

Policy, Research, and External Affairs
WORKING PAPERS
Country Operations

-WPS-0497

Southern Africa Department
Africa Regional Office
World Bank
August 1990
WPS 497

The Measurement of Budgetary Operations in Highly Distorted Economies

The Case of Angola

Carlos Elbirt

A proper measurement of Angola's 1989 budget should reflect the tremendous difference between official and parallel market prices at which transactions are undertaken. If all transactions are "valued" at parallel market prices, the budget deficit for 1989 would drop from 22 percent to 12 percent.

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This paper — a product of the Country Operations Division, Southern Africa Department, Africa Regional Office — is part of a larger effort in the World Bank to study a highly distorted economy with a view to identifying appropriate development policies. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Terry Gean, room J11-250, extension 34247 (16 pages).

In a highly distorted economy such as Angola's, budget accounts can be misleading — because prices in the parallel market, including the exchange rate, represent up to 100 times official prices.

Parallel prices are the real opportunity costs for consumers and guide them in their decisions. So budget accounts may not truly show the resources they are supposed to measure.

Angola's government collects taxes and pays expenses in two currencies: strong kwanzas (with attached buying rights, such as access to hard currencies or goods) and weak kwanzas (which must be used in the parallel market).

In adjusting Angola's 1989 budget, Elbirt assumed that all tax revenues or transfers from oil companies were in strong kwanzas, all other taxes and revenues in weak kwanzas, and expenditures varied. He found the composition of revenues in the adjusted budget to be totally different from the nonadjusted one. Oil revenues represent 98 percent of revenues, not 48 percent, as in the original budget. So dependence on oil revenues is underestimated.

The composition of spending also changes, but not as radically. Wages remain the largest item. Extrabudgetary items rank second, rather than third, among expenditures — at 24 percent, not 12 percent.

Should Angola's exchange rate and prices be liberalized, the budget for 1989 would tend to look like this adjusted budget — because the conversion prices used to adjust the budget resemble market prices. So the impact of policy adjustment would be as follows:

- The deficit would decline from 22 percent of GDP toward 12 percent, depending on the extent of price and exchange rate adjustments. Nominally the budget deficit would increase, but that would be a mere accounting change.
- Any additional reduction of the budget deficit would require active budget policies. In Angola, the wage bill and extrabudgetary expenditures account for more than half of government spending, so those items would have to be cut. Personnel costs account for more than 16 percent of GDP: cutting them by 10 percent would reduce the deficit by more than 10 percent.
- Wage remonetization should be neutral in terms of the nominal deficit of the consolidated public sector (the central government, parastatals, and financial institutions). The extra benefits parastatals would enjoy from price liberalization would compensate for the central government's extra spending on wages, if price liberalization and wage remonetization are strictly synchronized.

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THE MEASUREMENT OF BUDGETARY OPERATIONS IN HIGHLY DISTORTED ECONOMIES: THE
CASE OF ANGOLA

by Carlos Elbirt

A. Introduction

In highly distorted economies budgetary accounts could be very misleading. In Angola for example, prices in the parallel market, including the exchange rate, represent up to one hundred times official prices. Access to official prices depend on special rights ("cartaos") enjoyed only by formal sector workers. Some goods obtained at official prices are traded in the parallel market. Therefore, budgetary accounts do not necessarily provide a good picture of the real resources they are supposed to measure. Parallel prices are the real opportunity costs for consumers and guide them in their decisions.

The Government collects its taxes and pays its expenses for all practical purposes in two currencies: Kwanzas that have attached buying rights, such as access to hard currencies or goods, and Kwanzas which have to be used in the parallel market. A Ministry may have the budget to hire some personnel but will not find anybody at official wages unless some buying rights are offered as part of the wages (at parallel prices, wages are ridiculously low).

In a general sense, a more accurate measurement of the budgetary accounts should help policy makers at least in three aspects. First, to

know with more precision the relative size of the Government. Second, to know more accurately the relative size of the Government deficit. Third, to provide a more accurate picture of the composition of both revenues and expenditures. An appropriate measurement of the budgetary account could be crucial in determining the type of policies required by the country.

B. A "Conversion" Problem

Proper measurement of the budget in Angola requires "homogenization". We can assume that, for all practical purposes, there are two "currencies": Strong Kwanzas (S) which are the ones attached to special buying rights at official prices and Weak Kwanzas (W), with access only to the parallel market.

$$S = n * W$$

$$n = P_p/P_o$$

Where n is the conversion rate between strong and weak kwanzas. It could be the ratio between parallel (P_p) and official prices (P_o). Strictly speaking, for measurement purposes, it should be ratio between the "shadow" exchange rate (or prices) and the official one.

Each budgetary item, revenue or expenditure, can be converted into weak or market Kwanzas using the following equation:

$$*I = a * I + (1-a) * I * n$$

where *I - ... the adjusted budgetary amount for a particular item

I - is the original, non adjusted budgetary amount

a - is the proportion of weak Kwanzas in the
budgetary item

(1-a) - is the proportion of strong Kwanzas

n - is the conversion factor

The GDP can also be expressed in adjusted Kwanzas (*GDP) thus allowing us to show the budget as percentage of *GDP. Since, in the case of Angola, tentative GDP estimates have been done in US\$, its adjustment into weak or market Kz is quite simple for a given conversion factor.

In this exercise we will convert the budget for 1989, into weak or parallel market price Kwanzas. Extra-budgetary expenditures are also included in the conversion.

It is rather difficult to estimate n in view of the absence of comprehensive price information for Angola. However, for indicative purposes we will use a variable n in this exercise (from, say, 10 to 66; which are consistent with parallel exchange rates of 300 to 2000)1/.

1/

$$n = (Pp/Po)$$

where

Pp - parallel prices

Po - official prices (= 30 = official exchange rate)

If Pp= 300 ;

$$n = (300/30) = 10$$

If Pp= 2000

$$n = (2000/30) = 66.66$$

In order to estimate a, the following criteria were followed:

(a) all taxes on oil or transfers from oil companies were considered, in a simplifying assumption, to be 100 percent strong Kwanzas. The reason for this assumption is the fact that those revenues have, as counterparts, dollars in the Banco Nacional de Angola.

(b) all other taxes and revenues were considered weak Kwanzas. We assume that tax payers other than oil companies, pay their taxes after bartering and "bridging" the official and parallel markets. Since we are looking at the real resources behind each budgetary item, it appears that their payments to the Government are all in weak Kwanzas.

(c) the composition of each expenditure item in weak and strong Kwanzas was based on the import-component attributable to them (See Table 2.3). Wages have about 35 percent in Strong Kz, according to estimates carried out in another work^{2/}. Extrabudgetary expenditures, debt service and war-related payments (mostly imported war material), are considered to include a 100 percent import-component. They are, therefore, made up all of strong kwanzas.

^{2/} Angola: Selected Issues on Adjustment, in preparation.

TABLE 2.3. ANGOLA: FOREIGN EXCHANGE COMPONENT OF CENTRAL
GOVERNMENT EXPENDITURES (% IN 1989 BUDGET)

Service commissions	60.0
Personnel training	65.0
Medical supplies	100.0
Medical services	100.0
Other services	10.0
Food	80.0
External cooperation	60.0
Scientific research	100.0
Representation allowances	100.0
Visitors and conferences	10.0
Other current expenses	30.0
Capital expenditures	60.0

Source: Ministry of Finance, Mission estimates.

C. The results of the "conversions"

The results of adjusting the budget for 1989 are shown in Tables 2.4 and 2.5. Table 2.6 shows the overall results of using a parallel exchange rate of 2,000 (n=66) and 300 (n=10). We will focus on the results using a parallel exchange rate of 2,000. The choice is based upon the fact that

this exchange rate is close to the parallel market rate^{3/}. Several conclusions were reached from analyzing the adjusted budget:

(a) the composition of revenues in the adjusted budget is totally different from the non adjusted one. Oil revenues represent 98 percent of the total revenues as opposed to 48 percent in the original, non adjusted budget. The actual dependence on oil revenues is, therefore, underestimated in the non-adjusted budget.

(b) the composition of expenditures also changes, but not as radically as revenues. Wages continue to be the largest item. Extrabudgetary expenditures are more important than originally shown: they represent 24 percent of the total expenditures instead of 12 as originally thought and rank second instead of third among all the expenditures. Table 2.7 shows the structure of expenditures and the "rank" of each item before and after the adjustment.

^{3/} Strictly, we should use the shadow exchange rate. However, it is not possible, at this stage, to estimate the shadow exchange rate in Angola due to the lack of information. An advantage of the parallel market rate is the fact that it measures the opportunity costs for consumers prevailing at the present moment in the economy. In any event, as it is referred to below, the conclusions will not be altered when different rates covering a wide range are used.

TABLE 2.4. ANGOLA - 1989 GOVERNMENT REVENUES AT PARALLEL PRICES
(Billions of Kz.)

	1989 Budget	% "Strong"	% "Soft"	Budget In soft Kz	% GDP
Total Revenue	81.1	47.0	53.0	2,576.4	17.4
Tax Revenue	61.0	62.0	38.0	2,556.3	17.3
Taxes on Oil Prod.	38.0	100.0	0.0	2,523.3	17.1
Petroleum Output	11.0	100.0	0.0	733.3	5.0
Profits of Comp.	14.0	100.0	0.0	933.3	6.3
Other	13.0	100.0	0.0	866.7	5.9
Taxes on Int. Trade	6.8	0.0	100.0	6.8	0.0
Customs Duties	5.0	0.0	100.0	5.0	0.0
Customs Fees	1.6	0.0	100.0	1.6	0.0
Tonnage Tax	0.0	0.0	100.0	0.0	0.0
Lighthouse Tax	0.0	0.0	100.0	0.0	0.0
Export Duties	0.2	0.0	100.0	0.2	0.0
Taxes on Incomes	9.2	0.0	100.0	9.2	0.1
Industrial Tax	5.5	0.0	100.0	5.5	0.0
Labor Income	3.3	0.0	100.0	3.3	0.0
Capital Income	0.4	0.0	100.0	0.4	0.0
Taxes on Goods	7.0	0.0	100.0	7.0	0.0
Stamp Duties	3.5	0.0	100.0	3.5	0.0
Petroleum prod.	1.0	0.0	100.0	1.0	0.0
Beer	1.6	0.0	100.0	1.6	0.0
Other	0.9	0.0	100.0	0.9	0.0
Non Tax Revenue	8.3	0.0	100.0	8.3	0.1
Tans. from NFPEs	4.8	0.0	100.0	4.8	0.0
Property Income	2.5	0.0	100.0	2.5	0.0
Tans. from Mixed Enterprises	0.5	0.0	100.0	0.5	0.0
Other Revenue	11.8	0.0	100.0	11.8	0.1
Memo Items:					
Market Exchange Rate		2,000.0			
Official Exchange Rate		30.0			
Ratio of Market to Official ER		66.7			
GDP in US\$ Billion		7.4			
GDP in Kz		14,800.0			

Source: Ministry of Finance and Mission Estimates.

TABLE 2.5. ANGOLA - 1989 GOVERNMENT EXPENDITURES AT PARALLEL PRICES
(Billion of Kz.)

	1989 Budget	Z "Strong"	Z "Soft"	Budget In soft Kz	Z
Total Expenditure					
Incl. Extrabudg. Exp.	128.6	50.7	49.2	4,408.6	29.8
Total Expenditure					
Inc. Extrabudg. Exp.	109.2	43.7	56.3	3,241.0	21.9
Current Expenditure	89.1	40.0	60.0	2,429.0	16.4
Personnel	53.5	35.0	65.0	1,283.1	8.7
Salaries	43.5	35.0	65.0	1,283.1	8.7
Other Compensation	4.5	35.0	65.0	1,043.3	7.0
Travel	4.2	35.0	65.0	107.9	0.7
Training	1.3	35.0	65.0	31.2	0.2
Goods	8.4	62.5	37.5	353.2	2.4
Fuel	2.9	100.0	0.0	193.3	1.3
Repairs	2.7	30.0	70.0	55.9	0.4
Medical Supplies	0.8	100.0	0.0	16.6	0.1
Durable Goods	0.75	50.0	50.0	23.7	0.2
Other	1.3	30.0	70.0	26.9	0.2
Services	6.8	65.4	34.6	299.0	2.0
Food	4.4	80.0	20.0	235.5	1.6
Linen, Clothing	0.8	30.0	70.0	16.6	0.1
Medical Services	0.3	100.0	0.0	21.0	0.1
Other Services	1.3	30.0	70.0	26.9	0.2
Other Current Exp.	5.0	37.5	62.5	129.0	0.9
Foreign Coop.	1.2	60.0	40.0	48.5	0.3
Scientific Research	0.1	100.0	0.0	6.7	0.0
Representation	0.0	100.0	0.0	2.5	0.0
Conferences, etc.	0.4	100.0	90.0	3.0	0.0
Other	3.3	30.0	70.0	68.3	0.5
Transfers	15.4	34.5	65.5	364.7	2.5
Pension Benefits	0.2	0.0	100.0	0.2	0.0
Losses of UEES	0.0				
Price Subsidies	0.0				
Other Subsidies	15.2	35.0	65.0	364.5	2.5
Capital Expenditure	20.1	60.0	40.0	812.0	5.5
External Debt Interest	3.4	43.7	56.3	100.9	0.7
Other Extrabudg. Exp.	16.0	100.0	0.0	1,066.7	7.2
Deficit including Extrabudgetary Exp.	(47.5)		20.4	(1,635.8)	(12.4)
Deficit Excluding Extrabudgetary Exp.	(28.1)		18.4	(474.1)	(4.5)

Source: Ministry of Finance and Mission Estimates.

(c) the budget deficit increases tremendously in nominal terms. This reflects, basically, a change in the "numeraire". However, it decreases in relative terms from 22 percent of the GDP to 12 percent of the *GDP^{4/}.

(d) adjusted Government expenditures account for 30 percent of the *GDP, not over 50 percent as originally estimated. It should be pointed out, however, that since GDF estimates include production for auto-consumption or non-marketed GDP, 30 percent continues to indicate that a sizeable part of the economy is controlled by the Central Government.

TABLE 2.6. ADJUSTED GOVERNMENT DEFICIT AND EXCHANGE RATE

<u>Exchange Rate</u>	<u>Deficit</u> <u>Trillions of K</u>	<u>% of</u> <u>GDP</u>
2000	1.8	12.4
300	0.3	13.2

^{4/} The use of different conversion factors, which underline the use of different parallel exchange rates, will not change the budget deficit relative to *GDP substantively. For example it was found that the budget deficit varies from 12 to 13 percent of *GDP, depending on whether the exchange rate is 300 or 2,000. Since even "low values" for parallel or market exchange rates are considerable higher than the official rate, transactions in weak Kz become a small proportion of the total (See Annex B of this Chapter).

D. The budget deficit, exchange rate, and prices

The budgetary situation for 1989 is more accurately represented by the adjusted budget, particularly from the resource mobilization view point. It could be said that, should exchange rate and prices be totally liberalized, the budget for 1989 would tend to look, in the absence of other budgetary changes, like the adjusted budget shown in Tables 2.4 and 2.55/. The reason for this is the fact that conversion prices used in adjusting the budget are considered to resemble, by and large, market conditions. However, we do acknowledge the fact that the conversion factors used in the exercise are highly tentative. Based on the converted estimates, the impact of policy adjustment on the budget could be the following:

(a) the deficit would decline from 22 percent of the GDP in the direction of about 12 percent, according to the extent of exchange rate and price adjustments. In nominal terms, there is little doubt that the budget deficit would increase thus reflecting the change in the "numeraire"^{6/}. However, these would be mere accounting changes;

^{5/} Non oil revenues would be probably underestimated in such a case because they could increase as the base increases.

^{6/} It is possible that the larger nominal deficit also results from the fact that the Government is a net foreign exchange user (See Annex C). Additional analysis will be needed for a conclusive view on the matter. For the public sector as a whole, including the financial sector, it is generally agreed that the impact of exchange rate movements on the nominal deficit depends on whether or not the public sector is a net user of foreign exchange resources (See Lizondo, J. S. Multiple Exchange Rates and Black Market Exchange Rates. A Non-technical Survey of Theoretical Results. University of Tucuman, Argentina, mimeo, 1990)

(b) any additional reduction in the budget deficit would necessitate active budgetary policies. In the case of Angola, since the wage bill and extrabudgetary expenditures add up to more than 50 percent of total expenditures, active policies to reduce the budget deficit will most likely require some reduction in those items. Personnel expenditures account for 16 percent of the *GDP. Cutting them by 10 percent would reduce the deficit by more than 10 percent.

(c) An overall wage remonetization should, under certain conditions, be neutral vis-a-vis the public sector deficit^{7/}. Such neutrality refers to the nominal deficit of the consolidated public sector (Central Government, parastatals, and financial institutions). This is a theoretical assumption based on the fact that extra benefits enjoyed by parastatals from price liberalization would compensate for the additional expenditures in wages of the Central Government, if price liberalization and wage remonetization are strictly synchronized. The fiscal neutrality does not refer to each individual component of the public sector, including the Central Government. Moreover, given the special characteristics of the Central Government, the increasing autonomy enjoyed by parastatals in Angola, and the eventual privatization of most of them, it is very appropriate to assess the budgetary situation separately from the consolidated public sector, as intended in this paper.

^{7/} Angola: Selected Issues on Adjustment, in preparation.

TABLE 2.7. 1989 - STRUCTURE OF "ADJUSTED" AND "NON-ADJUSTED" BUDGET

	Non-Adjusted			Adjusted		
	<u>Kz Bill</u>	<u>%</u>	<u>Rank</u>	<u>Billions</u>	<u>%</u>	<u>Rank</u>
Revenues	81.1	100		2576.4	100	
Oil	38.8	48		2533.3	98	
Non oil	42.3	52		43.1	2	
Expenditures	128.6	100		4408.6	100	
Personnel	53.5	42	1	1283.1	29	1
Goods & Serv.	20.2	16	2	781.2	18	3
Transfer	15.4	12	3	364.7	8	4
Capital	20.1	16	2	812.0	18	3
Extra Int.	3.4	3	4	100.9	2	5
Extrabud	16.0	12	3	1066.7	24	2
	-47.5			-1832.2		

Sources: Economic Mission

Annex IAn "adjusted" Budget and the exchange rate

2.46 The budget deficit can be adjusted taking into account the existence of Strong Kwanzas (with some purchasing rights at official prices) and weak Kwanzas (without any purchasing rights), and can then be expressed in terms of GDP. If the operations in weak Kwanzas are a small proportion of the total, the budget deficit relative to GDP is likely to change very little in response to changes in the exchange rate used for conversions.

$$D = J - E \quad (1)$$

D - deficit

J - Government revenues

E - Government expenditures

$$D^* = J^* - E^* \quad (2)$$

$$D^* = (J_1 + N^*J_2) - (E_1 + N^*E_2) \quad (3)$$

where

* means "adjusted"

J₁ - Gov. revenues in Weak Kwanzas

J2 - Gov. revenues in Strong Kwanzas

N - Conversion factor (the number of weak Kwanzas that make a Strong one)

$$N = (P_p / P_o)$$

Pp - Prices parallel market

Po - Prices official market

$$D^* = \frac{(J_1 - E_1) - [N (J_2 - E_2)]}{GDP^*}$$

$$GDP^* = GDP_{us} * ER$$

GDPus - GDP in US\$

ER - Exchange rate (ER approx= Pp)

$$D^* = \frac{J_1 - E_1 - (J_2 - E_2)}{GDP^*}$$

$$GDP^* = GDP_{us} * P_p \quad GDP_{us} * P_o$$

If (J1-E1) is close to zero, then (D*/GDP*) will not be affected by changes in ER. In these estimates, the assumption that the GDP is constant in US\$ is a strong one. It can be defended in the case of Angola perhaps because of the high proportion of tradeables in the GDP (oil, diamond, etc.).

The Government budget and the external accountsANGOLA: Dollar Component of the Government Budget, 1989
(Percent and US\$)

	1989 Official Budget Kw	Dollar Component of Budget %	Budget US\$
Total Revenue	81.1	46.9	1.266
Tax Revenue	61.6	62.3	1.2667
Taxes on Oil Prod.	38.6	100.0	1.2667
Petroleum Output	11.6	100.0	0.3667
Profits of Comp.	14.6	100.0	0.4667
Other ^{8/}	13.6	100.0	0.4333
Taxes on Int. Trade	6.8	0.0	0.0000
Customs Duties	5.6	0.0	0.0000
Customs Fees	1.6	0.0	0.0000
Tonnage Tax	0.6	0.0	0.0000
Lighthouse Tax	0.6	0.0	0.0000
Export Duties	0.2	0.0	0.0000
Taxes on Incomes	9.2	0.0	0.0000
Industrial Tax	5.5	0.0	0.0000
Labor Income	3.3	0.0	0.0000
Capital Income	0.4	0.0	0.0000
Taxes on Goods	7.6	0.0	0.0000
Stamp Duties	3.5	0.0	0.0000
Petroleum Prod.	1.6	0.0	0.0000
Beer	1.6	0.0	0.0000
Other	0.9	0.0	0.0000
Non Tax Revenue	8.3	0.0	0.0000
Trans. from NFPEs	4.8	0.0	0.0000
Property Income	2.5	0.0	0.0000
Trans. from Mixed Enterprises	0.5	0.0	0.0000
Other Revenue	11.8	0.0	0.0000

Source: Ministry of Finance and Mission Estimates

^{8/} Excludes profits tax of enterprises on special regimes .

ANGOLA: Dollar Component of the Government Budget, 1989

	1989 Official Budget Kw	Dollar Component of %	Budget US\$ Billion
Total Expenditure inc. extra-budgetary exp.	128.6	41.6	1.7837
Total Expenditure excl. extrabudgetary exp.	109.2	31.2	1.1371
Current Expenditure	89.1	29.2	0.8691
Personnel	53.5	36.6	0.6527
Salaries	43.5	35.0	0.5075
Other Compensation	4.5	35.0	0.0525
Travel	4.2	60.0	0.0840
Training	1.3	20.0	0.0087
Goods	8.4	17.6	0.0493
Fuel	2.9	0.0	0.0000
Repairs	2.7	10.0	0.0090
Medical Supplies	0.8	100.0	0.0267
Durable Goods	0.7	40.0	0.0093
Other	1.3	10.0	0.0043
Services	6.8	58.1	0.1317
Food	4.4	90.0	0.1173
Linen, Clothing	0.8	0.0	0.0000
Medical Services	0.3	100.0	0.0100
Other Services	1.3	10.0	0.0048
Other Curr. Expend.	5.0	21.1	0.0354
Foreign Coop.	1.2	60.0	0.0240
Scient. Research	0.1	100.0	0.0033
Representation	0.0	100.0	0.0012
Conferences, etc.	0.4	10.0	0.0013
Other	3.3	5.0	0.0055
Transfers	15.4	0.0	0.0000
Pension Benefits	0.2	0.0	0.0000
Losses of UEEs	0.0		
Price Subsidies	0.0		
Other Subsidies	15.2	0.0	0.0000
Capital Expenditure	20.1	40.0	0.2680
External Debt Interest	3.4	100.0	0.1133
Other Extrabudg. Exp.	16.0	100.0	0.5333
Deficit Including Extrabudgetary Exp.	-47.5		-0.5171
Deficit Excluding Extrabudgetary Exp.	-28.1		0.1296

Source: Ministry of Finance and Mission Estimates

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