# Chapter 12

# Discussion I: Implications for Theory

This chapter discusses the contributions of this project to methodology and theory, including the evaluation of common CGE model assumptions to the Ghanaian case. The following chapter uses that discussion to answer the policy questions posed in this thesis, provide a more general evaluation of the effects of structural adjustment policies in Ghana, and make policy suggestions.

## 12.1 Methodological Innovations

### 12.1.1 Dataset Compilation

We have demonstrated that in spite of low data quality and availability, it is feasible to construct stock-flow consistent SAM/FAM time series for Ghana for more than a decade.

Such an exercise is worthwhile for several reasons: firstly, in the process of the compilation one discovers the errors and inconsistencies in the data and can to an extent correct for these, or at least draw conclusions as to which uses of that data are meaningful even in view of the errors and which are not.

Secondly, the resulting dataset allows one to get a better overall picture of the economy than individual time series or a SAM for one year could have allowed.

Thirdly, a sufficiently long stock-flow consistent SAM-FAM time series provides a sufficient data base for estimation *and* validation of a multisectoral dynamic model. A complete set of real and nominal flow time series allows us to derive the causal behavior of the model from history, instead of specifying it a priori as the CGE models do, be they neoclassical or structuralist. Further, if we split the SAM-FAM time series into an estimation and a validation segment, we can also gain an idea of how good the chosen causal structure is at predicting future behavior of the economy. Such an approach unites the advantage of a CGE-like ability to handle sectoral disaggregation and a high number of variables with an ability to specify measures of confidence of the model output.

While that is not a novel approach for industrialized countries with their high data availability, to the best of our knowledge this is the first time such a dataset has been compiled for a developing country.

### 12.1.2 Systematic Integration of Financial Stock Time Series with Flow Data

In developing countries, financial asset stock time series are available and generally more reliable than most flow data. This is firstly, because stock data are more easily observed than flow data (as a point observation is enough to pin down a stock variable, while we have to observe a flow variable over a period of time to measure it); secondly, because unlike data on physical quantities, most financial stocks are automatically measured, the numbers in a bank's computer *defining* the corresponding stock; and finally, because typically the banking sector is the most modernized part of an economy in terms of data collection and processing. This is true for both the private banking sector and the central bank.

Besides being interesting in its own right, knowledge of financial asset stock time series allows us to get more reliable estimates for net financial savings (net lending) of each institution. In an economy where some important sectors are demand-driven (that is, probably, any economy), knowledge of net lending is important to account for injections and leakages contributing to the aggregate demand. Unfortunately, net lending is normally computed as a residual from flow data, and is thus quite unreliable; using asset stocks for that purpose makes for a much more reliable estimate.

### 12.1.3 Testing Nonlinear Relationships on Short Data Series

While we are lucky enough to have monthly time series for the key nominal indicators such as the Consumer Price Index, the exchange rate, and the money supply, the real-side sectoral data, along with most nominal flow data, is only available on a yearly basis.

As our sample length of 12 years is too short to allow for rigorous econometrics, we use a different method to evaluate hypotheses of real-side behavior. We take the years 1990-1997 as the estimation period and the years 1998-2001 as the validation period. We use the estimation period data to estimate the coefficients of (mostly nonlinear) behavioral hypotheses and then use their ability to predict the validation period data as the way to choose between the different hypotheses.

This approach has the potential to increase our confidence in the choice of functional form, as a good fit in the estimation period does not necessarily translate into a good prediction ability in the validation period. On the other hand, if a functional formulation was good at predicting the validation period data when estimated with only estimation period data, we can have some confidence in its predictions for the future (or counterfactuals in the past) when estimated using the data of both periods.

### 12.1.4 A Simple Core for a Dynamic Fix-Flex Model

Using the method just describe to test behavioral hypotheses, we find, not surprisingly, that the Ghanaian economy contains both supply-constrained and demand-driven sectors. Further, the allocation of total demand between imports and domestically produced goods is dependent on their relative price; some sectors need intermediate inputs from both supply-constrained and demand-driven sectors; and demand for domestic retail services (that form a substantial part of the huge informal service sector) is a proportion of total goods sold, no matter their origin, while itself demanding intermediate inputs both imported and domestic - all in all, quite a jigsaw puzzle.

While setting up the model equations to satisfy all these descriptions is not terribly hard, it is not exactly trivial either; thus, Chapter 10 outlines the accounting for the real side of a model

that would conform to the findings of Chapters 9 and 11 and into which we can directly plug the functions estimated in Chapter 9.

Unfortunately, actual implementation of such a model is beyond the scope of the present effort.

### 12.1.5 A Compact Formalism for Description and Analysis of Financial Stock Dynamics

The Transaction Matrix formalism presented in Chapter 8 allows for an elegant integration of a Social Accounting Matrix describing the nominal flows in the economy with a Financial Accounting Matrix describing the gross asset stocks.

By using a collection of constant matrices describing the structure of the financial sector in a given country, this formalism allows us to decompose the changes in the financial stocks into revaluation, current transactions, and capital transactions in a computationally efficient way. Conversely, the transaction matrix formalism allows us to directly specify the portfolio allocation behavior of the different institutions while *automatically* observing the wealth constraints of the institutions. This formalism thus greatly simplifies the specification and estimation of portfolio behavior in stock-flow consistent models.

The following section contrasts the results of our analysis of Ghanaian data to common assumptions of economic models we have discussed in Chapter 4.

## 12.2 Structure of the Ghanaian Economy Compared to Common Model Assumptions

### 12.2.1 Structuralist vs. Monetarist views on Price Formation

As the reader will recall from Section 4.4, the descriptions of price formation and its relationship to money supply and interest rates are the main point of disagreement between monetarist and structuralist models.

According to the monetarist view, the price level is determined so as to clear the money market. Therefore money supply growth drives inflation, with no influence in the opposite direction. Furthermore, increasing interest rate levels is supposed to both decrease money supply and increase money demand, thus lowering inflation.

On the other hand, structuralist theory stresses the influence of cost factors on inflation, and takes the money supply to be either largely irrelevant to price formation or driven by the price level. The latter connection is supposed to work through demand for working capital: firms are supposed to hold an amount of cash for daily operations, which is proportional to the cost of their intermediate inputs, and thus roughly proportional to the overall price level. Thus, the demand for money grows in proportion to inflation. If we further suppose that a significant part of that working capital is borrowed, we see that an increase in interest rates will increase the cost of production, and according to the cost-view of price formation, that will lead to higher inflation. Summing up, structuralist theory would expect price level to drive money supply rather than vice versa, and an increase in interest rates to *increase* inflation.

A final structuralist mechanism important for price formation is indexation feedback loops. In the simplest example, we would have a firm owner increasing product prices so as to guarantee a certain profit after the wage costs are accounted for; at the same time, workers push for wages that

are high enough when measured in terms of the end product, so an increase in the product price automatically leads to an increase in wages, leading to more product price increases, etc. This is also referred to as the inflation from distributional conflict. It can lead to explosive or stable dynamics, depending on the strength of the feedback; but in any case if there is a price increase for any other reason, it will be amplified by this feedback loop.

Now let us turn to the econometric evidence and see which of these theories it supports.

### Price-Money Supply Causality

As Sections 11.2 and 11.3 show, broad money supply growth decidedly drives inflation, with a 1% increase in broad money supply causing about 0.67% (p=0.20%) total increase in the price level, spread over nine months. On the other hand, a 1% increase in the price index leads to a fairly quick (2-3 months) increase of .33% in the money supply ($p = 0.00\%$).

Thus in the question of money supply-price direction of causality, neither side of the theoretical debate is right on its own. In the short term of 0-3 months, the influence of CPI on money supply prevails, while in the medium term (2-10 months) the reverse direction of causality comes into its own, resulting in an inflation-money supply feedback loop. This feedback loop results in an increase of any impact on `cpi` or `m2` by an additional 28%, spread over about a year after the direct impact has taken place.

### Influence of the Interest Rate on Inflation

In this issue, the monetarists carry the upper hand - the direct influence of interest rates on inflation is non-significant. Thus the cost-push effect of higher interest rates appears to be negligible, and the main channel through which interest rates impact inflation is through their influence on money supply, discussed below. This is perhaps not surprising as the banking system in Ghana is quite thin and the degree of industrialization low; thus the role of loans from the formal banking sector in production is likely quite low compared for example to the economies of Latin America (that provided much of the inspiration for structuralist theory).

### Influence of the Interest Rate on Money Supply

In contrast to the question of price-money supply causality, the measured influence of interest rates on money supply is quite in agreement with orthodox portfolio balance theory: according to the latter, higher interest rates on government bonds are expected to lead to portfolio substitution from money to bonds, reducing money supply - and so they do, an increase of 10 percentage points in the interest rate reducing money supply by 6% ($p = 0.1\%$), spread over three months, with an additional 2% increase happening over the following year due to the `cpi`/`m2` feedback loop.

While the effect is statistically significant and has the sign expected by theory, the practical usefulness of interest rates as an instrument for control of money supply is quite limited by two factors: firstly, the magnitude of the effect is extremely small - ten percentage points is a hefty interest rate increase, yet a one-time 8% reduction in money supply is merely a blip against its typical yearly growth rates of 20% and more. This is most likely due to the very thin banking system in Ghana. Secondly, the money supply reduction is a static effect: only *changes* in the interest rate affect money supply, so the positive effect of money supply reduction is felt only once, as the interest rates are increased; whereas the negative effects of high interest rates, namely

reduced investment and increased interest payment costs to the government, are felt continuously, as long as the interest rates remain high.

Thus we can conclude that interest rates are not an effective tool for money supply control in Ghana.

### The role of cost factors

We have included three potential cost factors among the explanatory variables for the price level: the price of fuel (government-controlled), wholesale price of food crops, and the exchange rate. The first two were seen to be significant, impacting the CPI quite quickly (which might be the reason for their prominence in discussions of inflation in Ghana) with total impacts of coefficients of about .08 each ( $p = 1.9\%$ for fuel and $p = .9\%$ for wholesale food crop price). As Figure 11.2 showed, while these impacts were not negligible, they were on the whole much smaller than the impact of the money supply.

Interestingly, the exchange rate was completely insignificant as an explanatory variable for the price level. On the other hand, exchange rate was a significant explanatory variable for the money supply, with a 1% depreciation leading to a .37% increase in the money supply, spread over three months. This is in the reasonable range for a country with imports equal to over a third of GDP. Most of this impact is probably due to revaluation - as Figure 7.6 shows, about 30% of deposits are foreign-denominated; while no data is available for foreign exchange cash holdings, a similar figure does not seem unreasonable.

Remembering that total impact of money supply in the cpi equation was .85, the medium-term impact of a 1% depreciation is $.37\% \times .85 \approx 0.31\%$.

It is interesting that depreciation impacts prices primarily through revaluation-induced money supply growth, rather than through direct cost factors. Given the time profiles of both effects, it is likely that the revaluation is really working *instead of* direct cost-push rather than masking it, as the other cost factors work almost instantaneously, so an import-cost-push impact of depreciation would likely also be felt within 2-3 months. On the other hand, the channel through money supply takes at least 4-5 months to be felt at all, and is therefore slow enough that it would not mask cost impacts of the exchange rate.

### Constant Velocity of Money Assumption

Having thus largely understood the interactions between price formation and money supply, we are in a good position to check the verismilitude of the constant velocity of money assumption that is the simplest version of monetarist theory. (The constant velocity of money hypotheis states that the price level is proprotional to money supply and inversely proportional to GDP.)

That relationship is cetainly not identically true. For one thing, broad money supply, GDP and the Consumer Price index are not cointegrated. Furthermore, in our ARIMA regression (Table 11.3) the dependence of the price level on GDP comes out non-significant (though that is possibly due to the fact that we had to use an interpolation of yearly GDP instead of genuine monthly time series).

On the other hand, the "stylized fact" that money supply growth over time translates into inflation more or less percentage point for percentage point appears to be pretty accurate. We have seen that in fact a one percent increase in money supply results in a 0.85% rise in the price level, spread over the next 18 months or so. As the standard deviation of the total impact of `cpi` on `m2` in Table 11.10 was $0.085/0.329 \approx 26\%$ of the coefficient's value, our overall coefficient of 0.85

that was derived from it is not significantly different from 1. Thus, we cannot reject the hypothesis represented by this stylized fact.

However, the cost-push influence of fuel and wholesale food crop prices comes on top of the money supply-induced inflation, so that we have to conclude that the picture of inflation in Ghana is (perhaps not surprisingly) a hybrid of monetarist and structuralist mechanisms.

### 12.2.2 Output Determination and the Balance of Payments

The polarization between structuralist and monetarist views that we have seen in the previous section is to a large extent mirrored in the polarization between structuralist and Walrasian/neoclassical views on output determination, as we have discussed in Section 4.4.

While Walrasian models always assume full employment, and therefore conclude that a decrease in production in a part of the economy is necessarily followed by an increase in production in some other part of the same economy (the displaced labor is assumed to be automatically re-employed *somewhere*), the structuralists tend to let output, together with employment, be determined by demand in Keynesian fashion.

Walrasians claim to draw support for the full employment assumption from general equilibrium theory (incorrectly, as we saw in Section 4.4.3); structuralists cite empirical studies of structural adjustment in support of their approach. Thus, Taylor [1988] in a collection of 18 case studies concludes that the primary reason for improvements in balance of payments were decreases in import demand due to decreases in overall demand, as well as increases in exports due to decreases in domestic demand - all quantity effects; relative price effects did not appear important in the short run.

It is worth noting that the debate on output determination is not as polarized as that on price determination; as discussed in Kraev [2003], the models built within both traditions since the early 1990s increasingly include hybrid formulations, allowing some sectors (such as agriculture) being supply-constrained at full employment, and some (such as industry and services) being demand driven.

#### Incremental Capital Output Ratio

The first hypothesis we tested was the Incremental Capital Output Ratio, that is the hypothesis that the increase in GDP is proportional to investment with a fixed proportionality ratio. Our investigation of the Incremental Capital Output Ratio is in agreement with earlier studies thereof in concluding the ICOR is useless as a description of a country's output.

#### Sources of Demand

Thanks to using financial stock time series, we can construct pretty reliable estimates of the sources and sinks for aggregate demand during our period (Figures 9.3 and 9.4). Perhaps surprisingly, we find that the Government was the *only* net demand source during the 1990s, and all other institutions, that is, the private sector, the Deposit Money Banks, and the Rest of the World, were net demand sinks.

We could interpret this in two ways: either as saying that government deficits held consumption and therefore imports at artificially high levels, or to say that the government was the main driver of the economy. In either case, it is clear that as long as a substantial part of GDP is demand-

driven (and we will see below that there is evidence for that), cutting government deficits will, ceteris paribus, have a substantial adverse effect on GDP.

### Savings-Investment Balance

As we have mentioned in Section 7.1, in the 1990s investment in real terms was probably falling as share of GDP (after correcting the apparent deflator error in IMF data). It was hypothesized that a reason for this was insufficient savings supply, and higher interest rates were suggested as a remedy for that. However, we have just seen that the private sector (households and firms combined) is a net *sink* of funds; also, the Deposit Money Banks consistently had excess liquidity in the 1990s - hardly a picture one would expect if insufficient funds for lending were the limiting factor in investment.

The ratio of savings-investment gap to private disposable income is quite stable, much more stable than the ratio of investment to GDP. That suggests that investment mainly happens from own funds, implying passive savings and a limited role of the formal banking sector as source of loans.

### Agriculture

Our examination of the data in Section 9.2.5 indicates that agricultural production hit an aggregate supply constraint around year 1995. Since then, a production frontier between food crop production and cocoa (dominant agricultural export) production is a plausible model, with a relative price elasticity of the ratio of cocoa to food crops of about .33. The relative scarcity of food crops has also been increasing since 1995, as indicated by the wholesale food crop price index to Consumer Price Index ratio.

### Industry

When we estimated the relative price response of the exports to nontraded production in manufacturing, we came up with a relative price elasticity of -1. This is quite surprising from the Walrasian point of view, as it says that as export price *increases* relative to the price of non-traded manufacturing goods (all other things being equal), *more* units of nontraded goods are produced per each unit of exports.

This seems perverse if we think of export production and nontraded goods production as being substitutes on a productivity frontier. However, it makes perfect sense if we assume that the nontraded manufacturing production (i.e. production for domestic consumption) is demand-driven, rather than supply-constrained by a productivity frontier. Then, if the price of exports increases, that means more income for export-producing households, and therefore more demand for both imports and domestic goods, and therefore more domestic goods being produced.

Thus, we conclude that the nontraded industrial sector is demand-driven.

### Do relative Price Effects Matter to the Balance of Payments in the Short Term?

Based on the data investigation in Chapter 9, we conclude that relative price effects have a modest impact on exports, but a substantial immediate impact on import demand.

On the export side, in the case of agriculture we observe (in the period beginning 1995) a price elasticity of substitution of .33 between cocoa and food crop production - modest but not negligible.

In the case of industry, the relative price elasticity is -1, indicating a nontraded sector primarily driven by demand effects, and thus quantity-driven, rather than price-driven, adjustment.

On the import side, the imports to nontraded goods ratio of industry (excluding oil) responds to relative price with a quite high price elasticity of substitution, namely -1. This means that the total nominal amount (in domestic currency) spent on imports is largely independent of the relative price. This, in turn, implies that changes in that relative price due to import tariffs or exchange rate depreciation will produce a proportional response in import volume in foreign exchange terms. For example, an extra tariff of 10% is likely to induce a decrease of about 10% in the volume of manufacturing imports, and thus a 10% decrease in the component of foreign exchange outflow that is due to that particular category of imports.

Thus, we conclude that both relative price effects *and* quantity effects are quite strong in the Ghanaian case, even in the short term, and neither can be safely ignored.

#### Trends in exports and imports

In addition to relative price effects, the ratios of nontraded goods to exports and of nontraded goods to imports (both for industrial goods) exhibit a secular trend.

The trend for the ratio of imports to nontraded goods is yearly 3% growth (4% when estimated only for the period 1990-1997); for the ratio of exports to nontraded goods is 4% yearly growth (5% when estimated only for the period 1990-1997).

From this we can conclude that the opening-up process of the Ghanaian economy is still going on, although slowing down. The reason this is alarming is that the baseline value for imports is almost twice that for exports, thus if both continue growing at comparable rates, continuing severe balance of payments problems are guaranteed.

Such a straightforward trend analysis has to be taken with a grain of salt, however, as different components of exports have been exhibiting quite different behavior. While cocoa production has been largely stagnant, non-traditional exports have been growing quite fast and have in fact just exceeded cocoa in volume at the end of our period.

### 12.2.3 Exchange Rate Determination

Exchange rate determination is a question that typically gets much less attention in CGE models than either price determination or output determination. Walrasian models often assume a fixed balance of payments; combined with imports' and exports' dependence on relative prices, that essentially means the nominal exchange rate's role is to keep the real exchange rate (ratio between domestic and foreign prices) more or less constant, compensating for any jumps in the domestic price level. Since the structuralist models typically focus on quantity adjustments, they are likely to work with fixed or policy-determined exchange rates, rather than specify independent behavior for them.

Another popular theory for explaining the behavior of the exchange rate is Uncovered Interest Parity, which states that the exchange rate is determined by equalization of future returns from owning Ghanaian vs. other nation's bonds. Thus, an increase in interest rates on government bonds is supposed to lead to an appreciation of the currency. Taylor [2004, Ch. 10] contains a rich discussion of the various approaches to modeling the exchange rate.

In the case of Ghana, our interviews with Bank of Ghana staff suggest that forex scarcity and balance of payments considerations are the driving force of depreciation.

Unlike the fairly conclusive regression results on price level and money supply that we have discussed above, our attempts to explain the behavior of the exchange rate were only moderately successful. Here is the gist of our findings.

**Initial Observations on Exchange Rate Behavior**

The first thing that deserves note about dynamics of the exchange rate is that it switches between two distinct modes, which can be called "managed floating" and "freely falling" (following Reinhart and Rogoff [2004]); exchange rate depreciation tends to be mild and to lag between inflation, and then experience a sudden slide, changing the real exchange rate by almost a factor of two, followed by another quiescent period.

The observation of the graphs suggests that the freely falling periods are associated with low foreign exchange reserves and low imports to nontradables price ratio, and that there is an association between inflation and depreciation, but we could not discover any of these connections in regressions. The probable reason for that is a nonlinear form of some or all of these relationships.

**Does the Exchange Rate Try to Equalize Real Exchange Rate?**

Not really. The dollar price index for imports was the most significant variable in the regressions, but the dollar price index for exports was not significant. Also, CPI was not significant.

Further, the dynamic behavior of the exchange rate can hardly be called stabilizing. The alteration of floating/falling periods was the cause of more drastic changes in relative prices than any other factor in the economy, as can be seen e.g. in the third series of Figure 3.11.

**Does the Exchange Rate Respond to the Interest Rate?**

Yes, but perversely. Interest rate coefficients in the exchange rate regression were low but significant (total impact 0.37% extra depreciation per extra percentage point of interest rate, $p = 5.4\%$), and surprisingly, positive, i.e. indicating that interest rate increases lead to *depreciation*. Thus we conclude that Uncovered Interest Parity is not a useful theory for explaining exchange rate behavior in Ghana, and high interest rate are at least not conducive to lowering depreciation rates.

### 12.2.4 Is building CGE models worthwhile?

As we have seen in this chapter, neither structuralist nor neoclassical theory by itself suffices to explain the observed behavior of the Ghanaian economy. However, by judiciously combining the structuralist and the neoclassical assumptions, we could specify a model that would conform to most of our empirical findings (with the notable exception of exchange rate dynamics).

The reader might now ask why, then, we did not build such a CGE model? We would respond by wondering what the point of such an exercise would be. CGE modelers typically say that that the point of CGE models is not prediction but finding qualitative relationships and "orders of magnitude" of impacts. However, as there is no way to verify a CGE model, then if the model is to be credible, the qualitative relationships must already be well understood for us to specify model equations! And once we have invested the effort into finding out the causal relationships (as we have done in this project), it is not clear what further insight even a perfectly specified CGE model would give us, especially as it could lay no claim to numerical accuracy.

Thus we would argue that the CGE literature of the past two decades was extremely important in creating a vocabulary of alternative causal hypotheses and model formulations, and the questions

that one has to ask in order to specify the "right" CGE model are a very good guide to an overall understanding of the economy, as the current project illustrates. However, once the "right" CGE model structure has been identified through careful inspection of the data, the value added of actually building one appears to us to be very low.

A more fruitful approach would be to use the whole dataset to estimate a dynamic model with the causal structure that we have found in the data. Unlike CGE models, such a model would not be overdetermined, and having estimated it to time series, we would both be able to use it for predictions and at the same time have an idea of the reliability of those predictions, much like in the models of Inforum for the industrialized countries.

While building such a model would be quite interesting, at the present moment it would take us far beyond the scope of what is already an extensive project. We thus regretfully leave that for the future.

## 12.3 Summary

This thesis has made a contribution both to modeling methodology and to the theoretical debate between the structuralist and Walrasian/monetarist schools.

On the methodological side, we have successfully compiled a yearly time series of complete nominal and real flow accounts and financial stock accounts for the Ghanaian economy, for a period of 12 years. This is to the best of our knowledge the first time such a dataset has been compiled for a developing country. A particularly useful innovation was integration of financial stock accounts with the traditional Social Accounting Matrix of flow accounts, allowing among other things for more reliable net lending estimates.

After using this dataset to investigate various aspects of the Ghanaian economy, we proceeded to formulate prototype accounting equations for a model conforming to our understanding of that economy. We have further created a compact formalism for description and analysis of financial stock dynamics.

On the theoretical side, we have used Ghanaian data to evaluate the controversies between the two major schools of CGE modeling (CGE currently being the dominant methodology for models of developing countries), namely neoclassical (Walrasian/monetarist) and structuralist, and to see to what extent the favorite theories of either school are useful in describing the behavior of the Ghanaian economy.

The result can be described as largely a draw between the two schools, both for price formation and output determination. For price formation, causality went from money supply growth to inflation in the medium term (3-9 months, total coefficient 0.67) and from inflation to money supply growth in the short term (0-3 months, total coefficient 0.33); the ensuing feedback loop increased all impacts on inflation and money supply growth by an additional 28%; however cost-push factors were also important.

Interestingly, the main channel for the influence of exchange rate on inflation appeared to be through revaluation-driven growth of the money supply, rather than through, for example, cost of imports. Further, interest rates did not have a significant direct influence on inflation, while *increases* in interest rates led to a statistically significant, but quite small, reductions in money supply.

On the output side, the export vs. nontraded supply of agricultural goods are likely on a productivity frontier, while domestic manufacturing production is demand-driven. Both quantity

and relative price effects were found to be quite strong in determining the balance of payments, with relative price effects much stronger for import demand than for export supply.

Unfortunately, neither standard formulations, nor our regressions were able to provide descriptions of exchange rate dynamics that the data would support.

Summing up, neither of the two schools is by itself able to provide a description of the Ghanaian economy that would be compatible with the data. However, between them they provide a vocabulary of alternative formulations that is quite flexible; in fact, flexible enough for us to construct a realistic description of the Ghanaian economy (with the exception of exchange rate behavior) by judiciously combining elements of the two theories.