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Selected Briefs and Presentations to Government Of Ghana and the Private Sector Leadership

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March 7, 2001 **Sigma One Corporation**

Ghana: Macroeconomic Management Brief
Fiscal Year 2001

ISSUE: **Macroeconomic instability is driven by Deficits that cause inflation and high nominal rates of interest, create pressure on public sector wages and on nominal exchange rates. Persistently large deficits and inconsistent policy responses aggravate macroeconomic instability and perpetuate poverty.**

All these economic variables (deficits, inflation, nominal interest rates, nominal wages, nominal exchange rates) are strongly linked through transactions in the financial, the labour and goods and services markets and through the rational expectations of the participants in these markets. ***Stability and growth cannot be achieved by short-run tactical interventions in financial or foreign exchange markets without solving the core problem of persistent and growing broad budget fiscal deficits.*** Repression of one of these variables in any given market will result in greater instability in another market, because these nominal variables interact to determine the real economic incentives for production, consumption, savings and investment as expressed in the real exchange rate, the real rate of interest, and the real wage rate. These real ***incentives have been unstable and non-competitive making Ghana a "high cost and high risk" environment for all Ghanaians and for potential international investors.***

Discussion:

Actual Broad Budget Deficits have exceeded the projected deficits in the ***"Budget Statement"*** by increasingly large percentages of GDP (from 1-2% in the mid-nineties to as much as 5% of GDP in fiscal year 2000). The budget overruns have been caused by seemingly uncontrollable expenditures in infrastructure projects (the investment budget), under-performance in revenue collections, lags in compliance with conditionalities for donor disbursements, and unexpected increases in interest expenses required to finance the larger than expected deficits.

The government's failure to meet its budgetary targets, persistently over the years, has created inflationary expectations, because the budgetary excesses have tended to be financed through monetization by the Bank of Ghana. These expectations express themselves in the money market as upward pressure on the nominal interest rate required to finance the deficit, and as such, increase the budget deficit directly, because any given deficit requires a higher than expected interest burden. As the deficit and the interest rates grow together, the BOG finds it increasingly difficult to place government debt in the domestic market in spite of high nominal rates of interest, and it is forced to monetize the debt by direct lending to the government, as happened in Year 2000. Such ***monetization of the deficit fulfills and confirms inflationary expectations.***

Inflation persists in Ghana and averages 25-30% per year, in spite of artificial attempts to repress it through interventions by the Bank of Ghana in the foreign exchange market and by failures to adjust the prices of publicly provided good and services, e.g. petrol and electricity, as in the last three years. Over the last three years the ***Bank of Ghana failed in an attempt to repress inflation by intervening in the forex market*** using up the nation's foreign reserves. The intervention sought to achieve two ends–repress depreciation of the nominal exchange rate to repress the cost of servicing the external debt and mop-up excess domestic currency. The intervention worked for about one year, but when the reserves were exhausted, the ultimate and predictable failure of the intervention induced an assault on the domestic currency that has led to rapid depreciation of the

currency, accelerating inflation, difficulty in financing the domestic public debt, and over exposure of the Banking System to foreign currency liabilities.

The rapid ***depreciation of the currency will now have to be worked through the pricing system*** as there is a high degree of indexation in the economy, and because the economy is intrinsically open to international economic forces (tradables make up a large part of the consumption bundle and of the inputs into production). The high degree of indexation, in turn, puts upward pressure on wage bargains. All these factors tend to expand the deficit and together they too serve to feed inflationary expectations. High inflation, high nominal interest rates and continued depreciation, resulting from the higher deficits, also result in higher domestic and external debt service burdens. ***As a result the country is entering a debt treadmill, where domestic and external debt service obligations are driving the budget deficits and an increasing share of revenues have to be allocated to meeting domestic interest payments.***

Recommendation:

The only way to break this spiral is to prepare a budget with a credible non-interest domestic surplus. This requires realistic projections for inflation, interest rates, currency depreciation, revenue collections, divestiture receipts, real growth, external debt/capital flows, public sector pricing, donor disbursements, and expenditure elements. It also requires a process for monitoring all of these elements of the budget, a process for adjusting expenditures to conform to changes in the exogenous elements, and, significantly, a process for assuring compliance with authorized expenditures at all MDAs.

The spiral cannot be broken by repressing real pressures in any market–forex, labour, financial, or the markets for goods and services. Attempts to repress any one market will spill over onto other markets with disproportionately de-stabilising effects throughout the economy. The ultimate consequence of attempts to repress particular markets with "financial and administrative tactics" is to reduce competitiveness throughout the economy and to perpetuate poverty in Ghana.

Table 1. Indicators of Macroeconomic Instability

	Broad Budget Deficit (% of GDP)	Base Money Growth (% per year)	Inflation (% per year)	Nominal Interest Rate (% per year)	Real Interest Rate (% per year)	Exchange Rate Depreciation (% per year)
1992	8.1	32.2	10.1	20.4	9.4	18.8
1993	7.4	44.4	25.0	33.5	6.9	48.5
1994	3.8	35.4	24.9	29.8	3.9	47.4
1995	4.0	53.1	59.5	38.8	-12.9	25.5
1996	8.4	43.7	46.6	46.5	-0.1	36.4
1997	10.1	41.9	26.0	47.9	17.4	25.2
1998	8.1	24.6	16.4	37.6	18.3	12.9
1999	4.5	19.0	12.4	28.2	14.1	14.4
2000 *	10.4	29.6++	40.5	42.2	1.7	57.6

*Preliminary estimates: Sigma One Corporation ++ as of 30 September

Table 2. Bank of Ghana Targets and Performance (%/year)

	1993	1994	1995	1996	1997	1998	1999	2000
M2 growth**								
Target	0	5	8	5	15	20	15	12
Revised target			14		25		17	
Actual	27	46	37	34	44	18	16	29*
Inflation								
Target	9	15	18	20	15	10	10	8
Revised target	20						12	
Actual	28	34	71	33	16	16	14	40.5

Source: Targets from Government of Ghana Budget Statements, various years. Actual values from BOG data.

*Through September 2000

**Beginning 1997, money supply is M2+ which includes foreign currency deposits.

BANK OF Ghana is losing control of the money supply and the banks are getting squeezed by the process of dollarisation and their over exposure to non-performing assets in the domestic private credit market.

The BOG failure to repress inflation by intervening in the forex market set up a flight from the domestic currency which is having numerous deleterious effects on macro economic management. The BOG is losing control of the money supply as Ghanaians are less willing to hold Cedi denominated assets, and the banks are being squeezed by the requirement to hold reserves in Cedis against their foreign currency deposits. Consider the following:

(1) High-powered money (currency in circulation plus deposit money bank deposits at the BOG) increased by only 2% between Q1 and Q3 of 2000, from C1,543 million to C1,575 million. Since the increase in M2+ was 13% over this period, this implies that the increase in the multiplier accounted for about 11 percentage points of the growth in M2+. On a year-on-year basis, the growth in high-powered money was 18% from Q3 1999 to Q3 2000. Since M2+ increased by 29% over this period, the change in the multiplier accounted for about 11 percentage points of the yearly growth in M2+. This is high by Ghana's historical standards in which the bulk of broad money growth occurred because of changes in high-powered money.

(2) With this much of the growth in M2+ resulting from multiplier changes, the BOG is exercising less control over broad money growth. The value of the multiplier is partially controlled by the BOG through its setting of reserve requirements but is also influenced by the public's holdings of currency, savings deposits, time deposits, and foreign currency deposits relative to demand deposits as well as banks' holdings of excess reserves. The latter two factors are not under the control of the BOG. The BOG could raise reserve requirements in an attempt to reduce the multiplier (and therefore money growth), but there is no assurance that the multiplier would move in the desired direction--it might be offset by the behavior of the banks and the public.

(3) Actual secondary reserves (mainly deposit money bank holdings of T-bills) as a percentage of deposit liabilities have declined steadily since the first quarter of 2000 from 51% to 39%. Since secondary reserve requirements have been fixed at 35% over this period, the banks' excess secondary reserves, as a percentage of deposit liabilities, have been declining--currently they are less than four percent.

(4) The actual value of banks' secondary reserves increased to C2,412 million in September 2000, up 2% from their level of C2,373 million in March 2000. This was the same period when actual secondary holdings as a percent of deposit liabilities were declining. Thus, it would seem that the banks are getting "squeezed" by the depreciation-induced increase in FCDs: reserve requirements are assessed on the cedi value of these deposits, so as the cedi value increases purely from exchange rate changes, the amount that banks are required to set aside as reserves (both primary and secondary) automatically increases. This automatic increase is eating into the relatively constant pool of secondary reserve holdings, thereby reducing the percentage that banks are holding as excess reserves.

(5) The increase in FCDs relative to demand deposits (the ratio went from 1 to 2 between March and September 2000) and the decrease in banks' holdings of excess secondary reserves both act to increase the multiplier. This is further evidence that the BOG has lost a fair degree of control over money supply growth, at least recently.

(6) Summarizing the sources of change in M2+ between Q1 and Q3 2000 from the information in Statement 8 of the Statistical Appendix:

Change in M2+ = C597 billion

Sources:

Change in credit to GoG = C772 billion (all from BOG; the banks decreased lending to the GoG)

Change in credit to public institutions = C461 billion (all from the banks)

Sub-total: change in credit to public sector = C1,233 billion

Change in credit to private sector = C1,078 billion (all from the banks)

Change in net foreign assets = - C875 billion (negative)

Change in other = - C862 billion (this includes other net liabilities, the revaluation account, and credit for cocoa financing)

(7) The BOG alone saw an almost C800 billion decline in NFA, with the remainder of the C875 billion decrease attributable to the banks. For the BOG, 131 billion of the decline was due to a decrease in holdings of foreign securities and foreign currency (from Statement 1A), most likely a result of BOG intervention in the foreign exchange market.

(8) The increase of 1,233 billion in credit to the private sector from the banks seems surprising--perhaps the capitalization of interest due on existing loans? Also the increase in credit to public institutions by the banks--again, a nonperforming loan phenomenon?

(9) The revaluation account mentioned in the sources above is something different from the revaluation stock listed as an asset of the BOG, which has been fixed at C1,383 billion throughout 2000. Perhaps each bank has a revaluation account as well as the BOG in which exchange rate "gains" are booked.

Additional Signs of Flight from the Cedi

(1) From the end of Q1 2000 to the end of Q3 2000, M1 declined by C283 billion (Table 2, p.4 of the BOG Quarterly Bulletin). Most of this (C247 billion) was due to a decline in demand deposits; the remainder (C36 billion) was due to a decline in currency in circulation.

(2) Over the same period, there was an increase of C180 billion in quasi-money (savings and time deposits and certificates of deposit)--see Table 3 on p. 6 of the BOG Bulletin. M2 (M1 + quasi-money) therefore declined by C103 billion--the decline in M1 more than offset the increase in quasi-money.

(3) However, foreign currency deposits (FCDs) increased from C1,088 billion at the end of Q1 to C1,789 billion at the end of Q3, an increase of C701 billion (5th column of Table 4). This is a 64% increase. Of this, about 60 percentage points were due to the depreciation of the
cedi between Q1 and Q3. (See the interbank exchange rates in Table 21 on p. 24.) The rest was due to an increase in the dollar value of the FCDs: FCDs were $266 million at the end of Q1 (using the interbank exchange rate) and $274million at the end of Q3, an increase of about 3%.

(4) Adding FCDs to M2 to get M2+, you get an increase in M2+ of C598 billion between Q1 and Q3. That's an increase of almost 13% in 6 months and a 29% increase from its level in Q3 1999. This is consistent with the rising inflation over this same period.

(5) So it would seem that the C283 billion decline in currency and demand deposits could have gone into quasi-money (C180 billion worth) and the rest (C103 billion) into FCDs with exchange depreciation accounting for the lion's share of the increase in FCDs and, hence, in M2+. This would imply that the monetary aggregate is being driven primarily by the process of dollarisation and depreciation

Ghana: Macroeconomic Management Brief
Fiscal Year 2001

ISSUE: Domestic debt interest costs are increasing rapidly as major element of fiscal expendit

Interest payments on the domestic debt will likely exceed six percent of GDP for the Year 2000 bu out-turn. Additionally, ***the domestic debt has become increasingly difficult to place with the bank system and the public, because real interest rates have become negative and there is a process of from the domestic currency*** as portfolio capital seeks better returns abroad and Ghanaians convert money holdings to foreign currency. The Bank of Ghana has, therefore, been forced to take up an increasing share of the T-Bills offered for sale at the weekly auctions.

This is a very important problem facing the fiscal authorities, because the monetization of the dom debt will add to the inflationary expectations already inherent in the rapid devaluation of the ¢. The agents in the economy may be unwilling to finance the domestic interest burden and any additiona deficits unless real interest rates are increased substantially, while the base for inflationary finance : eroded by the substitution of the domestic currency for foreign exchange and foreign currency acco

Discussion:

In recent years, domestic financing of the deficit has averaged about five per cent of GDP; in Fiscal Year 2 broad deficit was approximately 10% of GDP. Traditionally, net donor disbursements have provided approximately 4% of GDP, but in Fiscal Year 2000 net donor resources in the form of grants and net proce from external debt were negative and extracted about 3% of GDP from the Budgetary Receipts. This place full burden of financing the deficit and the external debt service requirements on to the domestic debt mar task which it apparently refused to perform, because the willingness of the banks and public to finance the domestic fiscal deficits may have peaked at approximately 8% of GDP in 2000 (see attached charts). These forced the Bank of Ghana to take up a significant share of the domestic financing requirement, but the leve real resources that can be harvested from inflationary finance of the deficit appears to be "capped" at about of GDP. Thus the broad fiscal deficit financing requirements placed a burden on the domestic financial ma that they were either unwilling or unable to finance. This public burden on the financial sector was further aggravated by the financing requirements of several SOE's primarily the oil refinery. This action is inherer inflationary and will aggravate the already difficult prospects for managing the economy in Fiscal year 200 Inflationary financing of the deficit may become increasingly difficult, because of the flight from the dome currency. In the past

Recommendation:

Ghana: Macroeconomic Management Brief
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ISSUE: **Ghana's Financial Sector is reaching a limit on its ability to finance the domestic debt interest costs, Fiscal Deficits and parastatal subsidies.**

Interest payments on the domestic debt will likely exceed six percent of GDP for the Year 2000 budget out-turn. Additionally, ***the domestic debt has become increasingly difficult to place with the financial system, because domestic savings are low, real interest rates have become negative and there is a process of flight from the domestic currency*** as portfolio capital seeks better returns abroad and Ghanaians convert their money holdings to foreign currency. The Bank of Ghana has, therefore, been forced to take up an increasing share of the T-Bills offered for sale at the weekly auctions.

This is a very important problem facing the fiscal authorities, because there may be a ceiling on the volume of public debt that can be financed domestically, whether through borrowing or through inflation. The private agents in the economy may be unwilling (or unable) to finance the increase in the domestic interest burden and any additional fiscal deficits, because the domestic savings rate is low and the State and its enterprises already absorb a major portion of these resources. At the same time, the base for inflationary finance is being eroded by the substitution of the domestic currency for foreign exchange and foreign currency accounts. Under these conditions the economy would be forced to seek external finance for its domestic debt, but the external debt itself is now becoming a problem in its own right. Both the domestic and external debt may be at levels which cannot be financed without major fiscal effort to reduce the burden of the State on the economy.

Discussion: In Fiscal Year 2000 the broad deficit was approximately 10% of GDP. In recent years, domestic financing of the deficit has averaged about five per cent of GDP, and additionally, net donor disbursements have provided approximately 4% of GDP. When deficits exceeded these two sources of financing, the excess requirement was financed through inflation. ***But in Fiscal Year 2000, net donor resources in the form of grants and net proceeds from external debt were negative and extracted about 3% of GDP from the Budgetary Receipts.*** This placed the full burden of financing the deficit and the external debt service requirements on to the domestic debt market. A task which it apparently refused to perform, because the willingness of the banks and public to finance the domestic fiscal deficits may have peaked at approximately 8% of GDP in 2000 (see attached charts). These factors forced the Bank of Ghana to take up a significant share of the domestic financing requirement, but the level of real resources that can be harvested from inflationary finance of the deficit appears to be "capped" at about 4-5% of GDP. ***Thus, the broad fiscal deficit financing requirements placed a burden on the domestic financial markets that they were either unwilling or unable to finance.*** The burden on the financial sector was further aggravated by the financing requirements of several SOE's, primarily the oil refinery. The financial sector cannot simultaneously support the fiscal burden and the debts of the parastatals, which arise from their subsidised pricing of their goods and services.

Recommendation:

The situation demands a "genuine" positive domestic surplus in the broad budget out-turn for fiscal year 2001. There is limited scope for expenditure control in the recurrent budget; inflation and devaluation have eroded the value of public wages, and social expenditure commitments were not met in 2000. Revenue enhancement is possible through improved implementation of the VAT, improved management of IRS and CEPS, and through reform of the tariff system. These Revenue Agencies will need budgetary resources to carry out their functions. Fiscal savings must come from the investment budget, but this could reduce donor disbursements on project loans. Careful planning and negotiation with donors is required to insure timely disbursements of their commitments without aggravating the fiscal problem. Furthermore, the economy cannot sustain subsidies to publicly provided goods and services. The scope for unorthodox schemes for off-loading the fiscal burden onto the financial sector is exhausted. Finally, effective pursuit of divestiture could help relieve the debt burden.

Ghana: Macroeconomic Management Brief
Fiscal Year 2001

ISSUE: Under-collection of Budget Receipts from Donors Grants and Loans

Government Budgetary Receipts from Donor program and project grants and loans show a persistent pattern of under performance. ***In the Year 2000 as much as $150 million dollars of committed resources were not available to the Treasury, and this aggravated the Public Sector Domestic Financing Requirement by approximately C 900 Billion or nearly half of the domestic financing requirement.***

This is very important as an element of macroeconomic management because "planned" donor resources amounted to 12% of GDP in 2000. Net donor resources from grants and loans have averaged 4-5% of GDP in recent years, and heretofore the have represented a very low cost source of financing government operations, whereas domestic financing has been absorbing 8-10% of GDP and crowding out the private sector. The domestic interest cost of replacing the foregone donor resources is approximately C 350 Billion.

Discussion: Over the last three years there has been a significant shortfall between budgeted and actual receipts from divestiture and donor resources.

Table 1. Government Receipts, Budgeted and Actual from Donor Grants and Loans 1998 -2000 in Billions of Cedis

	1998	1998	1999	1999	2000	2000
	Budgeted	Actual	Budgeted	Actual	Budgeted	Estimated
Donor Grants	549	162	343	302	962	765
Donor Loans	1255	914	1203	973	2017	1342
Total	1804	1076	1546	1275	2979	2107

Source: Government of Ghana Budget Statements, 1997, 1998, 1999 and 2000.

In the last three years the shortfall in achieving the program levels of donor disbursements has averaged _____% of GDP and _____ of the Budgetary Receipts,

MORE DIRECT DISCUSSION OF ORIGIN OF PROBLEM HERE COUNTER PART FUNDS + UNREALISTIC CONDITIONALITIES OR ADMINISTRATIVE FOLLOW THROUGH

In addition, the shortfall in donor releases mean that donor requirements are not being met and increase tensions between donors and the Government. An important down-side to donor disbursements is that they often require subsatntial amount of counterpart financing and these resources are not often available because planned revenues from other sources tend to also under

perform significantly.

To improve management of donor resources, the Ministry of Finance should review all donor agreements, with priority to those involving cash disbursements, to identify the needed actions to achieve release of the funds and determine whether the actions are still relevant. It should then meet with donors to discuss possible changes in timing or content of the conditionality.

Ghana: Macroeconomic Management Brief
Fiscal Year 2001

ISSUE: **Ghana's Financial sector is over-exposed to foreign currency liabilities and to non-performing loans on the domestic portfolio.**

The banking system in Ghana is over-exposed to foreign currency liabilities (in excess of assets) by as much as $300Million US Dollars, and a major portion of its domestic loan portfolio includes very low quality assets from the private sector and the parastatal firms. While the banking system has been profitable, because its revenue base has been derived from interest earnings from holding the domestic public debt, the financial soundness of the system has become compromised as a result of its over exposure to foreign currency liabilities and to its domestic loan portfolio. This situation is a major problem for economic management because the banks' over exposures may become a burden on the Bank of Ghana or on the government (or both) at a time when both are exceedingly fragile financially. ***Imbedded in the banking system's problems is a deterioration in its functions as a source of finance for the domestic public debt and as an instrument of monetary policy.*** The capacity of the banking system to finance the domestic public debt appears to have been exceeded in fiscal year 2000, and foreign currency deposits are becoming a major component of the money supply. As such the money supply is being determined primarily by depreciation of the domestic currency rather than by the purchase and sale of government and BOG securities.

Discussion:

The over-exposure to foreign liabilities in conjunction with use of the nominal exchange rate as an anchor for inflation in the presence of large and persistent fiscal deficits and a rigid trade policy induced a run on the currency which has been manifested in rapid depreciation of the currency (almost 200% in two years; see attached graphs). The over exposure to foreign currency liabilities is the result, in part, of the BOG's management of the nominal exchange rate over the last three years. The forex liabilities of the banks may represent forex liabilities of the Bank of Ghana to the extent that the BOG entered into "swap" arrangements with the banks when the BOG was attempting to maintain a stable nominal exchange rate in 1997, 1998 and 1999.In any case this overexposure, at a minimum, implies continuing pressure on the domestic currency.

The over-exposure to low quality assets in the loan portfolio include massive advances to parastatal enterprises (more than 5% of GDP), and these could become a burden on the fiscal budget at a time when the government is running large broad deficits. Other low quality assets on the bank's portfolio represent loans and advances to private sector firms that may be insolvent or financially distressed. Some of these have expressed expectations of being bailed out of their debts by government action or at a minimum to have the debts "rolled" over. SSNIT also suffers from very poor quality in its asset portfolio, and its poor investment performance adds rigidity to an otherwise rigid labour market. Workers demand end of service benefits because they know that they value of their pension funds will deteriorate over time as a result of the poor investment performance at SSNIT.

Over the last decade the banking system has made its profits from high margins between the interest collected on the governments treasury bills (T-bills) and the interest paid to depositors, even when real interest rates were negative. With the flight from the domestic currency that is underway and the foreign exchange liabilities of the banks to domestic depositors and to international creditors, the banks are losing the ability to profitably finance the government's debt or to sustain the portfolio of non-performing assets from the private sector. The banks will now have to operate with interest rates that reflect international market conditions on the supply and demand side. In order to service their creditors and meet their obligations to their depositors the will need to demand payment from their private debtors and positive real interest rates from their holdings of government debt. Several of them will require re-capitalization or liquidation if they cannot improve the quality of their assets.

THE CONSOLIDATED PUBLIC SECTOR'S BUDGET CONSTRAINT

The budget constraint of the consolidated public sector is:

$$\delta + (r - q)\,\beta + (r^* + \hat{e} - q)\,\phi = (q - \theta + \pi)\,\mu + \Delta\beta + \Delta\phi$$

The left hand side of the constraint adds the three broad types of spending by the public sector: the real primary deficit, δ, which includes all expenditures except interest payments net of revenues; real interest expenditures on the domestic debt net of real economic growth, $(r - q)\,\beta$; and real interest expenditures on the external debt adjusted for real exchange rate changes and net of real economic growth, $(r^* + \hat{e} - q)\,\phi$. The right-hand side of the constraint adds up the sources of financing: inflationary finance based on holdings of high-powered money, $(q - \theta + \pi)\,\mu$; domestic borrowing that occurs through changes in the real stock of domestic debt, $\Delta\beta$; and international borrowing, $\Delta\phi$.

By consolidated public sector we mean the consolidated accounts of the central government, including state-owned enterprises, and the Bank of Ghana. All variables are corrected for the effects of inflation and real exchange rate changes. This properly accounts for the inflation-induced amortization of debt and the capital gains and losses caused by real exchange rate changes as financing items rather than as expenditure items. All variables are given as percentages of GDP. The growth accounting imposed by relating all variables to shares of GDP allows inflationary financing, interest payments, and domestic and external debt stocks to grow at the rate of real economic growth without imposing additional real costs on the economy. Our application of this framework is based on the work of Anand and van Wijnbergen (1989), Catsambas and Pigato (1989), and Riesen (1989).

Spending

The spending side of the budget constraint comprises the primary deficit and interest expenditures on domestic and international debt. The primary deficit, δ, theoretically captures the non-interest expenditures of *all* public sector entities, including state-owned enterprises, net of tax and non-tax revenues. We start our calculations using the data reported by the central government in its budget statements and replicated in IMF publications. In revenues we include total revenue from all sources, including program and project grants and divestiture receipts. Expenditures include all statutory payments except for principal and interest payments on the external and domestic debt and *all* discretionary expenditures, including personal emoluments, administration and service, domestic- and foreign-financed investments, and arrears clearance. Subtracting revenues from expenditures yields what we call the broad primary balance. The broad primary balance is divided by nominal GDP to obtain the real primary balance as a share of GDP.

This concept of the primary deficit differs significantly from that used by the central government in its budget statements and reported in IMF publications. In their calculations revenues exclude both grants and divestiture receipts. Expenditures exclude not only principal and interest payments on the external and domestic debt (as we do), but

also foreign capital expenditures and arrears clearance. Subtracting their calculated revenues from expenditures yields what they call the domestic primary balance. Since the expenditure items excluded are usually much larger than the excluded revenue items, the domestic primary balance often shows a surplus, whereas the broad primary balance we calculate either shows a deficit or a much smaller surplus.

Calculating real interest expenditures on the domestic and external debt first entailed determining the nominal interest rates that applied to servicing the domestic and external debt. The implied nominal interest rate on the domestic debt was calculated by dividing the interest payments reported in the government's budget statements by the nominal stock of domestic debt, as reported by the Bank of Ghana in the statistical annexes to their Quarterly Economic Bulletins. Inflation, measured as the percentage change in the GDP deflator, was subtracted from the nominal rate to calculate the real interest rate. In the process of converting all budget constraint items to shares of GDP, the real GDP growth rate enters the budget constraint as a factor that reduces the real resources needed to make real interest payments on the real stock of domestic debt. Hence, real interest expenditures become $(r - q)\,\beta$, where r is the real interest rate, q is real GDP growth and β is the real stock of domestic debt as a share of GDP. If real interest rates are equal to the rate of growth, no additional real spending burden is imposed on the private sector by the consolidated public sector.

For the consolidated public sector, external liabilities must include the public and publicly guaranteed external debt taken on by the central government, the SOE's, and the Bank of Ghana (for instance, the obligations to the IMF are kept on the books of the Bank of Ghana); these were obtained from Bank of Ghana Annual Reports and converted to cedis using the average nominal exchange rate for the year. The foreign assets held by the Bank of Ghana were subtracted from this amount to arrive at the net indebtedness of the consolidated public sector to the outside world. The interest payments on external debt reported in the government's budget statements were added to the cedi equivalent of the IMF charges reported by the IMF's International Financial Statistics. These total interest payments were divided by the net external liabilities calculated above to impute a nominal international interest rate. US inflation, measured by the percentage change in the CPI, was subtracted from this to get a real international interest rate.

The real resources needed to meet interest obligations on the external debt depend critically on changes in the real exchange rate, since the interest payments must be made in dollars and these dollars ultimately come from converting domestic resources at the real exchange rate. The deviation of the real exchange rate from purchasing power parity is therefore added to the real international interest rate. The payment of $1 in interest on the foreign debt is paid for by converting real domestic resources at the real exchange rate—even if the government books the payment at a more favorable exchange rate or makes the payment from the proceeds of a new loan, the $1 still carries an opportunity cost equal to the real exchange rate. The real resources needed to make the interest payments on external debt are offset by economic growth, as was the case with domestic interest payments. The transfer of real resources embodied in interest payments to external creditors is given by the term $(r^* + \hat{e} - q)\,\phi$.

Financing

The financing alternatives available to the consolidated public sector are inflationary finance, domestic borrowing, and international borrowing. The tax base for inflationary finance is the real monetary base as a percent of GDP, μ. The public sector captures revenues by taxing this base through inflation, π, as holders of the monetary base attempt to keep their holdings constant. The public sector also captures the seignorage revenues, $(q - \theta)\ \mu$, that are generated as the net demand for base money rises with increases in real GDP.

Domestic borrowing is measured as the change in the stocks of domestic debt instruments (Treasury bills, BoG bills, and government stocks) held by the private sector (the banking system, the nonbank public, and SSNIT). The nominal value of the stocks in each year were divided by nominal GDP to measure the real stock of domestic debt. The change in these real stocks reflect domestic borrowing of the public sector.

International borrowing by the consolidated public sector is measured as the change in the real stock of external debt as a percent of GDP. The gross external liabilities of the central government and the Bank of Ghana are measured by the stocks of short-, medium-, and long-term debt held or guaranteed by the public sector, including borrowings from the IMF, which are lodged with the Bank of Ghana. Partially offsetting these gross liabilities are the foreign assets of the Bank of Ghana. Hence, what is reflected in our measure is the *net* external indebtedness of the consolidated public sector. Depending on the size of the foreign assets held by the BoG in any one year, our measure will differ from the commonly reported external debt statistics for Ghana.

Imposing Equality in the Budget Constraint

We calculated each item in the budget constraint separately. This gave us a spending total (the sum of the items on the left-hand side of the equation) and a financing total (the sum of the items on the right-hand side). For every year except 1996, the financing total reflected either a bigger deficit or a smaller surplus than the spending total. The main reason for this was that the primary deficit was based only on the fiscal stance of the central government—it did not capture the net spending of the large state-owned enterprise sector. Thus, using only the net spending reported by the central government significantly understates the true fiscal stance of the country.

We enforced equality in the budget constraint by redefining the broad primary deficit to be the financing total net of interest expenditures on domestic and external debt. This reflects the notion that if financing occurred, net spendinng occurred, whether or not it was reported in the official budget statistics. By calculating the primary deficit in this way, we capture hidden expenditures that result from the quasi-fiscal activities of the Bank of Ghana and the SOE sector.

This gives us a more accurate picture of the true net spending of the consolidated public sector. This presentation of the budget constraint of the consolidated public sector also

provides a consistent framework within which we can see how the operational deficit (the primary deficit plus all interest expenditures) have been financed over time.

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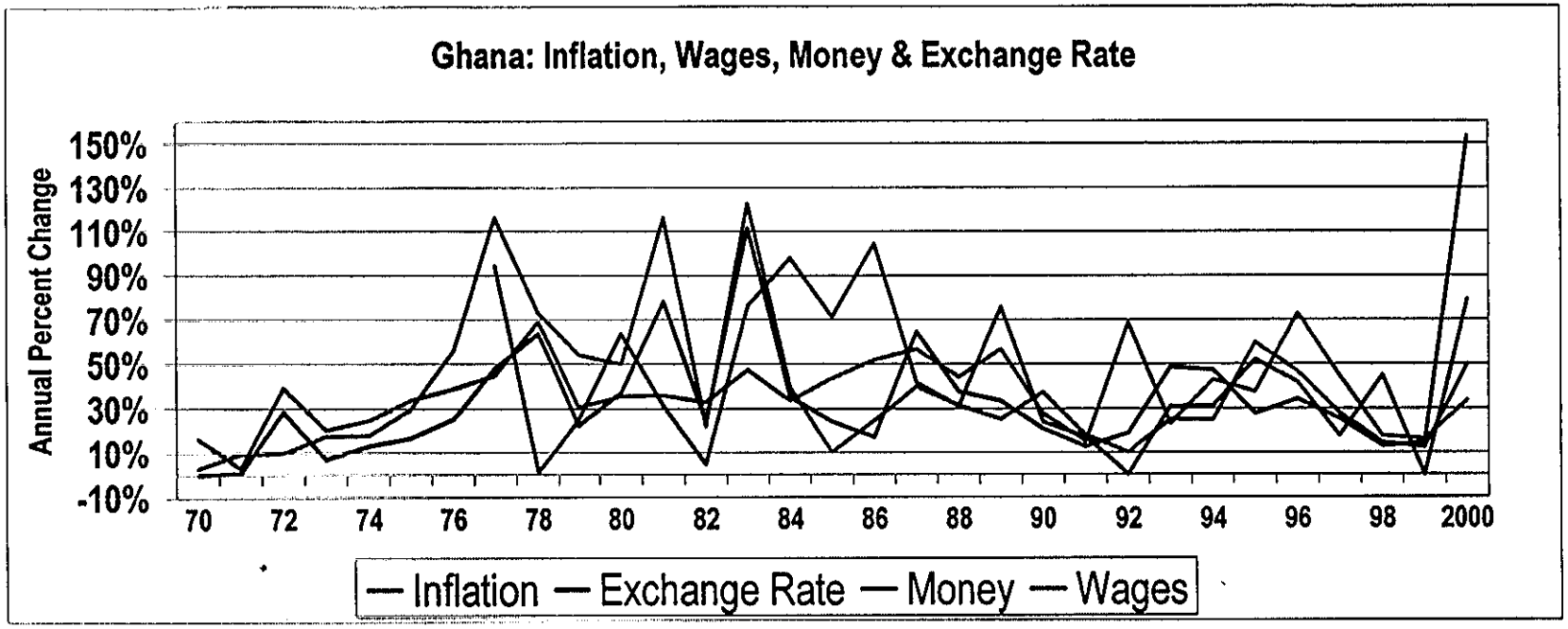
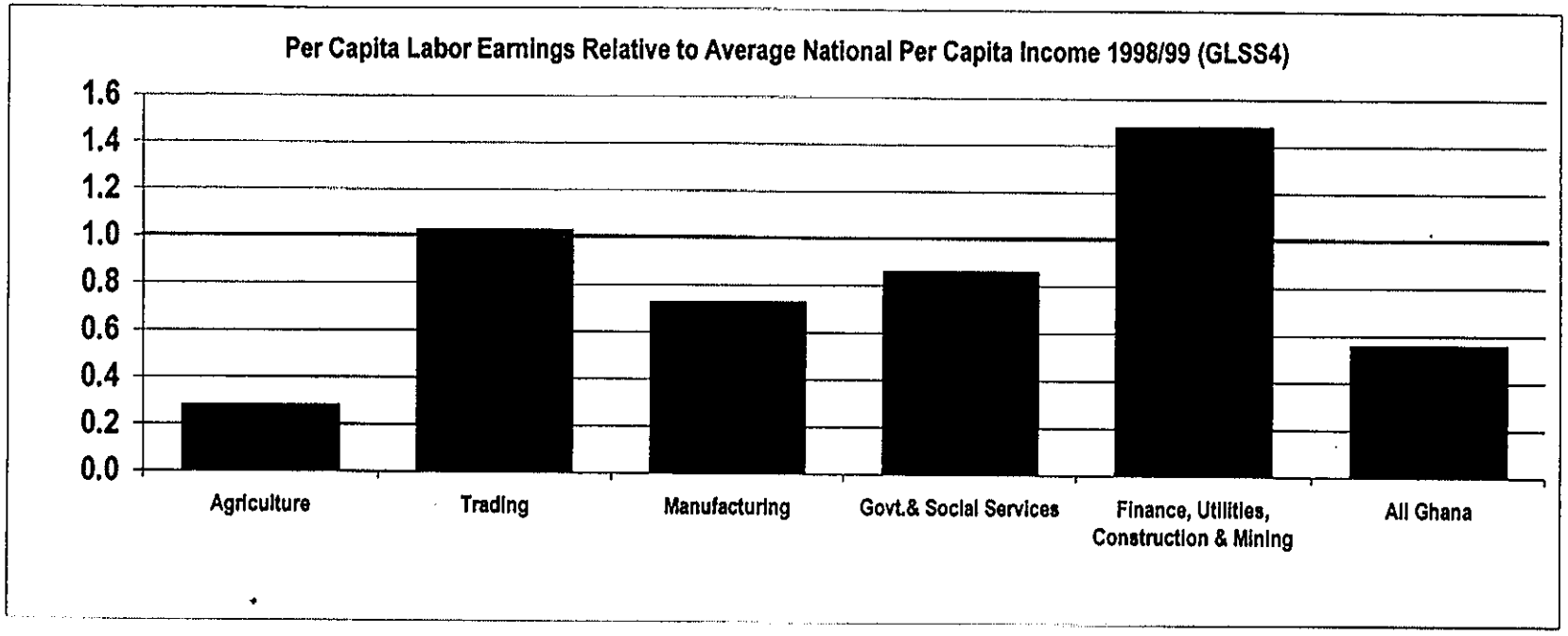
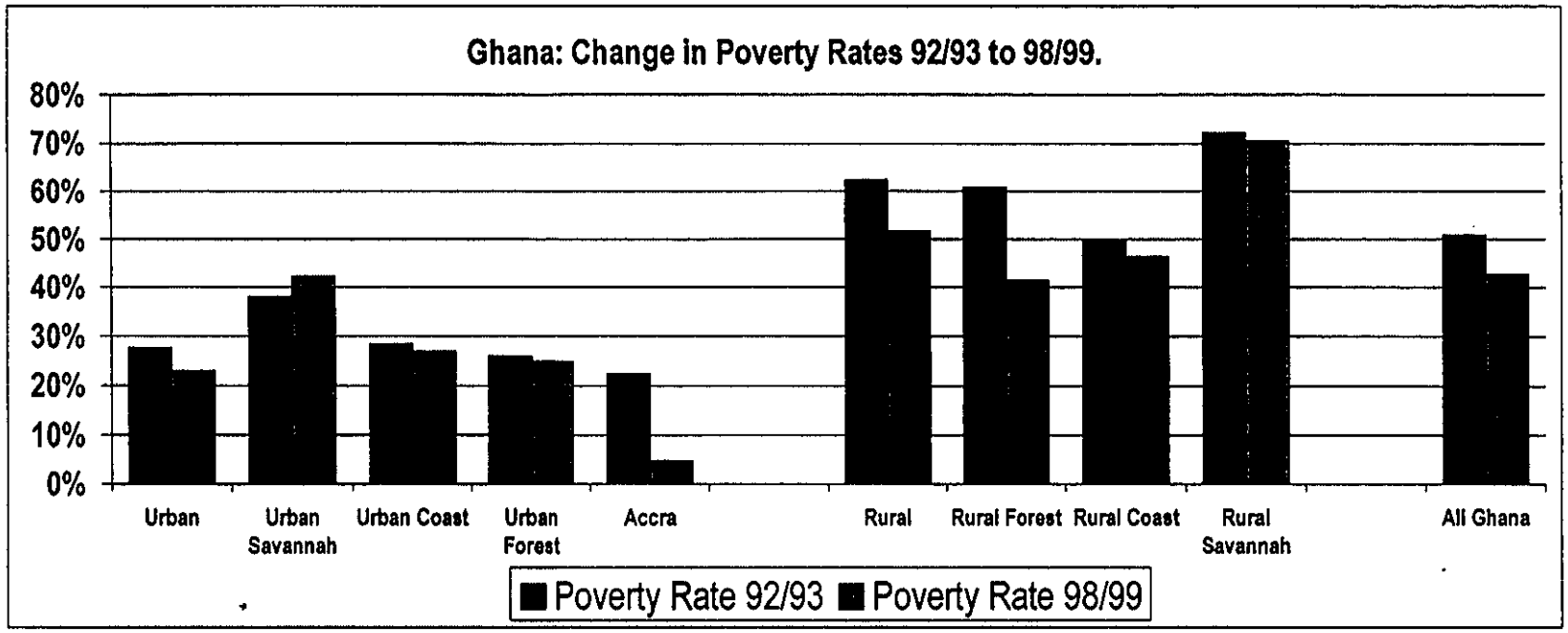
Selected Slides From Presentations To Government Of Ghana Officials and Leaders in the Private Sector

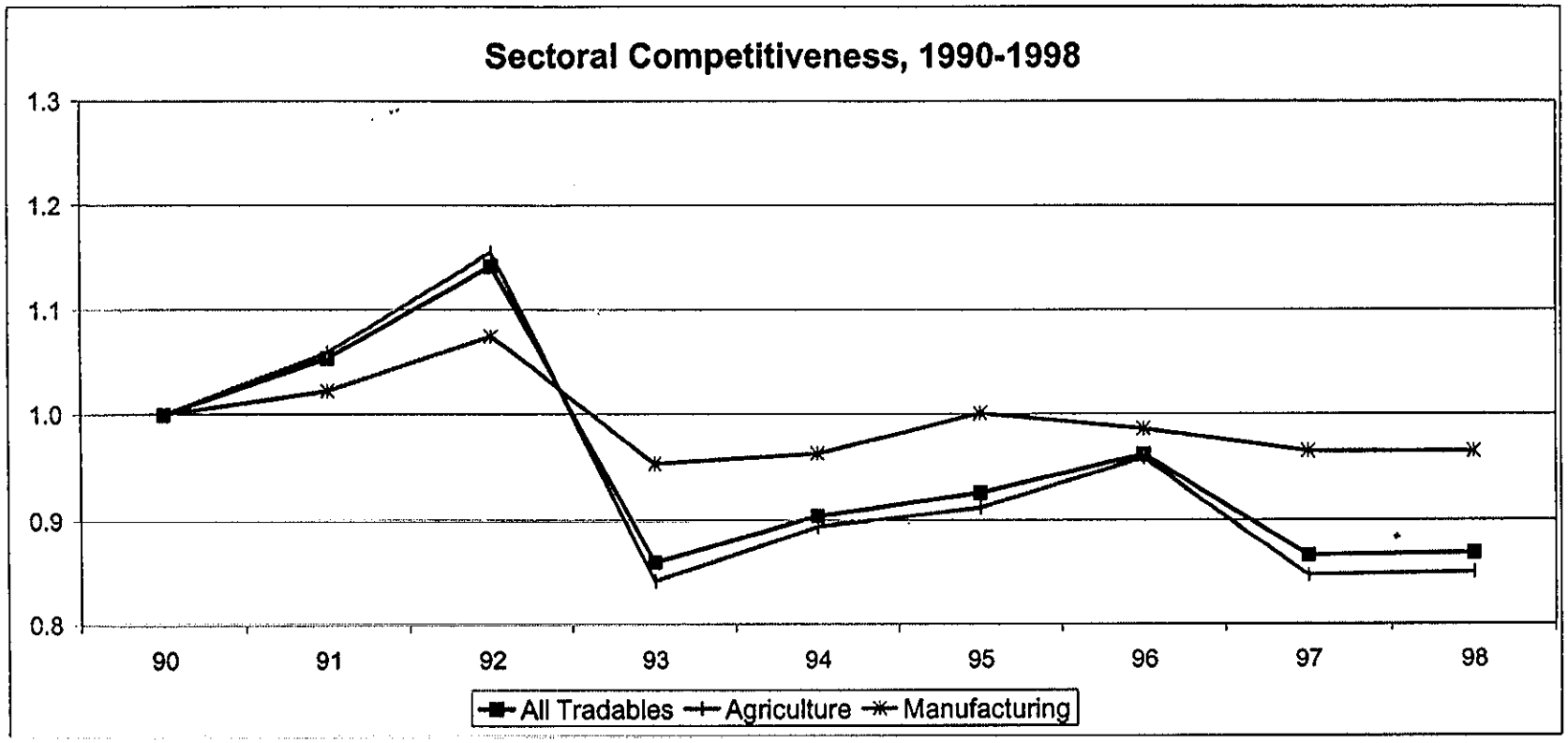
Accra, Ghana

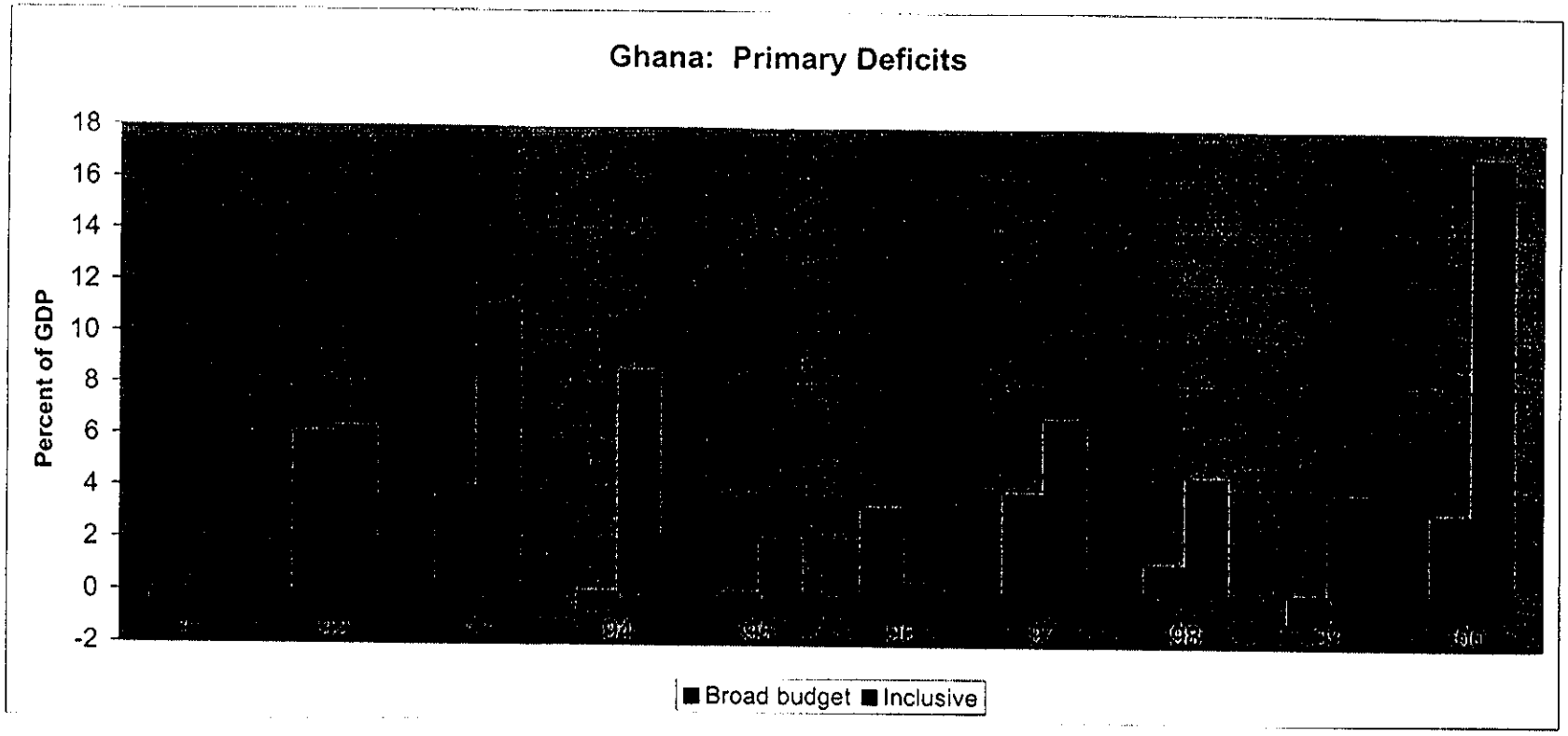
January 2001

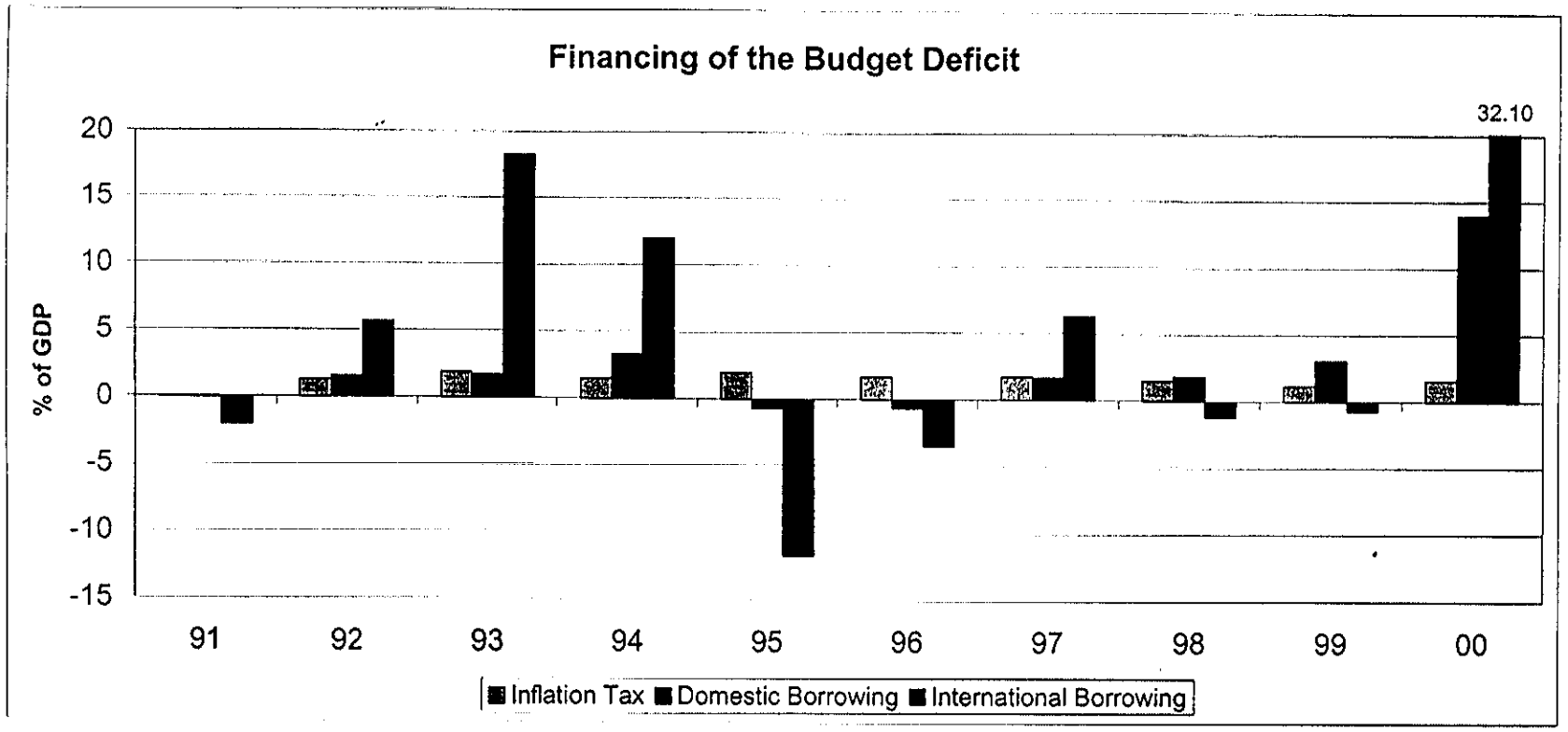

Ghana: Inflation, Wages, Money & Exchange Rate
Annual Percent Change
150%
130%
110%
90%
70%
50%
30%
10%
-10%
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
2000
Inflation
Exchange Rate
Money
Wages

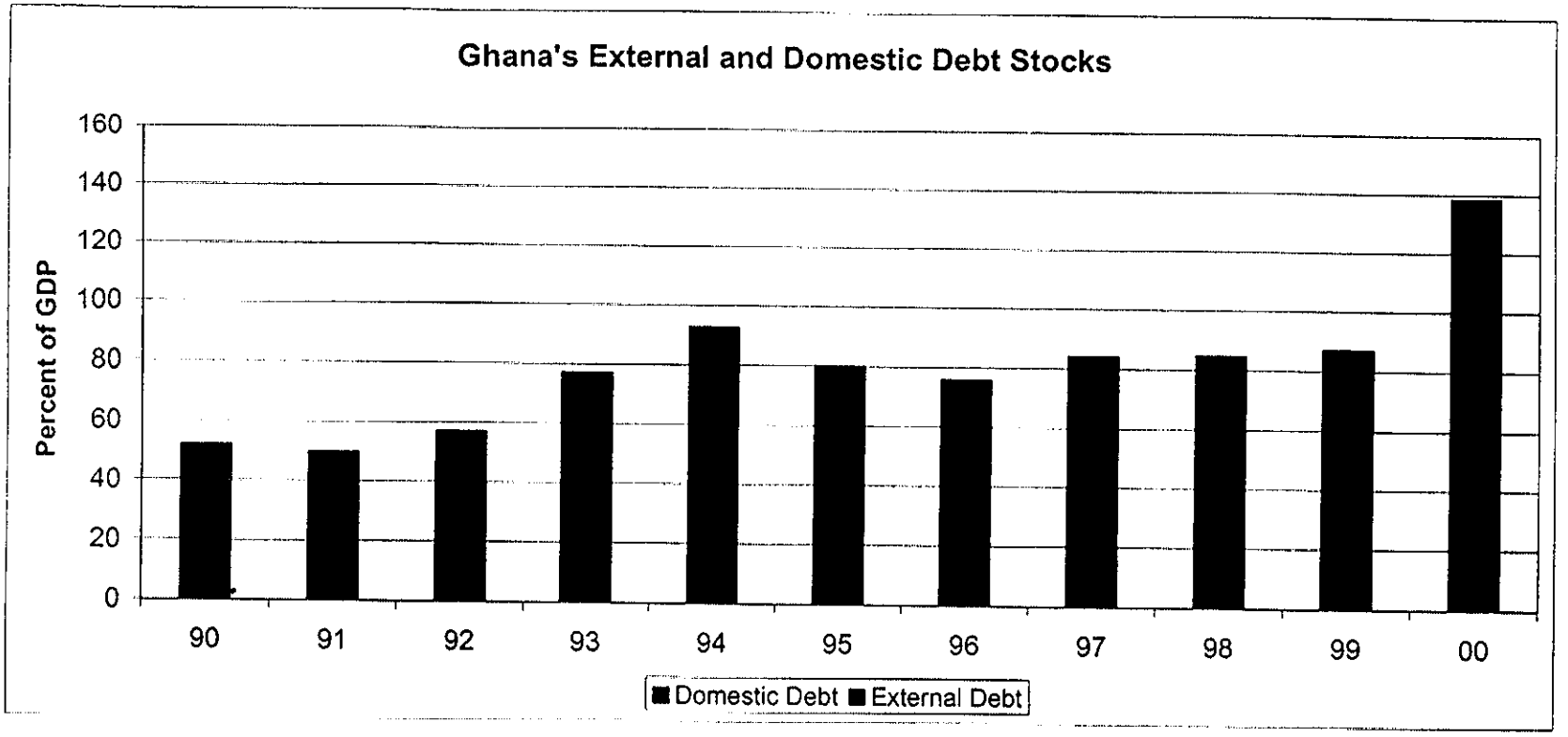

Per Capita Labor Earnings Relative to Average National Per Capita Income 1998/99 (GLSS4)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Agriculture
Trading
Manufacturing
Govt.& Social Services
Finance, Utilities, Construction & Mining
All Ghana

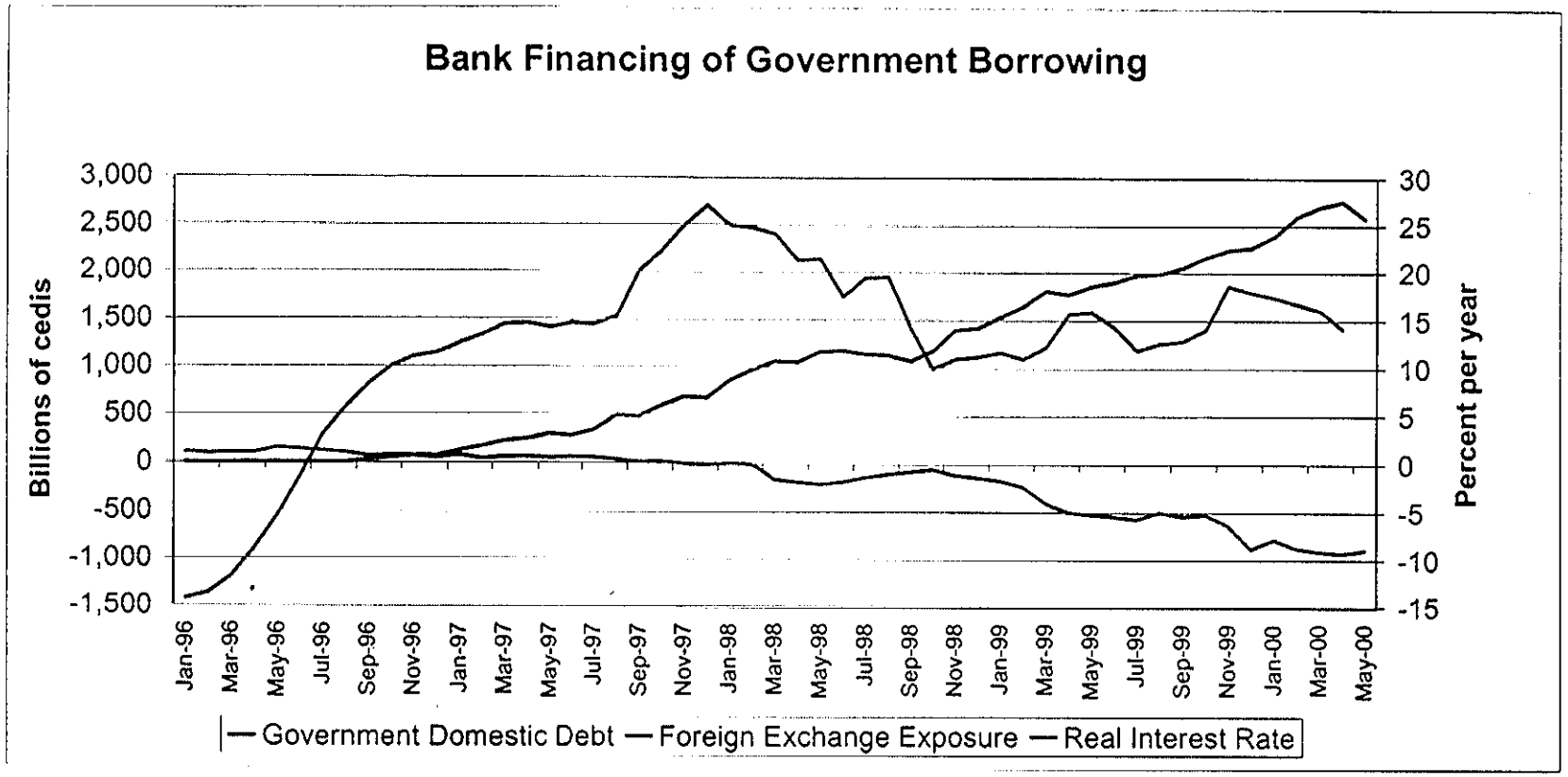

Ghana: Change in Poverty Rates 92/93 to 98/99.
80%
70%
60%
50%
40%
30%
20%
10%
0%
Urban
Urban Savannah
Urban Coast
Urban Forest
Accra
Rural
Rural Forest
Rural Coast
Rural Savannah
All Ghana
Poverty Rate 92/93
Poverty Rate 98/99

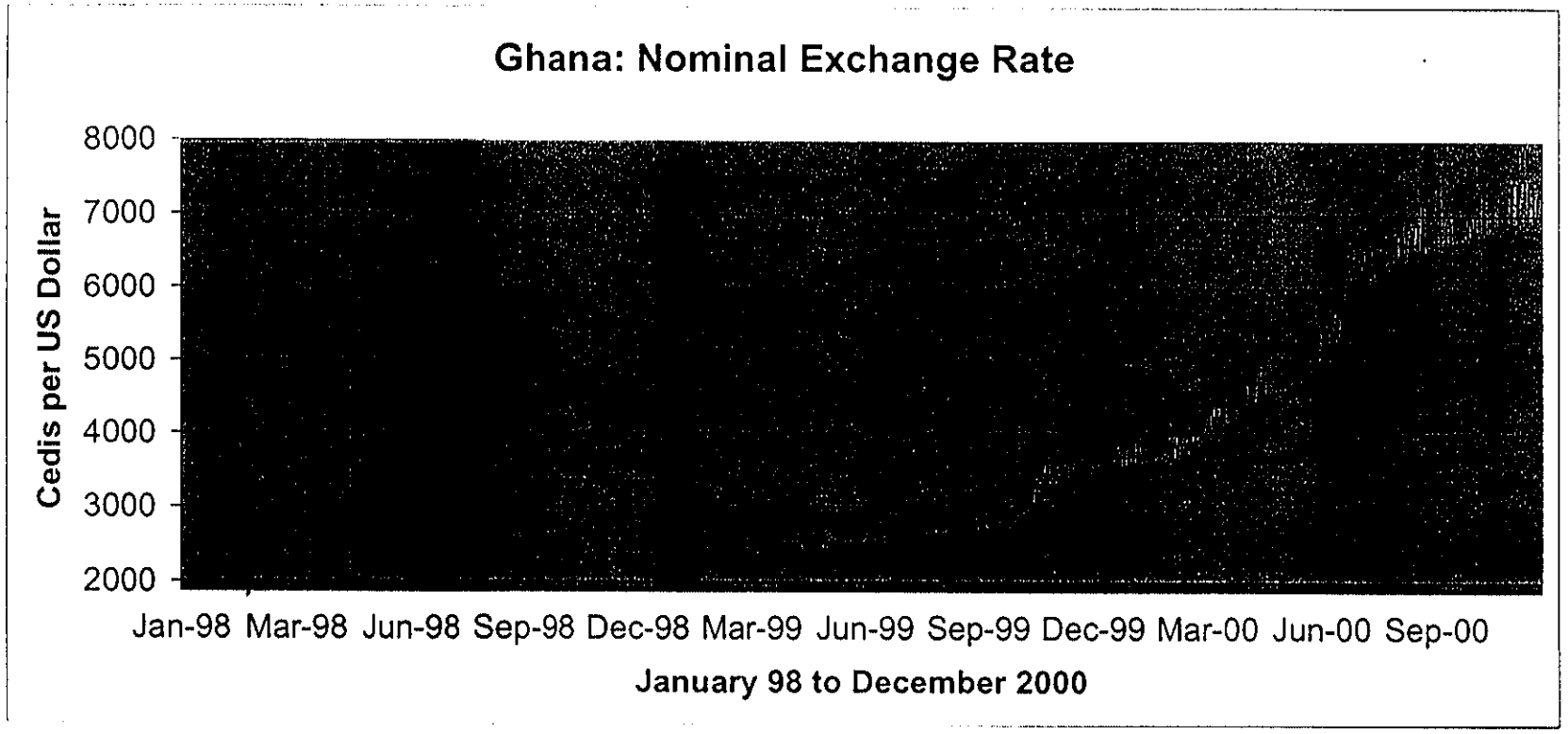

Sectoral Competitiveness, 1990-1998
1.3
1.2
1.1
1.0
0.9
0.8
90
91
92
93
94
95
96
97
98
All Tradables
Agriculture
Manufacturing


Ghana: Primary Deficits
Percent of GDP
18
16
14
12
10
8
6
4
2
0
-2
Broad budget
Inclusive


Financing of the Budget Deficit
% of GDP
20
15
10
5
0
-5
-10
-15
32.10
91
92
93
94
95
96
97
98
99
00
Inflation Tax
Domestic Borrowing
International Borrowing


Ghana's External and Domestic Debt Stocks
Percent of GDP
160
140
120
100
80
60
40
20
0
90
91
92
93
94
95
96
97
98
99
00
Domestic Debt
External Debt


Bank Financing of Government Borrowing
Billions of cedis
3,000
2,500
2,000
1,500
1,000
500
0
-500
-1,000
-1,500
Percent per year
30
25
20
15
10
5
0
-5
-10
-15
Jan-96
Mar-96
May-96
Jul-96
Sep-96
Nov-96
Jan-97
Mar-97
May-97
Jul-97
Sep-97
Nov-97
Jan-98
Mar-98
May-98
Jul-98
Sep-98
Nov-98
Jan-99
Mar-99
May-99
Jul-99
Sep-99
Nov-99
Jan-00
Mar-00
May-00
Government Domestic Debt
Foreign Exchange Exposure
Real Interest Rate


Ghana: Nominal Exchange Rate
Cedis per US Dollar
8000
7000
6000
5000
4000
3000
2000
Jan-98 Mar-98 Jun-98 Sep-98 Dec-98 Mar-99 Jun-99 Sep-99 Dec-99 Mar-00 Jun-00 Sep-00
January 98 to December 2000