Working Paper

Oil Revenue, The Real Exchange Rate and Sectoral Distortion in Angola

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Oil Revenue, the Real Exchange Rate and Sectoral Distortion in Angola

Abstract

This paper discusses the current status of the Angolan macroeconomy, with a particular focus on the role of oil income both now and in the future. Emphasis is placed on the distortions that can result from large inflows of foreign exchange both in terms of the real exchange rate and also in terms of bias in sectoral growth rates.

At the present time Angola is in the second year of a de facto policy of exchange rate based stabilization wherein the government is using large purchases of domestic currency to reduce the excess liquidity generated by deficit spending. This policy of "sterilization" of government spending has resulted in a quasi-fixed exchange rate at a level between 80 and 90 Kwanzas to the US Dollar. While inflation has declined substantially, prices have climbed more than 31% over the past year, a rate approximately half that of 2003. The result has been a sharp real appreciation of the Kwanza and a consequent decline in incentives to produce traded goods. Finding a sustainable way to transition from this expensive policy will be key to a successful rehabilitation and reconstruction of Angola's war torn economy.

By any measure the extent of the appreciation has been large. While it is impossible to assign a precise number to the extent of overvaluation it is possible to compare the current situation with the recent past to give an idea of what the nominal exchange rate would be if depreciation had kept pace with the inflation in consumer prices that has continued unabated over the past years. These calculations suggest that a nominal depreciation of as much as 50% would be needed to restore the real exchange rate to the level of only three to four years ago.

There can be little doubt that oil revenue and the real appreciation that it has caused has resulted in serious distortion of the economy even beyond that caused by war. While there have been various theoretical reformulations of the precise channels through which the classical "resource curse" symptom of a stagnating non-oil traded sector can occur, there is general agreement on the observed fact of this outcome. It is worth noting that virtually all channels identified in the literature can, at least potentially, be contributing factors in the Angolan case, including both the classical direct disincentive effects of an appreciated exchange rate, resource pull out of traded sectors toward urban and oil financed sectors, and an inability for non-oil sectors to invest due to high risk premiums caused by high variability in relative prices and hence profitability.

Using an index developed to measure the extent of sectoral distortion in oil economies, the extent of this sectoral distortion is evaluated in the Angolan case. The results show that the Angolan economy is among the most severely distorted of any included in previous analyses, including some oil economies in the Persian Gulf.

Oil Revenue and Long Run Growth in Angola

I. Introduction

Angola is more dependent on oil than any other country in Sub Saharan Africa and most other countries as well, apart from a handful of OPEC members. Contributing half or more of GDP, oil revenues condition and distort every other macroeconomic variable in the country, a situation that has existed for decades. While the degree of dependence varies with world oil prices, and has decreased somewhat at times, it will inevitably rise sharply over the next few years as new production comes on line. Angolan reliance on oil income is extreme even when compared to other countries with heavy dependence on mineral exports. Table 1 compares Angola to other mineral economies and shows that oil dependence is greater than in any other country listed, including those in the Persian Gulf.

The long standing nature of oil dependence in Angola together with its extreme nature has led to a severe case of what is commonly called "Dutch Disease" or the "resource curse", a syndrome common to countries which are the recipients of large (relative to their economies) inflows of foreign exchange. While the source need not necessarily be oil, this is the most common root of the problem in the period since the first oil shock in the early 1970's. In the Angolan case, the problem is exacerbated to some extent by diamond earnings though these are of secondary importance when compared to oil.

Appreciation of the real exchange rate is the main macroeconomic distortion resulting from large inflows of mineral income. As will be shown in detail below, there is a marked tendency for the Angolan Kwanza to appreciate in recent years, and continuation of this trend is one of the biggest threats to economic rehabilitation of Angola's war-torn non-oil economy. However, the appreciation tendency has been even more pronounced for the past year and a half due to the "hard Kwanza" policy of fighting inflation by supporting the exchange rate at a more or less constant level.

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Table 1
Mineral Income as Percent of Government Revenue and GDP
in Mineral Exporting Countries*

Country	Nonrenewable Resource Revenue as Percent of Total Government Revenue	Nonrenewable Resource Exports as Percent of GDP
Chile	8.6	10.1
Kuwait	59.3	39.7
Norway	14.4	12.1
Oman	77.3	35.9
Papua New Guinea	11.4	27.9
Venezuela	58.2	19.1
Angola	84.0**	48.5***

* All non-Angolan figures taken from Davis, Ossowski & Fedelino Eds. *Fiscal Policy Formulation and Implementation in Oil Producing Countries*, IMF 2003, p. 275
** Average of 1996-2003
*** Average of 2002 and 2003

A second major distortion resulting from the "resource curse" syndrome is a strong tendency toward urban bias and centralization of activities in the capital city. This is particularly pronounced in oil economies where the sole recipient of the revenues in the first instance is the central government. As the center of money and power, Luanda is the focal point of economic activity, and investment in oil-related activities (including rent-seeking) yield a far superior return to anything possible in rural areas. Accordingly, both labor and capital are drawn to the center, to the detriment of rural areas and rural activities. Within cities themselves there is a disincentive to manufacturing production due to competition from low cost imports resulting from the appreciated exchange rate. Service sectors and non traded goods production expand instead.

These common characteristics of mineral economies have been exacerbated in Angola by

two other factors:

1. Insecurity in rural areas through the civil war resulted in large portions of the country being virtually cut off from the outside world. Apart from the insecurity, the widespread destruction and deterioration of infrastructure, especially roads, added to the isolation in many areas.   Huge migrations of people seeking the relative safety of cities and towns skewed the population toward urban locations far more than would normally have been the case in a country of Angola's degree of development even after accounting for the "usual" resource curse effects.

2. Angola's government has historically been extremely centralized – indeed, the ruling MPLA was originally an avowedly Marxist party espousing a command economy strategy of development. While this is a thing of the past, the MPLA still retains strong centralizing tendencies, a factor which tends to increase the degree of urban bias seen. Though recent changes have moved toward more decentralization of government functions, there is still some way to go in this process.

The next section discusses the recent performance of the Angolan economy. This is followed by sections discussing theoretical issues in resource rich economies and measurements of the extent of economic distortion in Angola. This is followed by a discussion of the optimal path of consumption financed by oil wealth and the possibility of establishing an institutional mechanism for saving oil income. The final section discusses issues of what a sectoral investment program might look like and the political economy of implementing this in Angola.

II. Recent Evolution of the Angolan Economy

A. Growth

Annex Tables 1-5 and Figures 1 and 2 present data on the evolution of the Angolan economy over the past several years. It can be immediately seen that growth has been anemic at

best, and negative in many years. Only when oil prices and/or production rise does growth rise as well, reflecting the extreme oil dependence of the Angolan economy. This situation was in fact almost inevitable over the many years of conflict, when production in rural areas was virtually impossible.

The dislocations caused by the conflict make even the data that do exist less than completely reliable. The government's statistical network is largely non-existent outside of major cities, with even the size of the population a subject of some debate. Oil production estimates are better known, though the disposition of oil receipts is a major bone of contention between the government and international lending institutions. Allegations of huge diversions have been made but verification of these claims has been difficult.

It is striking that agriculture accounts for only a very small share of GDP even though the majority of the population is employed in that sector. This is a testimony not only to the dominance of oil in the economy but also to the extremely low productivity of much of smallholder production.

Overall GDP growth in 2003 was 3.4%, largely due to the performance of the oil sector. This growth rate is expected to have increased to about 12% in 2004 and 2005 and to go even higher in 2006 and beyond. These projections rely on oil production estimates and as such are contingent upon the state of the world oil market. While physical production estimates can be made with some level of confidence, world oil prices are, of course, dependent upon a host of factors well beyond the control of Angola.

The experience of other post-conflict countries indicates that a strong growth rate can be expected during the process of resettlement and reactivation of subsistence production. Indeed, when a family's production starts from zero, as is the case with millions of *deslocados*, any amount of production at all will look large when stated in terms of growth rates. The more difficult task will be the period after resettlement and rehabilitation, when growth depends on the success of rural development policies more generally. In addition, as farmers move beyond

Angola: GDP Composition
2003

Import Customs Duties
2%

Agriculture and Fishing
8%

Non-Trade Services
15%

Trade Services
14%

Construction
4%

Electricity
0%

Manufacturing
4%

Other Mining
5%

Crude and Gas
48%

- Agriculture and Fishing
- Crude and Gas
- Other Mining
- Manufacturing
- Electricity
- Construction
- Trade Services
- Non-Trade Services
- Import Customs Duties

Figure 1

Diamonds
9.9%

Other Exports
0.7%

Gas
0.4%

Oil-Derived
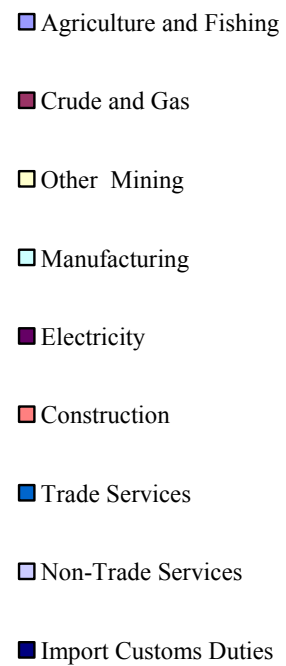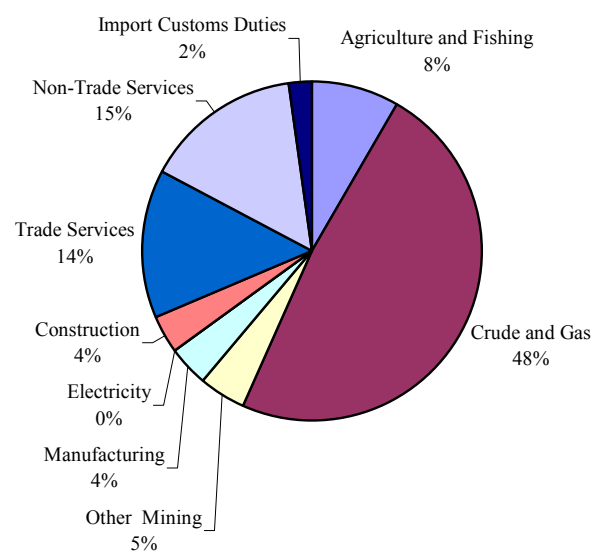Products
1.6%

Crude
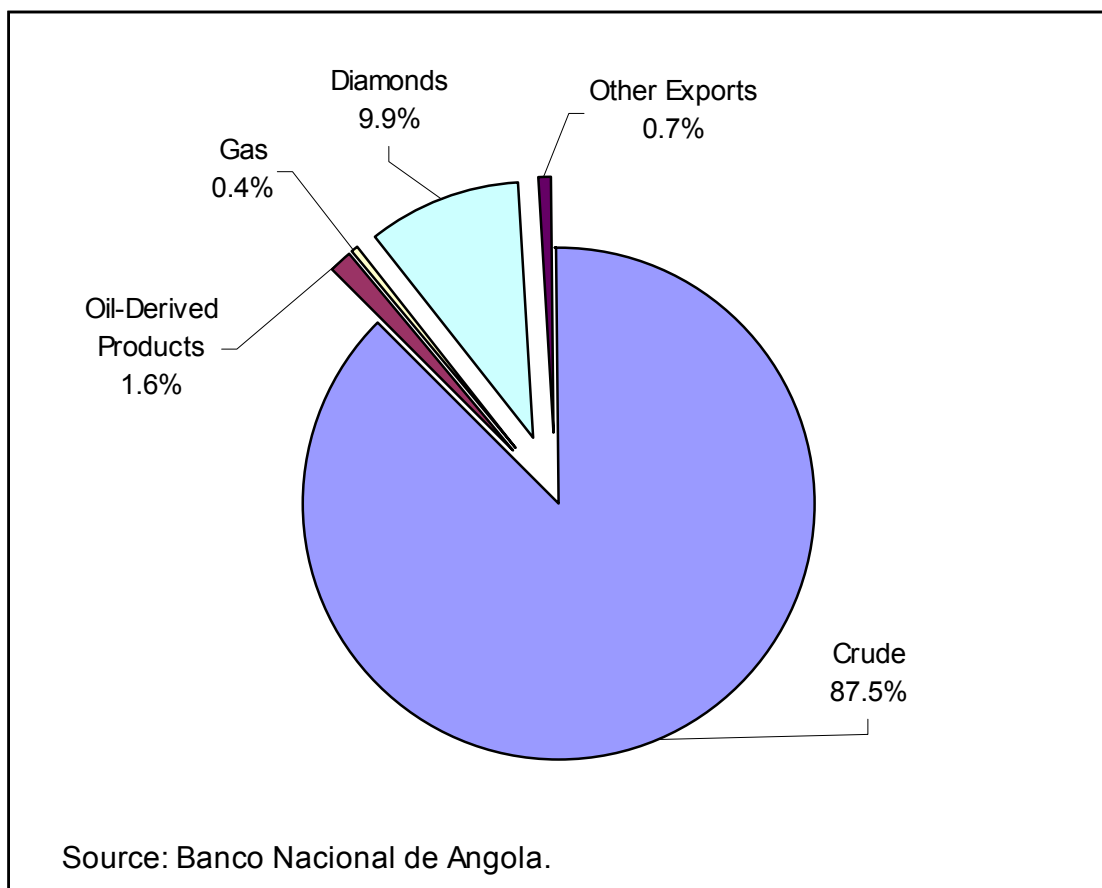87.5%

Source: Banco Nacional de Angola.

Figure 2: Composition of Exports - Average 2001-2002

subsistence production to selling marketed surplus in cities, the effects of exchange rate distortions and competing grain imports will also have a powerful effect on output growth. Projections currently forecast growth of between 10 and 15% per annum in agriculture over the next 4-5 years as the post-conflict surge in production occurs.

B. Inflation and Fiscal Deficits

For many years following independence Angola went through a series of hyperinflationary episodes followed by stabilization/control policy packages and then renewed inflation. The root cause of these cycles was monetization of fiscal deficits. Spending fueled by oil receipts would be unsustainable after a period of growth, with declining oil receipts from either production declines or adverse price movements often triggering increased money financing of deficits.

Throughout these cycles the government struggled to come to terms with the various international economic organizations but was unable to consistently adhere to the terms required by the IMF for approval. At this moment, Angola is at the beginning of a period in which very large new oil receipts pose both dangers and opportunities for macroeconomic management. While real exchange rate distortions are an inevitable problem given the size of the foreign exchange inflows, the new revenue also presents an opportunity for the government to establish control over fiscal operations and to try to maintain stability in macro aggregates.

In fact, there are signs of movement toward renewed stability already, with inflation in 2004 at about 35-40%, or about half of the 2003 figure of 75%. The improvement is largely due to the government's avoidance of money creation for deficit finance purposes together with a smaller deficit , a performance which continues the experience of 2003 which also showed a marked improvement over the previous year. The government has used a combination of oil receipts and international borrowing to cover its expenses, and though this creates other problems it has allowed the rate of inflation to be kept low when combined with the policy of

using foreign exchange reserves to buy Kwanzas in order to sterilize large oil financed expenditures. It is hoped that inflation in 2005 can brought to level even lower than the 35-40% registered in 2004. Figure 3 shows the evolution of the CPI in Luanda over the past five years. It can be seen that from an index of 100 at the end of 2001 the CPI has now reached a level of around 470.

There is still work to be done in achieving the degree of expenditure control needed for maintenance of stability in a sustainable manner. However, the government has made enormous progress in consolidating and unifying the reporting of government receipts and expenditures, so that the situation at the present time is markedly better than in the past. Even so, though a far greater share of expenditures are now accounted for within the system, there remain government entities and quasi-fiscal expenditures which still need additional attention.

Another area of substantial progress has been the accounting and management of foreign debt. Previously, there was no consolidated accounting of the country's foreign debt, so that planning and forecasting was likewise impossible. With the support of the IMF and the World Bank, substantial progress toward this goal has been achieved as well.

Perhaps the biggest area of concern for donors has been that of transparency. Inability to account for hundreds of millions of dollars of oil receipts dominated multilateral and bilateral relationships, and led to a deterioration of relations in the recent past. The government has been moving toward resolving this issue as well, and if it follows through on the plans made for auditing and accounting at Sonangol, the Banco Nacional de Angola, and the Treasury, there will be a marked improvement in donor willingness to fund a broad range of development projects. However, at the present time, particularly in the case of oil receipts, there remain unknowns in the figures.
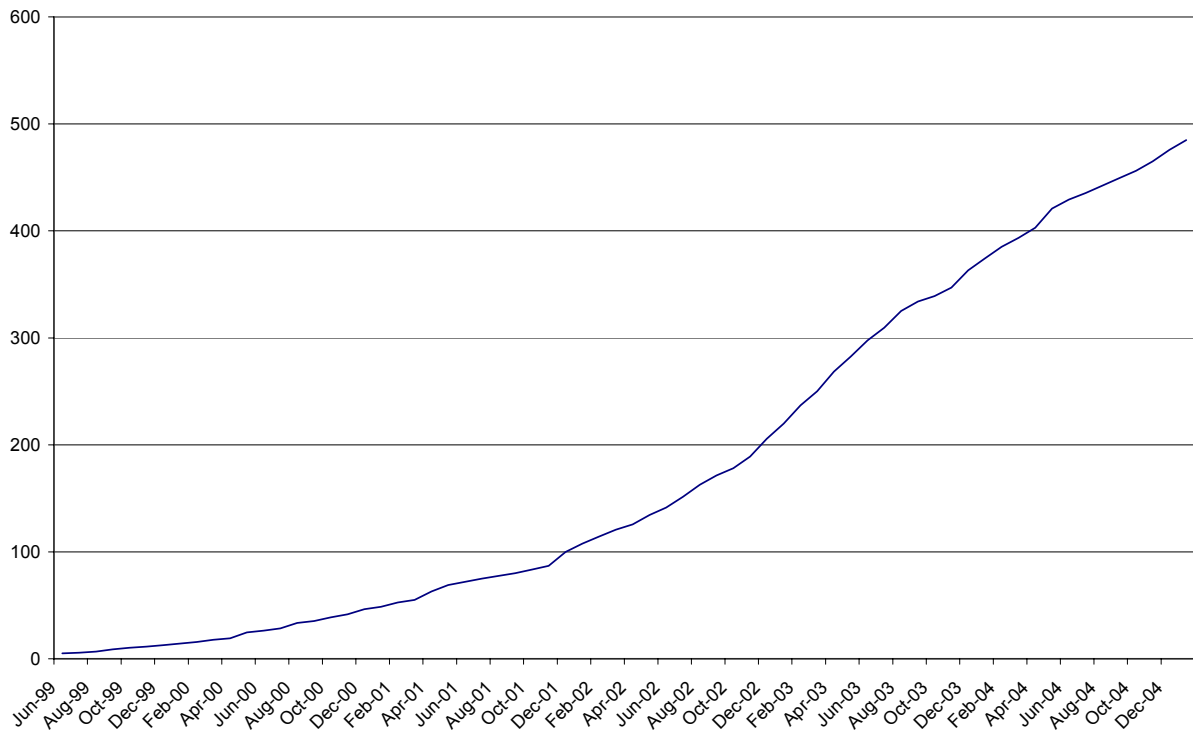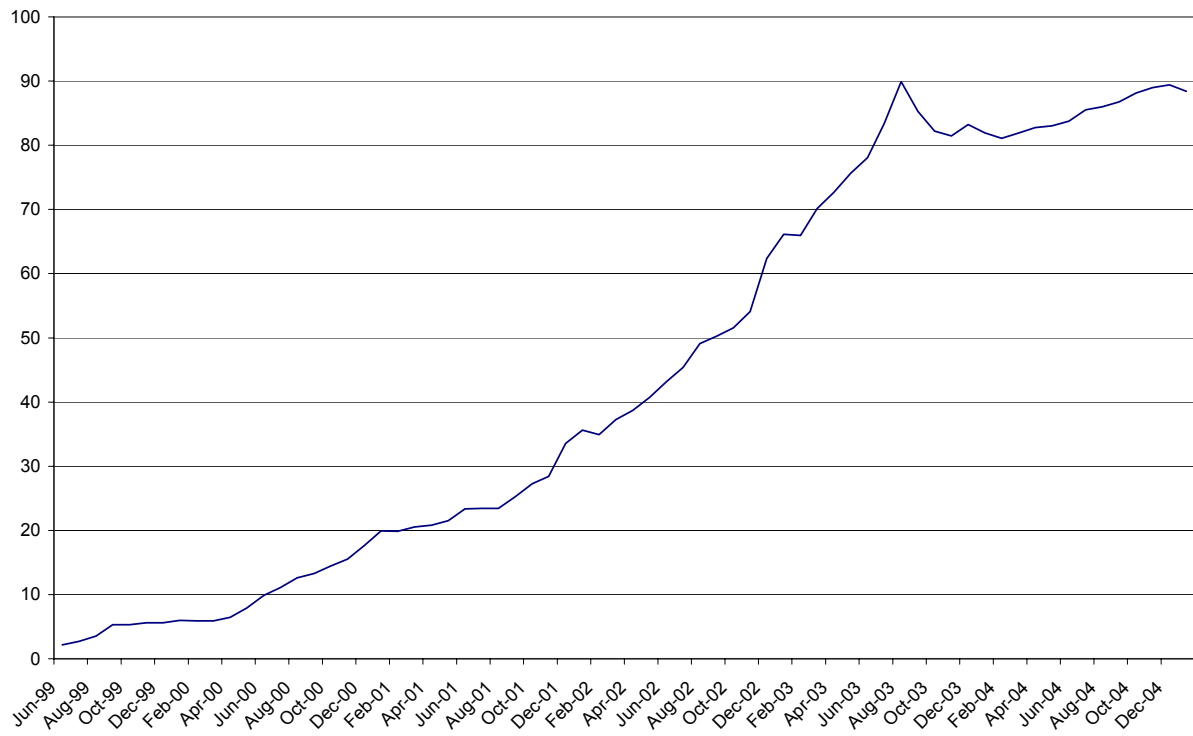
Figure 3: Angola - CPI in Luanda

Figure 4: Angola Nominal Exchange Rate - Kwanzas per US Dollar

C. Exchange Rates and the Balance of Payments

For virtually all of the 1990's, the official exchange rate was substantially overvalued, with the parallel market premium reaching levels well above 1000% at times. This is one area where the government has been very successful since the year 2000, with the parallel premium usually less than 1%. The Kwanza has stabilized at a level of around 80-90 to the US Dollar for the past year, but it should be noted that this is a period of substantial dollar depreciation vis a vis the Euro, so that the Kwanza has in reality been depreciating somewhat on a trade weighted basis. In spite of this, the Balance of Payments is unlikely to respond to any great degree since virtually all exports are composed of oil and imports are as yet quite price unresponsive, given the lack of domestic substitutes for many of the imports to coastal cities. Figure 4 shows the evolution of the exchange rate over the past five years. Of particular interest is the clear change in the trend as of August 2003 where the effects of government activity in the foreign exchange market can be seen in the stabilization and appreciation of the nominal exchange rate through the last five months of the year. Subsequently the government has permitted the exchange rate to slowly depreciate, reaching a level of about 89 by the end of 2004.

As noted above, the government has been financing the fiscal deficit largely with foreign exchange. Effectively this means using foreign exchange to buy Kwanzas in the open market with consequent dampening effect on inflation and the maintenance of an exchange rate substantially higher than would otherwise be the case. The natural reaction of most economists to this type of situation is that it is not sustainable - at some point the availability of foreign exchange to continue the policy will become limited, leading to a fall in the currency and a new policy regime.   However, in the Angolan case the government will be receiving huge inflows of oil receipts starting this year as new production comes on line, meaning that this policy can be continued far longer than would be the case in most other countries. The real question is whether this is the optimal use of foreign exchange reserves. A better outcome could be achieved with a reduction of the government deficit and consequent reduction in the need to use exchange reserves to finance monetary intervention.

Annex Table 2 shows the evolution of the Balance of Payments in recent years. It can be seen that there has been a sizable deficit on the current account in every year until 2000, which was a peak in the oil market. 2002 also saw a positive current account and this is expected again in 2004. While the trade balance is strongly positive in all years, the negative balance on the services account more than makes up for this difference in most cases. It is also evident that foreign loans account for a large share of the flows recorded in the balance of payments, including large interest payments in the current account.

D. Real Exchange Rate

The above discussion has unambiguous implications for the real exchange rate. With the nominal rate stable or appreciating over the past year, and with inflation recorded at 76% in 2003 and 31% in 2004, there has been a huge real appreciation. This has not been a conscious policy objective of the government. Rather, it is a result of the combination of policies in which the policy target is the rate of inflation, and the tool used to get there in the face of large fiscal deficits is the use of large quantities of foreign exchange for financing as discussed above.

This is the classic resource curse result and one which will be a major disaster for both domestic manufacturing and the agricultural sector if it continues. Every farmer wishing to produce maize for the coastal urban market has been effectively taxed over the past year by the real appreciation. To date, farmers in the interior have been protected by virtue of their very isolation. In addition, casual evidence indicates that they are still competitive in the inland provinces even at current exchange rates, but this will change if inflation continues while the exchange rate remains stable. Manufacturing in coastal cities is already in a precarious situation given the lack of transportation barriers for import competition together with the still poor state of utilities and other services necessary for production.

The extent of the appreciation of the real exchange rate can be seen in Figure 5. This index is calculated on the basis of the Banco Nacional de Angola's reported informal market

Figure 5: Real Exchange Rate Index for Angola

January 2001 = 100

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exchange rate against the US Dollar. The respective CPI's for each country are used to generate the real exchange rate. It should be noted that the choice of a base year (in this case January of 2001) is inevitably arbitrary. This is particularly so in Angola, where there is no point in the recent past which can be regarded as "normal" or "stable".

It is clear from the chart that there has been a steady appreciation of the real exchange rate over the 1999-2003 period. Since January of 2001 the appreciation has amounted to more than 50%, a very substantial change. As noted above, if the appreciation continues domestic producers will eventually be priced out of the market in coastal demand centers. The case of Nigeria is instructive with respect to this point: real exchange rate appreciation of the Nigerian naira was so extreme that domestic producers were in danger of being priced out of the domestic market altogether and not simply in coastal cities. The same could conceivably occur in Angola if appreciation continues unchecked.[1]

It is therefore encouraging to see the relative stability of the real exchange rate through the Fall and Winter of 2004 due to the government policy of allowing the nominal exchange rate to depreciate more or less in line with the rate of inflation. Even so, there remains a substantial built in level of overvaluation given the maintenance of the hard kwanza policy through a period of continued inflation. In addition, the most recent data indicate that the trend toward real appreciation has continued though at a more moderate pace than at times in the recent past.

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[1] A real example can illustrate this: Consider the cost of a ton of maize. The prices measured for a ton of maize in different points in the country in April 2004 in local markets upon delivery by informal truckers from farm areas were reported in World Bank 2004 to range from less than $100/MT in Kuanza Sul to $184 in Huambo, $230 in Benguela and more than 300 in Luanda. The prices of imported maize averaged about $115/ton in 2004 while transport from producing countries to Angola cost approximately $47.50. If we add $20 for port costs and taxes (a reasonable estimate) we arrive at a landed price of $184 per ton. It is immediately obvious that imported maize is cheaper than Angolan maize in the large coastal port cities. However, to arrive at the cost of imported maize in the interior, we must add the cost of trucking from the port to these locations. If we add the reported trucking cost of $50/MT from Lobito to Huambo to the landed cost of imported maize we get a figure of $244 which is only $60 above the local price. This competitive edge can be eroded either by further appreciation of the real exchange rate or alternatively by a drop in the cost of trucking maize from the coast to the interior. This could well mean that Angolan farmers could become uncompetitive with imported product *even in their own province or village.* The same result would occur if international maize prices were to fall. Annex Figures 1 and 2 show that international commodity prices are now at a relatively high point in terms of long run cycles, so this possibility cannot be discounted.

E. The Current "Hard Kwanza" Policy Regime

As noted above, for the past year and a half Angola has engaged in a policy of using oil revenues to stabilize the exchange rate at around 80-90 Kwanzas/US Dollar. This policy has been justified as a way to deal with inflation resulting from continued fiscal deficits and the money creation used to finance them. The standard response to this situation is a fiscal contraction combined with a devaluation of the currency in order to deal with exchange imbalances and problems in the balance of trade. It is clear that such a strategy, as a matter both of arithmetic and the record of experience of countries that have pursued it, can succeed in ending both the inflationary process and imbalances in the international accounts. Indeed, without fiscal control there can be no sustainable non-inflationary growth path.

However, the experience of other countries that have pursued such a contractionary path demonstrates that there is a serious cost to such a strategy - That is, the depth of the fiscal contraction required to achieve balance can be very large, with a correspondingly sharp recession or even depression as a result. This recessionary impact is likely to be more pronounced the less responsive the demand for imports to changes in their price. This is very probably the case in Angola, given the fact that Angolan substitutes for imported food and manufactures could not be easily produced in the extremely difficult conditions of a country only newly emerged from a long and destructive civil war.

Avoidance of a pronounced contraction had an obvious attraction to the government in the immediate aftermath of the newly achieved peace of 2002. With domestic need for expenditure so large due both to poverty alleviation and rehabilitation, a fiscal retrenchment would inevitably mean a delay in addressing these issues. Many critics have observed that most government expenditure was not (and still isn't) really devoted to rehabilitation or poverty alleviation, going instead to politically favored recipients. Even so, it can be argued that the very beginning of what for Angola is the third attempt at a peaceful beginning to development since independence is a particularly inopportune time to start a major campaign of stabilization based

fundamentally on cutting government support across wide swathes of the politically powerful in the country.

This meant the government had strong reasons to avoid a policy that would require an immediate fiscal contraction in favor of one which could achieve a measure of stability while postponing cuts in expenditure. In addition, the government needed a visible success in economic management in order to build the political capital to take on the difficult task of reducing expenditure. The policy chosen was exchange rate based stabilization. Though the government does not view its policy package as an intentional application of this strategy, it is in fact indistinguishable from similar efforts taken in several other countries over the past two decades. In Angola, the policy has meant that expenditures by the government which threaten to spark inflation due to the emission of large amounts of Kwanzas into the economy are countered by having the exchange authorities in the Banco Nacional de Angola purchase these excessive Kwanzas with dollars deriving either from oil receipts or from loans backed by promises of future oil receipts.

Among the benefits in the short run is the drop in the rate of inflation that we have witnessed in Angola over the past year and a half. The second main effect (and according to the government, secondary in importance) is a quasi-fixed exchange rate.[2] Preventing devaluation of the exchange rate has anti-inflationary influences of its own - hence the name "exchange rate based stabilization". The near fixity of the exchange rate means that there is a corresponding constancy in the prices of imported goods, eliminating inflationary pressures from this source. However, there are also significant costs to this policy - costs which grow as time goes on since increasing divergence of the exchange rate from what would be its market clearing rate in the absence of intervention requires increasing levels of intervention to maintain stability.

Fiscal control is an inescapable requirement of a sustainable exit from the current policy. Fiscal balance, at least in an intertemporal sense, is fundamental to <u>any</u> successful outcome to Angola's experience with exchange rate based stabilization. Though the delay in achieving this

initially need not mean the failure of the program or a necessary return to inflationary cycles, all observers agree that this adjustment <u>must</u> occur at some point if Angola is to emerge from this period to a sustainably stable macroeconomic situation rather than returning to a regime of alternating inflation and control.

There would be no reason to seek an alternative if the current policy regime could be continued indefinitely but historical experience in other countries and the situation in Angola today demonstrate that whether through action or inaction, something will change. The lack of a sufficient fiscal adjustment is one reason to expect that this, at a minimum, must be corrected before the policy regime can be ended. Some might object that Angola can go on for a long time due to its very large oil receipts which would allow funding of continued purchase of Kwanzas for a long time to come. However, there are three powerful reasons to reject this option. These are:

1. The Angolan government's figures indicate that these expenditures have reached **$250 million per month**.[3] This is a very large amount of money, and one which, if continued at its current rate, would imply an expenditure of $3 billion this year to hold the exchange rate at its current level. This amounts to more than $200 for every man woman and child in the country, an amount that could go far toward addressing poverty problems, not to mention the needs for investment in roads, bridges and other infrastructure destroyed in the war.

Furthermore, there is no reason to expect the amount needed to stabilize the exchange rate to remain at "only" $250 million per month. Since the beginning of the policy there has been an unmistakable upward trend in the amount necessary to keep the exchange rate at its current level - and there is every reason to expect this to continue as the divergence between the quasi-fixed rate and the "natural" rate that we would see if there were no intervention grows. This divergence is a result of the fact that inflation has continued (though at a decreasing rate) and is expected to amount to somewhere in the neighborhood of 35-40% in 2004.

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[2] It can be considered "quasi" fixed in that it is not fixed by decree as in a true fixed exchange rate system but rather is fixed in a de facto sense.
[3] See Jose Gasha and Gonzalo Pastor "Angola's Fragile Stabilization" IMF Working Paper WP/04/83 May 2004

2. As noted above, the appreciation of the "real" exchange rate over the past two years has made imports ever more competitive and exports ever less competitive as the inflation-driven rise of domestic costs has squeezed would-be producers who cannot raise their own sale prices because of the fixity of the exchange rate. Constant international prices in dollar terms coupled with a fixed exchange rate means that prices of exports and imports don't rise proportionately with other prices in the economy, and that these activities suffer from declining profitability and eventual abandonment as resources are attracted to other more profitable sectors. This is exactly the analysis that is most commonly used to explain the collapse of Nigeria's agricultural economy during its oil boom and period of extreme appreciation of the real exchange rate.

3. Perhaps the most important reason to seek an end to the current policy regime is the cost in terms of social and political conflict that could result. The country is now embarking on a period of national reconciliation in which the successful resettlement of dislocated populations and former combatants is of paramount importance. Part of the underpinnings of this success is the ability of these people to earn a living. They will have difficulty doing this if the scenario described above comes to pass. The result could be a re-migration to urban areas or a resurgence of instability and insecurity in rural areas.

Recent work[4] has shown that the long term failure to maintain stability in fiscal and exchange rate policy and outcomes has resulted in subnormal growth in Angola and Nigeria. Indeed, Angolan growth has been negative over the 1970-2000 period though this cannot be attributed solely to economic policy. Nevertheless, the experience of the past and of other oil countries demonstrates the need for an end to the stop-go cycles of the past if growth outcomes are to be improved over what has occurred in recent years.

III. Overvaluation, Economic Rehabilitation and Growth

A. *Economic Policy Response to Oil-Induced Distortions*

As noted above, the classical resource curse distortion noted in the economic literature is appreciation of the real exchange rate, which causes stagnation in non-oil traded sectors of the economy.[5] An alternative explanation focuses on the volatility of the real exchange rate in a relatively non-diversified economy such as Angola's and finds the failure to diversify to be a result of the inability of capital markets to bear the risk inherent in the wide swings in relative prices and profitability. The end result is similar to that in the classic resource curse literature in that there is underinvestment in non-oil traded activities and an inability of the capital structure to adjust when incentives are realigned in favor of these sectors.[6]

One possible reaction to this problem is to do nothing. From this point of view, since oil yields huge sums of money over long periods of time, dependence is not really a curse at all, and should simply be embraced as a new reality to be lived with. However, there are two problems with this:

1. Angola's current oil receipts are large but oil reserves will eventually be exhausted. Waiting until they run out (or world oil prices fall) is a recipe for disaster in the future since alternative economic income generation sources take many years to develop. Infrastructure planning and construction can take decades so that it is important to plan ahead.

2. The large size of current revenues compared to the economy as a whole is causing distortions which have very adverse consequences for large segments of the population. In fact the poorest

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[4] See, for example, Katz, Menachem, Ulrich Bartsch, Harinder Malothra and Milan Cuc "Lifting the Oil Curse - Improving Petroleum Revenue Management in Sub-Saharan Africa, International Monetary Fund, 2004.
[5] One of the best summaries of this literature can be found in Max Corden "Booming Sector and Dutch Disease Economics: A Survey," *Oxford Economic Papers* 36(3), November 1984, pp. 359-80.
[6] See Ricardo Hausmann and Roberto Rigobon, "An Alternative Interpretation of the Resource Curse", Chapter 2 in Davis, Ossowski and Fedelino Eds. *Fiscal Policy Formulation and Implementation in Oil Producing Countries*, IMF 2003.

segments of society are part of this majority, including the vast majority of rural smallholders who constitute the bulk of the population. Their welfare and incomes are important, which is why policies to address these problems are essential.

Economic theory suggests that one way to deal with the adverse effects of huge inflows of foreign exchange is to simply reduce the size of the flows by pumping out the oil more slowly. In effect, this strategy is to "save" the money by leaving it in the ground rather than spending it all as fast as possible. A macroeconomically equivalent strategy would be to save the money overseas (e.g. by buying investments in financial assets in other countries) rather than injecting it into the domestic economy.

While the outlines of a savings strategy are discussed below it is nevertheless likely that much if not most of oil and diamond revenue will be spent as it comes in over the near future. Certainly expenditures will remain large relative to the non-oil economy for the foreseeable future.

This implies:

1. Some degree of real appreciation of the Kwanza is virtually unavoidable even if every possible effort is made to keep it to a minimum. This means that there will be some inevitable disincentive effects on trade exposed sectors in terms of output prices, making necessary a strategy that takes this fact into account.

As noted above, the government has been supporting the exchange rate through purchases of excess liquidity with dollars. However, any expenditure of dollars which causes the Kwanza to appreciate also taxes non-oil traded sectors by so doing. Cheap manufactures undercut local producers in large urban markets on the coast. Cheap grain imports reduce the margin which domestic producers can hope to earn on their own output. This is particularly important at the present time, when one of the principal goals of agricultural policy is to reactivate national capacity to supply food needs.

2. Since the object of the strategy is to prevent the stagnation of sectors that will be necessary to sustain growth once the oil runs out, it is essential to reach some conclusion as to which these sectors are.

In economic terms the answer to this question is clear. The root of the problem is that an appreciated exchange rate masks the comparative advantage of those sectors of the economy that would be exporting (or substituting for imports) in a non-distorted environment. So, in terms of developing a sectoral strategy, the primary issue is to determine in which sectors the country has a comparative advantage. While question cannot be answered with any real precision given the dynamic nature of comparative advantage and the inability of direct observation of cost structures in a distorted economy such as Angola's it is nevertheless possible to say with some certainty that there are several areas where efficient import substitution and/or export could be easily achieved given proper investments and incentives.

As noted above, prior to the oil boom and conflicts of the 1980's and 1990's Angola had a strong light manufacturing sector and a large agricultural export sector. Growth in the former is typical of countries in the early to middle stages of structural transformation and the standard nature of the technology involved combined with Angola's low wage structure and the ready availability of raw materials in the form of food and fiber make it extremely likely that such activities can be efficiently conducted in Angola.

The agricultural sector is more dependent upon each country's natural resource base but here both history and agroclimatic conditions make it clear that Angola has some of the best basic conditions for agriculture to be found in Sub Saharan Africa. While not every crop can be grown profitably the range that can be produced is quite wide and the late colonial history of large grain and other exports points to the capacity of Angola for efficient agricultural production that is competitive on world markets.

B. The problem of agriculture

The analysis above is particularly relevant for the agricultural sector since an appreciated real exchange rate lowers the relative price of those goods which are exposed to international trade while at the same time raising the relative price of so-called "home goods" (or non-traded goods) which are not traded internationally. Agriculture is perhaps the prototypical example of a sector which is trade-exposed. An appreciated exchange rate means lower prices for all of those agricultural outputs which are either exported, or which face competition from imports. Angola's shift from a major agricultural exporter to an importer is a result not only of the civil war, but also of these exchange rate distortions.

It is agriculture which has borne the brunt of these distortions given the fact that Angola enjoys a strong potential comparative advantage in the production of agricultural products. Indeed, prior to independence and the beginning of oil revenue flows, Angola was one of the four largest exporters in the world of coffee, and was also a major exporter of maize, a crop which is produced almost exclusively by smallholders using largely traditional technologies. In addition to major exports, domestic agricultural production also supplied virtually all food needs of Angolan cities both on the coast and in the interior.

Now that the cessation of hostilities has allowed farming populations to return to their farms, Angola is in a position to reclaim its status as a major agricultural producer, but market links between interior producing regions and coastal demand centers and ports remain in poor condition. Angola is now a large food importer, while exports of formerly important cash crops such as coffee have dwindled to virtually nothing. Pervasively low prices for agricultural outputs will contribute to a stagnation of production and in the long run cause a diversion of investment and labor away from this sector and toward other pursuits.

This is particularly troubling in the Angolan case given the very close association of many of the poorest parts of the population with agricultural sources of income. Stagnation in

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agriculture means stagnation in efforts to alleviate poverty and the growth of major problems such as excessive urban migration and deterioration of traditional society in the countryside. The political economy implications of this are especially noteworthy in the Angolan case given the recent history of conflict between the government and UNITA and are discussed at greater length below.

C. Oil Income, Rents and Corruption

Another line of research in the economics literature points to the propensity of mineral (and especially oil) dependent economies to develop problems of rent seeking and corruption.[7] The argument is that the existence of oil income results in a scramble for these rents rather than efforts to engage in more productive activities. In addition, these effects can cause institutions to become weak, which will itself have a detrimental effect on growth. Isham et. al. find such a relationship in a cross section of countries[8] while Sala-i-Martin and Subramanian[9] study the case of Nigeria.

No observer of the Angolan experience would deny the powerful role that mineral income has played both in prolonging the civil war and in inducing corruption in various institutions of the government. Frynas and Wood have documented direct linkages between oil bonus payments and government offensives during the conflict[10] while numerous authors have written of the corruption surrounding oil revenue in Angola.[11] Even casual empiricism confirms the entrenchment of corruption in everyday dealings with the government and few would argue against the corrosive influence of oil money on many of the institutions that deal with it.

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[7] See for example, Mauro, P, (1995) "Corruption and Growth" *Quarterly Journal of Economics* Vol. 90 pp. 681-712, and Leite, C. and M. Weidmann (1999) "Does Mother Nature Corrupt? Natural Resources, Corruption and Economic Growth, IMF Working Paper WP/99/85.

[8] See Isham, J, L. Pritchett, M. Woolcock, and G. Busby 2003 "The Varieties of the Resource Experience. How Natural Resources Export Structures Affect the Political Economy of Economic Growth" mimeo, World Bank 2003.

[9] See Xavier Sala-i-Martin and Arvind Subramanian, "Addressing the Natural Resource Curse: An Illustration from Nigeria" NBER Working Paper 9804, June 2003.

[10] See Frynas JG, Wood G. "Oil & War in Angola", *Review of African Political Economy* 28(90): 587-606, 2001 for a discussion of this phenomenon.

The work of Sali-i-Martin and Subramanian on Nigeria is perhaps the most directly relevant to the Angolan case. They argue that corruption and institutional weakness has had a more important effect on Nigeria than has distortion of the real exchange rate. They argue that even though Nigeria invested a large proportion of their windfall, the weakness of their institutions resulted in "bad" investments with very low returns. They further argue against the importance of real exchange rate effects due to the fact that agriculture has remained stagnant even after appreciation has been reversed. Their solution is that oil revenues should simply be distributed to citizens rather than spent by the government and that this would result in an increase in welfare.

While they may be correct in an ex post sense in the Nigerian case, there are reasons to doubt that their result is entirely applicable to the current Angolan situation. First, to say that Nigerian investments were bad is not to say that all government investments will necessarily be bad. Certainly the case of Indonesia provides a counterexample while in Angola there is no question that there are massive investments in public goods that are needed to rehabilitate the damage caused by the war. Second, there are various reasons for the non-reversibility of agricultural stagnation, among them the fact that most migrants to urban areas were averse to remigration to rural areas, as well as adverse international market conditions for several of Nigeria's former exports. Indeed, it can be argued that the difficulties of reversing agricultural stagnation strengthen rather than weaken arguments for preventing this problem in the first place. Third, distribution of oil proceeds may well result in superior distributional consequences in a static sense, but they ignore intertemporal distribution issues between current and future generations. This is particularly important in Angola given the huge need for public investments in physical infrastructure of all kinds as well as in education to allow the accumulation of human capital.

Nevertheless, Sala-i-Martin and Subramanian make a valid point in emphasizing the importance of institutional weakness in exacerbating economic distortion and stagnation in oil

[11] See, for example, Ian Gary and Terry Lynn Karl, "Bottom of the Barrel – Africa's Oil Boom and the Poor",

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economies. There is no doubt that efforts to promote transparency together with ongoing efforts to improve the formulation and implementation of fiscal policy are key prerequisites for Angola to successfully manage its oil income. At the same time, it will also be important to do whatever is possible to ameliorate the problems of real exchange rate appreciation and the distortions that this can cause.

The next section of this paper discusses the degree of exchange rate appreciation that has occurred, and is followed by a discussion of the extent of sectoral distortion that has resulted, and an intertemporal analysis of Angolan oil income in order to arrive at a judgment as to the amount of consumption that can be financed by oil revenue.

IV. "Equilibrium" Real Exchange Rate

It would be a mistake to imagine that it is possible to estimate exactly where the equilibrium real exchange rate for Angola is. There are several reasons for this:

- There is so much instability in the economy since independence that there is no point which can be considered to be "in equilibrium"

- Regardless of past equilibrium, the structure of the economy has changed so much due to the civil conflict and oil revenue that any past equilibrium is a poor guide to the future. This is true *a fortiori* when we consider even the known changes in store in the next decade including but not limited to large new oil receipts and resettlement and rehabilitation of the war-torn economy.

- Data are insufficient to allow econometric analysis of the issue

Nevertheless, it is instructive to look at the question from the point of view of restoring the value of the real exchange rate to different points in the past. That is to say, if we were to

posit a change in the nominal exchange rate that would "undo" the real appreciation that has occurred since various points in the past, how large would that depreciation be?

Figure 5 and Table 2 below provide the answers to this question. In November of 2004 the real exchange rate index had a value of 51 given a base period of January 2001, and has in fact been stable at about this same level since May of 2004. As noted above, the relative stability of the index for the past seven months shows that nominal depreciation is now keeping pace with inflation but does nothing to address the large built-in appreciation left over from the past. In August of 2003 at the beginning of the "hard kwanza" policy the real exchange rate index had a value of 71. Few observers of the Angolan economy would argue that the Kwanza was undervalued in real terms at that time.

In order to offset the almost 40% real appreciation since that time the nominal kwanza/dollar rate today would need to be 125. Taking other dates further in the past yield larger required devaluations. The period from around April of 2001 to February of 2002 was one of relative stability in the real exchange rate when it fluctuated in a relatively narrow range around a value of 80. Restoration of the real exchange rate index to this level would require a current nominal rate of 140. Going further back to January of 2001, a return of the index to its earlier level would imply a current nominal rate of 175.

Another interesting question is the extent to which future oil-derived foreign exchange inflows can be expected to cause further real exchange rate appreciation. While there is no way to predict this without knowledge of how the money will be spent, it is possible to make some observations:

- The short run effect of the inflows on the real exchange rate depend crucially on whether the money is spent on traded or non-traded goods. To take an extreme case, if all of the money were immediately spent on imported goods there would be little or no impact effect on the real exchange rate since there would be no money spent in the national economy. Conversely, if all of the money were spent on non-traded goods (e.g. construction in Luanda, hiring workers, etc.)

then there would be an immediate and large impact. Van Wijnbergen's econometric estimates of the elasticity of the real exchange rate to foreign aid inflows in a cross section of African countries bears witness to the wide range of possible outcomes. His estimates ranged from a low of 0.20 to a high of 0.87 over the time period studied. His estimates of the elasticity of real wages to aid inflows ranged even higher, with values reaching as high as 2.50[12]

- The <u>long run</u> effect depends on whether the money is spent on consumption or investment goods and in the latter case, on whether the investment is directed toward increasing productive capacity in the traded or non-traded sectors. In the event that a large portion of the aid is devoted to increasing productive capacity, then this can help ameliorate inflationary pressures in the long run even though the short run impact might be inflationary. This could happen if, for example, a large immediate expenditure on roads generated high demand for non-traded goods (from high labor requirements and domestic inputs) though the long run effect was to increase supplies of both traded and non-traded items.

Buffie, et. al. 2004 present a model of capital flows and exchange rates in Africa that demonstrates the different effects that can be expected from different values of the parameters.[13] Their analysis shows that <u>given a credible commitment to low inflation</u> a managed float of the currency is the best policy alternative. This result is strengthened by the presence of large currency substitution effects such as those that exist in Angola. When a large amount of domestic wealth is held in the form of foreign exchange the large capital inflows that can result require a more flexible and ad hoc approach by the authorities than a simple rule (floating, pre-announced crawl, etc.) can permit.

Given all of these considerations it is likely that a minimum requirement for Angola to avoid real exchange rate related problems in the near future is to maintain the recent policy of depreciating in accordance with domestic inflation. In addition, some additional depreciation to make up for the massive past appreciation will also be needed. Management of this transition

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[12] See Sweder Van Wijnbergen, "Aid, Export Promotion and the Real Exchange Rate: An African Dilemma?" Discussion Paper No. 199, World Bank 1996

will, however, need to be conducted carefully since too rapid a move or a move prior to adequate fiscal reform could spark a new round of inflation.

Table 2

Depreciation Needed to Restore Real Exchange Rate Index to Past Levels

In Order to Restore Real Exchange Rate the Level of:	When the Real Exchange Rate Index had a Value of:	The Nominal Kwanza/Dollar Rate of January 2005 Would Need to be Depreciated to:
January 2001	100	180
April 2001 - February 2002	80	144
August 2003 - Beginning of "Hard Kwanza" Policy	71	128
January 2005 (present)	49	88.42 (actual rate)

V. Measuring the Extent of Sectoral Distortion

The result of the syndrome described above is one of sectoral distortion where traded sectors other than those producing mineral revenue shrink while non-traded sectors grow. Measurement of this effect requires a counterfactual since the process of structural transformation in all growing economies results in the growth of some sectors and the shrinkage of others in terms of shares in output. Chenery and Syrquin and various collaborators have analyzed this process exhaustively in various studies[14] which define "normal" paths of structural

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[13] Edward Buffie, Christopher Adam, Stephen O'Connell, and Catherine Patillo, "Exchange Rate Policy and the Management of Official and Private Capital Flows in Africa", IMF Staff Papers Vol. 51, 2004

[14] See for example Hollis Chenery, Sherman Robinson and Moshe Syrquin, *Industrialization and Growth* Oxford University Press 1986

transformation as countries transition from low income per capita to high.

Alan Gelb and associates use this "normal" structure to define a Dutch Disease Index to measure the extent of sectoral distortion in oil producing economies.[15] This index is defined as:

$$DD = (SN_{ag} + SN_{ma}) - (S_{ag} + S_{ma})$$

SN_{ag} and SN_{ma} are the "normal" percentage shares of the traded sectors (agriculture and manufacturing) while S_{ag} and S_{ma} are the shares of these same sectors in the oil exporting countries. Gelb calculates this index for seven different countries in 1981 in the aftermath of the second oil shock in the 1970's. It should be noted that Gelb modifies the Chenery/Syrquin sectoral classification somewhat to eliminate construction from manufacturing since this is a predominantly non-traded sector which should not properly be considered as part of SN_{ma} in the analysis. The data to perform this decomposition were not available for this analysis, but the results are nevertheless interesting.

Though an exact calculation of the index for Angola cannot be done without decomposing the Chenery/Syrquin benchmarks it is still possible to calculate upper and lower bounds for the value. Since the benchmark measure of the size of the traded manufacturing sector (incorrectly) includes construction, a measure of Angolan manufacturing will overstate the value of the index somewhat if it excludes construction, while including construction will understate the value of the index due to the presumably larger than "normal" size of the non-traded construction sector in the now distorted 2003 economy. Accordingly both values are presented here since the true value lies somewhere between the two extremes.

Tables 3 and 4 show details of the calculation for Angola and the values of the index obtained by Gelb for his sample countries. Following Gelb, the Angolan per capita GDP of $950 in that year is deflated (using the US GDP deflator) to 1970 dollars as used in Chenery, Robinson and Syrquin's 1986 computation of the "standard solution" at an income level of $140 per capita.

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[15] Alan Gelb *Oil Windfalls, Blessing or Curse?* Oxford University Press 1988.

This corresponds fairly closely to 2003 Angolan non-oil GDP of $128 in 1970 prices. Since Chenery and Syrquin chose this benchmark because it marks an income level before the onset of structural transformation, it is safe to use these same output shares at a slightly lower per capita income since their analysis indicates that no significant difference is observable at levels lower than this.

Angolan results are presented both with and without construction included in S_{ma} since as noted above it was not possible to disaggregate SN_{ma} to exclude construction from the "standard solution". In either case it is clear that Angola is at the extreme of sectoral distortion observed in Gelb's sample. The index value of 29 is higher than any reported by Gelb, while the value of 21 is higher than all but one. It is interesting to note that on a sectoral basis both Angolan agriculture and manufacturing account for about half as large a share in non-oil GDP as would be expected in a non-mineral country at the same income level. It is safe to conclude that regardless of small differences in computation, Angola ranks among the most extremely distorted in terms of sectoral production shares of any oil exporting country outside of the Persian Gulf region.

The distortion in the index results primarily from the extremely small share of GDP produced in the agricultural sector in Angola at the present time. While much of this can be attributed to the dislocation caused by the long period of hostilities, the distortions caused by exchange rate overvaluation will impede the reactivation that would ordinarily be expected after the end of the conflict. The clearly inflated size of the non-tradables sector is all the more notable given the exclusion of construction from that sector in the Angolan figures. Were they included, the 74% share of nontradables in non-oil GDP would far outweigh the 47% in the benchmark standard solution.

Table 3 Dutch Disease Index and Sectoral Shares in GDP : Chenery/Syrquin "Standard Solution" vs. Angola in 2003

Sectors	Chenery/Syrquin Standard Soln.	Angola 2003	Angola 2003
		% of total	% of non-oil
Primary	38	61	
of which			
Agriculture	37	8	17
Mining	1	53	
Manufacturing	15	3.8	8
of which			
Food	5		
Consumer Goods	6		
Producer Goods	3		
Machinery	1		
Construction		3.6	8
Nontradables	47	31	66
of which			
Social overhead	11		
Services	36		
DD index	**ex. Construction**		29
DD index	**incl.Construction**		21

Chenery/Syrquin figures from Chenery, Robinson & Syrquin op. cit. p. 49. Angola figures from 2004 IMF Article IV consultation report.

Table 4

Dutch Disease Index – Various Countries

Country	Dutch Disease Index
Algeria	11.2
Ecuador	2.1
Indonesia	-1.5
Iran	8.4
Nigeria	17.2
Trinidad	24.7
Venezuela	12.6
Angola (lower bound)	21
Angola (upper bound)	29

Source: Angola from Table 3. Other countries from Gelb 1988 p. 88.

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ANNEX

Table A1. ANGOLA: Gross Domestic Product									
	Nominal GDP in Billions of Kwz					Percentage Composition			
	1992	1998	2002	2003		1992	1998	2002	2003
Agriculture and Fishing	0.000000503000	0.3300000	79.5789000	84.85000		14.3	12.9	15.5	8.2
Crude and Gas	0.000001258000	0.9596000	251.0000000	498.50000		35.8	37.5	48.9	48.3
Other Mining	0.000000090000	0.1357000	22.5000000	46.94000		2.6	5.3	4.4	4.6
Manufacturing	0.000000140000	0.1600000	17.5657000	39.30000		4.0	6.3	3.4	3.8
Electricity	0.000000002394	0.0019000	0.1813000	0.44500		0.1	0.1	0.0	0.0
Construction	0.000000189000	0.1560000	16.3751000	36.75000		5.4	6.1	3.2	3.6
Trade Services	0.000000591000	0.4899000	67.0941000	146.80000		16.8	19.2	13.1	14.2
Non-Trade Services	0.000000609000	0.2674000	50.3000000	155.90000		17.3	10.5	9.8	15.1
Import Customs Duties	0.000000131000	0.0553000	8.5229000	21.95000		3.7	2.2	1.7	2.1
Total GDP	0.000003513394	2.5558	513.1180	1031.4350		100.0	100.0	100.0	100.0

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Table A2. ANGOLA: Balance of Payments, 1998-2004
(in millions of dollars; unless otherwise stated)

	1998	1999	2000	2001	2002	2003	2004 Est.
Current account	-1,867	-1,710	796	-1,431	-150	-719	1,450
Trade balance	1,464	2,047	4,881	3,355	4,568	4,028	7,239
Exports, f.o.b.	3,543	5,157	7,921	6,534	8,328	9,508	13,971
Crude oil	3,091	4,491	7,120	5,803	7,539	8,537	12,904
Diamonds	432	629	739	689	638	788	838
Other	20	37	62	43	45	35	39
Imports, f.o.b.	-2,079	-3,109	-3,040	-3,179	-3,760	-5,480	-6,732
Services (net)	-2,514	-2,442	-2,432	-3,316	-3,115	-3,120	-3,556
Receipts	122	153	267	203	207	201	221
Payments	-2,635	-2,595	-2,699	-3,518	-3,322	-3,321	-3,777
Income (net)	-969	-1,372	-1,681	-1,561	-1,635	-1,726	-2,336
Of which: Interest due 1/	-504	-569	-597	-539	-354	-268	-339
Current transfers (net)	152	56	28	91	32	99	102
Financial and capital account	304	1,664	-450	954	-508	934	1,224
Capital transfers (net)	8	7	18	4	0	0	0
Direct investments (net)	1,114	2,472	879	2,146	1,643	1,652	677
Medium- and long-term loans	-974	-291	-766	-618	-393	298	1,303
Disbursements	593	1,501	1,610	1,619	1,048	1,890	2,414
Amortizations	-1,567	-1,791	-2,376	-2,237	-1,441	-1,592	-1,110
Other Capital (net incl. E+0 2002-04)	156	-524	-580	-577	-1,758	-1,016	-757
Net errors and omissions	377	-80	-51	-365	-	-	-
Overall balance	-1,186	-126	295	-842	-658	215	2,674
Net international reserves (-increase)	319	-530	-631	508	207	-301	-817
Exceptional financing	868	656	336	334	451	87	-1,857

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Table A2. ANGOLA: Balance of Payments, 1998-2004 (cont.)
(in millions of dollars; unless otherwise stated)

	1998	1999	2000	2001	2002	2003	2004 Est.
Memorandum items:							
Current account (in % of GDP)	-29.0	-28.1	9.0	-15.1	-1.4	-5.2	7.1
Exports of goods & services (in % of GD)	56.9	87.2	92.4	71.1	79.1	70.2	69.7
Imports of goods & services (in % of GD)	73.2	93.7	64.7	70.7	65.6	63.7	51.6
Debt service ratio 2/	56.5	44.4	36.3	41.2	40.0	39.0	17.0
Gross international resources (end of period)	203	496	1,198	732	375	636	1,453
In months of imports of goods & services 3/	0.4	1.0	2.1	1.1	0.5	0.7	1.5
In months of debt service 3/	1.0	2.0	5.2	3.9	2.4	5.3	9.6

Source: Banco Nacional de Angola
1/ Including late interest from 1999 onwards.
2/ Medium- and long-term debt service due in percent of exports of goods and services.
3/ In months of next year's imports or medium- and long-term debt service. In 2002, using current year's data.

Table A3. ANGOLA: Commodity Composition of Exports, 1998-2003
(In Millions of U.S. dollars, unless otherwise indicated)

	1998	1999	2000	2001	2002	2003 Est.
Total exports	3,543	5,157	7,921	6,534	8,328	9,515
Crude oil	3,018	4,406	6,951	5,690	7,539	8,537
Volume (millions of barrels)	251	254	256	251	311.1	302.6
Price (U.S. dollars per barrel)	12	17	27	23	24.2	28.2
Refined petroleum products	62	75	132	93	95	139
Volume (thousands of metric tons)	666	720	734	675	674	718
Price (U.S. dollars per metric ton)	93	105	180	137	142	193
Liquefied Natural Gas	11	9	37	20	10	16
Volume (thousands of barrels)	1,094	624	1,475	1,068	636	636
Price (U.S. dollars per barrel)	10	15	25	19	16	25
Diamonds	432	629	739	689	638	788
Volume (thousands of carats)	2,765	3,806	4,319	5,159	5,020	6,060
Price (U.S. dollars per carat)	156	165	171	134	127	130
Other	20	37	62	43	45	35

Source: Banco Nacional de Angola

Table A4. ANGOLA: Public and Publicly-Guaranteed External Debt and Debt Service, 1999-2005 (in millions of U.S. dollars)	1999								After
	Debt Outstanding	Arrears	2000	2001	2002	2003	2004	2005	2005
Principal									
Total, medium-and long-term debt	8,782.4	3,749.0	953.8	804.6	640.8	463.6	326.5	256.9	2,030.3
of which: oil guaranteed 1/	2,689.1	449.9	644.3	381.3	379.2	132.1	114.2	94.4	493.7
Multilateral	243.1	90.0	5.0	5.0	6.0	5.6	6.0	5.5	120.0
Official bilateral	5,344.4	2,351.0	296.0	293.3	283.3	272.6	160.1	151.5	1,536.8
Paris Club pre-cutoff date	957.6	850.0	58.0	7.0	5.0	4.4	3.4	3.4	26.4
ODA	119.6	62.0	8.0	7.0	5.0	4.4	3.4	3.4	26.4
Non-ODA	838.0	788.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0
Paris Club post-cutoff date	1,959.6	1,042.0	227.0	160.0	152.0	142.0	30.4	21.8	184.4
ODA	381.2	56.0	26.0	30.0	30.0	24.0	23.1	16.8	175.3
Non-ODA	1,578.4	986.0	201.0	130.0	122.0	118.0	7.3	5.0	9.1
Other official bilateral creditors	2,427.3	459.0	11.0	126.3	126.3	126.3	126.3	126.3	1,326.0
Not previously rescheduled	360.0	349.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0
Rescheduled	2067.3	110.0	0.0	126.3	126.3	126.3	126.3	126.3	1,326.0
Private creditors	3,194.9	1,308.0	634.5	385.3	203.9	56.1	133.7	99.9	373.5
Interest on arrears		260.0	…	…	…	…	…	…	…
New debt	…	…	18.3	121.0	147.6	129.3	26.7	0.0	0.0
Short-term debt	809.0	691.0	118.0	0.0	0.0	0.0	0.0	0.0	0.0
Total public debt	9,591.4	4,440.0	1,071.8	804.6	640.8	463.6	326.5	256.9	2,030.3
Memorandum items: Total public debt									6,186.0
Oil guaranteed government debt 1/	2,689.1	449.9	644.3	381.3	379.2	132.1	114.2	94.4	493.7
a. to bilateral creditors	1,717.8	444.6	161.3	139.8	137.7	132.1	114.2	94.4	493.7
Brazil	708.9	0.0	39.3	36.0	48.1	73.5	72.8	72.3	366.9
Spain	770.7	400.1	70.4	57.3	51.9	31.5	20.7	12.0	126.8
Portugal	238.2	44.5	51.6	46.5	37.7	27.1	20.7	10.1	0.0
b. to other creditors	846.0	0.0	423.0	211.5	211.5	0.0	0.0	0.0	0.0
c. Sonangol w/ gov't guarantee	125.3	5.3	60.0	30.0	30.0	0.0	0.0	0.0	0.0

Table A4. ANGOLA: Public and Publicly-Guaranteed External Debt and Debt Service, 1999-2005 (cont.) (in millions of U.S. dollars)

	2000	2001	2002	2003	2004	2005	After 2005
Interest							
Total, medium-and long-term debt	132.7	203.3	257.7	137.9	137.1	117.6	546.3
of which: oil guaranteed 1/	124.7	89.0	77.5	44.6	36.8	29.8	82.5
Multilateral	1.8	1.6	1.0	1.0	1.1	1.0	11.0
Official bilateral	43.0	148.5	131.0	119.0	99.4	91.0	470.0
Paris Club pre-cutoff date	3.0	1.0	0.0	0.0	0.8	0.7	3.0
ODA	1.0	1.0	0.0	0.0	0.8	0.7	3.0
Non-ODA	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Paris Club post-cutoff date	40.0	32.0	24.0	19.0	6.6	5.3	29.3
ODA	9.0	8.0	7.0	6.0	5.4	4.5	27.8
Non-ODA	31.0	24.0	17.0	13.0	1.2	0.8	1.5
Other official bilateral creditors	0.0	115.5	107.0	100.0	92.0	85.0	437.7
Not previously rescheduled	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rescheduled	0.0	115.5	107.0	100.0	92.0	85.0	437.7
Private creditors	86.4	43.5	113.9	7.6	34.6	25.6	65.3
Interest on arrears	304.1	141.1	141.1	141.1	141.1	141.1	141.1
New debt	1.5	9.7	11.8	10.3	2.1	0.0	0.0
Short-term debt	9.4	0.0	0.0	0.0	0.0	0.0	0.0
Total public debt	140.6	193.6	245.9	127.6	135.0	117.6	546.3
Memorandum items: Total public debt							1,341.0
Oil guaranteed government debt 1/	124.7	89.0	77.5	44.6	36.8	29.8	82.5
a. to bilateral creditors	78.7	66.0	54.5	44.6	36.8	29.8	82.5
Brazil	50.6	45.4	40.3	35.6	31.1	26.4	65.1
Spain	15.7	11.5	8.2	5.5	4.0	3.1	17.4
Portugal	12.4	9.1	6.0	3.5	1.7	0.3	0.0
b. to other creditors	35.5	17.8	17.8	0.0	0.0	0.0	0.0
c. contracted by Sonangol with government guarantee	10.5	5.3	5.3	0.0	0.0	0.0	0.0

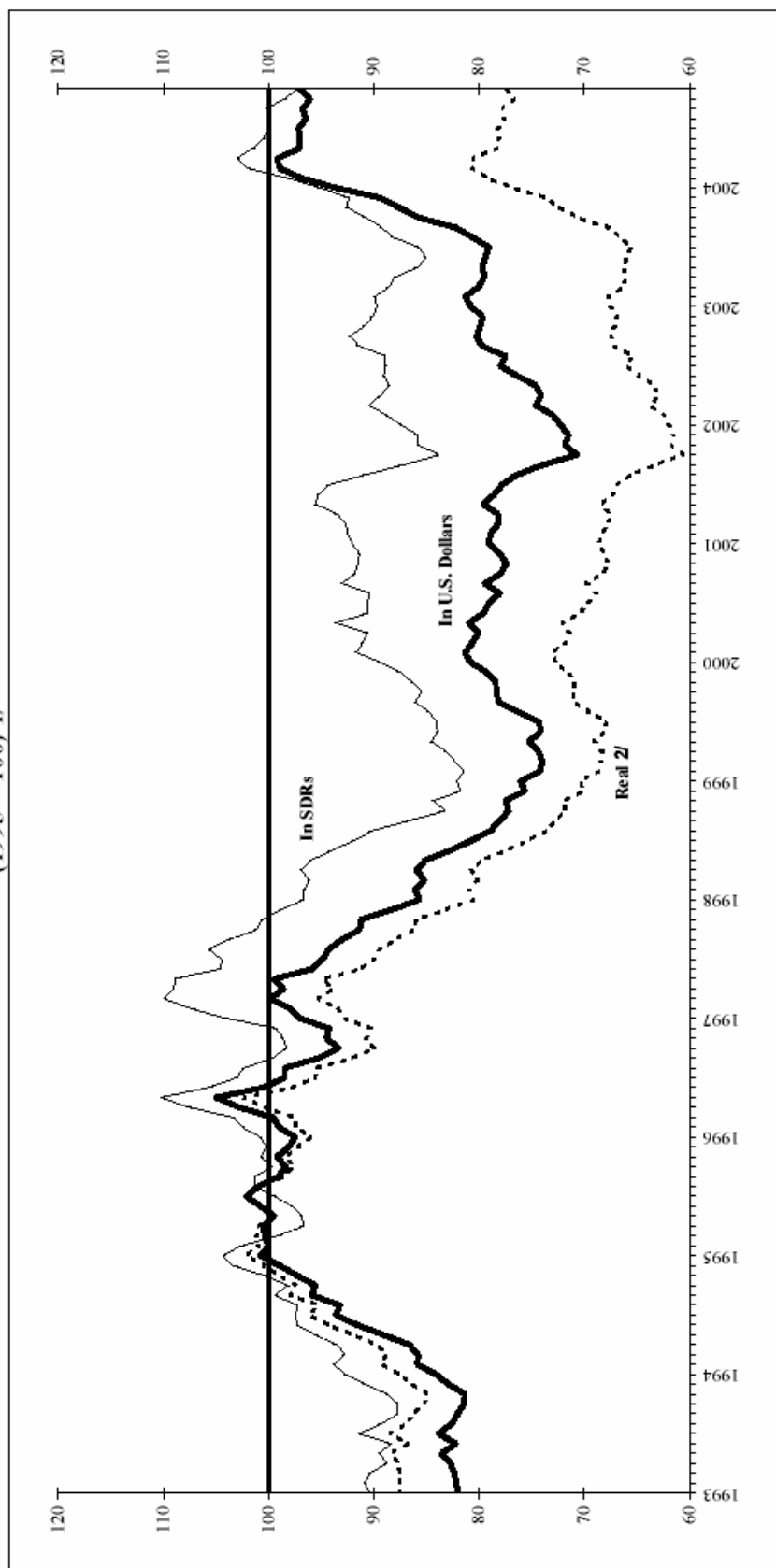Source: Angolan authorities; and staff estimates.
1/ Projected using contract oil prices.

Table A5. ANGOLA: Summary of Government Operations, 1998-2004
(in percent of GDP, unless otherwise indicated)

	1998	1999	2000	2001	2002	2003 Prel.	2004 Est.
Total revenue	31.6	46.8	51.7	42.5	40.5	37.5	35.6
Oil	23.4	41.1	46.2	33.9	31.0	28.2	27.4
Non-oil	8.2	5.7	5.5	8.7	9.0	8.9	7.5
Income taxes	2.1	1.6	1.5	2.5	2.6	2.7	2.3
Taxes on goods and services	2.4	1.9	1.8	2.8	3.1	2.9	2.1
Taxes on foreign trade	2.2	1.3	1.4	2.1	2.2	2.2	2.2
Other	1.5	0.9	0.8	1.2	1.0	1.0	0.9
Total expenditure	43.0	82.4	60.8	46.3	49.8	45.5	39.8
Current expenditure	36.5	51.1	44.8	33.6	36.9	36.7	30.6
Personnel	9.2	4.2	5.9	7.7	11.3	12.5	11.2
Goods and services	17.7	27.1	26.6	16.1	19.7	15.9	11.6
Interest payments due	8.6	9.1	5.6	4.7	3.3	1.8	2.1
Transfers	1.1	10.6	6.7	5.1	2.7	6.4	5.7
Capital expenditure	5.9	12.9	6.3	6.0	10.6	7.7	5.8
Central bank operational deficit	…	…	0.1	0.1	2.3	0.7	0.5
Discrepancy (unexplained)	0.6	18.4	4.6	5.7	3.2	0	0
Change in payment arrears (net)	11.7	10.8	26.6	-1.1	7.8	0.7	1.3
Domestic	3.9	3.2	22.9	-3.6	6.8	0.4	0.4
External interest	7.7	7.6	3.7	2.5	1.0	0.2	0.9
Overall balance before grants (cash basis)	0.2	-24.7	17.6	-4.9	-1.5	-7.3	-3.0
Financing	-0.2	24.7	-17.6	4.9	1.5	7.3	3.0
Onetime oil field concession bonuses	0.8	15.4	0.0	2.1	2.9	0.0	1.5
Grants	2.5	4.0	2.3	2.3	0.0	0.8	0.1
External funding (net)	-12.8	2.1	-4.8	-4.9	-5.1	3.3	3.9
Disbursements	4.2	14.9	11.8	12.3	8.7	11.4	12.2
Amortization	-17.7	-12.8	-16.8	-17.3	-13.0	-9.8	-3.9
Short-term borrowing, net	0.0	0.0	0.0	0.0	-0.7	0	0
Domestic financing (net)	9.2	3.3	-15.1	5.5	3.7	3.2	-2.5

Source: IMF

INDICES OF NON-FUEL PRIMARY COMMODITY PRICES
(1995 = 100) 1/

In SDRs

In U.S. Dollars

Real 2/

1/ Indices comprise 60 price series for 44 non-fuel primary commodities. Weights are based on the 1995-97 average of world export earnings.
2/ Deflated by US CPI.

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INDICES OF PRIMARY COMMODITY PRICES
(1995 = 100) 1 /

1/ Combines indices of non-fuel primary commodity prices and petroleum prices.

2/ Deflated by US CPI.

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