Towards Adequate Analysis and Modeling of Structural Adjustment Programs: An Analytical Framework with Application to Ghana

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Abstract

When a country experiences a balance of payments problem, the typical remedy mix proposed by the International Monetary Fund consists of fiscal austerity, tight monetary policies, devaluation, privatization, elimination of subsidies and trade liberalization, combined with low interest rate loans. Throughout the late 1980s, Ghana has been hailed as a success story for that policy mix. However, Ghana's performance has been increasingly disappointing during the 1990s. This thesis explores the reasons for that slowdown, its distributional implications, and the extent to which the behavior of the Ghanaian economy validates commonly used assumptions in economic models of developing countries.

We compile a complete consistent yearly dataset of financial stocks, nominal money flows (arranged in Social Accounting Matrices) and real product flows for Ghana in 1990-2001. The real-side data, available yearly, are then examined using fit optimization with alternative functional forms, while nominal time series (Consumer Price Index, the broad money supply and the exchange rate), available on a monthly basis, are analyzed using ARIMA-X regressions.

We find that industrial production, as well as investment, has been demand-constrained during our period, while agriculture has hit an aggregate supply constraint around year 1995. The relative price elasticity of substitution between imports and non-traded goods (in volume terms) is around minus one. The government was the only net source of demand during the period. Inflation could be predicted extremely well using only broad money supply, wholesale price of food crops and price of fuel, and formed a weak positive feedback loop with money supply growth. The main channel through which exchange rate depreciation impacted the price level was revaluation of the foreign currency-denominated money supply component. The response of broad money supply to interest rate increases was significant but small. We also formulate a novel matrix formalism for a more compact description and analysis of financial stock dynamics, cleanly separating structural and accounting constraints from behavioral descriptions.

We conclude that the major reasons for the economic slowdown of the 1990s were excessive liberalization of commodity imports and strangulation of industry through lack of demand and volatile real interest rates, and of agriculture through withdrawal of government support programs.

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