

# 8 Aspects of Macroeconomic Adjustment

## 8.1 INTRODUCTION

The economy of Sierra Leone fell into stagnation and then decline in the 1970s and 1980s, and in the mid-1980s into chronic instability. This instability the World Bank attributed to economic mismanagement by the government. In light of our subsequent discussion, it is worth giving an extended quotation that summarizes the view of the Bank,

[The Government] did not adjust the exchange rate in a timely and sufficient manner, and it continued to keep agricultural producer prices . . . low and incurred huge budget deficits. In 1979, when the terms of trade drastically turned against Sierra Leone, instead of managing demand, the Government . . . increased its expenditure program sharply. Domestic inflation soared, and the spread between the official and parallel market exchange rate widened sharply. With the Leone grossly overvalued in the official market, most trade and foreign exchange was attracted away from that market. (World Bank, 1985a, p. 1)

The Bank story can be summarized as follows: the economy suffered a severe external shock, and the government turned this shock into a domestic disaster by mismanaging the exchange rate (which made a bad balance-of-payments problem worse), generating disincentives for agriculture (which undermined exports), and reckless spending (which provoked rampant inflation). It will be argued that there is very little truth in this story;<sup>1</sup> on the contrary, much of the economic instability

resulted from the implementation of multilateral conditionalities, with the 'floating' of the exchange rate being the most important case of macroeconomic mismanagement. Prior to developing this argument, it is necessary to deal with several misconceptions about the performance of the economy

- (1) that the external account suffered from chronic disequilibrium;
- (2) that the exchange rate was grossly over-valued;
- (3) that government expenditure grew out of control.

After correcting these three misconceptions, we turn to a discussion of inflation.

## 8.2 THE BALANCE OF PAYMENTS

A key point in the multilateral diagnosis of the ills of the Sierra Leonean economy was that the government mismanaged the exchange rate, allowing it to be grossly overvalued ('unrealistic' was a term often used). The maladies resulting from this particular mismanagement were alleged to be several:

- (1) it discouraged exports in general and encouraged imports;
- (2) specifically, it stimulated the smuggling of diamonds and gold (into Liberia) to seek better prices in hard currency;
- (3) it penalized agriculture relatively to urban industry.

To rectify this mismanagement, the IMF in 1986 pressed upon the Government a float of the Leone against the advice of professionals in the Bank of Sierra Leone and the Ministry of Finance. In 1989 the IMF continued to require what it called a 'clean float' as conditionality.<sup>2</sup>

The first step in assessing whether instability derived from government mismanagement is to see whether the exchange rate was in fact over-valued and when. Some general theoretical considerations are necessary to interpret the statistics. There is a sense in which an exchange rate is by definition over-valued if there is unsustainable balance-of-payments pressure. If one

believes that exports are negatively related to the exchange rate and imports positively related and capital flows are ignored, then, *ceteris paribus*, there is a devaluation which will correct the balance-of-payments disequilibrium. However, by explaining all balance-of-payments deficits, this explains none, as well as begging the practical questions. For example, a balance-of-payments deficit may be the result of a deficit on the current account accompanied by a smaller surplus in the capital account (or vice versa). Particularly for African countries, the two accounts are unlikely to respond to a change in the exchange rate in the same manner. It could be argued that private investment is responsive to the exchange rate,<sup>5</sup> but this is much less important than official lending for the small SSA countries. For these countries during the 1980s, the non-trade account suffered from heavy deficits as a consequence of debt payments and the decline of official lending. If such a situation is treated as a relative price problem, then the exchange rate becomes captive of non-trade flows, and its role as regulator of commodity trade according to comparative advantage is lost. The view that debt-related deficits should be covered by exchange-rate-promoted trade surpluses has a decidedly mercantilist flavour. Further, pressing for larger trade surpluses to cover a debt deficit presupposes the value judgement that the debt should be paid in full, a position abandoned with regard to Africa by major donor governments in the late 1980s.

With these points in mind, we turn to an inspection of the external account in Table 8.1. The 25 years divide into five periods. During 1963-7, the country ran rather small trade deficits roughly equal to the overall deficit in the external account, with both private and official net capital flows positive. This period of small deficits was followed by six years, 1968 to 1973, when the trade account fluctuated between deficit and surplus, with an positive export-import balance for the years taken together. During this second period the overall external balance was positive every year except the last, when the shortfall was quite small. In the third period, 1974 to 1977, the trade balance turned negative. However, capital flows remained net positive, so the balance-of-payments pressure

Table 8.1 Measures of the external account, 1963-88

| Year         | Trade account (US\$m) |         | Percent of GDP* |             |                         | Comment |              |
|--------------|-----------------------|---------|-----------------|-------------|-------------------------|---------|--------------|
|              | Exports               | Imports | X/M             | X-M account | Total balance on period |         |              |
| Period 1:    |                       |         |                 |             |                         |         |              |
| 1963         | 72                    | 74      | -2              | -0.5        | -5.5                    | -0.6    | Small trade  |
| 1964         | 88                    | 89      | -1              | -0.1        | -6.4                    | -0.1    | deficit, net |
| 1965         | 83                    | 94      | -11             | -2.8        | -9.2                    | -2.6    | capital flow |
| 1966         | 78                    | 87      | -9              | -2.4        | -6.8                    | -1.8    | positive     |
| 1967         | 68                    | 79      | -11             | -2.9        | -7.5                    | -3.0    |              |
| Period 2:    |                       |         |                 |             |                         |         |              |
| 1968         | 93                    | 81      | 12              | 3.4         | -0.6                    | 3.5     | Positive     |
| 1969         | 105                   | 99      | 7               | 1.6         | -2.4                    | 2.0     | X/M,         |
| 1970         | 101                   | 103     | -2              | -0.7        | -3.8                    | 0.7     | capital flow |
| 1971         | 104                   | 109     | -5              | -1.0        | -4.7                    | 0.1     | positive     |
| 1972         | 114                   | 105     | 8               | 1.7         | -1.9                    | 2.1     |              |
| 1973         | 131                   | 140     | -9              | -1.5        | -5.0                    | -1.4    |              |
| Period 3:    |                       |         |                 |             |                         |         |              |
| 1974         | 145                   | 200     | -54             | -8.0        | -9.0                    | -2.2    | Substantial  |
| 1975         | 147                   | 186     | -40             | -5.1        | -9.4                    | -3.8    | X-M          |
| 1976         | 115                   | 148     | -33             | -4.9        | -8.5                    | -4.3    | deficit,     |
| 1977         | 148                   | 168     | -20             | -2.5        | -5.2                    | -0.7    | capital flow |
| Period 4:    |                       |         |                 |             |                         |         |              |
| 1978         | 193                   | 263     | -71             | -6.7        | -11.5                   | -3.8    | Large X/M    |
| 1979         | 197                   | 336     | -139            | -8.7        | -8.8                    | -0.9    | deficit,     |
| 1980         | 214                   | 386     | -172            | -14.7       | -7.2                    | 1.0     | capital flow |
| 1981         | 152                   | 282     | -130            | -9.3        | -10.3                   | -7.3    | positive     |
| 1982         | 110                   | 260     | -150            | -9.9        | -11.2                   | -8.3    |              |
| Period 5:    |                       |         |                 |             |                         |         |              |
| 1983         | 107                   | 133     | -26             | -1.8        | -1.2                    | -5.9    | Virtual      |
| 1984         | 133                   | 150     | -17             | -1.0        | -1.3                    | -5.1    | trade        |
| 1985         | 132                   | 141     | -9              | -0.8        | 0.6                     | -5.0    | balance,     |
| 1986         | 126                   | 111     | 15              | 2.0         | 17.9                    | -38.6   | capital flow |
| 1987         | 139                   | 114     | 25              | 2.9         | -3.2                    | -2.7    | negative     |
| Period 6(?): |                       |         |                 |             |                         |         |              |
| 1988         | 104                   | 138     | -34             | -3.3        | -0.4                    | -12.5   | ???          |

Table 8.1 continued

| Averages | Exports | Imports | X-M  |
|----------|---------|---------|------|
| 1963-67  | 78      | 84      | -6   |
| 1968-73  | 108     | 106     | 2    |
| 1974-77  | 139     | 176     | -37  |
| 1978-82  | 173     | 305     | -132 |
| 1983-87  | 128     | 130     | -2   |

\*The percentages are: (trade balance/GDP); (current account balance/GDP); and (overall balance/GDP), using the definition of the IMF in each case. For example, in the December 1990 number of *International Financial Statistics*, these three external balances are lines 77acd, 77a.d, and 77c.d. The percentages are calculated from external account flows and current GDP measured in Leone. Therefore, the figures are close to but not exactly what one would obtain by converting GDP into dollars and dividing into dollar-denominated external account categories.  
Source: SLG, BSL, items a, b, c; UN, *Monthly Bulletin of Statistics*; IMF, *International Financial Statistics*.

was clearly a trade account problem. The fourth period, 1978-82, separates itself out for the huge increase in the trade deficit, on average almost four times greater than in the previous period. Again, capital flows were positive (though smaller absolutely). Thus, for nine years, 1974 to 1982, Sierra Leone experienced a growing balance-of-payments crisis, arising in the trade account. The last period, 1983-7, proved quite different. In this case the external account deficit was associated with a near equality of imports and exports, with the overall deficit arising solely from the non-trade account. The substantial drop in exports and rise in imports in 1988 sets this year apart from the previous five. Until later figures came forth, it would not be possible to judge if this year represented a return to chronic trade deficits or a transitory phenomenon.

The table suggests that in the mid-1980s Sierra Leone resolved (at least temporarily) its problem of the current account. Inspection of Table 8.1 shows that in 1983, for the first time since independence the capital account showed a deficit, which continued through 1988 with the exception of 1987. After 1982 a spectacular decline in the trade deficit began: US\$ -150 million in 1982, -26 million in 1983, and continuing to fall until achieving a surplus in 1986 and another in 1987, with these

being the largest surpluses since independence. This dramatic improvement in the trade balance would not seem to qualify for economic mismanagement. Nor would the reversal from deficit to surplus seem consistent with a 'grossly overvalued' exchange rate. But the question naturally arises, why would a country be suffering from chronic balance-of-payments pressure when the trade balance was improving? The professionals at the Bank of Sierra Leone pointed out the answer: the huge devaluations of the Leone after 1982, combined with liberalization of foreign exchange dealings, resulted in massive capital outflow, quite legal and under the eyes of a central bank helpless to stop it. Later this point will be developed in more detail; stated briefly, the structural adjustment measures demanded by the multilaterals resulted in legalized capital flight and speculation on the national currency.

### 8.3 ROLE OF THE EXCHANGE RATE

For the World Bank and the IMF the key variable determining Sierra Leone's balance of payments was the exchange rate. This emphasis followed from a theoretical framework in which all problems derive from relative price distortions. Table 8.2 provides information to assess this approach. Here the trade balance is reproduced along with the nominal exchange rate and a calculation of the so-called 'real' exchange rate. In Table 8.2 1978 is taken as a convenient base for the indices, because in that year the Leone and US dollar exchanged virtually one-to-one. The last column offers a measure often used by the Fund and the Bank in judging the soundness of exchange rate policy, a calculation of inter-country purchasing power parity (PPP).<sup>4</sup> A measure of purchasing power parity can be crudely approximated by multiplying a nominal exchange rate by the ratio of domestic prices to international prices. As is common practice, in the table international prices have been approximated by the US general price deflator. The simple logic of the measure is as follows: given the nominal exchange rate, if the world (US) price level rises less (more) than the domestic price level, then the

TABLE 8.2 A crude estimate of the purchasing power parity ('real') exchange rate

| Year          | X-M balance<br>(US\$m) | Nominal exchange rate<br>\$/Leone | Index | PPP rate<br>Index | Comment on<br>period  |
|---------------|------------------------|-----------------------------------|-------|-------------------|---|
| Period 1:     |                        |                                   |       |                   |   |
| 1963          | -2                     | 1.400                             | 139   | 99                | Appreciation of 'real' exchange rate; increased trade deficit                       |
| 1964          | -1                     | 1.400                             | 139   | 110               |   |
| 1965          | -11                    | 1.400                             | 139   | 114               |   |
| 1966          | -9                     | 1.400                             | 139   | 114               |   |
| 1967          | -11                    | 1.361                             | 135   | 116               |   |
| Period 2:     |                        |                                   |       |                   |   |
| 1968          | 12                     | 1.208                             | 111   | 104               | Compared to previous period 'real' devaluation, worsening X-M                       |
| 1969          | 7                      | 1.200                             | 111   | 102               |   |
| 1970          | -2                     | 1.208                             | 111   | 106               |   |
| 1971          | -5                     | 1.304                             | 130   | 108               |   |
| 1972          | 8                      | 1.251                             | 124   | 108               |   |
| 1973          | -9                     | 1.241                             | 123   | 105               |   |
| Period 3:     |                        |                                   |       |                   |   |
| 1974          | -54                    | 1.191                             | 118   | 94                | Compared to previous period 'real' devaluation, worsening X-M                       |
| 1975          | -40                    | 1.258                             | 125   | 108               |   |
| 1976          | -33                    | 0.905                             | 90    | 86                |   |
| 1977          | -20                    | 0.907                             | 90    | 88                |   |
| Period 4:     |                        |                                   |       |                   |   |
| 1978          | -71                    | 1.007                             | 100   | 100               | Same 'real' exchange rate as period 2, huge X-M deficit compared to earlier surplus |
| 1979          | -139                   | 1.014                             | 101   | 103               |   |
| 1980          | -172                   | 1.121                             | 111   | 111               |   |
| 1981          | -130                   | 0.905                             | 90    | 102               |   |
| 1982          | -150                   | 0.803                             | 80    | 113               |   |
| Period 5:     |                        |                                   |       |                   |   |
| 1983          | -26                    | 0.528                             | 52    | 124               | Large appreciation, sharp fall in X-M deficit, changing to surplus                  |
| 1984          | -17                    | 0.414                             | 41    | 159               |   |
| 1985          | -9                     | 0.203                             | 20    | 138               |   |
| 1986          | 15                     | 0.064                             | 6     | 81                |   |
| 1987          | 25                     | 0.031                             | 3     | 106               |   |
| Period 6 [?]: |                        |                                   |       |                   |   |
| 1988          | -34                    | 0.029                             | 3     | 125               | ????  |

Table 8.2 continued

| Averages | X-M  | Nominal exchange rate<br>\$/Leone | Index | PPP rate<br>Index |
|----------|------|-----------------------------------|-------|-------------------|
| 1963-67  | -6   | 1.392                             | 138   | 111               |
| 1968-73  | 2    | 1.235                             | 122   | 106               |
| 1974-77  | -37  | 1.065                             | 105   | 92                |
| 1978-82  | -132 | 0.970                             | 96    | 106               |
| 1983-87  | -2   | 0.248                             | 24    | 122               |

The purchasing power parity rate was approximated by multiplying the nominal exchange rate by the Freetown cost of living index and dividing by the US GNP price deflator.

Source: Nominal exchange rate and trade in US dollars: UN, *Monthly Bulletin of Statistics*, various issues; the 'international' rate of inflation is the US general GNP deflator, from USG, CEA, 1988.

national currency in question appreciates (depreciates or devaluates), and the country's exports become less (more) competitive. This is a crude measure in that it ignores any institutional relations which may govern trade (such as commodity agreements), as well as taking no account of trade determined by technological factors or special endowments of factors.<sup>5</sup> Because the calculations usually use general price indices, no account is taken of the distinction between tradeables and non-tradeables, or the composition of trade of the country in question. Like many simple measures, familiarity in use has resulted in ignoring its limitations. These limitations do not weaken the argument that follows; rather, they strengthen it. The purpose is to use the measures of the multilaterals themselves to see if the conclusion about 'real' exchange rates and trade flows was supported by the empirical evidence.

From the early 1980s onwards the Leone experienced a series of nominal devaluations that could be described as astounding. In 1980 the trade-weighted exchange rate stood at US\$ 1.12 to the Leone; by 1987 it collapsed to US 3 cents. The most dramatic drop came in three catastrophic months in 1986 when the IMF 'clean float' (treated later) drove the Leone from 5.7 to the dollar to 30 (27 June to 26 September). If this represented sound economic policy, the government of Sierra Leone might have been well-advised to experiment with mismanagement.

Consider the mid-points of the two five year periods, 1978-82 and 1983-7: despite a nominal devaluation of 550 per cent, the purchasing power parity exchange rate *appreciated* by 15 per cent. One would think that when a policy so obviously failed to achieve its purpose ('real' devaluation), it would be abandoned. The great swings in PPP measure of the exchange rate lend support to the view that large devaluations generate general equilibrium effects which can be their own undoing, resulting in subsequent real appreciation. The sharp real depreciation in 1986 was followed by a real appreciation of 31 per cent in 1987, then in 1988 a return to the level of 1983 at 25 per cent above 1978.

Table 8.2 provides further evidence to cast doubt upon the effectiveness of devaluation. As the commentary in the last column summarizes, the behaviour of the trade balance with respect to the real exchange rate proves quite perverse if one follows the logic of the multilaterals. A substantial real devaluation characterized the second period compared with the first, but the trade balance worsened. Carrying on down the table, we see that the third period again brought a real devaluation, and again the trade balance deteriorated. In the fourth period the massive increase in the trade deficit was associated with real appreciation, but it is hard to attribute causality when one looks on to the fifth period. During 1983-7 the PPP rate appreciated by 15 per cent compared with the period before, and the trade deficit shifted from deficit to surplus. On the basis of the PPP calculations alone, one can agree with the Bank that the Leone was 'grossly overvalued' during the mid-1980s, and it is also true that the trade balance improved strikingly.<sup>6</sup>

These *ad hoc* criticisms of faith in the exchange rate adjustment can be made more rigorous by applying regression analysis. Using annual data from 1965 to 1985 and quarterly data for 1979 to 1988 (first quarter for both) the relationship between the exchange rate and trade flows can be estimated econometrically, and the results are reported in Table 8.3. The estimation is a crude one, but similar to statistical exercises carried out by professionals at the World Bank. For example, a 1988 World Bank working paper offered statistical results based

Table 8.3 Regression analysis of exports and imports and the 'real' (PPP) exchange rate

| Variable<br>(logarithmic)                    | Coefficient              | Standard error | T-statistic | Regression statistics |
|--|--------------------------|----------------|-------------|-----------------------|
| 1. Annual data, 1964-85                      |                          |                |             |                       |
| depVar:<br>deflated exports (level)          |                          |                |             |                       |
| real X-rate(t-1)                             | -0.656                   | 0.533          | -1.2        | R2(adj) = 0.142       |
| trend  | -0.016                   | 0.008          | -2.0        | DW = 1.97             |
| constant                                     | 5.601                    | 0.103          | 54.4*       | DF = 19               |
| depVar:<br>deflated imports (level)          |                          |                |             |                       |
| real X-rate                                  | -1.244                   | 0.385          | -3.2†       | R2(adj) = 0.739       |
| real GDP                                     | 2.284                    | 1.045          | 2.2         | DW = 1.53             |
| trend  | -0.096                   | 0.029          | -3.3†       | DF = 19               |
| constant                                     | -6.556                   | 5.886          | -1.1        |                       |
| 2. Quarterly data, 1979-88                   |                          |                |             |                       |
| depVar:<br>deflated exports (level)          |                          |                |             |                       |
| real X-rate(t-1)*                            | -1.127                   | 0.672          | -1.7        | R2(adj) = 0.009       |
|  | (-1.125)                 | (0.659)        |             | (0.054)               |
| 1st Qt dummy                                 | 0.307                    | 0.585          | 0.5         | DW = 0.201            |
| 2nd Qt dummy                                 | 0.570                    | 0.616          | 0.9         | DF = 34               |
| 3rd Qt dummy                                 | 0.001                    | 0.598          | 0.002       |                       |
| constant                                     | 3.833                    | 0.535          | 7.2†        |                       |
| depVar:<br>deflated exports (1st difference) |                          |                |             |                       |
| real X-rate(t-2)                             | -0.072                   | 0.058          | -1.2        | R2(adj) = 0.383       |
| 1st Qt dummy                                 | 0.576                    | 0.206          | 2.8†        | DW = 2.33             |
| 2nd Qt dummy                                 | 0.311                    | 0.208          | 1.5         | DF = 30               |
| 3rd Qt dummy                                 | -0.408                   | 0.202          | -2.0        |                       |
| constant                                     | -0.040                   | 0.143          | -0.3        |                       |
| depVar:<br>deflated imports (level)          |                          |                |             |                       |
| real X-rate(t-1)                             | -0.505                   | 0.221          | -2.3        | R2(adj) = 0.068       |
| 1st Qt dummy                                 | -0.017                   | 0.180          | -0.09       | DW = 2.58†            |
| 2nd Qt dummy                                 | -0.226                   | 0.179          | -1.3        | DF = 31               |
| 3rd Qt dummy                                 | 0.225                    | 0.180          | 1.3         |                       |
| constant                                     | 0.543                    | 0.260          | 2.1†        |                       |
| depVar:<br>deflated imports (1st difference) |                          |                |             |                       |
| real X-rate(t-1)                             | -0.736                   | 0.226          | -3.3†       | R2(adj) = 0.221       |
| 1st Qt dummy                                 | omitted, non-significant |                |             | DW = 2.11             |
| 2nd Qt dummy                                 | omitted, non-significant |                |             | DF = 33               |
| 3rd Qt dummy                                 | omitted, non-significant |                |             |                       |
| constant                                     | 0.091                    | 0.059          | 1.5         |                       |

Table 8.3 continued

\*Numbers in second row in parentheses are the statistics obtained using the real exchange rate only.

†The hypothesis that there exists autoregression cannot be rejected.

‡Significant at the 0.01 level of probability.

All equations are estimated in logarithmic form. In the case of first differences, the estimations are of the natural log of the ratio of successive periods.

Annual data: The exchange rate and real GDP are from previous tables. Deflated imports and exports are obtained by deflating dollar values by the unit value indices in World Bank, November 1974, Vol 5, Table 8.9; and World Bank, September 1985, p. 102; and SLG, CSO, 1987 (where indices refer to Leone prices and must first be adjusted for the exchange rate).

Quarterly data: Quarterly exchange rate figures are from IMF, *International Financial Statistics*, various years, multiplied by the ratio of the Freeborn cost of living index (Bank of Sierra Leone, *Economic Trends*, various numbers) to the US general price deflator (*Economic Report of the President*, various years). Quarterly dollar exports and imports are obtained by converting the Leone figures (*Economic Trends*) by the exchange rate. The exports and imports are then deflated by using the unit prices reported monthly, again in *Economic Trends*.

on cross-sectional data claiming to establish that real exchange rates had a major impact on the trade of SSA countries.<sup>7</sup> The statistics in Table 8.3 offer little support for that view in the case of Sierra Leone. For the annual data the exchange rate is not significant for the level of exports, and while it is highly significant for real imports, it is not of the theoretically predicted sign (also the estimate seems afflicted by autoregression). Estimations on first differences yield no significant coefficients (except for the constant term) and lower R<sup>2</sup>'s, so they are not reported.

Use of quarterly data produces results marginally more encouraging for the role of the real exchange rate. Here, surprisingly, estimations using levels of variables are considerably less significant than using rates of change. The coefficient on the real exchange rate for deflated exports is of the predicted sign (negative), but non-significant. Some explanatory power is gained from quarterly adjustment by the dummy variables). For imports again the coefficient on the real exchange rate is significant but assumes the 'wrong' sign. It might be that the absence of the real GDP variable in the quarterly estimate produced the perverse coefficient for imports, were it not that

the negative sign was duplicated in the annual data. Certainly these regression estimates are crude; for example, they employ ordinary least squares. As mentioned, they follow the technique applied in World Bank empirical studies. One can conclude that preliminary econometric evidence does not confirm that trade flows respond to the exchange rate in the manner suggested by the World Bank, and leave it to the advocates of the power of exchange rates to establish the contrary.<sup>8</sup>

This discussion of trade flows would not be complete without reference to smuggling, for many alleged that a substantial portion of the country's trade went unrecorded. This allegation by its nature would not be easy to verify empirically. However, the existence and extent of smuggling would not affect our conclusion that the official trade balance improved dramatically with no apparent connection with the exchange rate. The Bank and the Fund primarily concerned themselves with the official figures, and only indirectly with unrecorded flows. They argued that what smuggling occurred resulted from a mismanaged exchange rate (and taxes on diamonds and gold). The discussion so far demonstrates that it is not obvious that the exchange rate was mismanaged.

To this point we have considered the question of government exchange rate mismanagement by considering only data from Sierra Leone. Perhaps the more constructive approach would be to ask, if purchasing power parity exchange rates are a measure of sound management, how did Sierra Leone compare with its trading competitors? This question is more relevant, because Sierra Leone's trading partners do not to any great extent produce the commodities which Sierra Leone exports (diamonds, coffee, cocoa and palm kernels). To an extent, it was irrelevant what happened to inflation and the nominal exchange rate in Sierra Leone compared with Europe and the United States; what happened to those variables in other countries which export similar products is highly relevant. In Table 8.4, purchasing power parity exchange rates have been calculated for five countries of West Africa in addition to Sierra Leone: Cote d'Ivoire, Ghana, Liberia, Nigeria and Senegal. In each case, the nominal exchange rate was multiplied by the ratio of the

domestic price level to the US price level. All of these countries exported the agricultural commodities that Sierra Leone did (or potentially could have done).<sup>9</sup>

Table 8.4 Crude measure of purchasing power parity exchange rates for Sierra Leone and five trade competitors, 1980-7

| Year     | Country |         |       |               |              |
|----------|---------|---------|-------|---------------|--------------|
|          | Liberia | Nigeria | Ghana | Cote d'Ivoire | Sierra Leone |
| 1980     | 100     | 100     | 100   | 100           | 100          |
| 1981     | 99      | 121     | 253   | 99            | 97           |
| 1982     | 104     | 122     | 305   | 123           | 131          |
| 1983     | 106     | 134     | 61    | 161           | 181          |
| 1984     | 105     | 168     | 51    | 188           | 226          |
| 1985     | 104     | 144     | 48    | 155           | 207          |
| 1986     | 112     | 48      | 39    | 143           | 190          |
| 1987     | 114     | 41      | 30    | 122           | 147          |
| Averages |         |         |       |               |              |
| 1980s    | 106     | 110     | 111   | 136           | 160          |
| rank:    | 2       | 3       | 4     | 5             | 6            |
| 1980-84  | 103     | 129     | 150   | 134           | 147          |
| rank:    | 1       | 3       | 6     | 4             | 5            |
| 1985-87  | 110     | 78      | 39    | 140           | 193          |
| rank:    | 4       | 2       | 1     | 5             | 6            |

These statistics calculated in the same manner as in Table 8.2.

Source Exchange rates and inflation rates: IMF, *International Financial Statistics*, various issues.

The comparison suggests that the government of Sierra Leone was not flagrant in maintaining an overvalued exchange rate in the 1980s. At the bottom of the table are averages, for the eight-year period, and divided between 1980-84 and 1985-7 (the latter coinciding with Sierra Leone's massive nominal devaluations). Along with these averages is the rank ordering of the countries by reverse order of real exchange rate appreciation. For the

eight years as a whole, Sierra Leone had the smallest real appreciation compared with 1980, only 5 per cent. During 1980-84, Sierra Leone enjoyed the second lowest appreciation, exceeding only Liberia. In the latter period the country's currency depreciated in real terms by 3 per cent, with only Nigeria and Ghana doing better. That three countries in the table could not devalue nominally<sup>10</sup> does not alter the conclusion that on the criterion of exchange rate management the exchange rate of Sierra Leone performed better than its competitors.

From this analysis of the balance of payments and the exchange rate emerge important conclusions for structural adjustment. First, while Sierra Leone suffered from an unmanageable trade and current account in the 1970s and early 1980s, by the mid-1980s trade flows produced a surplus, and this surplus was achieved with an appreciating real exchange rate. Second, the massive devaluations of the mid-1980s proved ineffective in achieving substantial real devaluation. Third, evidence indicates little support for the view that the trade account was responsive to the real exchange rate. Fourth, relatively to its competitor countries, Sierra Leone did not have an appreciating real exchange rate. Taken together, these conclusions imply that the heavy emphasis on exchange rate adjustment by the multilaterals had little justification.

#### 8.4 THE FISCAL DEFICIT

If in the judgement of the Bank and the Fund the over-valued exchange rate qualified as the primary distortion in the Sierra Leone economy, a close second came the fiscal deficit. A key part of the World Bank story of the maladies of the economy involved an indictment of excessive spending:

In 1979, when the terms of trade drastically turned against Sierra Leone, instead of managing demand, the Government ... increased its expenditure program sharply. (World Bank, 1986b, p. 1)

The allegation is clear: after 1979 the government of Sierra Leone should have cut expenditure (or not increased it), and failed to do so. First, the ideology implicit in the statement should not be missed. 'Managing demand' could be achieved either by expenditure reduction or the increase of taxation. Considering only the former reflects dogma, not theory. Second, by any reasonable judgement the allegation was factually false. The government of Sierra Leone, either by intent or default, did cut expenditure. The factual incorrectness of the allegation is shown in Table 8.5, based upon data from the Bank itself, the IMF, the national accounts of the country, and government budget documents.<sup>11</sup> The figures in the first two columns refer to actual, *post-facto*, expenditures, not planned expenditures. The figures in the table are calculated in constant prices. When judging whether government expenditure 'rose sharply' and/or reached excessive levels, expenditure should be assessed in real terms, not nominal. While government expenditure itself might be contributing to inflation, it is none the less the case that expenditure in real terms measures the extent to which a government draws on real resources.

Table 8.5 is divided into the same periods as in the analysis of the balance of payments, reflecting a correspondence between the two deficits, fiscal and trade (refer to Table 8.1). The fiscal deficit (second column of Table 8.5) tended to rise and fall when the trade balance did the same. This resulted from two factors at work: first, much of the government's revenue derived directly and indirectly from trade; and second, a deterioration of revenue sources occurred in the 1970s when iron ore production (all of which is exported) ceased. However, the five periods in Table 8.5 could also be divided into only two: 1964-79, when expenditure in real terms increased almost continuously; and 1980-7 when except for 1986 it decreased almost continuously. Over precisely the period for which the World Bank accused the government of having 'increased its expenditure program sharply', recurrent expenditure fell dramatically in real terms. Identifying the 1980s as a period of rising expenditure reflected in most flagrant form the notorious 'money illusion', in which nominal changes are confused with real ones.



Table 8.5 Current expenditure and deficit in 1977 Leone and as percentage of GDP, 1964-83\*

| Year     | Current expenditure† (million 1977 Le) | Current account surplus/deficit | Current expenditure/GDP (percentages) | Current account deficit/GDP |
|----------|--|---------------------------------|---------------------------------------|-----------------------------|
| 1964     | 85.0                                   | 6.2                             | 13.2                                  | 1.0                         |
| 1965     | 76.7                                   | 5.9                             | 11.7                                  | 0.9                         |
| 1966     | 74.0                                   | 17.0                            | 11.4                                  | 2.6                         |
| 1967     | 76.4                                   | 5.7                             | 12.4                                  | 0.9                         |
| 1968     | 76.4                                   | 37.1                            | 11.1                                  | 5.4                         |
| 1969     | 90.1                                   | 32.5                            | 11.8                                  | 4.2                         |
| 1970     | 98.3                                   | 18.6                            | 13.9                                  | 2.6                         |
| 1971     | 105.7                                  | 16.5                            | 14.4                                  | 2.2                         |
| 1972     | 116.4                                  | 5.1                             | 15.6                                  | 0.7                         |
| 1973     | 164.7                                  | -5.6                            | 19.7                                  | -0.7                        |
| 1974     | 202.9                                  | -57.3                           | 23.4                                  | -6.6                        |
| 1975     | 142.2                                  | -22.2                           | 18.3                                  | -2.9                        |
| 1976     | 151.8                                  | -25.5                           | 18.8                                  | -3.2                        |
| 1977     | 220.3                                  | -62.0                           | 25.9                                  | -7.3                        |
| 1978     | 223.1                                  | -70.3                           | 25.1                                  | -7.9                        |
| 1979     | 246.2                                  | -108.6                          | 27.2                                  | -12.0                       |
| 1980     | 233.7                                  | -104.8                          | 25.8                                  | -11.6                       |
| 1981     | 202.1                                  | -77.4                           | 22.3                                  | -8.5                        |
| 1982     | 160.1                                  | -80.5                           | 19.1                                  | -9.6                        |
| 1983     | 110.3                                  | -65.2                           | 14.9                                  | -8.8                        |
| 1984     | 71.6                                   | -36.2                           | 10.5                                  | -5.3                        |
| 1985     | 52.0                                   | -24.6                           | 9.1                                   | -4.3                        |
| 1986     | 141.3                                  | -138.1                          | 24.4                                  | -13.6                       |
| 1987     | 68.4                                   | -28.1                           | 11.7                                  | -4.8                        |
| Averages |  |                                 |                                       |                             |
|          |  |                                 | 1964-67                               | 1.4                         |
|          |  |                                 | 1968-73                               | 2.2                         |
|          |  |                                 | 1974-77                               | 21.8                        |
|          |  |                                 | 1978-82                               | -9.9                        |
|          |  |                                 | 1983-87**                             | -6.8                        |
|          |  |                                 | (11.4)                                | (-5.0)                      |

Table 8.5 continued

\* Fiscal years, with 1986-7 money GDP estimated by assuming no growth and GDP deflator equal to Freetown cost of living index.

† Includes the category 'extra-budgetary expenditure', and therefore differs from figures given in World Bank (1985a, p. 4), which include only normal recurrent expenditure.

‡ Percentages in parentheses omit 1986, when the Leone was devalued massively.

Source: Government expenditure - 1964-71, World Bank, 1974, Table 6.1; 1972-8, World Bank, 1981, p. 162; 1979-85, SLG, BSL.a, SLG, BSL.b, and SLG, CSO, 1987; 1986 and 1987, GSL, n.d. See also World Bank (1985a, p. 4), where the 1978-84 figures are from SLG, BSL and Ministry of Finance sources.

From 1964 (the year after independence) to 1979, current account real expenditure grew at a least-squares-estimated annual rate of 8.5 per cent,<sup>12</sup> or at about 5 per cent per capita. This rate of per capita expenditure growth was not high by comparison with other SSA countries. Then, the level of real expenditure dropped sharply, from an average of Le 213 million for 1978-82, to Le 101 million for 1983-7 (these measured in 1977 prices). It was quite possible that no other sub-Saharan country during the 1980s matched this draconian real reduction in government expenditure. In addition to declining in real terms, the programming of government expenditure became increasingly chaotic in the wake of massive devaluations. The catastrophic fall of the Leone during 1986 and subsequent devaluations resulted in a collapse in the purchasing power of budgetary allocations. With each new descent of the exchange rate, ministries required new extra-budgetary allocations, such that supplemental funding represented 42 per cent of current expenditure in 1986 (BSL.a and BSL.b). The sudden increase in real expenditure in 1986 can be explained as the result of the government over-estimating the increase in nominal expenditure necessary to compensate ministries for the disastrous IMF-fostered float during June to September. By the next fiscal year the depreciating exchange rate had again done its work, and real expenditure fell by half.

In 1985 the World Bank judged that the government of Sierra Leone let recurrent expenditure spin of control. A quick

calculation from Table 8.5 shows that per capita expenditure for 1983-7 was 30 per cent below its annual level for 1964-7. The Bank had its conclusion backwards: during the 1980s government current expenditure in Sierra Leone was too low, not too high. Few were the countries of the world in which government expenditure claimed less than a fifth of GDP, and during the mid-1980s in Sierra Leone this share had dropped to 14 per cent. The deficit in this case (7 per cent of GDP in the last period) represented not an expenditure problem, but a revenue shortfall. In Sierra Leone public services – health, education,<sup>13</sup> and general administration – were appallingly low, even by the standards of some of its neighbouring countries. The proper advice to the government of Sierra Leone in the 1980s would have been: tax more and spend more, for the public sector was being pauperized. Certainly the government could have spent more wisely and efficiently, but in addition to its failings in this regard, it also was culpable of not sufficiently funding the basic needs of its people. To suggest the opposite was false. This was exactly the position taken by the 1990 JASPA report:

The Sierra Leone government cannot be qualified as a big spender . . . It would, therefore, be unreasonable to exercise more restraint on total non-interest expenditure . . . [T]he improvement of the social situation in Sierra Leone will not be possible unless the debt burden is substantially reduced . . . The basic cause of the balance of payments imbalance lies with the capital account, not with the trade account. (ILO/JASPA, 1990, pp. xiii-xiv)

A comparison between this JASPA quotation and that from the World Bank at the beginning of this section shows the difference between analysis and ideology. For the Bank a budget deficit presented a *prima facie* case for expenditure reduction, which could only be a gain since governments represent the source of economic distortions. Unencumbered by this ideology, the JASPA mission drew the opposite and obvious conclusion: 'the impression is overwhelming that one of the primary needs of the Sierra Leonean economy is the urgent rehabilitation of the public sector' (ILO/JASPA, p. xv).

## 9 Mismangement or Maladjustment?

### 9.1 THE FUND MISMANAGES THE EXCHANGE RATE

In previous chapters it was demonstrated that the multilateral organizations got their analysis and recommendations for Sierra Leone consistently wrong. At this point we go beyond criticism to analyse what actually happened to the economy of Sierra Leone to produce such chronic instability in the 1980s. First, we again summarize the story the multilaterals told about Sierra Leone in the 1980s: after the economy suffered an external shock in the late 1970s, the government unwisely expanded expenditure which worsened the balance of payments and provoked inflation; the inflation resulted in overvaluation of the exchange rate; the overvalued exchange rate depressed exports, which fed back to make a bad balance-of-payments situation even worse; and compounding these problems was a foolish policy of intervention in domestic agricultural markets which discouraged production, as well as worsening the rural-urban income gap. As we saw, there was little fact and much fiction to this story:

- (1) from the late 1970s onwards the Government cut real expenditure, it did not raise it;
- (2) compared with other currencies of the region, the Leone was not overvalued;
- (3) when the Leone appreciated in the 1980s, the trade balance improved;
- (4) with regard to agricultural policy,
  - (a) the policies of the Rice Board seem to have had little negative effect on production;
  - (b) producer prices for the major export crops closely followed the trend in world prices; and

- (c) there is no evidence that export crop output correlated with the gap between the producer price and the export price;
- (5) had a shift in income toward urban areas occurred (and the opposite happened), it would have probably improved income distribution, not worsened it.

But what of inflation? Certainly that part of the story was true: from 1980 to 1988, the general consumer price index increased by over 40 times, and beginning in 1982 the annual rate of inflation exceeded 50 per cent. If the multilateral story was false, how does one account for inflation? The acceleration of inflation occurred in part because the multilateral story was false. That false story led the experts of the Bank and the Fund to conclude that the problems of the Sierra Leonean economy were the result of 'price distortions', and that the key 'price distortion' the exchange rate. They then compounded this analytical mistake by the measure taken to correct that 'distortion', through a 'clean float'. By a 'clean float' the Fund meant a process of exchange rate determination in which the government did not intervene; a 'market determined' exchange rate, as it were.

When devaluation is called for, there are a number of ways to bring it about. When considering the alternatives, there are many reasons to doubt the wisdom of an unregulated exchange rate for any country. This, one might presume, was why no developed country practised such a policy after the breakdown of the Bretton Woods accords in the early 1970s. This in and of itself should cause pause for doubt: if the countries of the world with much more technical expertise in economic management and much more stable economies regularly send their central banks into foreign exchange markets to dampen fluctuations, would it be wise for a small, open economy buffered by terms of trade shocks to do otherwise?

There are a number of considerations that suggest that an unregulated exchange rate is especially foolhardy for small underdeveloped countries. These were stressed by the officials of the Bank of Sierra Leone in discussions with the Fund, but to

TABLE 9.1 Average trade flows and their variation by quarter, 1979-87

| Category                | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr |
|-------------------------|---------|---------|---------|---------|
| (Flows in US\$ m)       |         |         |         |         |
| Exports                 |         |         |         |         |
| average                 | 39.2    | 50.5    | 29.4    | 26.7    |
| coefficient of variance | 0.24    | 0.38    | 0.34    | 0.27    |
| Imports                 |         |         |         |         |
| average                 | 56.2    | 50.1    | 53.3    | 53.0    |
| coefficient of variance | 0.57    | 0.50    | 0.46    | 0.45    |
| Trade balance           |         |         |         |         |
| average                 | -17.0   | 0.04    | -23.9   | -26.3   |
| coefficient of variance | 1.58    | 39.71   | 0.89    | 0.87    |

SOURCE Bank of Sierra Leone, *Economic Trends*, various issues, with trade flows converted to US dollars.

no avail. First, agricultural exporters like Sierra Leone are characterized by large seasonal fluctuations in trade flows. This is demonstrated in Table 9.1, which gives the average trade flows by quarter for 1979-87. In the first row of the table one sees that the seasonal variation in exports over the nine-year period was quite large, about 90 per cent between the second quarter and the fourth (with monthly variations even greater), a variation resulting from the natural cycle of the growing season. For each quarter taken alone there was substantial fluctuation, as the coefficient of variation statistic in the second row shows. For example, in any year there was a two-thirds probability that export earnings in the second quarter might exceed those in the fourth by 250 per cent. As one would expect, imports were considerably more stable seasonally, with a maximum quarterly variation of only 12 per cent (between the first and second quarters). However, the combination of seasonal export variation and relative import stability resulted in an enormous fluctuation in the quarterly trade balance. The fourth quarter averaged a deficit of US\$ 26 million, compared with a slight surplus in the second. Even if the annual trade account had been

balanced, in two of the quarters there would certainly have been deficits.<sup>1</sup>

Under any reasonable assumption about how agents form their expectations, the result of an unregulated exchange rate in the context of such seasonal variations would be a sharply fluctuating value of the currency. In some quarters (much less months or weeks) there would be a shortage of foreign exchange, and in others a surplus. Given that agricultural exports vary due to stochastic factors such as the weather, not even an extreme rational expectations assumption would produce traders who could correctly anticipate the course of trade flows. Further, in the developed market economies traders have much more complete information about currency markets and the state of the economy, yet governments are loath to allow exchange rates to be market-determined without constraints. In Sierra Leone information on the current state of the economy and the external account, which would have to include capital flows, was much harder to come by. Even were foreign exchange shortages and surpluses correctly anticipated, agents' responses would be seriously constrained by the imperfections of the narrow private foreign exchange market in the country. With these points in mind, one can see that it was quite foolish that the IMF initiated the 1986 'float' (read 'sink') of the Leone at the beginning of the third quarter. This represented the quarter during which nature itself assured that there would be a shortage of foreign exchange on the basis of trade flows. A worse moment for such a policy initiative could hardly have been chosen.

Second, the character of currency trading in small countries also suggests that unregulated exchange rates are unwise. In its 1986 report, the World Bank referred to the country's 'flexible, market-determined exchange rate system', and proceeded to describe this system as follows:

Under the exchange system . . . [the Leone] has a varying rate that reflects the supply and demand of foreign exchange in the economy. (World Bank, October 1986, p. 4)

This statement is incorrect, as well as glossing over the problem of seasonal variation. As introductory textbooks in

economics are careful to point out, 'market-determined' is not the same thing as reflecting 'supply and demand'. The supply curve for any commodity, including currencies, is constructed on the assumption of perfect competition, which is why one refers to the 'degenerate supply curve' of the monopoly firm. Only if agents are price-takers is there a supply curve as such. Otherwise, the price decision and the quantity decision are simultaneous, rather than price being derivative from quantity ('determined by supply and demand'). There was considerable reason to believe that the foreign exchange transactions during the float of the Leone involved considerable collusion, which along with seasonal variation explains why the Leone did not float but sank during the third quarter of 1986.

The mechanism for the float of the Leone which the IMF put in place, including its own representative in the Bank of Sierra Leone to manage it, virtually granted a licence to speculate. In June 1986 the Fund organized a currency trading system in which representatives of the Bank of Sierra Leone and commercial banks operating in the country would meet once a week to 'exchange positions in foreign exchange'. This exchange would occur with each agent arriving with bids for Leones or foreign currency, and then an offer-clearing exchange rate would be reached. The first important characteristic of this system was that it represented a closed cartel of a small number of traders. Industrialists, merchants, and individuals were not allowed into this bidding process. If there was competition at all, it was a very limited competition among members of a Fund-sanctioned cartel. It was not clear why the Fund preferred arbitrarily restricting market access in this manner rather than pursuing an open bidding system such as it had implemented in Somalia, for example.<sup>2</sup> Restricting the meetings to the commercial banks, a handful of expatriate concerns whose managers were in constant business and social contact, greatly facilitated collusion; indeed, it made it virtually impossible to avoid. As basic economics teaches, efficient competitive outcomes derive from the interaction of many buyers and sellers, none of whom alone or in combination with others can manipulate price. The design

of the currency trading system contradicted this neoclassical principle.

The collusive nature of the trading quickly became clear, and resulted in there being no market at all.<sup>3</sup> At the first meeting of the action the cosy group of currency traders presented offers, all of which were to sell Leones and none to buy. Throughout the life of this Alice-in-Wonderland auction there appeared not a single offer to buy Leones. The Bank erred when it wrote that Sierra Leone during these months had a 'market-determined exchange rate system'. A market requires buyers and sellers, and this market had only sellers of Leones; there were no transactions. The commercial banks, all foreign controlled, sought Leones to send out of the country as capital flight. Simultaneously, the Bank of Sierra Leone also demanded foreign exchange, for reasons explained below.

The absence of transactions obviously created a difficulty in determining the exchange rate. What is the price of a commodity when no one wishes to buy it? At this stage the pragmatic person might have concluded that an unsuccessful experiment had been tried, and abandoning it might be well advised. The officials of the Bank of Sierra Leone took this view. Instead, the sham-market continued, with the average (not-accepted) offer price of the Leone taken as the indicative rate for bank transactions during the subsequent week. Taking the average bid as the market rate was totally *ad hoc* and arbitrary, having no technical justification. Because no exchanges had occurred, the exchange rates implied by the bids were completely notional.<sup>4</sup> That is, there was little reason to believe that any of the bids represented a market-clearing rate, much less the average. Once it became obvious that there would be no buyers of Leones, the putative sellers of Leones were virtually unconstrained in what bids they made. With no market discipline operating (for there were no transactions), the speculative plans of the commercial banks determined the exchange rate.

The framework of the auction virtually assured that the Bank of Sierra Leone would have no foreign exchange with which it could enter into trading. Prior to the IMF-inspired 'float' of the Leone, the government, in response to multilateral condition-

ality, deregulated the import licensing regime and external account capital transactions (SLG, 1987, p. 33). As a consequence, foreign exchange no longer flowed into the Bank of Sierra Leone. This placed the central bank in the anomalous position of going to the currency trading meetings needing to *purchase* dollars to pay its obligations overseas, when the stability of the Leone required it to sell dollars. Once the Leone began to sink, it was in the interest of private agents to hoard dollars, not to sell them to the BSL. Capital account deregulation further ensured that the currency trading system would result in a collapse of the Leone.<sup>5</sup>

Given when the 'float' began (during a quarter when foreign exchange would be in short supply under the best of conditions) and the manner in which it was carried out (facilitating collusion), it is hardly surprising that the Leone sank like a rock, from 5.7 to the US dollar on 27 June, to 30 to the dollar on 26 September. On the latter date the sham-market discontinued and the central bank re-established a fixed rate. Because the Bank of Sierra Leone had no foreign exchange to support a fixed rate, further devaluations followed, with the rate rising to 38 to the dollar in late January 1987. During this period relations with the IMF rode a roller-coaster: in November 1986, the government and the Fund reached agreement on a one-year standby arrangement; in January the Fund cancelled disbursements. The cancellation of the agreement resulted from the government failing to meet conditionalities, among which were restrictions placed by the Fund on domestic credit expansion. Cancelling the agreement on the basis of conditionality targets not achieved added insult to injury, for the government failed to meet these targets as a consequence of the disastrous Fund-organized float of the Leone, which is the second part of the currency-collapse story.

## 9.2 DEVALUATION-LED CHAOS

Three months after 26 June 1986, the Leone had sunk by 525 per cent; after seven months the nominal devaluation reached

667 per cent. This out-of-control currency sink catastrophically destabilized the money economy. One of the most obviously destabilizing impacts was that on the financial operations of the Government.<sup>6</sup> As part of the conditionality of the 'shadow programme' of good behaviour and the subsequent standby arrangement, the Fund had required that domestic credit expansion be limited to 34 per cent for fiscal year 1986-7, and current expenditure have a ceiling of Le 1800 million.<sup>7</sup> Once the Leone began its plunge, these figures became irrelevant, because the domestic currency costs of government activities ballooned. The largest such item was debt service, which at the end of 1986 threatened to absorb the entire current account.

Confronted with a devaluation cost over-run, the government went to the commercial banking system to borrow. By no reasonable judgement could this increased government demand for credit be attributed to excessive expenditure. The collapse of the Leone, instantaneous upon the opening of the sham-market for foreign exchange, dictated increased Leone expenditures in order to meet budgeted real expenditures. Quickly the demands of the Government and the private sector brought credit expansion to the limit set by IMF conditionality. Once this limit was reached, *the commercial banks refused to accept deposits*. If they had accepted deposits the banks would have been obligated to pay interest; unable to lend and themselves earn interest, the banks could hardly pay it to others. With the Leone sinking and devaluation-induced inflation running at an annual rate of three digits, private agents would have been irrational to hold Leone.<sup>8</sup> Since the Leone would not be accepted by the banks into interest-bearing accounts, capital flight and speculation in real property resulted.<sup>9</sup> This, of course, put further downward pressure on the Leone, accelerating its sink.

The multilaterals had a story of how the economy of Sierra Leone came to such a disastrous state in the mid-1980s. That story had little empirical support. A different story can be told: under severe balance-of-payments pressure (primarily from the capital account), the government of Sierra Leone yielded to

pressure to initiate a currency trading system which by its nature resulted in the collapse of the Leone; the collapse of the Leone provoked accelerating inflation which led to increasing credit demands by the public and private sectors; when the IMF-set credit limits were reached, banks refused deposits and private agents turned to capital flight, which had been facilitated by the previous conditionality that currency exchange be deregulated; capital flight further sank the Leone and inflation raged out of control. In other words, multilateral conditionality destabilized the economy.<sup>10</sup>

### 9.3 EMPIRICALLY TESTING THE STORIES

We have two stories, one of which is inconsistent with the facts and the other derivative from the facts. The multilateral story essentially had at its analytical core the quantity theory of money: inflation is the result of increases in the supply of money, which in the Sierra Leone context resulted from a fiscal deficit. Excessive monetary expansion to finance expenditure ('monetizing' the deficit) simultaneously resulted in inflation and excess monetary demand, which depressed exports through real appreciation of the currency and drew in imports. This process allegedly went out of control in the case of Sierra Leone.

This is a very simple story, frequently subjected to empirical test, especially within what was once called the 'monetarist-structuralist debate' over inflation in Latin America. Below we specify our empirical tests following that literature, in so far as the Sierra Leonean data allow. We begin with the basic quantity equation:

$$vM = py$$

where  $v$  is the velocity of money,  $M$  is the autonomous money supply,  $p$  is the price level and  $y$  is the quantity of real GDP.

If one assumes the velocity of money to be constant and takes the total derivative of the quantity equation, one obtains the

following oft-estimated equation (where the letters in italics refer to percentage rate of change):

$$P_t = a_0 + a_1 M_t + a_2 Y_t$$

The prediction of the quantity theory is that  $a_0$  would not be significantly different from zero (constant velocity of money),  $a_1$  not significantly different from +1, and  $a_2$  not significantly different from -1.<sup>11</sup> Frequently the equation is estimated with lags, reflecting the presumption that adjustment to equilibrium does not occur in one period. When the variable  $M$  appears more than once, the sum of its coefficients should not be significantly different from unity. Estimating such a very simple one-equation system and using it to explain inflation leaves much to be desired. Unfortunately, the arguments of the multilaterals in Sierra Leone were just this simple. It was alleged by the Bank and the Fund that inflation resulted from expansion of the money supply. Since neither reported testing that hypothesis, it was left for their critics to do so.

The expression was estimated for annual data for 1964-85, with the results reported in Table 9.2. A brief comment is required on the measurement of the money supply. Much debate in the empirical literature focuses upon what is the appropriate definition of  $M$  for empirical estimation. Here, we have used what might be called the 'basic' money supply, 'currency outside banks' plus 'demand deposits'. This was called the 'total money supply' in publications of the Bank of Sierra Leone (for example, SLG. BSL.b, p. 42). Other definitions, such as the inclusion of 'quasi-money', produced results with lower  $R^2$ 's and coefficients of lower significance. Other empirical estimates of the monetarist hypothesis have shown that there is frequently some *ad hoc* measure of the money supply which produces favourable results for the hypothesis. The purpose here was to select that measure of the money supply over which the government in principle had at least indirect control; otherwise, the model had little relevance to policy.

Two annual estimates are given, the first for the expression in its simplest form, and a second with the lag structure that

TABLE 9.2 Estimation of a simple 'monetarist' model of inflation for Sierra Leone

| Variable<br>(logarithmic)       | Coefficient | Standard<br>error | T-statistic | Regression<br>statistics  |
|---------------------------------|-------------|-------------------|-------------|---------------------------|
| Annual data, 1964-85            |             |                   |             |                           |
| depVar:                         |             |                   |             |                           |
| Cost of living (1st difference) |             |                   |             |                           |
| money supply [1]                | 0.524       | 0.214             | 2.44*       | $R^2(\text{adj}) = 0.281$ |
| real GDP                        | -0.759      | 0.781             | -0.97       | $DF = 21$                 |
| constant                        | 0.074       | 0.051             | 1.46        | $DW = 1.422$              |
| depVar:                         |             |                   |             |                           |
| Cost of living (1st difference) |             |                   |             |                           |
| money supply [1]                | 0.135       | 0.186             | 0.73        | $R^2(\text{adj}) = 0.471$ |
| money supply [ $t-1$ ]          | 0.062       | 0.021             | 3.00*       | $DF = 20$                 |
| real GDP                        | -0.719      | 0.586             | -1.23       | $DW = 1.263^{\dagger}$    |
| constant                        | -0.116      | 0.069             | 1.68        |                           |
| Quarterly data, 1979-1988       |             |                   |             |                           |
| depVar:                         |             |                   |             |                           |
| Cost of living (1st difference) |             |                   |             |                           |
| money supply [1]                | 0.484       | 0.181             | 2.67†       | $R^2(\text{adj}) = 0.418$ |
| money supply [ $t-1$ ]          | 0.469       | 0.180             | 2.60*       | $DF = 29$                 |
| constant                        | 0.021       | 0.024             | 0.84        | $DW = 1.997$              |

Coefficients not 'starred' are non-significant.

For Durbin-Watson statistics not marked with '†', the hypothesis that there exists autoregression can be rejected at the 0.025 level of probability.

\*Significant at 0.025 level of probability.

†Significant at 0.01 level of probability.

‡The hypothesis that there exists autoregression is inconclusive at the 0.025 level of probability.

Source: See appendix.

yielded the highest  $R^2$ . In addition, results from quarterly data are presented. The quantity theory explanation of inflation does not fare well in the annual data. The insignificance of the constant terms is consistent with a constant velocity, but the quantity theory should explain virtually all of the variation in the price level, and the  $R^2$ 's in both cases are low (0.28 and 0.49). The coefficients are also disappointing. The elasticity of the price level with respect to the money supply should be unity, but in the first estimate it is about 0.5, and in the second 0.2 (the sum of the coefficients for  $M[t]$  and  $M[t-1]$ ). These low

elasticities indicate that while changes in the money supply provoke increases in the price level, money is not neutral, and inflation was not exclusively or even primarily a phenomenon of the money supply. The non-significance of the real output term also undermines the monetarist view of inflation, for it suggests that inflation was not necessarily associated with excess monetary demand.

The simple monetarist model was also estimated with quarterly data, shown at the bottom of the table. Here the results could be interpreted as more favourable to the hypothesis, since the sum of the money supply coefficients is not significantly different from unity. And as before, less than half of the change in the price level is explained by changes in the money supply. Overall, the results in Table 8.3 provide *prima facie* support for a 'structuralist' interpretation of inflation in Sierra Leone: yes, increases in the price level are correlated with increases in the money supply, but both may be responding to some third variable absent from the estimates in Table 9.2.

That missing variable from the quantity theory explanation is the nominal exchange rate. By monetarist logic it should not play an explanatory role to inflation, since its movement is treated as derivative from the stock of money: if the exchange rate is flexible, monetary expansion at full utilization of resources produces a devaluation which maintains domestic prices equivalent to world prices (the law of one price); failure of the exchange rate to adjust with perfect flexibility results in inflation due to excess monetary demand. In Table 9.3 an alternative theoretical approach is taken. Here the nominal exchange rate is introduced into a model which seeks to capture the behavioural dynamics of inflation in Sierra Leone. It tells the following story:

(1) in response to a nominal devaluation of the currency, producers of non-agricultural commodities for the domestic market and commercial intermediaries dealing in imports raise the prices of their commodities to maintain profit margins, which they are able to do because of their monopolistic position in a small market;

TABLE 9.3 Estimation of a 'structuralist' model of inflation for Sierra Leone

| Variable<br>(logarithmic)       | Coefficient | error | Standard<br>T-statistic | Regression<br>statistics |
|---------------------------------|-------------|-------|-------------------------|--------------------------|
| Annual data, 1964-85            |             |       |                         |                          |
| depVar:                         |             |       |                         |                          |
| Cost of living (1st difference) |             |       |                         |                          |
| nominal Xrate [t]               | -0.264      | 0.112 | -2.34*                  | R2(adj) = 0.848          |
| nominal Xrate [t-1]             | -0.211      | 0.069 | -3.08                   | DF = 18                  |
| period-dividing dummy           | 0.138       | 0.054 | 2.54*                   | DW = 1.589†              |
| constant                        | 0.109       | 0.020 | 5.46                    |                          |
| depVar:                         |             |       |                         |                          |
| Money supply (1st difference)   |             |       |                         |                          |
| cost of living [t-1]            | 0.836       | 0.181 | 4.63                    | R2(adj) = 0.493          |
| constant                        | 0.064       | 0.034 | 1.88                    | DF = 20                  |
|                                 |             |       |                         | DW = 2.230†              |
| Quarterly data, 1979-88         |             |       |                         |                          |
| depVar:                         |             |       |                         |                          |
| Cost of living (1st difference) |             |       |                         |                          |
| nominal Xrate [t-4]             | -0.837      | 0.183 | 4.58                    | R2(adj) = 0.420          |
| nominal Xrate [t-5]             | -0.004      | 0.001 | 3.59                    | DF = 27                  |
| constant                        | 0.208       | 0.201 | 1.03                    | DW = 2.008               |
| depVar:                         |             |       |                         |                          |
| Money supply (1st difference)   |             |       |                         |                          |
| cost of living [t-3]            | 0.467       | 0.155 | 3.01                    | R2(adj) = 0.197          |
| cost of living [t-4]            | 0.003       | 0.001 | 2.87                    | DF = 27                  |
| constant                        | 0.569       | 0.171 | 3.34                    | DW = 1.845               |

\*Significant at 0.025 level of probability, all other coefficients except the constant term in the second equation significant at 0.01.

†The hypothesis that there exists autoregression is rejected at the 0.025 level of probability.

Source See appendix.

- (2) buyers of commodities, both public and private, then go to the commercial banks for credit to cover the increased monetary cost of their transactions;
- (3) the government then must choose between allowing the monetary accommodation or provoke a recession in the money economy;
- (4) since its instruments of monetary policy are relatively ineffective (especially in the context of liberalization of foreign exchange dealings), monetary accommodation



tends to be automatic unless purposeful action is taken, such as the government deciding not to maintain its own real expenditure.

The first of these steps is summarized in an equation which explains inflation in terms of the nominal exchange rate. The exchange rate is measured in US dollars per Leone, so the predicted sign on the currency rate is negative:

Inflation behaviour,

$$p = p(\text{nominal} \times \text{rate})$$

The monetary base responds to the inflationary pressure,

$$M = M(p)$$

And circularity in the arguments is avoided by the introduction of lags. Inspection of Table 9.3 shows that this simple model, which for want of a better term might be called 'structuralist', performs quite well for annual data. Three explanatory variables are used: the change in the current nominal exchange rate; the change in the nominal exchange rate lagged one period; and a dummy variable which divides the years between 1964-80 (when nominal exchange rate changes were relatively minor), and 1981-5 (when nominal devaluations were continuous and relatively large). The coefficients on the nominal exchange rate can be interpreted as follows: were there to be a repeated annual nominal devaluation of 10 per cent, this would result in the annual rate of inflation increasing by about 5 per cent. This relationship accounts for 85 per cent of the variation in the rate of inflation (compared with less than 50 per cent for the money supply). Further, the rate of inflation in the current year then explains half of the increase in the money supply in the subsequent year, with the coefficient on the rate of inflation significant at better than 0.005 probability. Finally, the coefficient on the dummy variable has an economic interpretation. Prior to 1981 (when the variable assumes a value of zero), the nominal exchange-rate was either fixed or fluctuated with no trend, so the rational expectation of agents would be for no exchange rate induced inflation on average. After 1981, the

exchange rate depreciated continuously, and the coefficient on the dummy variable can be interpreted as the inflationary expectation built in to agents' predictions of the coming price level. The significance of the money supply equation is especially important for the structuralist hypothesis. No structuralist argument claims to explain all of the change in the money supply by the rate of inflation. If money is not neutral, then one would not expect extremely high  $R^2$ 's, only a high degree of significance for explanatory variables.

The results using quarterly data produce in all cases coefficients of the predicted sign that are extremely significant, but lower measures of explanatory power ( $R^2$ 's). This is exactly what one would expect with a structuralist model. Structural influences - monopoly power and the government's limited control over credit expansion - manifest themselves systematically more in the medium term than in the short term. The estimates suggest that the lag between a nominal devaluation and the subsequent price inflation is four quarters, verifying the lag in the annual estimate. However, the coefficient on the lagged exchange rate changes seems rather too high, implying that a 10 per cent nominal devaluation provokes an 8 per cent increase in the price level. Close to the truth is probably the annual estimate of an elasticity of slightly under 0.5. For the 21 years as a whole, imports represented 33 per cent of GDP. The national accounts suggest that about 70 per cent of GDP was monetized, so that imports were 47 per cent of money GDP. The elasticity of the price level with respect to the nominal exchange rate as estimated on annual data is not significantly different from the share of imports in money GDP. This makes for a very simple story: devaluation was passed on completely to the domestic price of imports, with the resultant inflation equal to the share of imports in money national income.

The statistical results in Table 9.3 are quite rudimentary, employing the most simple of regression techniques, ordinary least squares. None the less, they are indicative that inflation in Sierra Leone resulted from nominal devaluations of the exchange rate, and sharp devaluations induced hyperinflation. As a result, the statistical evidence suggests serious mismanage-

ment of the exchange rate during the 1980s by those who pressed for a policy of a flexible, 'clean' float.

#### 9.4 MACROECONOMIC MISMANAGEMENT

'Mismanagement' was a term much used by the World Bank and the IMF in its analysis of the African development crisis, an analysis that in effect amounted to a critique of African governments, holding them responsible for the misery of their peoples. Therefore, it would not be inappropriate to subject the recommendations of these multilaterals to the test of good or mal-management. Many critics pointed out the shortsighted and narrow focus of structural adjustment programmes, citing as evidence the failure of any general improvement in growth rates for the region.

The analysis of this chapter pushes that critique further. If one assigns to the multilaterals the narrow goal of economic stabilization, control of inflation being the most obvious measure of this, structural adjustment policies failed miserably in Sierra Leone, generating rather than dampening instability. In part this failure resulted from attempting to achieve adjustment over too short a time period with 'shock' techniques, as many critics have pointed out for other countries.<sup>12</sup> Sheer incompetence possibly also played a role, though the mis-design of Sierra Leone's adjustment programmes probably lay deeper than this. At the core of the multilateral mismanagement lay an economic analysis more derivative from ideology than sound theory. In this ideology the analysis of relative prices, which provided such insights in economic theory, was carried to its *reductio ad absurdum*. More worrisome still, the multilaterals seemed to learn nothing from the repeated failures of their programmes in Sierra Leone. Like faith-healers, they attributed the failure of their ideological laying-on-of-the-hands to the sins of the economically-ill patient.

## 10 Alternative Adjustment

Representatives of the World Bank and the IMF offered as the ultimate defence of structural adjustment programmes that flawed as they might be, no one had produced a viable alternative in practice. At one level this defence could be seen as the structural adjustment equivalent of the famous Catch-22:<sup>1</sup> to be viable a structural adjustment programme required funding; the main sources of funding for SSA countries were the Bank and the Fund, which had no intention of funding programmes other than of their own design; *ergo*, alternative adjustment policy packages invariably proved inviable.

First, let us consider what might be an appropriate adjustment strategy for Sierra Leone on the counter-factual assumption that it received significant multilateral lending to support it. Economics, for all its theoretical deficiencies and indeterminacy, is a science, in the sense that it derives conclusions for concrete circumstances from a process of analytical abstraction. Therefore, any alternative adjustment strategy for Sierra Leone must begin with a process of analytical abstraction that differs from that of the World Bank and the International Monetary Fund. Alternative policies would not arise from the cleverness or superior imagination of the critic of the multilaterals, but rather from an alternative theoretical framework.

This alternative theoretical frame of reference involves rejection of the general equilibrium framework in which the decisions of agents derive from a set of relative prices determined in efficient markets. This treatment of markets represents an invalid abstraction. The international markets which would impose their relative prices upon Sierra Leone under a free trade regime were highly distorted in the 1980s. The decision facing the country's policy makers was to chose that set of distortions that would best serve the interest of economic recovery.<sup>2</sup> Thus, the first characteristic of the alternative

adjustment framework would be to treat world markets as providing but one of many alternative sets of relative prices upon which to base domestic policy. Second, the alternative framework would view the Sierra Leonean economy as demand constrained, in the specific sense of export demand constrained. Some countries of Africa might have employed in the 1980s the position of being able to sell as much as they wished of their export commodities without affecting the world price. If so, Sierra Leone was not among them. Increasing its exports of coffee and cocoa would require Sierra Leone to cut prices to undersell its competitors, or join in a general expansion of these exports with other countries and suffer the same price decline. The two points, world market distortions and demand constraint, imply the need for interventionist policies on exports and imports. Third, and a point the multilaterals would not oppose except that it failed to go far enough, the government would minimize its interventions to those it could element effectively.

The first step in the alternative adjustment programme would be economic stabilization. To achieve this, the government would fix the exchange rate, maintaining the rate with the postulated multilateral financial support. With a fixed exchange rate, inflation would be brought under control. After a period sufficiently long to depress inflationary expectations, the exchange rate instrument would shift from a tool of short-run stabilization to one of medium-term export-promotion. This would involve introduction of 'crawling-peg', periodic controlled devaluations.<sup>3</sup>

There are a number of reasons why the exchange rate, though quite ineffective as an instrument of short-term policy, could play a crucial role in the longer term. As an equilibrating price in the context of extreme balance-of-payments pressure in a small, open economy, the exchange rate usually proves a disaster.<sup>4</sup> A large imbalance in the external account provokes a massive nominal devaluation. One effect of this, as we have seen in the case of Sierra Leone, is to generate inflation and destabilize inflationary expectations. Further, it causes 'the law of one price' to work against the goals of policy rather than in

favour. The massive devaluation, during the brief period before inflation wipes it out, can result in a sudden inflow of imports due to the momentary and artificial gap between domestic prices and international prices. On the other side of the trade flows, agricultural exports respond with a considerable lag due to the natural cycle of the growing season. A crawling peg, on the other hand, allows the policymakers to keep a step ahead of the convergence of international and domestic prices.

In the mid-1980s the balance-of-payments problem of Sierra Leone arose from the capital account, which made implementing a stabilizing policy much easier. Multilateral assistance could have been used to service the external debt, thus permitting maintenance of the fixed exchange rate. To avoid capital flight prompted by lingering inflationary expectations, the government would impose controls on capital movements. These measures taken together – a fixed exchange rate, financial assistance directed to debt service, and controls on capital movements – would achieve short-run stabilization.

Achieving recovery and growth would prove a much more difficult task. Essentially, short-run stability would have been achieved on the basis of the previous decline of the economy that brought down imports to roughly the level of exports. Thus, the successful stabilization of the economy would represent a low-level and stagnant equilibrium, since growth would regenerate an unsustainable trade deficit. Sustainable growth would require expansion of exports and selective import substitution, especially for rice. Neither of these would be achieved quickly.<sup>5</sup> The country's problem of agricultural exports lay in lack of capacity, the stock of tree crops and the labour to manage that stock, and external demand. Increasing capacity required greater government investment, especially in transport, but also to improve the processing of coffee that must occur immediately after picking.

The problem of inadequate domestic food supply arose from demographic changes. Some short-term gain could be achieved through more efficient milling of rice,<sup>6</sup> a relatively easy measure to implement compared with expanding land under cultivation or altering growing techniques. In the face of long-term

demographic changes that increase the ratio of food-deficit households in the population, no alternative existed to raising output per worker in rice production. Whether this would be achieved through land-intensive or land-extensive techniques remained an issue of contention. As noted in Chapter 7, the experience of schemes to increase rice production in Sierra Leone was singularly dismal. However, the 1989 FAO report on rice offered cause for optimism, through its emphasis upon small-scale production and a long time period for implementing improvements.<sup>7</sup> Significant improvements in export agriculture and food production would require purposeful investment and intervention by the government.<sup>8</sup> One necessary intervention would be tariff or non-tariff protection for rice, to partially insulate domestic producers against competition from world market rice heavily subsidized by the exporting-country governments. Also the key to food crop production would be directing the rice-expansion programme towards poor farmers, as the FAO recommended, an emphasis that would address the rural inequalities so assiduously ignored by the World Bank.

Income and wealth distribution might play a key part in a post-stabilization development strategy. If so, distributional policies should reject the empirically false allegation of a privileged urban population. Urban wages in Sierra Leone fell to a level far below subsistence in the 1980s. For the unskilled and the semi-skilled workers the situation went beyond the dire. At the upper salary levels real pay dropped so low that the government lost the skilled people necessary for effective economic management. An extended period over which real wages rise would be essential for achieving increases in labour productivity in the private and public sectors. Far from needing a cut in the allocation of wages and salaries in the fiscal budget, as demanded by the World Bank, the Sierra Leone government would be well advised to increase these. To the extent that over-staffing characterized ministries, public sector employees could be retrained and shifted to other activities where desperately needed. Social services in Sierra Leone were inadequate and under-funded. In the medium term, a redistribution of income from the private to the public sector through effective taxation

would be a rational policy, until the economy-average tax share reached the vicinity of 20 per cent.

The alternative adjustment strategy described above presumes the external finance to allow for a fixed exchange rate, the linchpin in the stabilization phase. Since the alternative programme violates many of the most cherished tenets of multilateral dogma, the likelihood of assistance would be virtually nil. Without funds to service them, debt obligations would be suspended. Since many underdeveloped countries failed to meet their debt payments in the 1980s, choosing not to do so could not be considered a radical departure from the norm of international behaviour.<sup>9</sup> This step would balance the capital account. Heavy pressure would then be placed on the trade account to maintain the fixed exchange rate, perhaps implying further contraction of the economy until exports expanded in the medium term. Without external finance, the public investments necessary to facilitate expansion of agricultural output would be taken with agonizing slowness, and growth would be delayed considerably.

Competently designed, realistic adjustment in Sierra Leone under the alternative programme even with outside finance would be accompanied by severe strains and uncertainties. Unlike the Bank and the Fund, we do not claim a magic transubstantiation of stagnation into growth. Without outside finance adjustment would prove quite costly in human terms, especially for the poor. However, the cost might be no greater than that suffered under multilateral mismanagement in the 1980s.

# Appendix

This appendix provides the numbers from which the statistics in several of the tables are calculated. Not included are those data easily accessible from published sources outside of Sierra Leone. Also included are numbers which are used instead of those published elsewhere.

## National Accounts and population

The following national accounts and population estimates provided the basis for Tables 4.1, 5.1, 5.2 and 5.4. The sources are also given.

TABLE A1 GDP and primary sector value added (millions of Leone)

| Years   | GDP<br>(nominal) | Agric &<br>Mining<br>(nominal) | Crops<br>(nominal) | Agric &<br>mining<br>(real)* | Animal<br>Hsbdry<br>(nominal) | Crops &<br>An Hsbd<br>(nominal) |
|---------|------------------|--------------------------------|--------------------|------------------------------|-------------------------------|---------------------------------|
| 1963/4  | 219.9            | 73.4                           | 56.0               | 95.4                         | 3.4                           | 59.4                            |
| 1964/5  | 247.9            | 77.3                           | 59.0               | 95.9                         | 3.6                           | 62.6                            |
| 1965/6  | 267.6            | 80.6                           | 61.8               | 96.2                         | 3.8                           | 65.6                            |
| 1966/7  | 271.9            | 84.0                           | 62.9               | 99.6                         | 3.9                           | 66.8                            |
| 1967/8  | 271.7            | 86.4                           | 63.6               | 99.1                         | 3.9                           | 67.5                            |
| 1968/9  | 310.9            | 90.2                           | 67.5               | 104.1                        | 4.1                           | 71.6                            |
| 1969/70 | 353.5            | 89.9                           | 68.3               | 104.2                        | 4.2                           | 72.5                            |
| 1970/1  | 348.6            | 94.5                           | 72.0               | 106.6                        | 4.4                           | 76.4                            |
| 1971/2  | 355.8            | 97.4                           | 77.1               | 105.7                        | 4.7                           | 81.8                            |
| 1972/3  | 393.3            | 110.7                          | 91.1               | 110.7                        | 5.6                           | 96.7                            |
| 1973/4  | 477.8            | 129.9                          | 106.9              | 112.8                        | 6.6                           | 113.5                           |
| 1974/5  | 572.7            | 191.8                          | 162.6              | 111.3                        | 8.4                           | 171.0                           |
| 1975/6  | 613.5            | 220.0                          | 185.0              | 117.4                        | 9.4                           | 194.4                           |
| 1976/7  | 744.2            | 263.9                          | 231.0              | 123.5                        | 9.4                           | 240.4                           |
| 1977/8  | 850.0            | 281.7                          | 242.7              | 126.0                        | 9.0                           | 251.7                           |
| 1978/9  | 978.8            | 326.9                          | 269.7              | 135.5                        | 14.1                          | 283.8                           |
| 1979/80 | 1145.5           | 350.9                          | 269.9              | 137.0                        | 17.5                          | 287.4                           |
| 1980/1  | 1292.2           | 379.1                          | 293.3              | 138.7                        | 17.5                          | 310.8                           |
| 1981/2  | 1604.5           | 538.6                          | 355.9              | 140.0                        | 72.8                          | 428.7                           |
| 1982/3  | 1876.1           | 686.0                          | 398.5              | 141.0                        | 108.0                         | 506.5                           |
| 1983/4  | 2792.2           | 1052.6                         | 526.9              | 142.9                        | 118.1                         | 645.0                           |
| 1984/5  | 4309.8           | 1867.7                         | 963.5              | 154.6                        | 184.1                         | 1147.6                          |
| 1985/6  | 6352.7           | 2740.2                         | 1162.4             | 152.9                        | 302.0                         | 1464.4                          |

NOTES \*1972/73 prices.

ABBREVIATIONS: Animal Hsbdry & An Hsbd. animal husbandry.

Table A2 Farm households and farm income

| Year    | Farm Households (thousands) | Household Income (current L) | (real)* | Population (thousands) |
|---------|-----------------------------|------------------------------|---------|------------------------|
| 1963/4  | 230.9                       | 257.4                        | 334.5   | 2180                   |
| 1964/5  | 237.2                       | 264.0                        | 327.5   | 2226                   |
| 1965/6  | 243.7                       | 269.2                        | 321.3   | 2272                   |
| 1966/7  | 250.3                       | 266.7                        | 316.3   | 2319                   |
| 1967/8  | 257.2                       | 262.5                        | 301.1   | 2368                   |
| 1968/9  | 264.2                       | 271.2                        | 313.0   | 2417                   |
| 1969/70 | 271.3                       | 267.2                        | 309.7   | 2467                   |
| 1970/1  | 278.7                       | 274.2                        | 309.3   | 2518                   |
| 1971/2  | 286.3                       | 285.9                        | 310.2   | 2571                   |
| 1972/3  | 280.4                       | 344.8                        | 344.8   | 2624                   |
| 1973/4  | 274.7                       | 413.1                        | 358.7   | 2679                   |
| 1974/5  | 269.1                       | 635.6                        | 368.8   | 2735                   |
| 1975/6  | 263.5                       | 737.7                        | 393.6   | 2798                   |
| 1976/7  | 258.1                       | 931.3                        | 435.8   | 2862                   |
| 1977/8  | 252.8                       | 995.5                        | 445.3   | 2928                   |
| 1978/9  | 247.7                       | 1145.9                       | 475.0   | 2996                   |
| 1979/80 | 242.6                       | 1184.8                       | 462.6   | 3065                   |
| 1980/1  | 237.6                       | 1308.0                       | 478.6   | 3136                   |
| 1981/2  | 232.7                       | 1842.0                       | 478.8   | 3209                   |
| 1982/3  | 228.0                       | 2221.8                       | 456.7   | 3283                   |
| 1983/4  | 223.3                       | 2888.6                       | 392.2   | 3359                   |
| 1984/5  | 218.7                       | 5247.0                       | 434.3   | 3436                   |
| 1985/6  | 214.3                       | 6833.4                       | 381.3   | 3516                   |

NOTES \*1972/73 prices.

SOURCES TO TABLE A1 National accounts: SLG/CSSO, 1980 and 1987; World Bank, 1969, 1974, and 1981; and ILO/JASPA, 1990. All sources do not agree, in part due to subsequent revision of preliminary figures.

TABLE A3 Data by farm size, 1984/85

| hectares  | Area (hectares) |         |        |        |        |       |         |        |       |        |      |
|-----------|-----------------|---------|--------|--------|--------|-------|---------|--------|-------|--------|------|
|           | upRice          | swpRice | blRice | RvRice | Millet | Grdnt | Cassava | Citrus | Cocoa | Coffee | Palm |
| under 0.5 | 3176            | 5624    | 15     | 3161   | 26     | 176   | 510     | 82     | 286   | 610    | 157  |
| 0.5 to 1  | 16421           | 13313   | 245    | 5543   | 277    | 244   | 1153    | 481    | 1829  | 2895   | 188  |
| 1 to 2    | 37284           | 22762   | 511    | 3341   | 1176   | 964   | 1520    | 686    | 4173  | 9329   | 35   |
| 2 to 4    | 49177           | 18880   | 243    | 319    | 1369   | 2436  | 1128    | 1920   | 11871 | 23147  | 1185 |
| 4 to 6    | 22751           | 3137    | 0      | 0      | 0      | 169   | 1225    | 12     | 7846  | 12899  | 254  |
| over 6    | 17376           | 5700    | 2202   | 0      | 0      | 199   | 660     | 813    | 14589 | 19654  | 1326 |
| total     | 146185          | 69416   | 3216   | 12364  | 2848   | 4188  | 6196    | 3994   | 40594 | 68534  | 3145 |

| hectares  | Yield (kilograms per hectare) |         |        |        |        |       |         |
|-----------|-------------------------------|---------|--------|--------|--------|-------|---------|
|           | upRice                        | swpRice | blRice | RvRice | Millet | Grdnt | Cassava |
| under 0.5 | 0.9                           | 3.0     | 2.9    | 3.0    | 0.7    | 0.8   | 10.7    |
| 0.5 to 1  | 0.9                           | 3.0     | 3.0    | 3.6    | 0.8    | 0.7   | 7.8     |
| 1 to 2    | 1.0                           | 3.1     | 2.0    | 3.5    | 0.8    | 0.6   | 5.4     |
| 2 to 4    | 1.0                           | 3.4     | 2.9    | 2.5    | 0.9    | 0.6   | 7.0     |
| 4 to 6    | 1.1                           | 3.6     | -      | -      | -      | 0.7   | 2.7     |
| over 6    | 1.0                           | 4.0     | 2.6    | -      | -      | 0.9   | 3.5     |
| Wght mean | 1.0                           | 3.2     | 2.6    | 3.4    | 0.9    | 0.6   | 5.8     |

| hectares  | Value by Crop (millions of Leone) |        |       |         |        |       |        |      |
|-----------|-----------------------------------|--------|-------|---------|--------|-------|--------|------|
|           | All Rice                          | Millet | Grdnt | Cassava | Citrus | Cocoa | Coffee | Palm |
| under 0.5 | 6.7                               | 0.0    | 0.0   | 6.6     | 0.0    | 0.4   | 0.7    | 0.4  |
| 0.5 to 1  | 35.8                              | 0.3    | 0.0   | 10.9    | 0.0    | 2.4   | 3.4    | 0.7  |
| 1 to 2    | 84.2                              | 1.1    | 0.0   | 10.0    | 0.0    | 5.8   | 11.4   | 0.1  |
| 2 to 4    | 114.5                             | 1.5    | 0.0   | 9.7     | 0.0    | 16.4  | 29.3   | 4.8  |
| 4 to 6    | 56.4                              | 0.0    | 0.0   | 4.0     | 0.0    | 11.0  | 15.8   | 1.2  |
| over 6    | 40.0                              | 0.0    | 0.0   | 2.8     | 0.0    | 19.5  | 26.0   | 3.3  |
| Total     | 337.6                             | 3.0    | 0.0   | 44.0    | 0.0    | 55.6  | 86.5   | 10.4 |

## NOTES

1. Rice production and yield refers to husk (non-milled).
2. For groundnuts, no reliable farmgate price could be found for 1984/85. Since value by any realistic price would have been proportionately small, it was decided to omit it.
3. For citrus crops no non-arbitrary procedure presented itself for the determining the harvest from the data on numbers of trees given in the farm survey. It was decided to omit this crop also.
4. For cocoa, coffee, and palm products, total value is based upon sales to the Sierra Leone Produce Marketing Board, with an estimated deduction for intermediate costs to obtain value added.

## ABBREVIATIONS

upRice - upland rice  
 swpRice - swampland rice  
 blRice - boland rice  
 RvRice - river rice  
 grdnt - groundnuts  
 wght weighted

**Rice production simulations**

Table 7.4 presents simulations of rice production on the presumption of a constant farm population. The simulated values were obtained by the following identities.

$$\begin{aligned} (\text{rice demand})_t &= (\text{rice output})_t + (\text{rice imports})_t \\ (\text{rice demand})_t &= (\text{actual consumption per capita})_t \\ (\text{rice output})_t * t &= (\text{output per farm})_t \times (\text{number of farms})_t \end{aligned}$$

Rice output was simulated by the following steps:

1. using an estimate of the number of farms (see Table A2) and data for rice output, output per farm was calculated for each year; and
2. the average number of farm families over the period 1963-1984 was used as the value for number of farms.

**Quarterly Data**

Because data on a quarterly basis were not for the most part available outside of Sierra Leone, there follow the numbers used in Tables 9.1-9.3

TABLE A1.4 Quarterly data for Sierra Leone

| Quarter | (Leone, millions) |         | Xch rate | (US\$, millions) |          | Money supply | SL COL index | USA GNP deflator | 'real' Xch rate* |
|---------|-------------------|---------|----------|------------------|----------|--------------|--------------|------------------|------------------|
|         | Exports           | Imports |          | Exports*         | Imports* |              |              |                  |                  |
| 1979.1  | 38                | 66      | 0.9414   | 35.8             | 62.1     | 111          | 40           | 73               | 0.514            |
| 1979.2  | 71                | 59      | 0.9447   | 67.1             | 55.7     | 129          | 44           | 77               | 0.541            |
| 1979.3  | 41                | 81      | 0.9639   | 39.5             | 78.1     | 130          | 47           | 80               | 0.568            |
| 1979.4  | 39                | 83      | 0.9637   | 37.6             | 80.0     | 131          | 47           | 82               | 0.550            |
| 1980.1  | 58                | 137     | 0.9175   | 53.2             | 125.7    | 132          | 47           | 87               | 0.497            |
| 1980.2  | 90                | 116     | 0.9724   | 87.5             | 112.8    | 147          | 49           | 89               | 0.535            |
| 1980.3  | 42                | 102     | 0.9610   | 40.4             | 98.0     | 139          | 50           | 91               | 0.528            |
| 1980.4  | 22                | 92      | 0.9441   | 20.8             | 86.9     | 142          | 51           | 93               | 0.518            |
| 1981.1  | 58                | 115     | 0.8947   | 51.9             | 102.9    | 150          | 53           | 96               | 0.493            |
| 1981.2  | 52                | 76      | 0.8393   | 43.6             | 63.8     | 160          | 61           | 99               | 0.519            |
| 1981.3  | 43                | 91      | 0.8415   | 36.2             | 76.6     | 142          | 64           | 99               | 0.542            |
| 1981.4  | 25                | 93      | 0.8516   | 21.3             | 79.2     | 145          | 64           | 99               | 0.549            |
| 1982.1  | 45                | 109     | 0.8118   | 36.5             | 88.5     | 151          | 67           | 100              | 0.544            |
| 1982.2  | 41                | 91      | 0.7962   | 32.6             | 72.5     | 168          | 77           | 100              | 0.615            |
| 1982.3  | 14                | 86      | 0.7843   | 11.0             | 67.4     | 196          | 85           | 100              | 0.667            |
| 1982.4  | 35                | 90      | 0.8113   | 28.4             | 73.0     | 223          | 89           | 100              | 0.724            |
| 1983.1  | 38                | 43      | 0.7872   | 29.9             | 33.8     | 253          | 100          | 100              | 0.787            |
| 1983.2  | 63                | 73      | 0.7811   | 49.2             | 57.0     | 256          | 133          | 100              | 1.036            |
| 1983.3  | 53                | 90      | 0.3984   | 21.1             | 35.9     | 302          | 140          | 101              | 0.552            |
| 1983.4  | 41                | 81      | 0.3984   | 16.3             | 32.3     | 336          | 167          | 102              | 0.655            |
| 1984.1  | 68                | 107     | 0.3984   | 27.1             | 42.6     | 344          | 183          | 102              | 0.713            |
| 1984.2  | 117               | 93      | 0.3984   | 46.6             | 37.1     | 372          | 217          | 103              | 0.838            |
| 1984.3  | 59                | 115     | 0.3984   | 23.5             | 45.8     | 393          | 223          | 103              | 0.861            |
| 1984.4  | 80                | 103     | 0.3984   | 31.9             | 41.0     | 440          | 229          | 103              | 0.887            |
| 1985.1  | 165               | 104     | 0.1718   | 28.3             | 17.9     | 541          | 283          | 103              | 0.474            |
| 1985.2  | 237               | 232     | 0.1761   | 41.7             | 40.9     | 618          | 355          | 103              | 0.609            |
| 1985.3  | 139               | 250     | 0.1851   | 25.7             | 46.3     | 671          | 409          | 102              | 0.740            |
| 1985.4  | 108               | 203     | 0.1920   | 20.7             | 39.0     | 812          | 431          | 102              | 0.809            |
| 1986.1  | 197               | 216     | 0.1987   | 39.1             | 42.9     | 947          | 461          | 101              | 0.910            |
| 1986.2  | 253               | 141     | 0.0831   | 21.0             | 11.7     | 1121         | 554          | 99               | 0.466            |
| 1986.3  | 590               | 639     | 0.0356   | 25.7             | 22.7     | 1314         | 754          | 98               | 0.274            |
| 1986.4  | 916               | 1026    | 0.0281   | 21.0             | 28.8     | 1747         | 903          | 98               | 0.259            |
| 1987.1  | 1461              | 1071    | 0.0230   | 33.6             | 24.6     | 2281         | 1330         | 99               | 0.309            |
| 1987.2  | 1874              | 1479    | 0.0237   | 44.4             | 35.1     | 3111         | 2046         | 101              | 0.480            |
| 1987.3  | 769               | 862     | 0.0423   | 32.5             | 36.5     | 3070         | 2033         | 102              | 0.841            |
| 1987.4  | 562               | 1009    | 0.0434   | 24.4             | 43.8     | 3023         | 2114         | 103              | 0.889            |
| 1988.1  | 820               | 751     | 0.0356   | 29.2             | 26.7     | 3203         | 2011         | 105              | 0.682            |

Notes \*Calculated by author.

Exports and imports are of commodities only.

The money supply is currency plus demand deposits. 'Real' exchange rate obtained by dividing the nominal rate by the USA GNP deflator, then multiplying by the SL COL.

Abbreviations: Xch rate - exchange rate; SL COL - Sierra Leone cost of living, using Freetown consumer index; USA GNP deflator - United States Gross national product deflator.

Source: Quarterly data are found in *Economic Trends and Annual Report of the Bank of Sierra Leone*.



# Notes

## 1 Introduction

1. The World Bank makes its policy reports available to researchers, for which it should be commended. The Fund does not make its country documents public. Therefore, the survey by necessity stresses the policies of the Bank.

## 2 The African Crisis and the Ideology of Structural Adjustment

1. 'Sub-Saharan Africa' is an unfortunate term due to its redundancy: all sub-Saharan countries are in Africa. Preferable would be 'Africa south of (below) the Sahara'. Further, some countries frequently included in this category partly overlap the great desert. Given the universal usage of the term, it is employed in this book.
2. Countries with rising per capita incomes during 1980-7 were: Chad, Guinea-Bissau, Burkina Faso, and The Gambia. Malawi had a zero rate of growth (World Bank, 1989, p. 221).
3. Middle-income countries in which per capita income increased were: Mauritius, Cape Verde, the Seychelles, Swaziland, Botswana, Senegal, People's Republic of the Congo, and Cameroon. The World Bank reported no growth figures for Equatorial Guinea, Angola, and Djibouti (World Bank, 1989, p. 221).
4. The index of per capita food production increased in Benin, Burkina Faso, Ghana, Guinea Bissau, Kenya, and Senegal (FAO, 1990a, p. 93). The World Bank (World Bank, 1989, p. 235) shows increases for 14 of 41 countries for 1985-7 compared to 1979-81. The difference is a result of the years chosen (the World Bank figures are from the FAO). The average for the years reported by the World Bank include two when weather conditions were particularly favourable for the region, 1985 and 1986. The average for the region for 1983-4 and 1987-9 from the FAO estimates is 93 (1979-81 = 100), and 1985-6 averaged 97.
5. The charters of neither organization preclude rescheduling, but this proved the practice of the multilaterals.

