Lag Coefficients from The Broad-Money Equation

Predictor	Coefficient	Std. error	p value	Interpretation
Broad money	1.184355	0.136174	< .001	Strong monetary persistence
Policy rate	−0.144006	0.032990	< .001	Higher rates contract broad money
Call-money rate	0.062344	0.032325	.056	Suggestive interbank-liquidity effect
Inflation	−0.021954	0.003891	< .001	Price pressure reduces real liquidity
Government expenditure	−0.046548	0.010847	< .001	Crowding out or sterilisation
Net taxes	−0.020787	0.011786	.080	Suggestive liquidity withdrawal
Budget deficit	0.002024	0.062387	.975	No direct first-lag monetisation

4.4 Reserve-Mediated Adjustment and Revenue Effects

The international-reserve equation reveals a more complex, indirect financing route. At the first lag, government expenditure increases international reserves (0.013390, $p < .001$), whereas public debt (−0.002076, $p = .005$), inflation (−0.007409, $p < .001$) and exchange-rate depreciation (−0.156492, $p = .001$) reduce them. The budget deficit has a positive but only suggestive effect (0.030288, $p = .095$), indicating that the reserve effect depends on how government spending is financed and on debt and exchange-rate conditions. The second-lag coefficients further indicate monetary and revenue adjustments. A higher policy rate increases reserves (0.062618, $p < .001$), whereas a higher call-money rate reduces them (−0.104979, $p < .001$). Furthermore, net taxes increase reserves (0.035267, $p < .001$), indicating that stronger tax collection supports reserve accumulation by reducing reliance on fiscal and external finance. Therefore, accommodation operates through government cash-flow financing that combines fiscal receipts, policy interest rates, market liquidity and foreign-exchange management.

Table 4: Selected Coefficients from The International-Reserve Equation

Predictor	Lag	Coefficient	p value	Interpretation
Government expenditure	1	0.013390	< .001	Spending-related inflows may support reserves
Net taxes	1	−0.068961	< .001	Immediate tax-liquidity effect is negative
Public debt	1	−0.002076	.005	Debt pressure reduces reserves
Budget deficit	1	0.030288	.095	Suggestive reserve accommodation
Exchange rate	1	−0.156492	.001	Depreciation depletes reserves
Policy rate	2	0.062618	< .001	Higher rates support reserve accumulation
Call-money rate	2	−0.104979	< .001	Interbank tightness reduces reserves
Net taxes	2	0.035267	< .001	Revenue improvement later supports reserves
Inflation	1	-0.00740	< .001	Higher inflation are linked to declining reserves, indicative effects of macro-economic instability

Source: Reduced-form international-reserve equation reported in the doctoral model.

4.5 Integrated Cross-Equation Evidence

The results of this cross-equation comparison are consistent with selective rather than mechanical monetary accommodation. The deficit variable is positive and significant in the inflation equation, negative and suggestive in the policy-rate equation ($p = .057$), positive but only suggestive in the reserves equation ($p = .095$), and statistically insignificant in the broad-money equation.

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Table 6: Cross-Equation Assessment of The Accommodation Mechanism

Channel	Key evidence	Assessment
Direct fiscal-price channel	Budget deficit → inflation: 0.017655; p = .017	Supported
Policy-rate accommodation	Expenditure L2 → policy rate: −0.613298; p = .038	Supported
Direct broad-money monetisation	Budget deficit → broad money: 0.002024; p = .975	Not supported
Reserve-mediated accommodation	Budget deficit → reserves: 0.030288; p = .095	Suggestive and conditional
Revenue-offset channel	Net taxes reduce inflation and later support reserves	Supported
Output-price interaction	Output growth → inflation: 0.014086; p < .001	Supported

Source: Author's cross-equation synthesis of the reported reduced-form VAR coefficients.

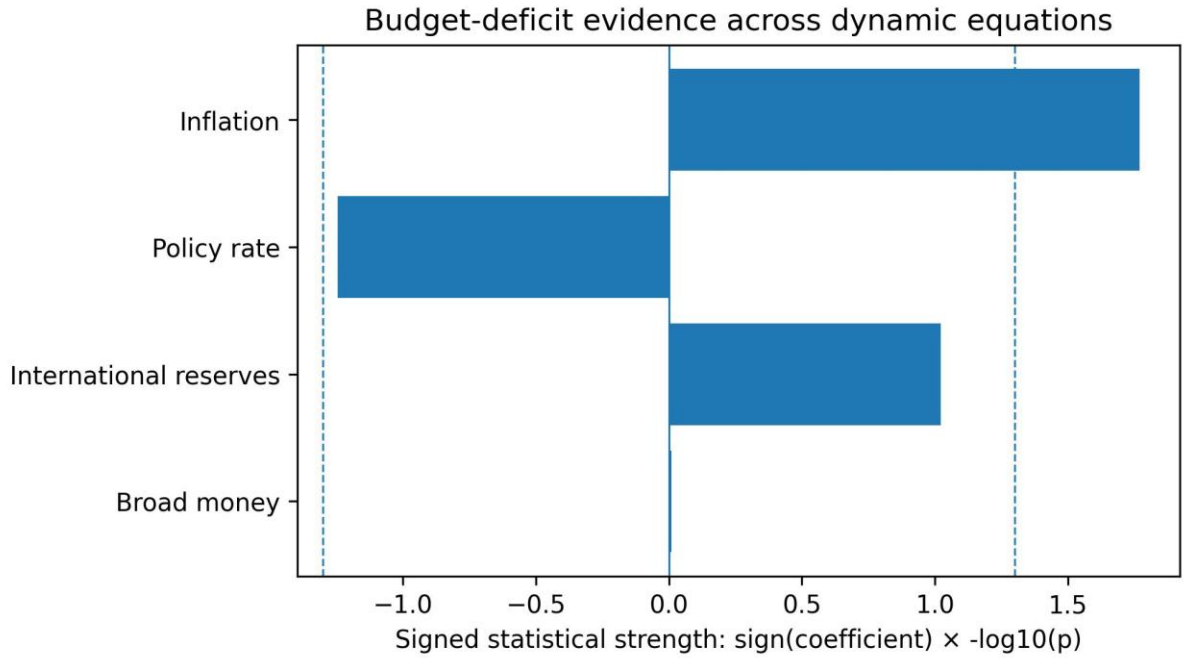


Figure 3: Budget-deficit evidence across dynamic equations. Dashed lines indicate the approximate 5% significance threshold

4.6 Discussion of Findings

The findings help to refine the fiscal-dominance debate by distinguishing among three propositions that are often conflated: first, a budget deficit may raise inflation; second, the monetary authority may accommodate fiscal expansion; and third, a budget deficit may expand the money supply. The evidence from Ghana supports the first two propositions but not the

third. This difference in results is consistent with the work of Hooley et al. (2024), who demonstrate that the inflationary effects of government financing depend on a country's monetary and exchange-rate regimes rather than on a simple accounting relationship.

The positive deficit term in the inflation equation supports the Fiscal Theory of the Price Level and the idea of an active-passive policy regime. Woodford (2001) and Leeper (1991) show that a lack of sufficient fiscal backing can cause changes to the price level even if the central bank maintains control over its own interest rate. The deficit term remains positive after controlling for output, tax revenue, public debt, monetary variables and exchange-rate indicators. Therefore, this conclusion complements Leshoro's (2024) finding that fiscal policy influences long-term inflation and helps explain why Obeng and Abotsi (2024) find different associations using annual aggregated data.

The equation for the policy rate presents perhaps the most convincing evidence for accommodation. Lower policy rates follow higher government spending with a two-quarter lag and higher deficits with a one-quarter lag. This does not imply that the central bank funds all prior fiscal expansions directly. Rather, it implies that the monetary authority adjusts its stance based upon the liquidity, funding and production implications of prior fiscal actions. The unpleasant arithmetic of Sargent and Wallace (1981) therefore still applies, since fiscal pressures may limit the feasible interest rate paths available to the monetary authority before an increase in the money stock occurs.

The broad-money result is significant because it rejects an overly generalised monetisation hypothesis. The direct deficit coefficient is close to zero and statistically insignificant, while policy rates, inherited money balances, prices, and expenditures are statistically significant. Thus, monetary aggregates are determined by central bank reactions, sterilization, banking sector portfolio allocations, and pre-existing liquidity conditions. Therefore, empirical accounts of accommodation should separate central bank claims on government, reserve money, broad money and commercial bank holdings rather than using the overall deficit as a direct proxy for each.

Reserve dynamics provide additional insight into the external constraints facing interactions between fiscal and monetary authorities. Public debt, inflation and depreciation reduce reserves, whereas policy tightening will increase reserves. Net taxes reduce inflation at the first and second lags and increase reserves at the second lag. Revenue mobilisation thus serves as a macroeconomic stabiliser, not merely a budgetary objective. This finding is consistent with views presented by both the IMF (2025) and the World Bank (2025), which emphasize revenue mobilization through domestic sources, fiscal restraint, and reserve accumulation in Ghana's program of adjustment.

The positive output-growth term in the inflation equation also identifies an inflation–output channel. A higher level of economic growth can lead to greater upward pressures on prices; however, the study does not estimate the output effect of a spending or tax shock. Instead, it illustrates that accommodating monetary policy to keep the level of output stable could create even more inflationary pressures in a supply constrained economy with limited ability to import goods. Therefore, the results represent a conditional trade-off for policymakers as opposed to an estimation of a fiscal multiplier.

The study has several limitations. The analysis relies on equation-level coefficients reported in the original doctoral model, which should be replicated using the archived data and code. The standard error of first-lag inflation appears unrealistically small and warrants re-examination. Additionally, reduced-form models cannot establish structural causation, and the dataset does not separate the direct effects of central bank credit, government deposits, government security

holdings and sterilisation operations. Lastly, the sample period ends in 2020 and does not include Ghana's subsequent inflation surge, debt restructuring and new financing constraints.

Future studies should re-estimate the four equations with explicit measures of central bank financing and government securities. They should also test for parameter changes between the pre- and post-inflation-targeting periods and compare high-debt with low-debt regimes. Researchers could use sign restricted VARs, local projections, and external instruments to test whether the observed reduced form accommodation patterns survive alternative methods of identifying causal relationships (see Jordà, 2005; Lütkepohl, 2005).

5.0 Conclusion

This study used a five-lag reduced-form vector autoregression (VAR) model of inflation, the policy rate, broad money and international reserves to investigate the interactions of fiscal and monetary policy in Ghana. By design, it did not estimate fiscal multipliers or generate structural impulse responses. The findings indicate that past increases in the budget deficit are associated with higher inflation, that previous government spending is followed by policy-rate reductions, and that past GDP growth creates upward pressure on prices. In contrast, the coefficient for the direct deficit variable was not statistically significant in the broad money equation and only weakly significant in the reserve equation. The study therefore concludes that monetary accommodation in Ghana is selective, delayed and conditional.

6.0 Recommendations

First, limits on central bank financing are necessary but not sufficient on their own. To help policymakers and market participants understand how monetary policies affect the economy, the Ministry of Finance and the Bank of Ghana should issue a joint quarterly report detailing all financing and liquidity arrangements made by each institution for the government. The report should detail advances made directly to the government, deposits received from the government, purchases of government securities, payment of outstanding arrears, sterilisation operations undertaken to offset changes in the money supply and foreign currency loans provided to the government. Second, net taxation is the most effective fiscal stabiliser identified in these models. Net taxation reduces current inflationary pressures and subsequently supports future reserve accumulation. The Government of Ghana should therefore prioritise increasing net taxation by broadening the tax base and improving digital tax compliance, alongside commitment controls and predictable cash-flow management. Lower inflation and stable reserves would, in turn, reduce the likelihood that fiscal expansions result in accommodative policy stances or exchange-rate pressures.

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