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Nigeria During and After the Oil Boom: A Policy Comparison with Indonesia

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Nigeria and Indonesia provide an interesting contrast with regard to performance and policy during and after the oil boom. Roughly a decade after the first oil shock, Nigeria is faced with several economic problems including a serious decline in its agricultural sector and a deteriorating external debt situation. While some decline in the nonoil traded goods sector reflects efficient adjustment to the oil boom, policy with regard to public expenditure, exchange rates, pricing, and the trade regime could exacerbate such decline and impede readjustment as the boom subsides. The links between oil prices, deficits, inflation, and real exchange rate appreciation are analyzed and Nigerian and Indonesian fiscal and exchange rate and agricultural and foreign borrowing strategies are compared. It is concluded that with the exception of cuts in the deficit since 1984, Nigerian policy following the boom has not been conducive to adjustment to the current period of low oil prices and high real interest rates. Corrective measure and policy options are discussed. A postscript gives post–September 1986 policy changes.

Nigeria, a member of the Organization of Petroleum-Exporting Countries (OPEC), is an exporter of coveted high- (bonny light) and medium-grade crude oil. The oil price shocks of 1973–74 and 1979 resulted in a large transfer of wealth to Nigeria. Public expenditure increased greatly, as did the country's access to international capital markets. Evidence of "Dutch disease" emerged during this period: agriculture, the main nonoil tradables sector, declined. Following the collapse of oil prices in 1982 and the rise in real interest rates, Nigeria experienced rising inflation, strict rationing of foreign exchange, and the possibility of debt rescheduling. This coincided with the rise of parallel markets, so that an illegal, floating-rate parallel market coexisted with an official, fixed-rate market.

This article analyzes the Nigerian experience during and after the oil boom; Indonesia is used as a contrast for policy comparison. The two countries are similar in being heavily populated oil exporters, dependent on agriculture and primary sectors as the chief source of nonoil exports and having similar trade policies, including protection of capital-intensive industry and manufacturing.

The main differences, it will be argued, are in their fiscal and exchange rate, agricultural, and external debt policies.

Section I describes the process of adjustment to an oil boom. The implications of the exchange rate regime and fiscal policy are discussed. Section II presents data on Nigeria and Indonesia and compares their policies. Section III discusses post–oil boom adjustment issues for Nigeria.

I. RESPONSE TO THE OIL BOOM: PUBLIC EXPENDITURE, REAL EXCHANGE RATES, AND MACROECONOMIC POLICY

Faced with higher immediate and anticipated income after 1973, the Nigerian government had a range of choices: it could consume the increase currently, in the future, or spread the increased consumption over time. If part of the wealth were to be saved for future consumption, this could be achieved via increased investment in foreign assets or domestic physical capital. Finally, it could spend *more* than the current addition to income, that is, it could borrow. The decisions on these issues are based on interactions between the social rate of time preference (consumption now versus later), the relative rates of return between physical and financial assets (a question of portfolio choice), and expectations regarding oil prices and, hence, future revenues.[1]

The dominance of oil in the Nigerian economy is evident from the data in table 1. The share of oil in gross domestic product (GDP) and exports rose sharply after 1970–73. This rendered the Nigerian terms of trade virtually synonymous with the price of oil deflated by the import price index. In all the years except those immediately following the two oil shocks, domestic absorption exceeded GDP and national disposable income. This was reflected in current account deficits, which arose in 1976–78 and 1981–83.

Comparative data on Indonesia in table 1 suggest that the main difference between the two appears to be the more moderate rise in the share of oil in total exports in Indonesia.

The Oil Boom and the Real Exchange Rate

Commodity booms are traditionally analyzed in terms of "spending" and "resource movement" effects.[2] We abstract from the "resource movement" effect because the oil sector can be considered to be a separate enclave with its own capital, labor, and technology: it does not compete with the nonoil economy for resources.

The "spending" effect operates as follows: in the nonoil economy, both tradables and nontradables are produced (henceforth, we shall use "tradables"

1. Gelb (1986) presents estimates of the size of the oil windfall and its disposition for several middle-income oil exporters, including Nigeria and Indonesia.

2. Much of the discussion here is based on Neary and van Wijnbergen (1986, chap. 1). See also the references therein. For other policy-based discussions on the adjustment, see Gelb (1986), Nankani (1979), and Glassburner (n.d.). A commodity boom study of interest is in Edwards (1984).

Table 1. *Oil Production, Oil Exports, and the Current Account Balance:
Nigeria and Indonesia*

Year	Oil production as percentage of GDP		Oil exports as percentage of total exports		Current account balance as percentage of GDP	
	Nigeria	Indonesia	Nigeria	Indonesia	Nigeria	Indonesia
1970	8.1	5.2	57.5	40.3	−3.8	−3.4
1971	11.1	8.0	74.5	45.8	−3.3	−4.0
1972	13.4	10.8	81.9	51.4	−2.4	−3.0
1973	16.6	12.3	85.0	50.1	−0.1	−2.9
1974	31.9	22.2	92.9	70.2	16.9	2.3
1975	20.4	19.7	93.2	74.8	0.1	−3.6
1976	22.9	18.9	93.3	70.2	−0.8	−2.4
1977	22.6	18.9	93.4	67.2	−2.1	−0.1
1978	22.6	19.2	90.5	63.9	−7.2	−2.7
1979	26.3	21.8	93.4	56.9	2.5	1.9
1980	19.4	25.7	96.1	58.7	5.8	4.0
1981	22.2	24.0	96.9	64.6	−6.7	−0.7
1982	19.1	19.6	98.6	66.7	−8.6	−5.9
1983	15.2	18.5	96.3	63.7	−5.0	−7.8
1984	12.9[a]	17.7	96.3[a]	55.2	0.5[a]	−2.5
1985	—	—	—	41.3	—	−2.0

— Not available.

a. Estimates.

Sources: Oil output and Nigerian GDP: World Bank data and estimates. Indonesian GDP, oil exports, total exports, and the current account balance: International Monetary Fund, *International Financial Statistics,* various years.

to refer to tradables other than oil). Let r denote the relative price of tradables to nontradables, which we define as the real exchange rate. Assuming tradables and nontradables are normal goods, the demand for both increases following the rise in real income associated with the oil boom.

Equilibrium in this model can be described solely in terms of market clearing for the nontraded good, for which by definition, domestic demand must equal domestic supply. The excess demand for nontraded goods that arises following the boom can be eliminated by a rise in their relative price, that is, a fall in r. This draws resources out of the tradables sector into the nontradables sector, so that nontradables output rises and tradables output falls. The consequent decline in the tradables sector is called "Dutch disease." It is accompanied by real appreciation, that is, a fall in r. Strictly, there is no "disease" since the boom enables the economy to attain a higher level of consumption and welfare. Real appreciation is necessary for efficient adjustment to the boom, since traded goods can be imported.

Real appreciation by itself, therefore, does not constitute grounds for intervention. There might be some basis for providing assistance to the declining sector, however, on allocative and distributional grounds. The relevant nonoil tradables sector in Nigeria and Indonesia is agriculture. Owing to the reduced competitiveness of agriculture during the oil boom, the farmer may be dissuaded from using better inputs and more advanced techniques, or even from buying

fertilizer. This may create setbacks to long-run agricultural development, and thus provide an argument for subsidies and special assistance programs to agriculture during the oil boom. Of course, we already live in a second-best world, and intervention may be desirable in the case of market failure irrespective of an oil boom; but the boom would raise the optimal level of subsidy if capital market imperfections exist, which is the presumption in Nigeria and Indonesia (see Neary and van Wijnbergen 1986).

Government Spending and Real Exchange Rates

Oil revenues accrue to the government in the first round, whether through direct sales, royalties, or taxes. Therefore, the composition and timing of government spending are important (see, for example, Harberger 1983).

Government spending is biased toward construction, services, and capital-intensive investments in protected sectors, which are essentially nontradable. Wages and salaries are also important components of government spending. In addition to these direct effects on the nontradables market, the rise in private disposable income also creates excess demand for nontradable goods as a result of the "spending effect," causing real appreciation. This leads to a reallocation of resources in the nonoil economy.

The major domestic productive resource in the nonoil economy in Nigeria and Indonesia is labor. With government spending concentrated in urban centers and on nontradables, mobile labor moves from agriculture to services and construction in cities. This can occur due to a rise in the real wage in terms of tradables and a fall in terms of nontradables, which is exactly what a short-run model with sector-specific capital and mobile labor would predict.

Government Spending and the Money Supply

Following the analysis of the oil boom as a real phenomenon above, monetary aspects of it are now reviewed. The analysis assumes fixed exchange rates and capital controls, which would be descriptive of Nigeria. Later, these assumptions are relaxed.

The increase in foreign exchange as a result of the oil boom accrues to the government and is deposited in the central bank. If it accrued to private citizens and were deposited in commercial banks, an increase in the money supply would occur in the usual way through the money multiplier. Since the increase is deposited in the central bank, however, there will be no increase in the domestic money supply unless the government spends at home out of the increased oil earnings, or domestic credit to the private sector is increased. This is because in the absence of spending, the increase in net foreign assets of the central bank is exactly offset by the reduction in net domestic credit to the government, leading to an unchanged monetary base.

This can be shown by manipulating the balance sheet identity for the combined central and commercial banking system (see Dornbusch 1980, chap. 2, eq. 11):[3]

3. The first term in parentheses on the right-hand side of equation 1 is the change in domestic credit to the government. The fixed exchange rate is normalized to unity.

(1) $$\Delta M_2 = (G - T + \Delta NFA^g) + \Delta DC^{nb} + \Delta NFA^b,$$

where

M_2 ≡ the liabilities of the banking system (broad money)
$G - T$ ≡ government spending less taxes
NFA^g ≡ net foreign assets of the government
DC^{nb} ≡ domestic credit to the nonbank private sector
NFA^b ≡ net foreign assets of the banking system

Taxes, T, sum together oil and nonoil revenues. Suppose now that oil revenues increase by one dollar, which is deposited in the central bank. G remains fixed. On the right-hand side of equation 1, T and ΔNFA^b increase by $+1$ each, so that the net change is zero: money supply does not change. If, however, government domestic spending monetizes the oil dollar, G increases by $+1$ as well, so that $\Delta M_2 = +1$. Since government debt held by the nonbank public is negligible for countries such as Nigeria, an open market operation to sterilize the impact of this spending on the domestic money supply is precluded.

To emphasize that the oil boom is a real phenomenon, however, assume for a moment that open market operations were feasible and carried out. This would merely alter the shares of money and bonds in private wealth: the "spending" effect would still operate as a result of the rise in real income.[4]

The money supply will increase as government domestic spending monetizes the oil revenues. The demand for real money balances rises as well, owing to the rise in real income. Inflation will therefore result only if the increase in the supply of money exceeds that of the demand for money. This is the presumption immediately after a commodity boom. Since the price of tradables is fixed by the exchange rate (foreign prices are normalized to unity), the relative price of nontradables rises, that is, there is a real appreciation.

Exchange Rate Regime and Capital Controls

We now relax the assumptions of fixed exchange rates and capital controls, which are applicable to Nigeria: its currency, the naira, has an adjustable peg to a basket of currencies and has behaved like a fixed (adjustable) exchange rate. The naira is nonconvertible, and there are capital controls.

The Indonesian rupiah is convertible and has been crawling since 1978. It was subject to maxidevaluations in 1971 (preoil boom), 1978, and 1983. There are no capital controls, and there is a high degree of asset-market integration with Singapore. Other things being equal, Indonesia's open capital account permits its citizens a greater diversity of financial assets.

These differences in the capital account do not alter the basic conclusion of the earlier sections: that the oil boom is a real phenomenon, and what counts is the

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4. Suppose, ignoring its political feasibility for the moment, that G in equation 1 were held constant after the boom. Would this stifle the spending effect and thereby prevent real appreciation? This depends on what happens to net transfers to the private sector, including expectations of tax rebates. Conceivably, the "wealth effect" of the oil boom could operate through the private sector. For an interesting comment, see Neary and van Wijnbergen (1984).

spending effect associated with real income.[5] Real appreciation is required to facilitate adjustment to the oil boom. During a downturn in the oil markets, convertibility and an open capital account may impose fiscal discipline—unless convertibility is suspended and capital controls introduced—and thereby hasten adjustment to a postboom phase.

Fiscal Policy

Indonesia has a balanced budget law, which stipulates that government spending should not exceed revenues *plus* official foreign borrowing. This departs from convention, since the portion of spending financed by foreign borrowing would be treated as a deficit. Nevertheless, we see in the next section that there were important differences in fiscal policy between Nigeria and Indonesia.

Since the government is generally the biggest borrower and investor in such countries, fiscal policy is closely linked to the borrowing strategy. This too will be explored in the next section.

II. EMPIRICAL EVIDENCE AND POLICY COMPARISON

A basic conclusion of section I is that real exchange rate appreciation is inevitable during an oil boom. Such an appreciation is necessary to spur adjustment to the oil boom and restore equilibrium in the goods market.

What magnitude of real appreciation is appropriate? There are two factors relevant here. The first is expectations regarding the oil market. If the oil boom were seen as permanent, rather than transitory, sustained real appreciation would be acceptable, with some stabilization of the real exchange rate (RER) expected as supply in the nontraded goods sector responded. If, however, the boom is temporary, then the costs of readjusting to a "normal" oil situation might outweigh the potential benefits from responding to the oil boom and reallocating resources as though the boom were permanent. The difficulty lies in making this judgment ex ante. Not only have expectations for the oil market been volatile, but a credible hypothesis is that the transient nature of the oil boom was not foreseen in the mid-1970s. The following forecasts by the Economic Analysis and Projections Department of the World Bank for the 1985 price of a barrel of oil made at three different points in time illustrates this: the 1976 forecast was $21.9; in 1979, following the second oil shock, this number was revised upward to $47.3; and then downward to $29.0 in 1983, which in retrospect was an overestimate. These forecasts have a mean of $32.73 and a standard deviation of $10.70 per barrel, indicating the volatility of expectations for the oil market.

The second factor relates to fiscal, monetary, and exchange rate policies. Suppose, for example, that government spending were cut, and the currency devalued, once it was discovered that the oil market was going to collapse and

5. Monetary effects and exchange rate adjustments could, however, affect the speed of adjustment following the boom. See Neary and van Wijnbergen (1986) for fixed versus floating regimes; also see Harberger (1983).

remain sluggish for awhile. Two things would happen: the rates of money supply increase and inflation would decline, and the real exchange rate would tend to depreciate. The signals to investors and wage earners would tend to reverse themselves, leading to an increased resource flow into the traded goods sector.

With the above considerations in mind, we turn to empirical evidence on real exchange rates, deficits, inflation, and the terms of trade in Nigeria and Indonesia from 1970 to 1984.

Alternative Measures of the Real Exchange Rate

The RER is used here as an indicator of the relative price of (nonoil) tradables to nontradables faced by producers. In practice, one works with consumer and wholesale price indices (CPIs and WPIs). Table 2 presents five measures of the RER for Nigeria: the first is a bilateral RER vis-à-vis the United States, with the exchange rate times the U.S. WPI serving as a proxy for the price of tradables, and the Nigerian CPI as a proxy for nontradables. The second and third measures are trade-weighted real exchange rates as conventionally defined: TRER1 is with varying trade (exports + imports) weights, while TRER2 is with 1980 trade

Table 2. *Five Measures of the Real Exchange Rate for Nigeria*

		Trade-weighted exchange rates			
Year	Bilateral real exchange rate (1)	Varying trade-weighted (TRER1) (2)	1980 trade-weighted (TRER2) (3)	Varying import-weighted (TRER3) (4)	1980 import-weighted (TRER4) (5)
1970	221.9	160.7	178.3	162.8	156.0
1971	196.9	150.9	164.2	152.8	146.1
1972	184.6	151.3	163.1	152.2	148.5
1973	197.8	163.6	177.3	163.4	164.6
1974	200.3	153.6	166.5	153.3	154.5
1975	159.7	136.0	139.4	130.8	131.0
1976	137.0	112.8	117.7	107.9	108.7
1977	125.2	115.3	119.7	111.6	112.8
1978	112.0	108.4	111.4	107.3	109.0
1979	107.9	105.6	107.4	105.1	106.1
1980	100.0	100.0	100.0	100.0	100.0
1981	101.9	90.7	90.7	87.8	87.8
1982	105.6	91.6	91.6	85.4	85.4
1983	95.9	79.3	79.3	72.4	72.4
1984	76.7	58.5	58.5	52.2	52.2

Note: Correlation coefficient between TRER1 and 2 is 0.9978; between TRER3 and TRER4 is 0.9973. Each RER measures the relative price of tradables to nontradables.

Explanation of columns: (1)—nominal exchange rate index times the U.S. wholesale price index (WPI) divided by the Nigerian consumer price index (CPI). (2)—as in (1), with import and export weights: 1970 weight for 1970–74; 1975 weight for 1975–79; and 1980 weight for 1980–84. (3)—as in (1), with 1980 trade weight. (4)—as in (2), with import weights only. (5)—as in (1), with 1980 import weight.

Sources: Exchange rates, Nigerian CPIs and U.S. WPIs: *International Financial Statistics,* International Monetary Fund, various years. Trade and import weights: *Direction of Trade,* International Monetary Fund, various years.

weights.[6] Both rely on CPIs. The fourth and fifth measures are also trade-weighted real exchange rates, but they use import weights instead of trade weights. TRER3 uses varying import weights, while TRER4 is based on 1980 import weights.

Although the use of import instead of trade weights may appear minor, it is significant in the Nigerian and Indonesian context. Since oil is the main export, using import weights essentially excludes oil from the computation. This is desirable from three points of view: (a) it focuses on the nonoil sector, which is a major objective of this paper; (b) it abstracts from the impact on trade weights of the large increases in the price of oil; and (c) it makes economic sense because there is no resource movement effect between oil, whose factors may be regarded as sector specific, and the rest of the economy.

Consequently, it was decided to work with an import-weighted real exchange rate for the rest of this study. The high positive correlation (0.997) between TRER3 and TRER4 made it a matter of indifference with which to work. TRER4 was chosen for simplicity and also because it rules out any anomalies related to the appreciation of the U.S. dollar which started in the fourth quarter of 1980, and which would be reflected in the bilateral RER. Interestingly, appreciation for Nigeria between 1973 and 1984 was 61 percent according to the bilateral RER, and 64 percent and 67 percent respectively using TRER1 and TRER2. When measured by TRER3 and TRER4, it was 68 percent.

Oil Prices, Deficits, Inflation, and the Real Exchange Rate

Table 3 presents data for Nigeria on the price of oil, terms of trade, inflation, money supply, and (trade-weighted) nominal and real exchange rates. The terms of trade were measured as the relative price of oil to imports. The RER is measured by TRER4, discussed in the previous section. The nominal exchange rate appeared to generally reflect the price of oil, appreciating (depreciating) as it rose (fell). The rate of growth of high-powered money (M1) was phenomenal between 1973 and 1977, and then again immediately following the second oil price increase in 1979. The fact that this led to high rates of inflation (despite nominal appreciation of the naira in some of these years) suggests that the flow supply of money grew much faster than the flow demand.

Comparative data on Indonesia in table 3 show that the increases in M1 and inflation rates are similar to those in Nigeria. Major differences exist with regard to the terms of trade (which were slightly less variable for Indonesia) and the

6. The trade-weighted RER, TRER, is defined as:

$$\mathrm{TRER}_t \equiv \prod_{i=1}^{n} (E_{it}\ \mathrm{CPI}_{it})^{\alpha_i} / \mathrm{CPI}_t$$

where α_i is the relevant trade weight, $\sum_{i=1}^{n} \alpha_i = 1.00$. E_i is the exchange rate vis-à-vis the ith trading partner, and CPI_i, its CPI. In the denominator, CPI refers to the Nigerian CPI. The subscript t refers to time. TRER$_t$ is defined such that a fall (rise) implies that Nigerian inflation is rising faster (slower) than the mean inflation rate of its trading partners, connoting thereby a decrease (increase) in competitiveness or equivalently, a real appreciation (depreciation). See Edwards (1984) for a treatment of analytical and measurement issues.

Table 3. *Oil Price, Terms of Trade, and the Real Exchange Rate: Nigeria and Indonesia*

Year	Oil price (current U.S. dollars) Nigeria	Indonesia	Terms of trade (1980 = 100) Nigeria	Indonesia	Nominal exchange rate (NER) (1980 import weights) Nigeria	Indonesia	NER rate of change (− = appreciation) Nigeria	Indonesia	Rate of growth in M1 (percent) Nigeria	Indonesia	Inflation rate (percent) Nigeria	Indonesia	Real exchange rate (1980 import weight) Nigeria	Indonesia
1970	2.4	1.7	17.7	21.6	99.8	43.4	—	12.5	43.8	34.9	13.6	12.4	156.0	91.8
1971	3.2	2.2	21.8	25.6	102.0	47.2	2.2	8.7	4.2	28.7	16.1	4.4	146.1	100.5
1972	3.4	3.0	22.8	27.9	100.6	54.1	−1.4	14.7	11.5	50.6	2.8	6.4	148.5	113.2
1973	4.0	4.8	22.4	32.8	108.6	59.5	8.0	10.0	24.0	42.7	5.5	31.0	164.6	105.8
1974	11.3	11.7	52.2	52.4	100.5	58.1	−7.5	−2.4	89.7	40.4	12.5	40.6	154.5	87.6
1975	11.3	12.8	43.1	47.1	100.0	57.8	−0.5	−0.6	48.3	35.2	33.8	19.1	131.0	82.6
1976	13.9	12.8	45.6	46.9	92.8	56.7	−7.2	−1.8	48.3	25.6	24.2	19.8	108.7	74.2
1977	14.5	13.6	54.5	50.8	97.6	59.1	5.2	4.2	43.8	25.3	19.5	11.0	112.8	75.1
1978	13.9	13.6	54.9	50.9	107.9	70.1	10.6	18.6	−8.2	24.0	18.6	8.1	109.0	86.2
1979	21.3	19.2	65.8	75.8	108.0	101.0	0.1	44.0	20.5	33.3	11.1	20.6	106.1	109.1
1980	35.4	29.5	100.0	100.0	100.0	100.0	−7.4	−1.0	50.1	51.1	11.4	18.5	100.0	100.0
1981	38.9	35.0	105.5	102.2	96.8	98.7	−3.2	−1.3	5.6	29.2	20.9	12.2	87.8	94.3
1982	35.8	34.8	80.9	101.1	94.2	96.0	−2.7	−2.7	3.1	10.0	7.7	9.5	85.4	87.5
1983	30.0	29.5	61.8	98.5	93.7	128.9	−0.5	34.2	12.4	6.4	18.9	11.8	72.4	107.9
1984	28.5	28.4	—	98.2	90.1	145.2	−3.8	12.6	8.2	13.2	39.6	10.5	52.2	112.8

Note: 1984 Nigerian data are provisional estimates. Petroleum = Nigerian bonny light, Indonesian sumatra light. Terms of trade = index of export price divided by import price index. M1 = currency plus demand deposits. Inflation = rate of growth of CPI.

Sources: Petroleum prices: *Twentieth Century Petroleum Statistics* and World Bank estimates. Terms of trade: World Bank data. Import weights: International Monetary Fund, *Direction of Trade.* Exchange rates, M1, CPIs: International Monetary Fund, *International Financial Statistics.*

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Table 4. *Nigeria: Government and Current Account Balances*

Year	Government surplus/deficit (million naira)	Government surplus/deficit as percentage of GDP	Oil receipts as percentage of GDP	Current account balance as percentage of GDP	Change in public external debt as percentage of GDP
1970–71	−118.8	−1.6	2.24	−3.54	0.25
1971–72	36.2	0.4	5.64	−3.20	0.75
1972–73	−82.7	−0.9	8.32	−2.45	0.40
1973–74	188.9	1.7	9.14	−0.05	2.82
1974–75	1,247.6	6.7	20.01	16.58	0.04
1975–76	−1,435.8	−6.8	20.23	0.12	−0.43
1976–77	−1,870.1	−6.9	19.80	−0.82	−0.53
1977–78	−2,134.2	−6.7	19.09	−2.06	0.16
1978–79	−1,185.0	−3.5	13.75	−7.10	2.70
1979–80	−757.0	−1.9	22.29	2.52	1.18
1980	−143.0	−0.3	23.06	5.85	0.88
1981	−4,734.0	−8.9	18.47	−6.76	2.64
1982	−4,524.0	−8.0	16.69	−8.58	4.02
1983	−6,650.0	−11.0	11.95	−5.01	4.75
1984	−3,984.0	−5.2	12.25	0.53	0.16

Note: Data for 1984 are provisional estimates. Current account balance and public external debt data are for calendar years.

Sources: Government oil receipts: Sayre P. Schatz (nondated). Current account balance, government deficits: International Monetary Fund, *International Financial Statistics*. Public external debt, GDP: World Bank staff estimates.

nominal exchange rate (reflecting Indonesia's maxidevaluations in 1978 and 1983). The net result is a more depreciated RER for Indonesia and an appreciating RER for Nigeria.

In table 4, government and current account deficits for Nigeria are presented. In Nigeria, as in many developing countries, the government is by far the biggest investor and borrower. A remarkable feature of table 4 is the wide swings in the current account balance: large surpluses in the boom years followed by large deficits as the oil boom subsided. Table 5 contains figures on Nigerian government deficits and their source of financing for the years 1980–84. The first column gives the deficit defined *exclusive* of oil receipts, that is, it treats the difference between expenditure and nonoil revenue sources as being financed by oil receipts and changes in domestic and foreign borrowing. The deficit thus defined actually increases despite the fact that oil receipts leveled off and then fell in nominal terms, before rising in 1984. This implies that large doses of new domestic and external debt were needed to close the gap. It will be noticed that the numbers in table 5 do not "add up." No attempt has been made to reconcile them because published figures on the deficit and its financing are not available beyond 1978 in *International Financial Statistics*. The main purpose of the table is to show the increasing reliance of the government on the inflation tax as indicated by the changes in net domestic credit.

If the Indonesian government were to strictly adhere to its balanced budget law, net domestic credit to the government would be constant. In fact it became negative in 1976 and has exhibited a decreasing trend ever since, implying a

Table 5. *Nigeria: Government Deficits and Financing*
(millions of naira)

Year	Government deficit excluding oil receipts	Government oil receipts	Change in net domestic credit to government	Change in public external debt
1980	−11,133.2	11,763.1	226.3	421.5
1981	−14,559.2	10,596.0	2,759.4	1,404.6
1982	−13,964.8	9,440.8	4,029.5	2,275.4
1983	−13,875.5	7,225.5	5,147.2	2,869.1
1984	−13,369.0	9,385.0	2,348.0	118.9

Note: Data for 1984 are provisional estimates. Public external debt data are for calendar years. Government oil receipts include petroleum tax revenues earmarked for capital funding of joint ventures by the Nigerian Petroleum Corporation.

Sources: Government oil receipts: World Bank estimates. Government deficits: International Monetary Fund, *International Financial Statistics*. Public external debt: World Bank staff estimates.

buildup of government net assets within the domestic banking system. As mentioned in section I under "Fiscal Policy," the balanced budget law and the classification of spending and accounting practices in Indonesia depart from convention.[7] In some boom years there were surpluses; in others, deficits (as commonly defined) were financed by foreign borrowing. But the deficit/GDP ratio between 1974 and 1984 was extremely small, always less than 5 percent, and it registered surpluses in two years. The balanced budget law, therefore, has induced a measure of fiscal discipline that is in sharp contrast to the fiscal response in Nigeria. The Nigerian ratio exceeded 5 percent in 7 years, with a peak of 11 percent in 1983, and did not indicate a surplus after 1974–75.

Real Exchange Rates in Nigeria and Indonesia

The rationale for computing trade-weighted real exchange rates based on import weights is discussed above in this section under "Alternative Measures of the Real Exchange Rate." The 1980 import weights were chosen in both cases, since varying them did not make much difference. The results are presented in figure 1.

While the Nigerian TRER appreciated (fell) more or less monotonically after 1973, the Indonesian TRER was cyclical, fluctuating around an almost constant mean. Interestingly, inflation rates (see figure 2) were comparable in the two countries right up to 1982.[8] Thereafter, inflation rates in Nigeria were far higher.

7. May (1985) addresses these issues and presents a reconstructed set of accounts.

8. This may appear surprising owing to the different fiscal responses of Nigeria and Indonesia. Net domestic credit to the private sector increased in both countries at about 28 percent annually between 1973 and 1982, but the size of the windfall over 1974–78 was 22.8 percent of nonoil GDP for Nigeria as compared with 15.9 percent for Indonesia (Gelb 1986). Net domestic credit to the government in Nigeria was negative in 1974 and 1975, but has grown rapidly since; that for Indonesia became negative in 1976 and has fallen rapidly since, except for 1982 and 1983 when it rose slightly but remained negative. The Pertamina crisis of 1975 could well mark a watershed in the Indonesian response to the oil boom. Pertamina, the Indonesian national oil company, borrowed heavily to diversify into a number of major capital-intensive and service projects, many of which were (and are) considered of doubtful economic value. In 1975, this created a major debt rescheduling problem. Thereafter, borrowing powers were restricted to the Ministry of Finance, and the scope of Pertamina's activities was curtailed.

Figure 1. *Trade-Weighted Real Exchange Rates, Nigeria and Indonesia*
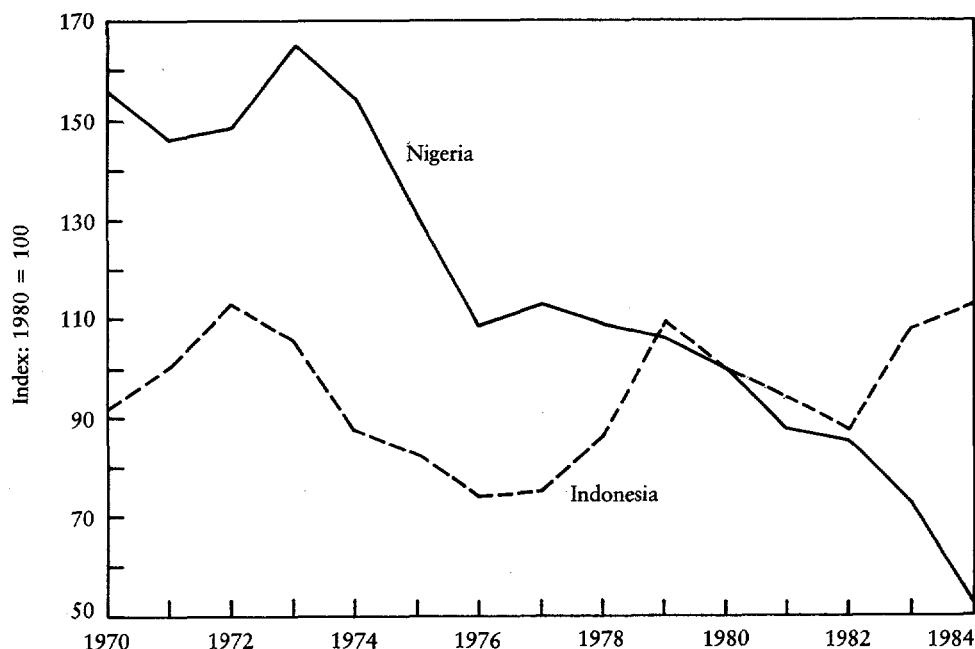
Sources: International Monetary Fund, *Direction of Trade Statistics* and *International Financial Statistics,* various years.

The effects of the two maxidevaluations in Indonesia are reflected in figure 1. The rupiah was devalued in November 1978 from Rp415/U.S dollar, at which value it had been pegged since 1971, to Rp625/U.S. dollar. This rate was allowed to crawl downward until March 1983, when it was devalued from Rp700/U.S. dollar to Rp970/U.S. dollar. One might conclude by looking at the graphs that the RER fluctuated a great deal in Indonesia and was therefore less informative than in Nigeria, where it consistently appreciated.

Two comments are relevant here: first, whether or not the RER is informative depends upon what type of expectations mechanism is posited. If the variability in the RER is predictable, and if it is expected that the RER will fluctuate around some trend, then the signal could still be informative. Further, and this point is stressed by Arndt and Sundrum (1984), even a temporary improvement in the TRER can be valuable if, for two or three years, it gives relief to producers in the tradables sector and encourages resources either to remain or increase there. There is evidence that the beneficial effects of the 1978 devaluation had been lost by late 1982, which is supported by the graph; but this implies that the beneficial relative price effects persisted for over three years.

Warr (1984) speculates on the reasons underlying the devaluations of 1978 and 1983. He argues that while the 1978 devaluation may have been adopted

Figure 2. *Inflation Rates, Nigeria and Indonesia*
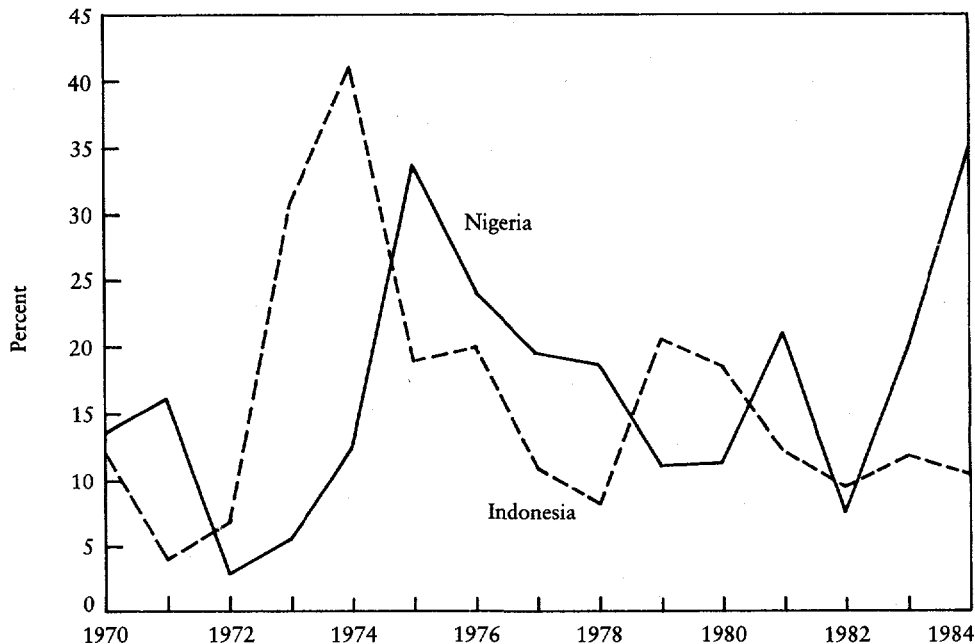
Source: International Monetary Fund, *International Financial Statistics,* various years.

to protect the tradables sector from the consequences of the oil boom, the 1983 devaluation may also have been partly due to balance of payments pressures.[9]

Second, although in Nigeria the RER was appreciating when computed using official exchange rates, the black market premium has been rising since 1982, coinciding more or less with strict official exchange rationing and the collapse of oil prices. We discuss this further in the section on post–oil boom adjustment issues.

Agricultural Performance and Policy in Indonesia and Nigeria

The presumption following an oil boom is that agriculture will decline owing to a reallocation of resources in favor of nontradables in the nonoil economy. This presumption needs to be qualified by at least two factors. First, as mentioned

9. Warr (1984) points out that in 1978 the view was widely held that the nonoil traded-goods sector needed to be protected, reflecting a presumption that Indonesia's oil exports would inevitably decline in volume, possibly vanishing within twenty years. Although Arndt and Sundrum (1984) point out that capital had moved abroad in anticipation of the 1978 devaluation, both they and Warr (1984) ignore the asset market integration with Singapore as impinging on the magnitude or timing of the devaluation.

earlier, oil revenues typically accrue to the government so that the real and monetary effects of an oil boom are critically dependent on the timing and composition of government spending. Second, the desirable magnitude of RER appreciation depends, among other things, on expectations regarding future oil prices, including the perceived persistence of the terms of trade improvement, the size of oil reserves, and adjustment costs.

In Nigeria, the oil boom led to a severe disruption of the agricultural economy and a large exodus of labor to the cities. Between 1970 and 1982, annual production of Nigeria's major cash crops—cocoa, rubber, cotton, and groundnuts—fell by 43, 29, 65, and 64 percent, respectively. The share of agricultural imports in total imports increased from about 3 percent in the late 1960s to about 7 percent in the early 1980s.

Indonesia succeeded in avoiding serious economic disruption in the agricultural sector. Agricultural growth slowed in the mid-1970s, but recovered to previous levels by the late 1970s. Rice production grew by 4.2 percent per year from 1968 to 1978 and by 6.7 percent from 1978 to 1984, largely because of rapid increases in rice yields. The share of agricultural imports in total imports remained unchanged at about 1 percent. The share of Indonesia's agricultural exports as a proportion of both developing-country agricultural exports and world agricultural exports rose at a rate of 2 percent and 0.5 percent per year, respectively, from 1965 to 1983. Nigeria's corresponding export market shares over the same period declined at the rate of 5.7 percent and 7.1 percent per year, respectively.

There were important differences in macro- and microeconomic policy between Nigeria and Indonesia. At the macro level, the two maxidevaluations in Indonesia helped significantly to reverse earlier trends of appreciation in the import-weighted real exchange rate. Fiscal policy and the composition of government spending also differed. The bulk of Nigeria's increased public expenditure went into transport, primary education, a major steel complex, construction, and auto assembly. Agricultural investments (federal and state) have accounted for an estimated mere 3 percent of disbursement in the 1970s. In contrast, Indonesia pursued an expenditure strategy relatively balanced between physical infrastructure, education, agricultural development, and capital-intensive industry.

At the microeconomic level, Nigerian agricultural policy has been criticized for its deficiencies in three areas: failure to encourage private price setting and marketing channels; failure to create a satisfactory credit system to finance farming, support services, and processing units; and in its failure to create infrastructure and an economic environment to support private services in machinery maintenance, repair, spares, and training. Most serious, perhaps, is the criticism of commodity boards for imposition of heavy taxes and retention of producer payments and for setting producer prices that bear little relationship to international prices, eroding producer incentives.[10]

10. Unless otherwise noted, the data in this section are derived from World Bank sources.

Table 6. *Nigeria: Movements in Rural Terms of Trade: Index of Real Producer Prices*
(1975 = 100)

| Year	Cocoa	Rubber (latex)ᵃ	Seed cotton	Groundnuts	Soyabeans	Palm oil
1975	100.00	—	100.00	100.00	100.00	100.0
1976	77.30	—	80.80	87.80	80.80	80.8
1977	104.20	100.00	74.80	83.50	91.70	77.7
1978–79	90.30	86.60	64.80	76.20	82.40	81.0
1979–80	94.00	89.10	57.90	82.30	73.70	91.8
1980–81	92.80	93.70	64.00	90.00	74.60	92.0
1981–82	76.80	96.00	61.60	79.80	63.90	76.2
1982–83	71.30	104.00	62.70	74.10	66.90	70.7
1983–84	62.10	84.00	51.70	59.90	71.10	57.2
1984–85	47.70	64.60	49.90	62.10	66.50	49.7

— Not available.
a. 1977 = 100.
Note: Real producer prices = Commodity Board producer prices (naira per ton) / rural CPI.
Sources: Prices: Central Bank of Nigeria, various years. CPI: Federal Office of Statistics, Lagos.

Table 6 attests to the rapid decline in producer price incentives in Nigeria. It presents an index of the real producer price faced by the farmer, defined as the nominal commodity board price divided by the rural CPI. Although data on the rural CPI are available only from 1975 onward, it appears that the decline had begun by 1975. The rural terms of trade (as measured by this real producer price) deteriorated significantly for all six commodities shown. For cocoa, cotton, and palm oil, the real producer price was less than 50 percent of its level in 1975 by the end of the period shown, and in all cases, it was less than 70 percent. Since commodity board prices are set with reference to the official exchange rate, in recent years the overvalued naira has contributed to this decline. But the marketing and pricing policies of the monopsonistic commodity boards also deserve scrutiny.

Indonesian policy has been more market oriented. The closest Indonesia comes to having a commodity board is BULOG ("Logistics Board"), the major objective of which is to ensure that prices closely follow international price trends. There has been heavy emphasis on rice production with considerable input of research and extension (the BIMAS ["Public Guidance"] extension and credit program), investments in irrigation, and subsidization of fertilizer. As a result, Indonesia is almost self-sufficient in food, with domestic production of rice and root crops adequate for its needs.

These differences are evident in per capita food imports between 1970 and 1983 (see figure 3). Both series behaved smoothly until about 1974. Thereafter, imports in Nigeria diverged significantly, consistent with Nigeria's policy of favoring the urban consumer, reaching a peak of U.S.$39 per capita in 1981, compared with U.S.$9 per capita in Indonesia. Nigerian imports fell sharply in 1983 owing to the introduction of stringent import licensing. Overall, import policy has been marked by erratic tariff policies and the

Figure 3. *Food Imports Per Capita, Nigeria and Indonesia*
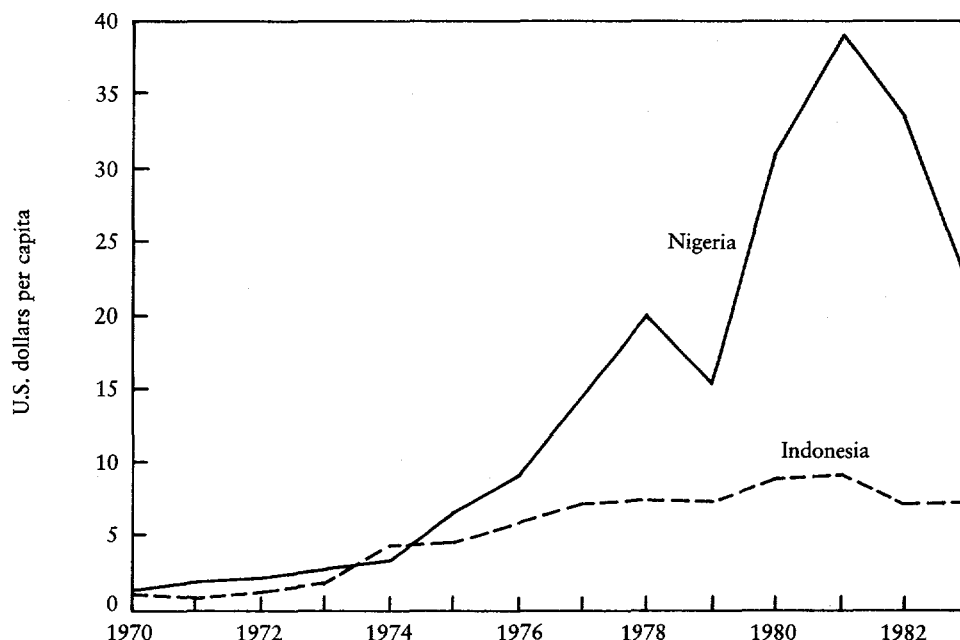
Sources: Nigerian food imports: Central Bank of Nigeria. Indonesian food imports: U.N. Trade System. Population: World Bank data.

imposition or relaxation of quantitative restrictions depending on the fluctuating oil revenues.[11] Indonesia has performed well in production of both food and exports: exports of rubber, coffee, tea, and spices were maintained throughout the oil boom.

For Nigeria, cocoa is virtually all that is left of agricultural exports. Low profitability is reflected in a roughly 50 percent decline in the volume of exports since the early 1970s, and a drop in Nigeria's position in world production from about 16 percent in the preboom years to 8 percent today.

Once a net agricultural exporter, Nigeria now spends more on import of agricultural products than it earns from its agricultural exports. Both exportables (cash crops such as cocoa and rubber) and importables (food) have been affected by the real appreciation of the exchange rate and the exodus of labor to urban centers. Some deterioration in agriculture following the oil boom may be regarded as unavoidable, but the decline of Nigerian agriculture was certainly exacerbated by erratic import and agricultural pricing and marketing policies. Since 1982 foreign exchange rationing and strict import licensing have increased the premium on illegal sale of foreign exchange and improved the outlook for

11. See Ohene-Yankyera (1984) for a study of the impact of Nigeria's food import policy on domestic agriculture.

food, as an import-competing product. But this is more due to questionable macroeconomic policy than a corrective policy for agriculture.

Foreign Borrowing: Nigeria and Indonesia

While Nigeria's proven oil reserves are estimated at about 16.6 billion barrels, this is considered an underestimate because of the current promising explorations in the Niger delta (see the *Petroleum Economist*, March 1985; *Oil and Gas Journal*, December 31, 1984; OPEC *Annual Statistical Report*, 1983). The utilization of natural gas, of which about 80 percent is currently being flared, is likely to increase because of the Escravos pipeline project. If one accepted 16.6 billion barrels of oil as a conservative estimate of Nigeria's reserves, deducted an extravagant marginal extraction cost of $5 per barrel and assumed that 50 percent of the proceeds accrue to the government, the total value at a price of about $14 per barrel for bonny light/medium would be $75 billion. This compares favorably with Nigeria's total foreign debt outstanding and disbursed of $12.3 billion in 1983. Yet Nigeria faces a potential rescheduling problem of insured trade credits of about $2 billion, as its creditors insist on a prior IMF agreement.

Since oil is an asset, it can facilitate intertemporal trade, allowing Nigeria to run current account deficits now and repay them through surpluses in the future. In countries such as Nigeria and Indonesia, the government is invariably the biggest borrower and investor. Since fiscal deficits feed into current account deficits, which are financed either by running down reserves or borrowing, there is a close link between fiscal policy and the borrowing strategy. Nigeria financed current account deficits with short-term trade credits. In the boom years it accumulated surpluses, and ran deficits in the slack years, especially from 1981 onwards. This strategy is quite reasonable provided one expected slack years and boom years to alternate and be roughly of the same frequency; but in a period of sustained sluggishness in the oil market, it could lead to serious dislocations.

Indonesian fiscal policy has been conservative, as seen earlier. While Nigeria's debt outstanding and disbursed (DOD) increased by a factor of more than 10 between 1973 and 1983, that of Indonesia increased by a little more than fourfold. More remarkably, Nigeria's DOD increased by a factor of less than 4 between 1973 and 1980, and then more than doubled between 1980 and 1983. Assuming a population of 90 million for Nigeria and 150 million for Indonesia, Nigeria's DOD per capita was about $137 in 1983 while Indonesia's was about $145. The extent of concessional aid as measured by the average grace period and grant element is much higher for Indonesia, in which per capita income is lower. The maturity structure and interest rates favor Indonesia.

Two conventional measures of debt burden, the debt/GDP and debt/exports ratios for public and publicly guaranteed medium- and long-term debt are plotted in figures 4 and 5 for Nigeria and Indonesia over 1970–84. The debt/GDP ratio has been consistently and significantly higher for Indonesia: after 1982, if the
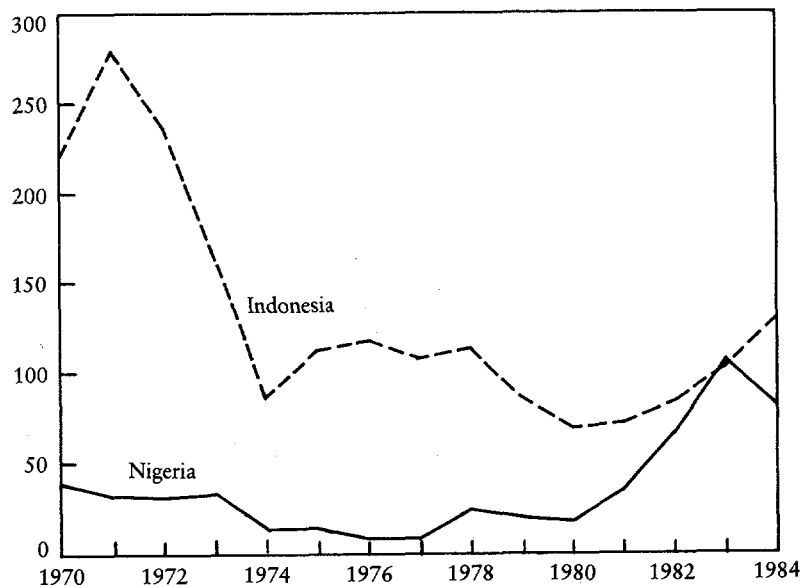
Figure 4. *Debt Outstanding as Percentage of Gross Domestic Product*
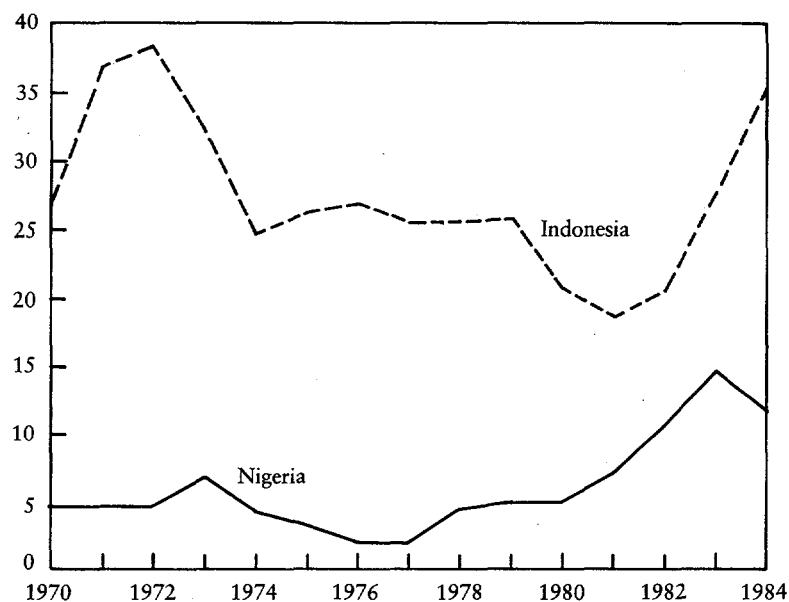
Note: Debt outstanding includes outstanding and disbursed medium- and long-term publicly guaranteed debt. Gross domestic product is at current prices. Data for 1984 are provisional estimates.
Source: World Bank data.

Figure 5. *Debt Outstanding as Percentage of Exports*

Note: Debt outstanding includes outstanding and disbursed medium- and long-term publicly guaranteed debt. Exports are totals at current prices. Data for 1984 are provisional estimates.
*Sources:* Debt: World Bank data. Exports: International Monetary Fund, *International Financial Statistics,* various years.

parallel exchange rate is used for computing this ratio for Nigeria (see section III) this conclusion may be reversed. The debt/exports ratio in Nigeria was considerably lower until about 1980, but has rapidly increased since then to a level roughly equal to the Indonesian ratio.

Given the debt burden measures, DOD per capita, and the vast oil and gas reserves of Nigeria, one might ask why debt rescheduling is not a straightforward issue. A crucial factor yet to be considered is the terms of trade (TOT) presented in figure 6: they have deteriorated sharply for Nigeria since 1981, following the oil glut. Indonesia's TOT, conversely, have remained fairly steady, even improving somewhat since 1981. This difference has its basis in the degree of export diversification in the two economies. Figure 7 plots the share of oil in total exports between 1970 and 1983. Since about 1974, oil has consistently accounted for more than 90 percent of Nigeria's exports, making its terms of trade virtually synonymous with the real price of oil.

A final conclusive consideration is the perceived economic risks borne by prospective lenders. In today's environment, these risks would be closely related to the (perceived) abilities of Nigeria and Indonesia to adjust to the high real interest rate–low oil price squeeze. This might explain the reluctance of Nigeria's creditors to reschedule without a prior IMF agreement. The market may have

Figure 6. *Terms of Trade, Nigeria and Indonesia*
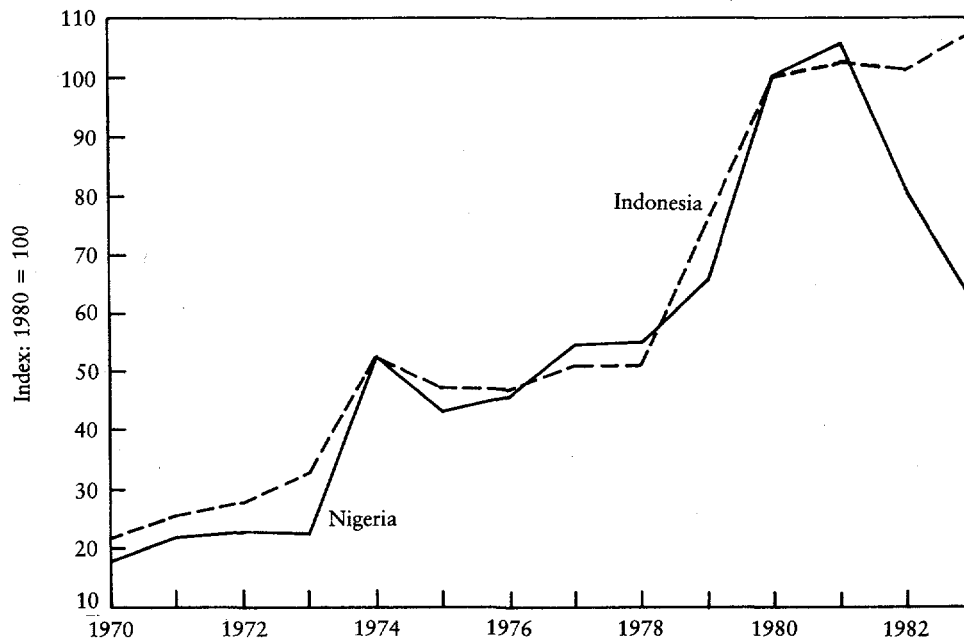
Sources: International Monetary Fund, *International Financial Statistics,* various years.

Figure 7. *Oil Exports as a Percentage of Total Exports, Nigeria and Indonesia*
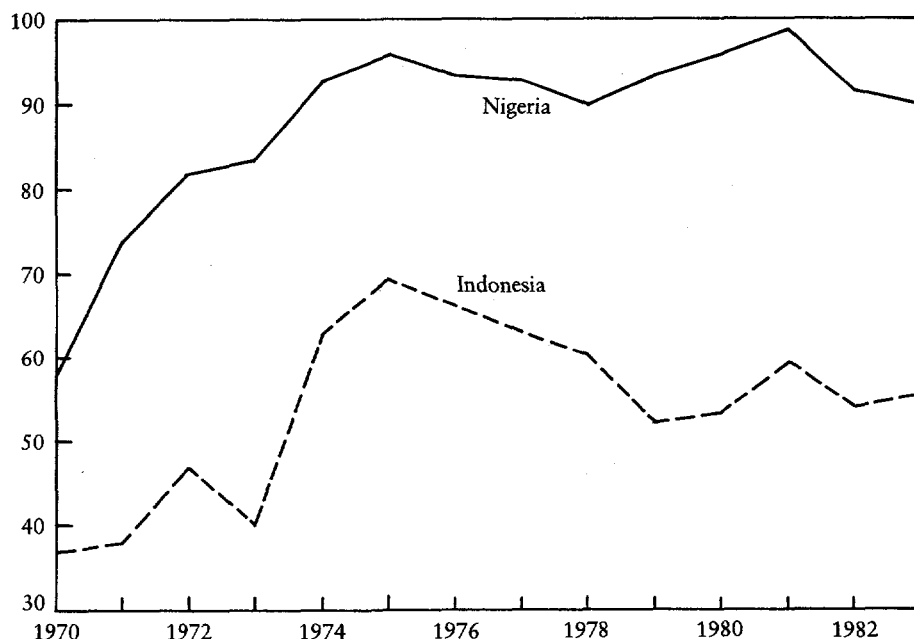
Sources: International Monetary Fund, *International Financial Statistics,* various years. Oil exports: crude petroleum exports at current prices (in millions of U.S. dollars). Total exports: merchandise exports at current prices (in millions of U.S. dollars).

determined that without policy reform of the sort discussed in section III, Nigeria is at the limit of its debt-carrying capacity.

III. NIGERIA: DOMESTIC ADJUSTMENTS AND EXCHANGE RATE POLICY

By 1981, oil had become the key determinant of Nigeria's real income, external terms of trade, creditworthiness, government revenues, and foreign exchange earnings. Following the oil glut of 1982, the major and almost exclusive policy response till the fourth quarter of 1984 was to intensify rationing of foreign exchange. Rather than let the naira depreciate in an attempt to restore equilibrium, it was decided to amend the import licensing system. In 1982, a foreign exchange budget constraint and a priority allocation formula were imposed on the issuance of licenses. In February 1984 the licensing system was completely revised with the scrapping of the open general license (OGL) system. Prior to 1981, OGL had allowed for the unrestricted importation of nonprohibited items and goods not subject to individual licensing. Further, advance import deposits, which had been imposed on nonessential goods in 1979 (lifted in 1980) were reintroduced in 1982 for all goods. For the first time, in 1982 and 1983, Nigeria accumulated trade arrears, evidence of the excess demand for foreign exchange at the official rate.

With private capital transactions and a large fraction of private commercial transactions rationed out of the official foreign exchange market (capital controls existed even during the boom), the premium on foreign exchange in the parallel (illegal) market started growing.[12] The parallel exchange market has long been a channel for private capital transactions. It has also served as a channel for illegal imports. Even during the oil boom years when foreign exchange was plentiful and import licenses easy to get, goods on the banned list were smuggled into Nigeria. There is, for example, much evidence that imported textiles have always accounted for a significant percentage of domestic supply although they were and are on the banned list. With an increasing fraction of legal commercial transactions rationed out of the official market, the foreign exchange market in Nigeria began increasingly to assume the appearance of a dual exchange system: an official market where the exchange rate is fixed and depreciates at an exogenous rate; and an illegal parallel market where the naira floats freely.

In the parallel market, there is demand for foreign currency for imports and to hold as an asset. With the rationing of the official market, the marginal cost of foreign exchange is determined either explicitly or implicitly on the parallel market. Officially, the naira is nonconvertible and there are strict capital controls. By definition, it is "freely" convertible in the parallel market for trade and capital transactions.

The parallel market premium was fairly steady until the oil glut in 1982, when the price of oil fell far below expectations while government spending remained roughly the same (see table 5) so that the reliance on the inflation tax for financing the fiscal deficit increased considerably. In the fourth quarter of 1984, fiscal austerity measures were adopted, which greatly reduced the deficit and hence, slowed the growth rate of the nominal money supply. These measures complemented the rationing of the foreign exchange market introduced earlier. In addition, the official exchange rate was depreciated at a faster rate. The parallel market premium—defined as the ratio of the parallel to the official exchange rate—continued growing until the third quarter of 1984 (see table 7), implying that the naira was depreciating faster on the parallel market. Thereafter, it stabilized. These developments coincided with the declining real price of oil, as can be seen from table 7.

Fiscal, Monetary, and Exchange Rate Policy

To maintain external balance over an extended period requires that the present discounted value of future expected trade surpluses equal the value of foreign debt. With no improvement in oil prospects expected in the near future, there seems to be little option but to reduce government spending, in particular to lower the fiscal deficit/GDP ratio, since the deficit together with the private sector saving-investment balance determine the trade surplus. The Nigerians have been

12. Whether capital controls should be relaxed is an important issue in intertemporal trade but it is beyond the scope of this paper.

Table 7. *Nigeria—Deficit Finance, Inflation, the Official Exchange Rate, and the Parallel Market Premium*

Period	Real price of oil	Change in net claims on government / beginning monetary base (percent)	Inflation	Official exchange rate depreciation (percent)	Parallel market rate depreciation (percent)	Official exchange rate (naira/dollars)	Parallel market premium
1980.1	100.00	4.29	1.40	−3.80	−3.00	0.55	1.77
1980.2	117.54	−17.30	1.00	0.90	−14.30	0.56	1.50
1980.3	119.80	−10.16	11.30	−3.20	4.80	0.54	1.63
1980.4	117.09	26.32	1.40	−1.20	4.60	0.53	1.72
1981.1	122.91	−20.50	6.00	3.10	−1.10	0.55	1.65
1981.2	120.18	3.57	5.70	9.90	1.10	0.61	1.52
1981.3	114.87	31.16	4.60	10.80	5.40	0.67	1.45
1981.4	106.95	26.10	0.30	−4.10	−6.20	0.64	1.41
1982.1	107.53	7.05	0.90	1.80	11.00	0.66	1.54
1982.2	105.05	11.11	1.80	2.80	6.90	0.67	1.60
1982.3	104.58	19.76	1.80	1.20	14.80	0.68	1.82
1982.4	104.47	12.33	2.00	0.30	4.00	0.68	1.89
1983.1	88.23	10.64	4.90	0.70	19.40	0.69	2.24
1983.2	87.93	12.91	8.70	3.70	−2.60	0.71	2.10
1983.3	87.09	17.43	10.10	4.70	42.00	0.75	2.85
1983.4	86.67	7.56	7.30	0.20	32.40	0.75	3.77
1984.1	85.71	2.44	7.40	0.00	−0.40	0.75	3.75
1984.2	85.14	4.48	16.40	0.30	18.90	0.75	4.45
1984.3	85.34	7.31	7.70	2.30	3.90	0.77	4.52
1984.4	79.86	2.88	−3.90	4.20	−2.60	0.80	4.23
1985.1	80.04	−4.12	0.90	6.00	7.10	0.85	4.27
1985.2	79.96	−1.49	2.00	5.00	3.90	0.89	4.23
1985.3	80.49	12.19	−1.80	1.50	4.00	0.90	4.33
1985.4	80.02	−3.53	−1.40	3.60	−1.50	0.94	4.12

Note: Real oil price = Nigerian bonny light petroleum prices deflated by U.S. wpi (1980.1 = 100). Net claims on government = as in line 32an, *International Financial Statistics*, imf. Monetary base = reserve money + net claims on government by commercial banks as in lines 14+22a–26d, *International Financial Statistics*, imf. Parallel market premium = parallel rate / official rate.

Sources: Oil prices: World Bank data. Net claims on government, monetary base, inflation, official exchange rate: International Monetary Fund, *International Financial Statistics*, various years. Parallel market rates: International Currency Analysis, Incorporated, *World Currency Yearbook*, various years.

doing precisely this since end-1984. The reduction in deficits should slow down the rate of increase in the money supply and inflation. If deficits had not been reduced, given the current deterioration of Nigeria's external debt situation, a predictable implication would have been increasing reliance on seigniorage to finance the deficit.

Before 1981, Nigeria's adjustable peg exchange rate policy could be supported through reserve intervention. Private excess demand at the going official rate could be satisfied by reserve depletion. With this no longer feasible, and with the government indicating its reluctance to adopt flexible arrangements, the official exchange market is strictly rationed via an import licensing system. The resultant premium on foreign exchange has provided an incentive for the emergence of parallel markets, and thereby for exports and imports to go through parallel channels as well.

The rising parallel market premium (see table 7) may be taken as an indicator of inconsistency between fiscal and exchange rate policy, resulting in foreign exchange rationing. The situation would be exacerbated by a fall in the price of oil, and hence revenues, which in the absence of further reductions in government spending, would lead to a higher inflation tax.

Given this inconsistency between fiscal and exchange rate policy, investors are unable to use the real exchange rate as a signal for decisions about resource allocation. This is partly because of a measurement problem: the official nominal exchange rate is likely to become increasingly irrelevant as the black market premium grows. The prices of traded goods are more likely to reflect the parallel exchange rate.

More importantly, even if the parallel real exchange rate signals a depreciation, investors may be unwilling to commit themselves through irreversible investments in the tradables sector.[13] This is because a high premium could damage the credibility of macroeconomic policy and thereby impinge on business risk. Further, a high premium would be a serious disincentive for foreign investors, who may be reluctant to use parallel channels. Going through official channels would imply a significant tax on such investment when the premium is high. Likewise, private inward remittances are not likely to pass through official channels.

Reductions in real government spending and official imports are likely to be efficacious in reducing the premium. In substantial measure, fiscal austerity since the end of 1984 has exploited this possibility: the government's response to declining oil revenues in the face of rising debt service has been a drastic cut in federal and state expenditures, including a priority ranking of the investment program, reduction in public sector employment, and moves toward reduced subsidies and an increase in cost recovery in the parastatals and other areas such

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13. Van Wijnbergen (1985) argues that in the absence of credible reform, liquid assets acquire an option value by enabling deferral of commitment. A similar motive might lead to capital flight and thus a higher black market premium in the current Nigerian context.

as education and health. The deficit/GDP ratio has fallen sharply as a result. A concerted effort has been made to meet medium- and long-term external debt service obligations, and uninsured trade credits have been rescheduled. The exchange rate regime, however, remains the same with the exception of a faster rate of depreciation.

Implications of the Exchange Rate Regime

The overvaluation of the naira is explicit in the high and growing parallel market foreign exchange premium, and implicit in the strict official rationing of foreign exchange. Since the government has reduced the real deficit, a devaluation should be effective in depreciating the official real exchange rate. The efficacy of a devaluation is enhanced because it is likely to be noninflationary. The reason is that a considerably more depreciated exchange rate than the official rate is already implicit in the domestic price of tradables, reflecting the scarcity premium in the illegal foreign exchange market. The devaluation would largely amount to a tax on rents received by those who get import licenses. Second, if the cut in the deficit/GDP ratio is seen as credible and sustainable, a devaluation will accelerate adjustment to a lower parallel exchange premium, reducing the desirability of using parallel channels.[14]

The present system is both inequitable and inefficient. It is inequitable because it results in a large transfer of unearned income, "rents," to those who obtain licenses. Importers are subsidized at the expense of exporters who surrender their foreign exchange earnings at the official rate but do not get the entire amount back for subsequent imports and of the central bank to the extent that it runs down reserves to finance the import program. The size of the unearned income can be estimated as the difference between the exchange rate implicit in the ultimate naira price of items officially imported, and their cost, insurance, and freight (c.i.f.) naira price at the official exchange rate. A crude measure of the unearned income can be obtained by multiplying the total value of the import program by the parallel market exchange premium, since this scarcity premium is reflected in the domestic price of traded goods. It suggests, given an illustrative import program of $3 billion (billion means one thousand million) and a parallel market naira/dollar premium anywhere between 2 and 3 naira per dollar that the rents are of the order of 6–9 billion naira, a significant fraction of annual GDP at roughly 70 billion naira.

The import licensing system is inefficient on three counts: first, it creates allocative inefficiency by encouraging economic activity that might be unviable with a more realistic exchange rate; second, it is wasteful, encouraging businessmen to invest resources in attempting to influence the composition of licenses, the well-known phenomenon of "rent seeking"; and finally, it imposes a serious administrative burden on civil servants.

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14. For the dynamics of corrective fiscal and exchange rate policy in the presence of parallel foreign exchange markets, see Pinto 1986.

Recent Policy Developments

The emphasis of the Nigerian government has been shifting from large, capital-intensive projects to agriculturally based ones. Domestic and multinational companies are being encouraged to integrate backward by investing in agriculture as a source of raw materials. The government appears to be reducing its own involvement and encouraging private sector investment and credit flows. In keeping with what is perceived to be the economy's comparative advantage, the government intends to channel resources to agriculturally related industries that have high-employment potential, produce basic consumer necessities, and have extensive links with the rest of the economy. Priority industries include textiles, paper, drugs and chemicals, and food processing. Nonpriority industries, which include those with high import content and those which make consumer durables such as cars and electronic equipment, will be left to survive on their own.

While, on the one hand, the government is encouraging private enterprise and initiative, on the other hand, it is strengthening administrative control over crucial areas such as import licensing, and indirectly increasing its influence through its fiscal and exchange rate policies. These policies and signals are likely to become increasingly confusing as inflation and the parallel market exchange premium rise. Reliance on the private sector is likely to succeed only if backed by credible and consistent policy and clear market signals. The shift in emphasis away from a capital-intensive sector calls for major trade reforms. It is unlikely to be achieved through administrative allocation procedures.

IV. Concluding Remarks

This article provides a perspective on the Nigerian experience during and after the oil boom. It stresses that what mattered during the boom was the spending effect and its impact on resource allocation in the nonoil economy. With oil revenues accruing to the government, the composition and timing of public spending were crucial in the adjustment to the boom.

The policy comparison with Indonesia reveals that there were important differences between the countries with regard to fiscal and exchange rate policies. Principal differences also existed in their foreign borrowing strategies (which were more conservative in Indonesia) and agricultural policy (which was market-oriented and included provision of transitional assistance in Indonesia).

Lastly, post–oil boom adjustment issues for Nigeria have been discussed. While fiscal austerity has decreased government spending, the question of exchange rate unification (minimization of the parallel market premium) remains. One frequently encountered the following argument in Nigeria: "Oil is dollar-denominated and virtually our only export. What purpose then would be served by an exchange rate adjustment?" This article shows that this argument is incomplete. Such a perspective ignores too many issues: the credibility of macroeconomic policy; the rents and the administrative burden imposed on civil servants by

administrative allocation; the misallocation likely to be induced by the subsidy implicit in the overvalued exchange rate; and the constraints placed on pricing by the agricultural commodity boards.

Postscript

On September 26, 1986, Nigeria adopted a floating exchange rate regime with an interbank market, simultaneously getting rid of the strict rationing in the official foreign exchange market. It has also undertaken, or proposes to undertake, wide-ranging reforms in agricultural marketing (commodity boards were abolished at the end of 1986), domestic credit allocation, and pricing policies, in addition to other economic measures as part of a comprehensive medium-term adjustment program. The analysis contained in this article was completed prior to these developments.

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