

**Monitoring and Measuring International Competitiveness
Database Specifications**

January 2000



Sigma One Corporation

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Database Specifications**

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Sigma One Corporation

**Monitoring and Measuring International Competitiveness via the Real Exchange Rate
Theory and Data Requirements
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1. Introduction

- 1.1 Ghana must become more competitive internationally if it is to make progress toward becoming a middle income country by the year 2020. International competitiveness is the ability of a country to convert its own resources (labour, natural resources and capital) into goods and services at costs that are equal to or lower than the prices of such goods and services determined by international markets. For example, if Ghana can produce quality textiles at a cost lower than the world market price for such goods, then the textiles can be exported at a profit or used in Ghana as a substitute for similar textiles that might be imported.
- 1.2 The fundamental sources of international competitiveness derive from the skills, ideas and hard work of all Ghanaians. There are, however, forces at work in the economy that shape how Ghanaians use their labour, ideas and other resources, and hence, how much they can produce and sell with the resources available. One of the most important ways that these forces influence Ghana's competitiveness is through the prices that Ghanaians receive for the goods and services they produce.
- 1.3 In many developing countries, it has been observed that the prices of goods and services which can be exported or substitute for imports (called tradeables) often fall relative to those of goods and services (called non-tradeables) whose prices are determined primarily within a country. Cocoa (an exportable) and petrol (an importable) are examples of tradeables - their prices are determined in world markets. House rents and football match admission tickets are examples of non-tradeables - their prices in Ghana are almost entirely determined by the conditions of supply and demand within the country.
- 1.4 When the prices of tradeable goods fall relative to those of non-tradeable goods, then entrepreneurs, workers and owners of capital follow the goods and services with the relatively higher prices, and resources move into the production of the non-tradeable goods. The result is less effort and investment in the production of both exports and import substitutes; fewer resources are devoted to producing tradeable goods.
- 1.5 There is evidence that the prices of non-tradeable goods have risen relative to those of non-tradeable goods over the period 1994 to 1998, thus eroding Ghana's international competitiveness. As shown in Figure 1, while the nominal United States dollar per Cedi exchange rate depreciated substantially from 1994 through to the end of 1999, the real exchange rate, measured using the consumer price index of Ghana relative to that of the USA, appreciated sharply during 1994 and remained almost 40% above where it had been

at the beginning of 1994, until the end of 1999, when it sharply depreciated.

1.6 This has both short term and long term consequences for Ghana's economic health. Because prices of goods and services in Ghana in Cedi terms from 1994 to 1999 rose faster than prices in major trading partners measured in their own currencies, and the Cedi

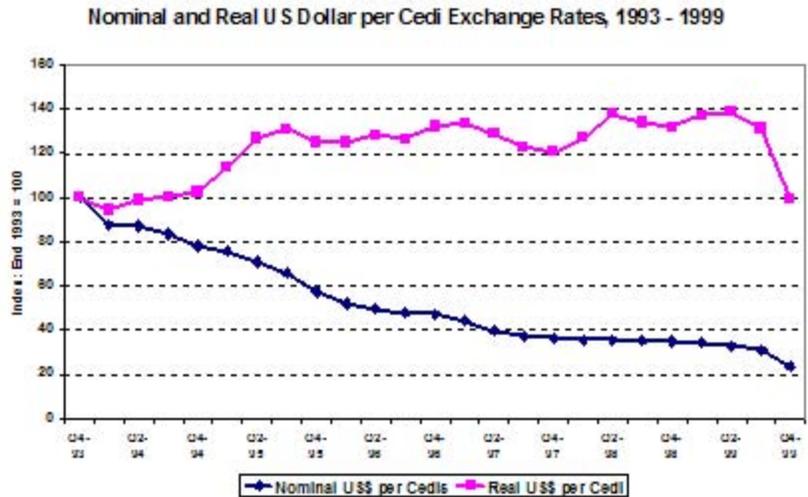


Figure 1: Nominal and CPI-Based Real Exchange Rates

exchange rate did not depreciate sufficiently to offset that inflation differential, foreign products continued to gain a competitive advantage over Ghanaian products, eroding the profitability of Ghanaian producers of tradeable goods. For both Ghana's exports and import substitutes, foreign goods came to look like better value for money, which resulted in lower export growth, especially of non-traditional exports, and higher import growth than would have otherwise obtained if Ghana had maintained a stable, competitive exchange rate. As a result of this deteriorating competitiveness, not only was there a trade deficit and a fragile balance of payments position during 1999, investment in Ghana was increasingly discouraged, resulting in lower economic growth and fewer formal sector jobs for Ghanaians. The erosion in competitiveness reduced the country's opportunities to diversify its export base, leaving the country vulnerable to shocks to the markets for its major traditional exports of cocoa, gold and timber; and it increased the economy's dependence on international donors and creditors.

1.7 The increasingly uncompetitive exchange rate, while attractive to holders of Cedi denominated assets in the short run, was not sustainable; and ultimately, it served to erode the real returns and hence the real value of those assets. At some point, painfully, there had to be an adjustment to the exchange rate to restore external balance. But, by the time the adjustment occurred in late 1999, much damage had been done to the opportunities for Ghanaian producers to employ local resources profitably to produce tradeable goods for export markets or to compete with imports.

1.8 A policy of preventing the full adjustment of the currency to inflation differentials between Ghana and its trading partners was apparently used at the time of the North Carolina Conference in 1997 as a means for repressing inflation during a period of accelerating inflation. This practice is referred to as using the nominal exchange rate as an anchor for

inflation. The Bank of Ghana claimed throughout much of 1999 that such a policy was not pursued over the period, although the stability of the nominal exchange rate experienced during 1998 would suggest otherwise. However, in January 2000, the Bank of Ghana acknowledged that the National Economic Management Team concluded that the Cedi exchange rate had become seriously over-valued, and had decided that the nominal exchange rate should be allowed to depreciate significantly during the fourth quarter of 1999 by about 30% in order to restore the competitiveness of domestic producers, especially of non-traditional exports.

- 1.9 But, adjusting the nominal exchange rate, by itself, is generally not a successful means to restore competitiveness to domestic producers, and external balance to the economy, because other, powerful factors are at work in determining whether the economy really has a competitive exchange rate. These other determinants of the equilibrium exchange rate include factors, such as the terms of trade, the level and stability of capital flows, real wages, excess money growth, tariff and non-tariff barriers and the expenditure-production gap. To restore competitiveness to an economy that has allowed its exchange rate to become overvalued requires concerted action and a coordinated macroeconomic policy framework, getting fiscal policy, monetary policy, wage and labour market policy, trade policy and financial policy all to work together.
- 1.10 The loss of competitiveness Ghana experienced during 1997 and 1998 has both short term and long term consequences for the country's economic health. The short term consequences entail low foreign exchange earnings and balance of payment problems. The long term consequences are more important. A small economy like Ghana must be part of the international economy to grow and prosper. New technologies and business methods must be acquired and introduced throughout the economy. Knowledge about new markets and commercial arrangements must be gained. Reduced incentives in the tradeables sector means that the linkages with the rest of the world to obtain the new technologies, management practices, markets, inputs and information remain weak. As a result, adoption of new technologies, rewards for innovation and the economic discipline to produce high quality goods in an increasingly efficient manner are limited in all parts of the economy -- tradeable and non-tradeable alike.
- 1.11 This paper sets out a list of fundamental economic determinants of the relative prices of exportables, importables and non-tradeables, along with the data requirements to measure some of those relative prices, and considers the way in which fundamental forces in the economy work through macroeconomic mechanisms to affect Ghana's competitiveness. The relative prices of exportables, importables and non-tradeable goods and services are an informative summary measure of the incentives for guiding the allocation of domestic resources amongst the tradeable and non-tradeable sectors of the economy. The definition of competitiveness used in this analysis is based narrowly on incentives passed through relative prices: increased competitiveness is reflected in an increase in the price of

exportables and importables relative to the price of non-tradeable goods, while decreased competitiveness is indicated when the price of non-tradeable goods rises relative to the price of tradeable goods.

- 1.12 Such a narrow focus has both its strengths and its limitations. The strength of this approach is that it allows a rigorous focus on the often-overlooked macroeconomic determinants of a country's ability to compete internationally. Fiscal, monetary, public sector, trade and labour policies have fundamental effects on the incentives to export and to produce import substitutes. Maintaining a focus on the competitiveness effects of policies that have other primary aims is essential.
- 1.13 However, there is clearly more to competitiveness than the relative prices across sectors. There are the factors that enhance or detract from innovation and efficiency within firms and individual entrepreneurs, and these factors can be both economic and cultural. The existence of an efficient and stable financial sector is necessary for significant expansion of export activity. The fundamental institutions of civil society, including the legal system's ability to provide a modicum of security, enforce contracts and guarantee property rights, can make or break a nation's ability to compete internationally. Successful provision of essential services in health and education are building blocks of the skills and effort of individuals which fundamentally determine Ghana's ability to turn her domestic resources into claims for goods and services from world markets.
- 1.14 While the above determinants of international competitiveness all play some essential roles, the aim of this paper is to foster an understanding, such that policy makers throughout Ghana - public and private sector alike - consider the effect of their decisions on the incentives to produce exports and import substitutes, as they are transmitted through changes in the real exchange rate. Such a focus on tradeable goods production, while not a sufficient condition to ensure competitiveness, is certainly a necessary one.
- 1.15 The relative price of non-tradeable goods to that of tradeable goods, which is used to provide a measure of the differential incentives to produce such goods in Ghana, is known as the real exchange rate. This price ratio governs the terms of exchange between the part of the Ghanaian economy where prices are determined primarily by domestic forces of supply and demand (the non-tradeables sector) and the international economy (where the price of tradeable goods is determined). The concept of the real exchange rate is useful to the extent that it helps policy analysts and decision makers to link consideration of macroeconomic and trade policies to efficient resource allocation and use.
- 1.16 The nominal exchange rate - the number of foreign currency units per unit of domestic currency - is a central determinant of the real exchange rate in the short run, but it is not the only determinant; and in the long term, other fundamental factors (e.g., macroeconomic, fiscal, labour market and trade policies) are more important in

determining the level and stability of the real exchange rate. Some of the determinants of the real exchange rate are beyond Ghana's control, such as the international prices of cocoa, gold and petrol. Other fundamental determinants of the real exchange rate are within the control of government and the private sector; and it is those factors which are important for policy initiatives to promote international competitiveness and Ghana's prospects for rapid and sustainable economic development.

- 1.17 The next section puts forth the terminology and notation used for measuring the real exchange rate. The paper then proceeds to discuss the fundamental determinants of the real exchange rate. Section four provides a discussion on ways to measure international competitiveness and its fundamental determinants, along with some of the constraints and limitations involved in such an exercise. The fifth section then reviews the data availability and constraints that must apply to efforts to measure and monitor Ghana's international competitiveness. In the concluding section, some consideration is given to how different policy options to enhance competitiveness may work in Ghana's economic, political and institutional environment.

2. Terminology

- 2.1 There are a variety of ways to express and measure concepts relating to the international competitiveness of Ghanaian producers. In order to keep the terminology simple and consistent, the following terms relating to tradeable and non-tradeable goods, their prices and exchange rates are defined. In the analysis that follows, an appreciation of the Cedi exchange rate, whether in nominal or real terms, is an increase that makes foreign goods look cheaper relative to domestic goods; and a depreciation of the Cedi exchange rate makes foreign goods appear more expensive relative to domestic goods. Thus, the international competitiveness of Ghanaian producers, their ability to compete profitably with foreign goods, at home or abroad, deteriorates with an appreciation of the Cedi exchange rate, and improves with a depreciation of the Cedi exchange rate.

X: exportables

M: importables

T: tradeables

NT: non-tradeables

P: a price which is the domestic price of exportables, importables, tradeables and/or non-tradeables, expressed in Cedis: P_X is the price of exportables; P_M is the price of importables; P_T is the price of tradeable goods¹ and P_{NT} is the price of non-tradeable goods.

¹ The price of tradeable goods is calculated as a weighted average of the prices of exportables and importables, where the weights are the shares of exportable and importable in total tradeable goods production.

RER: the Real Exchange Rate

- 2.2 The real exchange rate is defined as the price of non-tradeable goods relative to the price of tradeable goods, P_{NT}/P_T , so that:
- (i) An increase in the real exchange rate (the RER appreciates) means production of non-tradeable goods is relatively more profitable for domestic producers than is the production of exportables or importables (tradable goods).
 - (ii) Conversely, a decrease in the real exchange rate (the RER depreciates) means that domestic production of exportables and importables (tradable goods) is relatively more profitable compared to the production of non-tradeable goods.

NER: the Nominal Exchange Rate

- 2.3 The nominal exchange rate is expressed as the number of foreign currency units per unit of the domestic currency unit (i.e., the number of United States dollars per Cedi, or more practically, the number of United States dollars per thousand Cedi; e.g., US\$ 0.2778 per thousand Cedi, or equivalently, ¢ 3600 per United States dollar).
- 2.4 An increase in the nominal exchange rate (an appreciation of the NER) means more United States dollars per Cedi. A decrease in the nominal exchange rate (a depreciation of the NER) means fewer United States dollars per Cedis.

3. Fundamental Determinants of Real Exchange Rates

3.1 Introduction

- 3.1.1 Amongst the various fundamental determinants of the real exchange rate, the ones highlighted in this paper include: trade barriers, including both tariff and non-tariff barriers, for imports and exports; the expenditure-production gap; capital inflows; foreign exchange reserves policy; fiscal policy; production and investment subsidies and incentives; and technological change.

3.2 Trade Barriers

Trade Barriers: Imports

- 3.2.1 Tariff barriers on imports increase P_M directly, and some fraction of the incidence of such tariffs passes through to the non-tradeable goods sector, raising the price of non-tradeable goods. Therefore, the price of exportables falls relative to the price of non-tradeable goods (as well as to the price of importables). Thus, the real exchange rate as regards exporters appreciates, eroding their competitiveness. However, what happens to the broad real exchange rate measure covering all tradeable goods, which includes the price of importables, is not unambiguously determined.
- 3.2.2 A potentially key issue with respect to import barriers is heterogeneity across categories of imports and across importers (e.g., whether the imports are for donor projects, aluminum

manufacturers, etc.), and across sectors. Import tariffs can hide gross inefficiencies in resource allocation within the importable goods sector.

- 3.2.3 Non-tariff barriers on imports also increase P_M directly, and some fraction of the incidence of these price increases passes through to the non-tradeable goods sector. Therefore, as with import tariffs, the real exchange rate as concerns exporters increases, making production of exports less profitable relative to both importables and non-tradeable goods. Although, whether the broad real exchange rate measure, covering P_{NT}/P_T , falls, rises or remains constant cannot be clearly established a priori.
- 3.2.4 Above and beyond the real exchange rate mechanisms involved in trade barriers which make production of exportables less profitable relative to importables and non-tradeable goods, production of exportables is discouraged by other disadvantages. As a result of increased trade barriers, resources are attracted by the relatively higher price of importables; therefore, domestic resources move away from production of exports and toward the protected sectors. Exporters can also be disadvantaged by negative effective protection as a result of the increased prices of importables that are used as inputs in their production functions.

Trade Barriers: Exports

- 3.2.5 Export taxes directly reduce P_X received by domestic producers; and therefore, the real exchange rate as regards producers of exportables appreciates (P_{NT}/P_X rises), thus reducing the incentive to produce such exports. Such an occurrence for Ghana seems to only be an issue for cocoa.
- 3.2.6 Other non-tariff barriers, which result in increases in the costs of exports broadly considered, including transportation costs², translate into a reduced P_X that producers of exportables face in net terms. Therefore, increases in costs of exports, which reduce the denominator in the expression for the real exchange rate, represent an appreciation of the real exchange rate. For international competitiveness and the promotion of tradeable goods production, it is important to understand the adverse effects that non-tariff barriers have, and reduce them as much as possible. While official non-tariff barriers, such as export bans and quotas, may act as the major factor impeding export competitiveness, it is also important to pay attention to unofficial non-tariff barriers. These include time spent obtaining export licenses or clearing goods through customs, money paid to expeditors, losses of product or product quality associated with the conduct and regulation of international transportation services and other similar factors.

² Increases in transport costs may also give some additional protection to producers of importables; but such cost increases are welfare reducing in the aggregate.

- 3.2.7 Tariffs and non-tariff barriers on imports are equivalent to a tax on exports. The magnitude of the tax on exports depends first on the average tariff and the equivalent tariff of non-tariff barriers, and also on the dispersion among tariff rates and how they effectively apply to different sectors.

3.3 Expenditure-Production Gap

- 3.3.1 From the national accounting income identity, $GDP = C+I+G+X-M$, the expenditure-production gap is defined here as expenditures minus production ($C+I+G-GDP$). This quantity is, by definition, equivalent to the negative of the trade account, including non-factor services, since from the national accounting identity, $C+I+G-GDP = M-X$. Increases in expenditures ($C+I+G$) less production (GDP) cause P_{NT} to increase (more expenditure relative to domestically produced goods available), while the prices of P_X and P_M , which are determined in international markets, do not change in Cedi terms if the nominal exchange rate does not change. The result of a rise in P_{NT} relative to P_T is an appreciation of the real exchange rate (the RER increases). Reducing the amount by which domestic expenditure ($C+I+G$) exceeds domestic production (GDP) causes the price of non-tradeable goods to fall relative to the price of tradeable goods, and thus decreases the real exchange rate, making production of non-tradeable goods less attractive relative to the production of tradeable goods.
- 3.3.2 Another way to explain this result is to focus on the adjustment mechanism involved in accommodating the trade gap. When an open economy decides to spend more than it produces, it can only do so through some combination of retaining goods and services that would ordinarily be exported, or by importing more goods and services from the rest of the world. The signals required to cause this reallocation of resources in domestic markets must involve making exports less attractive and imports more attractive. This manifests itself in a rise in the real exchange rate. This is true whether the gap increases through an increase in expenditures or a reduction in production. If the reverse occurs and production exceeds expenditures, then the excess production must be disposed of in the rest of the world, i.e., net exports must increase. In order for this to occur, the real exchange rate must depreciate: the reallocation of resources for that to occur requires a decrease in the price of non-tradeable goods relative to the price of tradeable goods.

Expenditures

- 3.3.3 Interest rates, credit availability, terms of trade³ and government expenditures are factors which may have an impact on aggregate expenditures. Lower interest rates, greater credit availability, more favourable terms of trade which increase disposable income, and larger government expenditures will induce an upward swing in aggregate expenditures and then, everything else given, increase in the gap between domestic expenditure and production, thus resulting in an appreciation of the real exchange rate.

Production

- 3.3.4 Labour policies and practices may have positive or negative impacts on production. Disincentive effects of some of Ghana's labour policies and practices on international competitiveness can be explained through this mechanism. Lower labour productivity translates into reduced production and therefore increases the expenditure-production gap, which leads to an appreciation of the real exchange rate. Increases in labour productivity will increase production, narrow the expenditure production gap, and result in a depreciation of the real exchange rate. These increases in productivity will result both from investment in human and non-human capital and in policies that encourage efficient labour and capital markets⁴.
- 3.3.5 Short term phenomena affecting GDP (for example, strikes or droughts) can increase the expenditure-production gap through decreases in production. Such phenomena affect the real exchange rate through exactly the same mechanism as described above; given the level of expenditure, the reduction in GDP must be compensated for by an adjustment in the trade account.

³ Improved terms of trade imply an increase in expenditures even at an unchanged level of GDP, as identical quantities of exports increase the available supply of foreign exchange. Note also that improvements in the terms of trade imply a decrease in the real exchange rate facing producers of those exportables whose relative price has risen on world markets. However, the depreciation of the broadly defined real exchange rate will tend to be offset as non-tradable prices adjust upward relative to those tradable goods whose relative price has risen. Producers of different tradable goods and services within the economy may face different effective real exchange rates for their own products, although all will be affected by the fundamental forces determining the broadly-defined real exchange rate.

⁴ Income taxes, by reducing incentives to work, lead to reduced labour supply at the margin and therefore lower production. In addition, income taxes do reduce the incentives to increase the capital stock and therefore overall potential production. Differentiated taxes on business income would affect the relative incentives to invest in different sectors, but would also tend to reduce the overall efficiency of investment.

3.4 Capital Inflows

- 3.4.1 Larger capital inflows work primarily through the mechanism of the nominal exchange rate to affect the real exchange rate. The increased supply of dollars resulting from these inflows will tend to reduce the Cedi price of dollars (appreciate the NER) and therefore directly reduce P_X and P_M in domestic currency terms, and hence lead to an appreciation of the real exchange rate.
- 3.4.2 If a fixed exchange rate is in place, the increased supply of dollars due to the capital inflow leads to an increase in the money supply and consequently to upward pressure on P_{NT} . Hence, the ratio of P_{NT}/P_T would rise, again reflecting an appreciation of the real exchange rate.
- 3.4.3 But capital inflows are vital to the growth prospects of Ghana and other developing economies. So, a normal capital inflow is expected (and needed) in the form of project financing and direct foreign investment. This is another way of saying that, in the first stages of development, Ghana needs foreign savings. So, the relevant real exchange rate has to internalize this variable.
- 3.4.4 What is important are changes in these capital flows above what the country considers normal, and also the nature of the flows. Inflows of capital which come in as physical capital have little or no direct effect on the nominal exchange rate (the limited effect comes from placing additional demands on limited domestic resources), while flows of financial capital, which are not used solely to finance imported capital goods, do have this effect.⁵ Short term capital flows aimed at taking advantage of interest rate differentials, also have this same effect of causing an appreciation of the real exchange rate.

3.5 Foreign Reserves Policy (and, More Broadly, Policies that Manage the Short Term Nominal Exchange Rate)

- 3.5.1 The nominal exchange rate is one of the instruments available to central banks to attempt to control inflation. The Bank of Ghana (BOG) buying foreign exchange (to build up its international reserves) increases the demand for dollars relative to the supply, and thus leads to a depreciation of the nominal exchange rate. Other things equal, such depreciation of the nominal exchange rate will result in a depreciation of the real exchange rate also. Selling foreign exchange reserves in exchange for local currency by the Bank of Ghana has the opposite effect, the nominal exchange rate and the real exchange rate would

⁵ Project assistance, which is significant in Ghana, is comprised of both kinds of long term capital inflows. Many donor funded projects consist largely of imported physical capital, where the donors provide foreign exchange to pay for the foreign currency denominated costs of the project, while others consist of capital inflows that ultimately are expended, in large measure, on non-tradeable goods and services, and thus serve to increase the price of non-tradeables.

appreciate.

- 3.5.2 To the extent that the Bank of Ghana has been using the nominal exchange rate as an anchor for its anti-inflation policy, then selling foreign exchange may partially offset the impact on the real exchange rate, by slowing down the rate of inflation. The selling of dollars by the Bank of Ghana does directly contribute to appreciation of the nominal exchange rate; but taking the purchased Cedis out of circulation reduces liquidity in the system, thus lowering inflationary pressures on the production of non-tradeable goods to some extent. The final effect on the price of non-tradeable goods relative to tradeable goods generally entails an appreciation of the real exchange rate.
- 3.5.3 However, it is important to emphasize here that the other instruments to control inflation that are available to central banks have similar effects on appreciation of the real exchange rate. Tight monetary policy, which leads to increases in interest rates, can cause additional inflows of foreign capital in a globally integrated capital market, and this can lead to appreciation of the nominal and the real exchange rate.⁶ The result is that resorting to monetary policy instruments to combat inflation may not necessarily have the desired effect on international competitiveness via the real exchange rate: and a central bank's choice of how to fight inflation will depend on other policy and political considerations.

3.6 Fiscal Policy

- 3.6.1 The level of government expenditures (G), as one of the components of national expenditure affecting the expenditure-production gap, has important effects on the real exchange rate. But, in addition, there are effects on the real exchange rate that derive from the composition of government expenditures. Where government expenditure is biased toward the non-tradeable goods sector, the real exchange rate increases as the demand for non-tradeable goods increases and boosts the price of non-tradeable goods. For each of the three major categories of government expenditure: current expenditures, investment and debt service payments, there can be different kinds of effects of spending on the real exchange rate.
- 3.6.2 Government current expenditures on labour and services tend to comprise a high proportion of government consumption. These budget items are mainly comprised of non-tradeables: thus, such expenditures will boost the demand for non-tradeables and appreciate the real exchange rate. Domestic raw materials and other intermediate inputs used in producing public goods and services can be tradeable and non-tradeable goods. Hence, whether the real exchange rate appreciates or depreciates as a result of

⁶ But, increased interest rates can also discourage expenditures, especially on consumption and investment, and thus reduce the expenditure-production gap, resulting in a depreciation of the real exchange rate.

government spending on such raw material inputs will depend on the split between tradeable and non-tradeable inputs.

- 3.6.3 Government investment typically increases the demand for both tradeable and non-tradeable goods. The effect generally is to appreciate the real exchange rate to the extent that investment increases the demand for non-tradeable goods, although some government investment, if it helps to “crowd in” the private sector, can lead to increases in the supply of non-tradeable goods, while other government investment can be biased toward raising the profitability of tradeable goods production, thus increasing international competitiveness.
- 3.6.4 Government expenditure also encompasses debt service, and here the effect on the real exchange rate depends primarily on the split between servicing foreign debt and domestic debt. Domestic debt, whether denominated in dollars or Cedis, is a transfer within Ghana and therefore has no direct effect on the real exchange rate. There could be some indirect effects deriving out of a change in consumption patterns as command over resources is transferred from one group in society to another group. Servicing foreign debt increases the demand for dollars and therefore leads to a decrease in the real exchange rate through depreciation of the nominal exchange rate.

3.7 Public Sector Subsidies and Incentives

- 3.7.1 Tax and investment laws and policies can give differentiated incentives to invest in production of tradeable and non-tradeable goods. If the incentives favour investment in tradeable goods, i.e., making tradeable goods production more profitable, this will be equivalent to a depreciation of the real exchange rate as regards domestic producers of tradeable goods. Tax law treatment of adoption of new technology for example, rapid depreciation of capital investment in the tradeable goods sector is one policy that can have this effect.⁷
- 3.7.2 Competition and investment to ensure efficiency in the provision of public services can improve technology adoption in the non-tradeable goods sector. One strategy for accomplishing this is privatization. Whatever strategies are adopted should be judged on the basis of their ability to foster efficiency in service delivery and maintain a competitive structure of price formation.
- 3.7.3 The removal of subsidies for producers of non-tradeable goods will directly decrease the price they receive, and thus lower P_{NT} relative to P_T . Therefore, this would result in a depreciation of the real exchange rate, and an improvement in the (relative) incentive to

⁷ As noted above in footnote 4, differentiated tax treatment will tend to lower overall productivity of investment.

produce tradeable goods.

3.8 Technological Change

- 3.8.1 Technological progress in general improves international competitiveness in the broadest sense of increasing the country's command over international goods and services, irrespective of whether the technological change occurs in the tradeable goods or non-tradeable goods sector. However, trying to look at international competitiveness by just observing the ratio of the price of non-tradeable goods to the price of tradeable goods can be deceiving when the nation's production possibility frontier is shifting outward. Suppose, for example, that improved productivity due to technological change is biased in the tradeable goods sector, meaning that higher levels of tradeable goods output can be achieved using the same level of inputs. Since P_T is given, production of tradeable goods is more profitable, since producers would receive more revenue for the same level of cost, *ceteris paribus*. Resources should flow into the tradeable goods production (not out of it) until P_{NT} rises enough to restore the equilibrium conditions regarding the marginal rate of transformation in production and the marginal rate of substitution in consumption. The final result should entail more tradeable goods production, not less, even though the ratio of the price of non-tradeable goods relative to that of tradeable goods has risen (i.e., the measure of the real exchange rate has increased, indicating an appreciation). Technical progress biased towards tradeable goods should not reduce competitiveness; rather it should increase it.
- 3.8.2 However, just looking at the ratio of P_{NT}/P_T can mask this improvement in the ability of the country to claim greater resources from the rest of the world. The distinction, therefore, needs to be made between situations in which the production possibility frontier is shifting outward due to technological progress, and situations when the frontier is either static or shifting inward due to tax and subsidy wiggles (and other distortions that reduce efficiency). The P_{NT}/P_T measure of changes in international competitiveness is misleading when talking about shifts in the production possibility frontier due to technological change.
- 3.8.3 To the extent that technology adoption is biased toward tradeable goods, increased exports and decreased imports will increase net inflows of foreign exchange and the real exchange rate will appreciate through the mechanism of an appreciation in the nominal exchange rate; but this will not change the fact that domestic producers of tradeable goods became more internationally competitive in the first instance as a result of the technological progress.
- 3.8.4 Technological change that increases the efficiency of the non-tradeable goods sector will lead to a depreciation of the real exchange rate by increasing the efficiency and lowering prices in the non-tradeable goods sector relative to those in the tradeable goods sector. However, because the profitability of producing non-tradeable goods is increased by

technological change, resources may be drawn out of tradeable goods production and into that of non-tradeable goods. On the other hand, technological progress in the production of tradeable goods, which reduces the costs of producing such goods relative to producing non-tradeable goods, will improve international competitiveness and expand production of tradeable goods.

3.9 Beyond the Fundamentals

3.9.1 Increasing the real international competitiveness of Ghanaian producers means making Ghana more efficient throughout the economy, tradable and non-tradable sectors alike. Distortions and impediments which restrain improvements in efficiency in the production of services and other non-traded goods will make Ghana less, not more, internationally competitive. Other factors may also have significant effects on competitiveness, including, inter alia:

- (i) the costs of capital
- (ii) labour market efficiency
- (iii) the degree of macroeconomic stability or instability
- (iv) investment in both human and non-human capital
- (v) the level and structure of taxation
- (vi) the legal/institutional framework of property rights
- (vii) information costs (e.g., for markets, products, technology, etc.)
- (viii) the cost and availability of financial facilities
- (ix) transportation costs (which act as an effective additional tariff)

4. A Macroeconomic Model for Estimating Determinants of the Real Exchange Rate in Ghana

4.1 Taking into account the key fundamental factors described above, a simple explanatory model of the determinants of the real exchange rate can be formulated as followed:

$$RER_t = \frac{P_{NT}}{P_T} = \alpha_0 + \alpha_1 TB_t + \alpha_2 \left[\frac{E_t - Q_t}{Q_t} \right] + \alpha_3 \left[\frac{UR I_t}{Q_t} \right] + \alpha_4 \left[\frac{G_t^{NT}}{G_t} \right] + \alpha_5 \left[\frac{S_t}{P_t} \right] + \alpha_6 \Delta BOGR_t$$

where:

RER_t is the real exchange rate in period t , defined as the price of non-tradeable goods over the price of tradable goods. Finding the best definition of these prices, and disaggregating the price of importables and the price of exportables for separate real exchange rates, are important considerations.

TB_t is a measure of trade barriers, both tariff and non-tariff barriers, for imports and exports in period t . The expected sign of α_1 is positive.

E_t is the level of aggregate nominal expenditures in period t . Q_t is nominal Gross National

Product in period t . The expected sign of α_2 is positive.

URT_t/Q_t is unrequited transfers in period t as a percentage of GNP. The expected sign of α_3 is positive.

G_t^{NT} is government expenditures on non-tradeables, and G_t is government expenditures in period t . The expected sign of α_4 is positive.

S_s is the effective subsidy on the price of public services, while P_s is the total price of the public services. The expected sign of α_5 is negative.

$\Delta BOGR_t$ is the change in the level Bank of Ghana foreign exchange reserves in period t . The expected sign of α_6 is negative.

4.2 This model can thus be tested against available data.

5. Measurement Issues for Analysis of Real Exchange Rates and Monitoring International Competitiveness

5.1 Assembling series of indicators of the fundamentals affecting competitiveness in Ghana, and understanding how these data have changed over time can provide a basis for identifying policy initiatives that can improve the competitiveness of Ghanaian producers. However, since competitiveness is always relative to the competition, such indicators by themselves cannot adequately describe whether Ghana is more or less competitive than other countries. A summary of the major data sources available for monitoring international competitiveness is given in the Appendix.

Measures of the Real Exchange Rate

5.2 There are a variety of alternative measures of the real exchange rate, which can be used to measure changes in international competitiveness in the aggregate and for various sub-sectors or components of the economy. Three methods are suggested and discussed in this section, although other measures have been constructed for Ghana. These alternative measures are derived using the CPI, the GDP deflator and unit labour costs, respectively, to reflect changes in the price of non-tradeable goods relative to tradeable goods.

5.3 A fourth measure sometimes employed involves using the producer price index or the wholesale price index of the major trading partner(s) in comparison to the price index used for domestic producers. However, this often leads to problems if comparable and consistent indexes are not used; e.g., if Ghana's consumer price index is used to reflect the costs of her producers, while the producer price index of the trading partner(s) is used to reflect foreign production costs. The reason is that there tends to be, almost universally, but not over all time periods, a bias when comparing consumer price indexes and producer price indexes for any country. The consumer price index typically rises faster than the

producer price index over time. Thus, using the USA producer price index in comparison to the Ghanaian consumer price index in calculating the real exchange rate will tend to indicate a real appreciation, even if the real exchange rate, in fact, may have been stable or depreciating.

- 5.4 The most commonly used measure of the real exchange rate is derived using consumer price index data, which is generally readily available on a timely basis, in conjunction with data on the nominal exchange rate. The Ghanaian consumer price index is assumed to reflect the price level of non-tradeable goods, while the foreign (trading partner) consumer price index converted into local currency units by the nominal exchange rate is assumed to reflect the price level of tradeable goods. The real exchange rate (RER) in period t is calculated as:

$$RER_t = NER_t \left[\frac{CPI_t^G}{CPI_t^F} \right] = \left[\frac{CPI_t^G}{\left(\frac{CPI_t^F}{NER_t} \right)} \right] = \frac{P_{NT,t}}{P_t}$$

Where NER_t is the exchange rate expressed as the number of foreign currency units per unit of domestic currency in period t ; CPI_t^G is the Ghanaian Consumer Price Index in period t ; and CPI_t^F is the Consumer Price Index of the relevant foreign competition in period t . While a trade weighted average of the consumer price indexes of the domestic country's trading partners is sometimes used as the price index of the competitors' goods, it is often just as reliable and much easier to use the USA Consumer Price Index as the proxy for the price of internationally competitive tradeable goods, since many goods (and services) are priced in United States dollars. It is also standard practice to express the real exchange rate in index form, picking some period when Ghanaian producers were considered to be reasonably competitive as the base period. (See Figure 1 for the CPI-based real exchange rate index for the period 1996 to 1999.)

- 5.5 But, there are recognised weaknesses in this measure, since it includes taxes and other distortions, it also includes non-tradeable goods and services and it excludes intermediate goods which feed into the cost structures of Ghana producers, especially for those firms that produce outputs which are primarily exported to competitive international markets.
- 5.6 The second measure of the real exchange rate uses the GDP deflators of Ghana and its relevant trading partners to reflect the ratio of relative prices of non-tradeable and tradeable goods produced at home and abroad.

$$RER_t = NER_t \left[\frac{GDPD_t^G}{GDPD_t^F} \right]$$

- 5.7 There are problems with this measure also, and unfortunately for Ghana, the requisite data for the GDP deflator are only available annually, sometimes with a substantial time lag.
- 5.8 Since labour is Ghana's major domestic resource used as an input in the production of goods and services, movements in relative unit labour costs can often serve as a useful proxy for what is happening to Ghana's costs of producing tradeable goods relative to the costs of competitors. Unit labour costs reflect both the wage costs of workers employed and the productivity of those workers: i.e., unit labour costs equal the average costs of employing labour divided by the average productivity of labour. A rise in Ghana's unit labour costs relative to those of the foreign competition would erode the international competitiveness of Ghanaian producers, and amount to an appreciation of the real exchange rate.

$$RER_t = NER_t \left[\frac{ULC_t^G}{ULC_t^F} \right]$$

- 5.9 However, there are measurement and data availability problems in using unit labour costs in analysis of real exchange rates.
- 5.10 Another set of real exchange rate measures, which can be derived from available national accounts data, involve using export and import price deflators to calculate P_{NT}/P_X and P_{NT}/P_M , and certain sub-components of the CPI or unit labour costs, if available, as an index of the price of non-tradeable goods. The P_X and P_M used in the calculations should be the prices paid to Ghanaian producers.

6. Data Requirements, Availability and Issues

- 6.1 For each of the factors that can influence the real exchange rate, consideration needs to be given not only to the sources of data and their availability, but also to their timeliness, reliability and relevance. A summary of the major sources of data for monitoring international competitiveness is given in the appendix.

Tariff and Non-Tariff Barriers

- 6.2 Ideally, the measures of tariff and non-tariff barriers should be estimated separately. Tariffs may not pose a major measurement problem if one could use the effective tariff rates, either for a sample of goods or for some average for the universe of goods. But the average should be weighted by production or, even better, by value-added, if the data are available.
- 6.3 Non-tariff barriers poses measurement problems. They are almost impossible to measure directly unless it is feasible to estimate an equivalent tariff rate. In the absence of such a measure, it may be possible do a time series of border prices and Cedi prices, watch the evolution of tariff barriers over time, and use the entire residual or difference between the domestic Cedi price and the border price expressed in Cedi terms as the measure of non-

tariff barriers and wholesale and retail margins:

$$P_D = \left[\frac{P_B}{NER} \right] (1 + \tau)(1 + NTB)(1 + VAT)$$

Where P_D is the domestic price in Cedi; P_B is the border price in foreign currency terms; NER is the exchange rate expressed as foreign currency units per Cedi; τ is rate of tariff; NTB is the non-tariff barrier (including wholesale-retail margins and other costs such as domestic transportation) as a fraction of the border price; and VAT is the rate of applicable Value Added Tax.

- 6.4 One complicating issue here involves the relevant nominal exchange rate for imports (and for exports) to use if non-price rationing and parallel markets characterize the foreign exchange market.
- 6.5 Input/output tables may provide some data on the wholesale and retain margins to use (see MOTI study of Effective Protection). Other data sources might include detailed information on production cost structures for whatever sample of firms is available. Technoserve is another possible source of data for the cost structures of some firms, as might be the Association of Ghana Industries. There are some Technoserve documents providing some information on export barriers and administrative hassles; and these can provide the basis for follow-up studies.
- 6.6 Another approach along the same lines would be to identify one or more sub-components of the CPI that could plausibly be called an exportable price index and do the analogue of the above calculation:

$$P_X = \left[\frac{P_{XB}}{NER} \right] [1 - \tau - NTB]$$

Where P_X is the domestic price of the exportable good received by the exporter; P_{BX} is the border price of the exportable good denominated in foreign currency terms; NER is the nominal exchange rate; τ is rate of tariff; and NTB is the equivalent tariff rate of non-tariff barriers.

- 6.7 It should be possible to estimate rates of effective protection for a small sample of tradeable goods; e.g., beer, furniture, pineapples, canned tuna, palm oil, shoes, clothing, iron bars, aluminum and some consumer durables. In addition, updating the MOTI study of effective protection, at least for a sample of commodities, should be considered.

Expenditure-Production Gap

- 6.8 A variety of data can be useful in exploring the expenditure-production gap. Information on the interest rates (nominal and real) for loans, along with data on credit to the private

sector through both the financial and non-financial sectors, and from both formal and informal financial intermediaries, can shed light on expenditure growth.

6.9 With respect to some of the more specific data requirements for the expenditure-production gap, the national accounts can provide detailed production information by sector and sub-sector, including, inter alia:

- (i) Agriculture
 - (a) Agriculture and Livestock
 - (b) Cocoa Production and Marketing
 - (c) Forestry and Logging
 - (d) Fishing

- (ii) Industry
 - (a) Mining and Quarrying
 - (b) Manufacturing
 - (c) Electricity and Water
 - (d) Construction

- (iii) Services
 - (a) Transport, Storage and Communication
 - (b) Wholesale and Retail Trade, Restaurants and Hotels
 - (c) Finance, Insurance, Real Estate and Business Services
 - (d) Government Services
 - (e) Community, Social and Personal Services
 - (f) Producers of Private Non-Profit Services

6.10 A services deflator could serve as one measure of the price of non-tradeables, the numerator in the real exchange rate. The detailed data needed to do these computations are available from the **Quarterly Digest of Statistics**; but these data need to be updated. Sectoral data are also available from various World Bank reports and the IMF's International Financial Statistics. The **Quarterly Digest of Statistics** can also provide data for computation of export and import price deflators.

Terms of Trade

6.11 Data on the terms of trade are available from the national accounts. Sigma One Corporation has constructed a terms of trade series from international prices in which the price of exportables is a weighted average of the price indexes for cocoa, logs and gold, while the price of importables is proxied by the price of oil. This latter assumption may be questionable, as the prices of other categories of imports may not follow the same price trend or pattern as the price of oil.

Aggregate Expenditures

- 6.12 Similarly, with respect to aggregate expenditure, national accounts data on consumption, investment and government expenditures are available, albeit with a time lag, from the IMF statistics, as well as from the Government Statistical Service.

Trade Account

- 6.13 The trade account can be defined different ways, which then requires that different national accounts data be used in measuring the production component of the expenditure-production gap. If the trade account is defined to exclude non-financial services, GDP is the consistent measure of production. Alternatively, if the trade account is defined to include non-financial services, GNP is the consistent measure of production.
- 6.14 For some of these data, information is available on a monthly or quarterly basis, but for others, only annual data are available. It may, however, be possible to interpolate the annual data into quarterly or monthly series using related series of data.

Capital Inflows

- 6.15 In order to estimate the capital flows that might cause fluctuations in the real exchange rate, it is necessary to identify what is a viable capital account deficit for Ghana. Ghana's current account deficit has grown very rapidly, from 2% to 8% of GDP. It may be more reasonable to take a current account deficit of 5% of GDP as a target; and consider as normal an inflow of 10%-12% of GDP, including unrequited transfers.⁸ Grants (e.g., development aid) have the same impact as any other capital inflow, as do remittances, which account for a significant flow (approximately 25% of exports).
- 6.16 Data for international transactions, including capital flows, should document the current account balance, remittances and grants for at least the past 2 years; and in general, provide as disaggregated accounting of the capital flows as possible, preferably on a monthly basis. So ideally there should be separate series for remittances, grants, direct investment, long term loans, IMF facilities and other balance of payments support, as well as other flows.
- 6.17 Annual data on workers' remittances are available from the IMF's balance of payments statistics or from the World Bank's World Trade Tables. Data on grants, covering both programme and project grants, do exist; but the latter are confidential data that may be available, on request, from the IMF and/or the World Bank. Data on programme grants are probably reasonably well proxied by the data on official unrequited transfers in the IMF statistics.

⁸ Unrequited transfers are remittances from Ghanaians living abroad and grants.

- 6.18 Regarding the remaining capital account items, annual data can be found in IMF statistics, or possibly in the World Bank gray cover reports.

Foreign Reserves

- 6.19 Variation in the level of international reserves can reflect the effects of both policy measures and exogenous shocks to the economy. Thus, information is needed regarding the foreign reserve policies being pursued by the authorities, as well as good measures of the level of foreign reserves, preferably on a monthly basis. Such data would show the net injection of the Bank of Ghana's foreign reserves into the foreign exchange market, and indicate BoG interventions aimed at stabilization of the nominal exchange rate, and the impact that might have on the real exchange rate. Flows of foreign exchange by non-Bank of Ghana institutions should show up in net capital inflows. Unless other public institutions share the responsibility of managing Ghana's foreign reserves, the Bank of Ghana measure of changes in its foreign reserves should be the appropriate indicator here.
- 6.20 Data on the money supply, interest rates and nominal exchange rates are also needed. To the extent that the foreign exchange market may be segmented, with different nominal exchange rates in each, differences the exchange rates in each market, along with the details about quantities and institutional rules, would be useful. Those data should be available on a monthly basis.
- 6.21 Data on international reserves are easily available on a monthly basis from the IMF's International Financial Statistics, as are monthly nominal exchange rate data, including estimates of the parallel market premium, which was pretty small and getting smaller during most of the 1990s. Monthly money supply data, covering base money, narrow money (M1), broad money (M2) or the latest broad money measure (M2+) are also easily available through the Bank of Ghana and IMF statistics.

Fiscal Policy

- 6.22 Data on the current expenditures of government disaggregated into: personal emoluments, other non-tradeables, importables and exportables. It can be assumed that labour is non-tradable service; although for more highly skilled labour, further refinement of the measure may be appropriate. Debt service data should be separated into domestic and foreign categories.
- 6.23 Data on government investment should be broken down in the same way as the data for current expenditure, into: personal emoluments, other non-tradeables, importables and exportables.
- 6.24 The IMF's Government Financial Statistics has the most detailed breakdown of revenues and expenditures; although it may be difficult to get the same level of detail for the government's capital budget. But, the Accountant General's reports may provide some

such breakdowns.

- 6.25 Interest payments on the foreign and domestic debt are available from the Government Finance Statistics or World Bank gray cover reports.

Public Sector Subsidies and Incentives

- 6.26 Data for this determinant can be derived by measuring the cost of public services, and get whatever measures are possible on the effect on the public sector deficit. Focus first on the available information of the big subsidies like electricity. Look at the change in price and the weight within CPI.

Technological Change

- 6.27 Aggregate and sectoral data on GDP and investment (and perhaps capital stock data), along with the corresponding employment and labour force data, can be used to estimate labour productivity and total factor productivity growth. Other data needed to assess technological change would include year-by-year changes in investment laws and regulations, as well as the updated history of the investment code. In addition, information should be collected providing as much detail as possible regarding the privatization process, separating clearly what is going on in privatization programmes for tradeable goods versus non-tradeable goods sectors. Information should also be collected on what new investments are made in each sector after privatization.
- 6.28 Any available measures of productivity would be useful here: for example, productivity at the port (in terms of average wait or delay, average disappearance and damage, number of separate forms, etc.). Other indicators of productivity change in other services (such as communications and electricity), which can serve as reasonable indicators of quality of service in the non-tradeable goods sector, should be collected. This is particularly important given the role that the (quality-adjusted) price of services in the non-tradeables sector plays in determining the real exchange rate.

7. Conclusion

- 7.1 This paper has considered how fundamental economic forces affect Ghana's competitiveness. While some of the determinants of Ghana's ability to produce and competitively market goods and services that give the country command over international commodities are beyond Ghana's control, other fundamental determinants of international competitiveness are within the control of government and the private sector, which makes them important in designing policy initiatives to promote international competitiveness and attainment of Vision 2020 objectives.
- 7.2 Various fundamental determinants of the real exchange rate, such as trade barriers, including both tariff and non-tariff barriers, for imports and exports, the expenditure-production gap, capital inflows, foreign exchange reserves policy, the composition of

government expenditure, production and investment subsidies and incentives, as well as technological change, were identified as factors which should be monitored on a regular basis.

- 7.3 Trade barriers, especially non-tariff barriers, have adverse effects on Ghana's international competitiveness and the promotion of tradeable goods production; thus policy reforms should be directed at reducing them as much and as quickly as possible. Increases in the expenditure-production gap, which cause the price of non-tradeable goods to increase relative to the prices of exportables and importables, operate against international competitiveness.
- 7.4 Increased capital inflows operate through the nominal exchange rate to appreciate the real exchange rate and erode the international competitiveness of tradeable goods producers. The foreign exchange reserves policy of the Bank of Ghana, which is reflected in the buying and selling of foreign exchange to build up or draw down its international reserves, changes the demand for dollars relative to the supply, and thus can lead to a depreciation or appreciation of the nominal exchange rate.
- 7.5 The real exchange rate can also be influenced by the composition of government expenditures; the extent to which such expenditures are biased toward non-tradeable goods or tradeable goods. Differentiated incentives to invest in the production of tradeable versus non-tradeable goods can be influenced by tax and investment laws and policies, although such differentiation tends to lower the overall productivity of investment. Technological progress improves international competitiveness in the broadest sense of the term; the country's command over international goods and services is increased. However, the real exchange rate measure of just observing the ratio of the price of non-tradeable goods to the price of tradeable goods can be deceiving when the nation's production possibility frontier is shifting outward. Distortions and impediments which restrain improvements in efficiency in the production of non-tradeable goods and services make Ghana less internationally competitive.
- 7.6 A macroeconomic model for analysing the fundamental determinants of the real exchange rate was proposed, with variables to reflect trade barriers, both tariff and non-tariff barriers, the expenditure-production gap, unrequited transfers, government expenditures on non-tradeables, the effective rate of subsidy on the price of public services, and the change in the level Bank of Ghana foreign exchange reserves. The model now needs to be tested against data available for measures of the real exchange rate and the determinants.
- 7.7 The availability of various series of indicators of the fundamentals affecting competitiveness in Ghana was discussed, with many of those series incorporated into

databases developed for the Trade and Investment Reform Program project.⁹ While several alternative measures were discussed, the CPI-based real exchange rate is the most commonly used measure of changes in international competitiveness. The data for that index are generally readily available on a timely basis, in conjunction with data on the nominal exchange rate. However, there are measurement and data availability problems in using the various measures in analysis of real exchange rates; thus, they should be used with caution, recognising that such measures cannot be a substitute for sound judgement.

- 7.8 The experience of the past two years, in which the international competitiveness of Ghanaian producers deteriorated, leaving the country increasingly vulnerable to external shocks, which eventually manifested themselves during 1999, should highlight the importance of monitoring international competitiveness via measures of the real exchange rate. If attention had been properly given to such measures, policy makers might have taken more timely action and avoided the currency crisis that finally occurred in the fourth quarter of 1999, and the uncertainty and instability that faces the country in 2000.

⁹ A database covering the Statistical Statements in the Bank of Ghana Annual Reports and Quarterly Bulletins has been constructed, taking most of the series back to 1990. A second database compiled from the World Bank World Development Indicators is also available with some data series dating back to 1965. A third database covering detailed government budget data, and a fourth database incorporating the national accounts data have also been constructed for the TIRP project.

Appendix: Major Sources of Data for Monitoring Ghana's International Competitiveness

Source	Data Types and Availability
Bank of Ghana, Annual Report and Quarterly Economic Bulletins	Latest Q3 1999: Assets and Liabilities BoG, Commercial Banks and Rural Banks and Consolidated Banking System; Reserve Requirements and Liquidity; Credit Outstanding; Money Supply; Interest Rates; Consumer Price Index and Inflation; Foreign Exchange Rates; Balance of Payments Summary; Exports, Non-Traditional Exports, Imports, Capital Account and Net Foreign Assets; External Debt and Debt Service; Money Market Instruments; Ghana Stock Exchange; Government Finances; GDP, GDP by Sector, and Indices of Production.
Quarterly Digest of Statistics (GSS)	Latest Q2 1997: Agriculture; Mining; Manufacturing; Fuel and Power; Transport and Communications; Money and Banking; Public Finance; Employment and Earnings; Prices; External Trade and Balance of Payments; Education; Medical Statistics; National Accounts; Population.
Consumer Price Index (GSS)	Latest Oct. 1999:
Ghana Living Standards Survey (GSS)	Latest GLSS4, 1999: Household Income and Expenditure.
Ghana Export Bulletin (MOTI)	Exports: Quantities, Values and Destination.
Employment and Manpower Statistics (MESW)	Detailed Employment and Earnings.
SSNIT: Annual Reports and Accounts	Pensions, Pensioners, Contributions, Contributors, Investments, Earnings, Expenditures.
Budget Estimates and Statement (MoF)	Latest 1999: Government Revenue and Grants, Expenditures, Subventions, Deficits, Financing, Debt and Debt Service.
Public Expenditure Review (MoF)	Summary of Expenditures

Monitoring International Competitiveness

MoF Data	Periodic updates of general economic data.
IMF Website, Policy Framework Paper, Article IV Consultation Staff Report, Selected Issues	Latest May 1999: GDP; GDP Deflator, Inflation; Exports; Imports; Terms of Trade; Transfers; Capital Account; Balance of Payments; International Reserves; External Financing Requirements; IMF Credit; External Debt and Debt Service Payments; Government Budget; Revenue and Grants; Expenditure; Arrears; Financing; Primary Balance; Money and Credit; Monetary Survey; Net Foreign Assets; Investment and Saving; Medium-Term Outlook; Long Term Projections (Debt, Debt Service, Balance of Payments).
World Bank: World Development Indicators, Africa Database	Latest 1999, 1998 (but with 1 year lag): over 1000 data series on Ghana.
ISSER	State of the Ghanaian Economy 1998
IEA	Annual Economic Review and Outlook 1998; Mid-Year 1999 Economic Review and Outlook
CePA	Macroeconomic Review and Outlook 1998
Economic Intelligence Unit, Ghana: Country Report	Latest Q4 1999: Summary Data and Review of Political-Economic Situation.
Ghana Stock Exchange Stock Market Reports	Data on Listings, Prices, P/Es, Market Capitalisation, Volumes, Developments.
DataBank Services Reports	Data on Stock Market Index, Market Performance, Company Performance, New Listings, Market Developments
FAS: Agricultural Situation Report	Agricultural Data.
FAO Website	Agricultural Data (2 year lag)
US Embassy, Country Commercial Guide	Economic and Business Situation