# Export-Import Responses to Devaluation in Sub-Saharan Africa

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*Résumé: La dévaluation dans les Pays les Moins Avancés (PMA) en général et l'Afrique au Sud du Sahara en particulier, est devenue un grand sujet de controverse. Pour certains, la dévaluation mène à une augmentation et à une diversification des exportations, améliorant ainsi la balance des paiements et les crises de la dette des pays africains. A cause de son impact éventuel sur les revenus générés par les exportations, ils estiment qu'elle constitue un instrument important de redressement économique. Pour d'autres et particulièrement dans le cas de l'Afrique au Sud du Sahara, la dévaluation mène plutôt à des problèmes économiques et sociaux comme l'inflation, la compression économique, l'inverse de la redistribution des revenus, les conflits au lieu de l'équilibre externe et la croissance des exportations. La présente étude est une contribution à ce débat en proposant une analyse les données empiriques sur les comportement des importations et des exportations par rapport à la dévaluation en Afrique sub-saharienne.*

## Objectives of the Study

There is very little disagreement that the valuation in terms of local currencies and the allocation of foreign exchange in sub-Saharan Africa (SSA) and in other low income undiversified economies should reflect its acute scarcity. There are, however, vocal disagreements on how best to do these in order to bring about external equilibrium and also to promote economic growth. One side of the argument is to devalue local currencies to reflect the scarcity of foreign exchange and to leave the allocation to the market mechanism. Another argument is that, in the case of low income undiversified economies, the valuation and allocation of foreign exchange are best managed by government policies such as import controls, subsidies, taxes and multiple exchange rates.

The first argument is championed by the IMF and the World Bank. Devaluation is an integral component of the structural adjustment programs they have prescribed for developing countries. In the past, SSA states, by and large, have resisted devaluation. In the 1980s, however, burdened by the debt crisis and strapped for external funding, they have found compliance with the conditionalities of the IMF and the World Bank unavoidable. By the end of the 1980s, only three SSA states, Ethiopia, Liberia and Rwanda have not devalued.

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Proponents expect devaluation to stimulate the expansion and diversification of exports by raising their prices in terms of domestic currency and to expand their market share in the international market by lowering their prices. The expansion of the volume of exports, in turn, is expected to more than compensate for the decline in prices and to raise export earnings making the export sector the leading sector for general growth. On the import side, devaluation is, in the short-run, expected to bring about a downward change by raising the prices of imports in terms of the domestic currency. In the long-run, the export-led higher income is expected to drive imports upwards to a new equilibrium level at a higher standard of living.

The above views of devaluation have faced some serious challenges. For some, the relationship between devaluation and external balance of payments is at best inconclusive (Mussa, 1984). For others, the usefulness of devaluation as a tool for correcting external disequilibrium cannot be generalized to all types of disequilibria much less to all types of economic structures (Maizels, 1986: 20). Its relevance is thus qualified by a number of conditions among which are:

1) the level of competition and/or export restrictions such as quotas, that a country's exports face;
2) the elasticity of the supply of export commodities;
3) the elasticity of foreign demand for the devaluing country's exports
4) the elasticity of the demand for foreign products in the devaluing country, and
5) the nature of the causes for the external disequilibrium, i.e., whether or not the external disequilibrium is caused by uncompetitive costs of production or by external factors such as declining prices at the international market.

Moreover, critics claim that as devaluation fails to increase export earnings it creates new economic and social problems among which are the following.

1) It leads to either inflationary conditions through wage-price spiral (if governments allow nominal wages to follow increases in prices of imports and their substitutes) or it leads to reverse income redistribution and political conflict if governments suppress the wage increase pressures (Singh, 1986).
2) By reducing the imports of intermediate goods, including machinery, spare parts, fertilizers, etc., and also by shifting income from wage earners to profit earners who generally have lower propensity to consume (Diaz-Alejandro, 1963), devaluation leads to contraction of economic activity.

This study is an attempt to contribute to the debate on the relevance of devaluation in the case of SSA by examining the responses of exports and

imports of goods and non-factor services to devaluations[1]. The hypothesis to be tested is that in low income undiversified economies, such as those of SSA, changes in real exchange rates (RERs) do not lead to significant changes in exports and imports rendering devaluation ineffective as a mechanism for correcting external disequilibria. An attempt is also made to examine briefly the impacts of devaluation on inflation, income redistribution, economic growth, and broader structural changes of SSA economies such as the transformation of the subsistence sector into surplus producing exchange economy and diversification through selective import-substitution.

*Methodology I*

Testing the hypothesis raises several problems. The response time for both imports and exports to devaluation varies depending on the nature of the goods. The response time for imports of consumer goods can be expected to be rather short while that of capital goods and inputs can be long since it takes considerable time for the production process to change to less import-intensive techniques. In countries where the chief exports are mineral products and perennial agricultural crops, the response to devaluation can also be expected to materialize within a year provided there is underutilized capacity. However, in countries where the chief exports are tree crops such as coffee, cocoa and tea there is a considerable time lag between devaluation and the possible responses of such exports since these products take up to five years between planting and harvest. In order to deal with these problems three testing approaches are selected.

*The first test examines:*

1) the relationships between the dependent variable, annual changes in the values of Exports ($Y_1$) and the annual changes in the independent variable, annual changes in RERs ($X_1$) in fourteen SSA countries; and

2) the relationships between the dependent variable, annual changes in the values of imports ($Y_2$) and the independent variable $X_1$ in the same fourteen countries[2]. In order to determine if exports and imports respond to changes in the values of real exchange rates, the values of the

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1    Exports are better indicators of the impacts of devaluation than imports since high levels of imports could be maintained due to aid or accumulation of debt despite devaluation. For the same reason, exports are also better indicators than balance of payments. So, while the impact of devaluation on imports is also tested in this study the emphasis is on the response of exports to changes in real exchange rates.

2    The two equations tested in the first test are $Y_1 = a + bX_1 + E$ and $Y_2 = a + bX_1 + E$ where a stands for the constant b stands for the coefficients and E represents the standard error. These two equations are run separately for each of the fourteen countries.

independent variables are regressed against the values of the dependent variable of a year later. For the hypothesis to be rejected, changes in the values of RERs should be accompanied by significant changes in the values of exports and imports. The fourteen countries selected for inclusion in this test due to availability of consistent data are; Cameroon, Congo, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Malawi, Nigeria, Sudan, Tanzania Uganda, Zaire, Zambia and Zimbabwe. The time period under study is 1966-1983. The sources for the data used are Adrian Wood, Global Trends in Real Exchange Rates 1960 to 1984, World Bank Discussion Paper, No. 35 and IMF, International Financial Statistics Supplement on Trade Statistics, 1988.

*Results of the first test*

**Table 1 : Responses of the values of Exports to Devaluation**

| Country | Coefficients $B_l$-$Y_l$ | PR | F-Value | Adi. $R^2$ |
|---|---|---|---|---|
| Cameroon | -1.75 | 0.585 | 0.327 | -0.092 |
| Congo | 1.41 | 0.500 | 0.506 | -0.066 |
| Cote d'Ivoire | 1.33 | 0.476 | 0.567 | -0.057 |
| Ethiopia | -0.96 | 0.330 | 1.094 | 0.012 |
| Ghana | -0.84 | 0.272 | 1.421 | 0.050 |
| Kenya | -1.55 | 0.539 | 0.418 | -0.079 |
| Malawi | 1.55 | 0.539 | 0.416 | -0.079 |
| Nigeria | 1.68 | 0.571 | 0.354 | -0.088 |
| Sudan | -7.01 | 0.891 | 0.020 | -0.140 |
| Tanzania | 2.52 | 0.703 | 0.158 | -0.118 |
| Uganda | 9.49 | 0.919 | 0.011 | -0.141 |
| Zaire | 0.34 | 0.022* | 8.673 | 0.490 |
| Zambia | 2.79 | 0.731 | 0.128 | -0.122 |
| Zimbabwe | -3.66 | 0.793 | 0.074 | -0.131 |

* significant at 0.05 level of confidence

The results of the first test show that, with the exception of Zaire's exports, the impacts of changes in the values of RERs are not accompanied by significant changes in the values of either exports or imports. Despite the exception (which appears to be a fluke with no clear explanation), the results of this test do not support the contention that devaluation through its impacts on exports and imports brings about the correction of external disequilibria in SSA. These results are hardly surprising since even if devaluation has strong impacts on exports and imports, the impacts would, especially in the case of developing countries, take several years to materialize. We thus try

another approach that tests the responses of exports and imports over a longer period of time.

**Table 2: Responses of the value of Imports to Devaluation**

| Country | Coefficients $B^1$ -$Y_2$ | PR | F Value | Adj. $R^2$ |
|---------|------------|------|---------|------------|
| Cameroon | -1.66 | 0.566 | 0.363 | -0.087 |
| Congo | 1.73 | 0.582 | 0.333 | -0.091 |
| Cote d'Iv | 1.26 | 0.454 | 0.628 | -0.049 |
| Ethiopia | 0.89 | 0.301 | 1.247 | 0.030 |
| Ghana | -1.99 | 0.632 | 0.251 | -0.103 |
| Kenya | -0.87 | 0.287 | 1.331 | 0.040 |
| Malawi | 0.78 | 0.240 | 1.646 | 0.075 |
| Nigeria | -2.69 | 0.721 | 0.138 | -0.121 |
| Sudan | 0.53 | 0.102 | 3.550 | 0.242 |
| Tanzania | 0.43 | 0.055 | 5.306 | 0.350 |
| Uganda | -1.26 | 0.455 | 0.626 | -0.049 |
| Zaire | -0.76 | 0.228 | 1.742 | 0.085 |
| Zambia | -2.28 | 0.669 | 0.200 | -0.111 |
| Zimbabwe | 4.44 | 0.828 | 0.051 | -0.135 |

*Methodology II*

The second approach is made up of two tests. The first compares average annual growth rates of exports ($x_1$) and imports ($X_2$) of five years before and after devaluation for twenty-three cases of devaluations in SSA. Averages of five years are selected since some of the exports such as coffee, cocoa and tea take up to five years between planting and harvesting. An analysis of variance is then utilized to determine if the differences in the growth rates of exports and imports in the two time periods are significant. A second test is conducted in order to control for the impacts of external factors, such as changes in commodity prices, during the two time periods. The growth rates of exports and imports of countries with real devaluations are compared with those of countries with only nominal devaluations. All other factors being common to both groups of countries, the exports of those with real devaluation can be expected to do better.

The same data sources as in the first approach are used for this approach. The data we have for imports and exports go up to 1987. However, since a five year period is required for the response of exports of some commodities, the last devaluations that are included in this approach are those of 1982. One drawback of this approach is thus most of the IMF-World Bank sponsored devaluations of the 1980s are excluded from consideration.

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### Table 3: Selected Devaluations Vs the US$, 1966 - 1982

| Devaluating Country | Date of Devaluation | Nominal Devaluation in % | Changes in Real Exchange Rates in %* |
|---|---|---|---|
| Rwanda | 1966 | 75.0 | -24.29 |
| Ghana | 1967 | 21.5 | -23.90 |
| Zaire | 1967 | 101.5 | -26.43 |
| Cameroon | 1970 | 6.9 | -5.20 |
| Congo | 1970 | 6.9 | -9.36 |
| Cote d'Iv | 1970 | 6.9 | -6.12 |
| Madagascar | 1970 | 6.9 | -6.00 |
| Senegal | 1970 | 6.9 | -10.35 |
| Togo | 1970 | 6.9 | -13.23 |
| Kenya | 1976 | 13.9 | 1.14 |
| Malawi | 1976 | 5.7 | 0.80 |
| Zambia | 1976 | 12.2 | -2.41 |
| Burkina | 1977 | 2.8 | 5.88 |
| Niger | 1977 | 2.8 | 6.14 |
| Zaire | 1977 | 8.2 | 17.69 |
| Ghana | 1978 | 53.4 | -3.59 |
| Sudan | 1979 | 13.7 | 0.53 |
| Madagascar | 1982 | 23.1 | 2.93 |
| Cameroon | 1981 | 20.9 | -8.48 |
| Nigeria | 1981 | 12.9 | -3.18 |
| Cote d'Ivoire | 1981 | 20.9 | -16.78 |
| Somalia | 1982 | 70.8 | -33.44 |
| Tanzania | 1982 | 12.1 | -0.64 |

* Negative signs represent appreciation of real exchange rates.
**Source:** computed from the figures in Wood (1988).

### Results of the second test

A glance at Table 3 shows that none of the nine nominal devaluations between 1966 and 1970 was accompanied by real devaluation. Yet with the exception of Ghana (see Table 4) all of the countries recorded rising export earnings during this period. This improved export performance is unlikely to be due to nominal devaluations. Rather, it might be explained better by the generally high commodity prices during this period.

Table 3 also shows that only seven of the fourteen nominal devaluations during the 1976-82 period were accompanied by real devaluations. A comparison of the performances of exports and imports of five years before and five years after devaluation for these seven cases with real devaluations shows no significant differences (see Table 5). In fact, with the exception of Madagascar, all of these real devaluations were accompanied by a decline in

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export performance which can be attributed to the general decline in commodity prices during this period. Even with such a decline in general commodity prices and other unfavorable external factors, the exports of the countries with real devaluations would be expected to perform better (or less badly) than those of countries with only nominal devaluations since the external factors can be regarded as common to all. However, there are no significant differences in the exports of these two groups of countries. Thus, the second test also fails to support the hypothesis that devaluation of RER improves the performances of exports. Even in this case, the absence of support for the hypothesis may be attributed to the failure of the devaluing countries to consistently maintain undervalued exchange rates for an extended period of time (Fletcher, 1989:126).

### Table 4: Growth Rates of the Values of Exports and Imports of Five Years Before And After devaluation

| Country | Before Devaluation | | After Devaluation | | | % |
|---|---|---|---|---|---|---|
| | X | M | X | % change | M | change |
| Rwanda | -21.9* | 142.2 | 14.4 | 165.7 | 7.9 | -111.9 |
| Ghana | 19.3 | 0.04 | 8.7 | -54.9 | 0.9 | 2150.0 |
| Zaire | 7.9 | 2.6 | 11.8 | 49.4 | 20.8 | 700.0 |
| Cameroon | 11.0 | 10.5 | 17.5 | 59.1 | 20.5 | 95.2 |
| Congo | -6.8 | -4.9 | 47.4 | 797.1 | 24.4 | 597.9 |
| Cote d'Ivoire | 11.5 | 10.5 | 22.5 | 95.7 | 25.2 | 140.0 |
| Madagas | 10.1 | 22.8 | 16.0 | 58.4 | 17.8 | -21.9 |
| Senegal | 4.4 | 3.5 | 31.8 | 622.7 | 24.9 | 611.4 |
| Togo | 16.1 | 7.8 | 37.8 | 134.8 | 22.6 | 189.7 |
| Kenya | 22.1 | 13.7 | 10.0 | -54.8 | 19.7 | 43.8 |
| Malawi | 18.4 | 15.7 | 11.1 | -39.7 | 13.5 | -14.0 |
| Zambia | 14.3 | 7.2 | 3.9 | -72.7 | 11.6 | 61.1 |
| Burkina | 22.8 | 30.9 | 6.7 | -70.6 | 11.4 | -63.1 |
| Niger | 27.7 | 25.7 | 22.8 | -17.7 | 22.5 | -12.5 |
| Zaire | 9.2 | 2.1 | -6.2 | -167.4 | -2.1 | -200.0 |
| Ghana | 11.9 | 21.4 | 28.0 | 135.3 | 34.3 | 60.3 |
| Sudan | 10.5 | 12.5 | 4.9 | -53.3 | 2.7 | -78.4 |
| Madaga! | -4.8 | 1.4 | 1.9 | 139.6 | -5.1 | -464.3 |
| Cameroon | 18.9 | 19.8 | -6.3 | -133.3 | 5.6 | -71.7 |
| Cote d'Ivoire | 10.7 | 14.9 | 6.7 | -37.4 | -1.7 | -111.4 |
| Nigeria* | -4.1 | 25.9 | 1.8 | 143.9 | -21.1 | -181.5 |
| Somalia* | 21.9 | 13.5 | -0.3 | -101.4 | -10.2 | -146.6 |
| Tanzania! | -0.7 | 0.03 | -4.1 | -485.7 | -2.4 | -242.9 |

! Four years average is used due to missing data
* Three years Average is used due to missing data
**Source:** IMF, 1988.

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## Methodology III

A third approach utilized is a comparison of the growth rates of the values of exports ($X_1$), values of imports ($X_2$), GDP ($X_3$) and average annual changes of current account balance ($X_4$) of four groups of countries. The first group (GP1) is comprised of countries with an average of over 10% rate of devaluation of RERs for the period between 1980 and 1987. The second group (GP2) consists of countries with real devaluation rates of less than 10% and more than 5%, the third group (GP3) consists of countries with below 5% average real devaluation rates and the fourth group (GP4) consists of countries that have not devalued or have revalued. The time period under consideration in this test is 1980-87, a period that was essentially excluded from the previous two tests. Devaluations in the later years of this period do not allow sufficient response time for some of the exports. However, each of the selected devaluing countries began a series of devaluations in 1980 or 1981. Therefore, this approach can detect a trend on the impact of real devaluation on exports, imports and consequently, on current account balance (CAB) as well as on gross domestic product (GDP). The data for this test are acquired from IMF, International Financial Statistics (several years), IMF, International Financial Statistics: Supplement on Trade Statistics, 1988 and United Nations Development Programme and the World Bank, African Economic and Financial Data, 1989[3].

### Table 5: Impacts of Real Devaluations on Imports and Exports

|  | Exports $X_1$ | Imports $X_2$ |
|---|---|---|
| F Value | 2.12 | 0.94 |
| PR | 0.17 | 0.35 |
| R2 | 0.15 | 0.07 |
| Mean B$_d$ | 15.13 | 14.57 |
| Mean A$_d$ | 7.31 | 8.94 |
| Mean Difference Between GP1 - GP2 | 7.82 | 5.63 |

B$_d$ represents before devaluation and A$_d$ represents after devaluation.

Note: The differences in the performances of exports and imports before and after devaluation are not significant at the 0.05 level of confidence.

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3    Real exchange rates are estimated on the basis of the equation, $RER = EP^*/P$, where $E$ = nominal devaluations, $P^*$ = foreign price index (consumer price index of industrialized countries, which are the most important trading partners of SSA countries) and $P$ = consumer price index of each SSA country in the test.

## Table 6: Input

| Country | Devaluation rate in % | X (X₁) | M (X₂) | GDP (X₃) | CAB(X₄) |
|---|---|---|---|---|---|
| GP1 | | | | | |
| Nigeria | 16.7 | -11.1 | -17.6 | -2.6 | 298.7 |
| Burkina | 15.9 | 5.6 | -1.2 | 5.2 | -265.9* |
| Cote d'Ivoire | 10.7 | -0.3 | -6.8 | 0.7 | 13.5* |
| GP2 | | | | | |
| Ghana | 5.6 | 2.8 | 2.2 | 0.9 | -237.3 |
| Zaire | 8.2 | 3.0 | -5.0 | 1.5 | -23.0 |
| Zambia | 6.4 | -2.2 | -8.4 | -0.1 | -0.8 |
| Madagascar | 8.0 | -7.4 | -10.4 | 0.03 | 20.5* |
| Malawi | 7.2 | 1.1 | -4.9 | 2.0 | -778.5 |
| Cameroon | 9.5 | 9.5 | 2.9 | 6.2 | 210.0* |
| Kenya | 6.0 | 2.4 | -2.8 | 3.3 | -88.1 |
| GP3 | | | | | |
| Sierra Leone | 4.4 | -7.6 | -24.7 | -0.3 | 23.8* |
| Sudan | 4.6 | -3.5 | -8.0 | 0.9 | 12.1 |
| Tanzania | 4.3 | -4.1 | -2.0 | 1.6 | -1.9* |
| GP4 | | | | | |
| Ethiopia | 0.0 | -0.02 | 7.9 | 3.5 | -826.9* |
| Liberia | 0.0 | -3.9 | -6.1 | -1.4 | 59.1 |
| Rwanda | -2.3 | 3.5 | 5.8 | 2.2 | -24.2 |

\* = average of six years is used due to missing data
**Source:** computed from IMF (1988) and UNDP and the World Bank (1989).

The results of the third test also do not reject the null hypothesis as the four groups of countries do not show any significant difference in any of the variables tested (Table 7). None of the three tests thus rejects the hypothesis that devaluation of RERs does not bring about the correction of external disequilibrium in the case of SSA. It may be argued that the reason for the continued external disequilibrium is because the devaluation rates in SSA were not sufficient and that higher real devaluation of real rates would correct the problem. Higher devaluation rates, however, while capable of depressing imports, are not likely to raise export earnings (see section 3). And without raising export earnings, further devaluations tend to lead to economic contraction and inflationary crisis that we discuss in section 4.

### Reasons of the Ineffectiveness of Devaluation

There are a number of plausible explanations for why devaluation is ineffective in correcting external disequilibria in SSA. One is that SSA countries, like other producers of primary commodities, have faced declining demand and prices for their products. Copper continues to be displaced by

other metals. Synthetic substitutes have affected cotton. Coffee and tea also
have faced a saturated demand (Gulhati, et al., 1986: 412). Recession in the
industrialized countries in the early 1980s contributed to the decline of
prices of primary commodities. Projected increases in the volume of world
commodity exports are also hardly promising (Grilli [ed.], 1983). Declining
commodity prices are actually, a major reason for their external
disequilibria. Under these conditions, attempts to increase the volume of
exports through devaluation, especially when a large number of producers
devalue at the same time, leads to over-supply in the world market resulting
in further fall in prices without increasing the market share of individual
countries.

**Table 7: Results of the third test**

|  | Exports X$_1$ | Imports X$_2$ | GDP X$_3$ | CAB X$_4$ |
|---|---|---|---|---|
| F Value | 1.06 | -2.05 | 0.21 | 0.53 |
| PR | 0.4006 | 0.1609 | 0.8904 | 0.6717 |
| R$^2$ | 0.2101 | 0.3386 | 0.0489 | 0.1165 |
| Mean GP1 | -1.933 | -8.533 | 1.100 | 15.433 |
| Mean GP2 | 1.314 | -3.771 | 1.976 | -128.171 |
| Mean GP3 | -5.067 | -11.567 | 0.733 | 11.333 |
| Mean GP4 | -0.140 | 2.533 | 1.433 | -264.000 |
| Mean Difference |  |  |  |  |
| GP1-GP2 | -3.248 | -4.762 | -0.876 | 143.600 |
| GP1-GP3 | 3.133 | 3.033 | 0.367 | 4.100 |
| GP1-GP4 | -1.793 | -11.067 | -0.333 | 279.400 |
| GP2-GP3 | 6.381 | 7.795 | 1.242 | -139.500 |
| GP2-GP4 | 1.454 | -6.305 | 0.542 | 135.800 |
| GP3-GP4 | -4.927 | -14.100 | -0.700 | 275.300 |

SSA's foreign exchange problems and its economic crisis are more
serious than other regions of the developing world. This has often been
attributed by many to the overvaluation of SSA's currencies. However,
trends of real exchange rates do not provide a strong support for this
argument. Between 1960 and 1984, SSA currencies have significantly
depreciated relative to those of industrial and middle-income economies and
they have only modestly appreciated relative to those of other low-income
economies (see Table 8). Furthermore, a support for such a claim requires a
comparative data not only on exchange rate trends but also on the rates of
subsidies, export taxes, import tariffs as well as direct controls, factors for
which data are not available. In any case, it seems that SSA countries suffer
the most from the decline of the prices and market share of primary
commodities primarily because their exports are dominated by non-oil

primary commodities more than the other regions of the Third World. In 1986, for instance, the percentage of exports of non-primary commodities to total exports for 27 SSA countries averaged only 13.8% compared to 43.3% for 13 Asian and Pacific countries (excluding Japan, Taiwan, Singapore, Hong Kong, and the two Koreas) and 25.1% for 20 Latin American and Caribbean countries (World Bank, 1989).

**Table 8: Actual Real Exchange Rate Trends By Country Groups (1980-84 average as Ratio of 1960-64 Average)**

| Region/Country | Official Rate | Black Market Rate |
|---|---|---|
| India | 0.62 | 0.83 |
| China | 0.40 | 0.96 |
| Other low-income econ. | 0.60 | 0.58 |
| Low-income Africa | 0.76 | 0.71 |
| Low-income Asia | 0.59 | 0.74 |
| Oil-Importing Middle Income Economies | 0.87 | 0.95 |
| High Income Oil Exporters | 3.52 | 3.66 |
| Industrial Economies | 1.00 | - |

Source: Adrian Wood (1988, 66).

A related reason why devaluation fails to increase export earnings in SSA is due to the low demand elasticities of primary commodities at the international level (see Table 9). Such elasticities hardly warrant an increase in the global consumption of the three commodities. Individual devaluating countries thus can raise their market share only at the expense of other commodity exporters. In the 1980s, however, devaluation had become a common occurrence among large numbers of primary commodity exporters. Thus, contrary to increasing the volume and thus earnings of exports, devaluation may result in a loss of export earnings due to the size of the share of the devaluing country (or devaluing groups of countries together) in total world supply and the low elasticity of price of exports (Godfrey, 1985; Maizels 1986).

Proponents recognize the limitations of the effects of devaluation on export earnings in the short-run because of the inelastic world demand for primary commodities. However, they expect devaluation to alter the internal terms of trade between tradeable and nontradeable goods and thus to increase the incentives for export production, including nontraditional commodities and to promote less import-intensive production methods. Devaluation of real rates certainly shifts the internal terms of trade in favor of internationally tradeable goods. A combination of devaluation and price deregulation has, for instance, raised the producer price for cocoa in Ghana from 12,000 cedis per tonne in April 1983 to 174,000 cedis per tonne in

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1989 (Araka et al., 1990:7). Whether this redistribution of income will promote export diversification remains to be seen. However, the third approach in this study which tested export earnings over a period of seven years gives little indication that the process of export diversification has begun to make a difference in export earnings. Furthermore, the process of diversification would depend on a number of factors such as production and marketing capabilities in addition to realistic exchange rates.

### Table 9: World Demand Elasticities of Selected Primary Commodities

| Product | Demand Elasticity |
|---------|-------------------|
| cocoa | -0.300 |
| coffee | 0.230 |
| tea | -0.250 |

Source: Pasquale L. Scandizzo and Dimitris Diakosawas, *Instability in the Terms of Trade of Primary Commodities, 1900-1982*, Rome: FAO, Economic and Social Development Paper, No. 1987.

## Negative Impacts of Devaluation

As already noted, high rates of devaluation can depress imports and reduce external disequilibrium even without raising export earnings. This type of adjustment is, however, likely to fuel several economic and social problems. Among such problems are inflation, contraction of economic activity, reverse income redistribution, conflict and slowing of structural changes. We now briefly examine the impacts of devaluation on each one of these problems.

### Impacts on Inflation

Increases in the local currency value of imports spark a general price increase by raising the prices of imported consumer goods, of capital goods, imported raw materials and other intermediate goods. The higher the devaluation rate the higher the inflationary pressure is. The inflationary ramification of devaluation is evident from Table 11 where the increases in consumer price index correspond with the nominal devaluation rates. As Gulhati et al. (1985:22) argue, the inflationary impact of devaluation may be preventable by budgetary and monetary restraints and wage controls. However, such policies, which reinforce the redistribution of income in favor of the export sector and against the domestic sector (including urban consumers, civil servants and even food producers), may prove difficult to maintain for long unless they quickly increase export earnings and thereby generate economic growth or are accompanied by significant resource inflows from abroad. Maintaining these policies for long without quick growth or external assistance may require authoritarian military

governments. Even such governments will have to divert resources from economic to security concerns which will undermine the objectives of devaluation.

*Impacts on Overall Economic Activity*

That devaluation can lead to economic contraction has been widely recognized (Cooper, 1971, Krugman and Taylor, 1985, van Wijnbegen, 1986, Edwards, 1989 and 1986). There are several reasons why devaluation can lead to a decline in real output. One is that it raises the value of imported inputs of production which tends to lower capacity utilization. Most SSA countries already face large current account deficits and huge debt obligations that have lead to import strangulation which, in turn, has led to contraction of production and development projects. Singh (1986:429), for example, points out that import strangulation has forced Tanzanian manufacturing industry to operate at only 20% of capacity while agricultural production has been hampered by scarcity of inputs such as fertilizers. While the degree of import strangulation varies from country to country, many other SSA countries including, Uganda, Sudan, Zaire and Madagascar have suffered severe capacity underutilization (Gulhati et al.,1985:30). Devaluation can only worsen the problem of import strangulation since, as our three tests indicate, exports have not responded to devaluation to offset the increases in import prices brought about by devaluation.

The impacts of increased input prices is likely to be serious on the subsistence peasantry and other small producers who can ill afford higher prices. Recent experiences of some SSA states suggest that devaluation, in company with import decontrols, is also likely to undermine the efforts of these countries to diversify their economies through import-substitution industrialization. In Nigeria, closures have become rampant, with manufacturers often blaming the difficulties on reduction of protectionist barriers and on the sharp cost increases for imported raw materials and spare parts brought on by devaluation (Harsch, 1988:14). In Cote d'Ivoire, the number of workers employed in textile industries dropped from 12,000 in 1982 to 8,000 in 1987 (Harsch, 1988:14).

Another reason why devaluation is contractionary is its impact on income distribution. It shifts income from the wage earners and the food producing peasantry to profit earners and the export sector that generally have lower propensity to consume. The impact of devaluation on the prices of inputs also affects producers, especially the small ones. Both these factors depress aggregate demand (Diaz-Alejandro, 1963) and thereby lead to economic contraction.

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**Table 10: Devaluations and Changes in Consumer Price Index of
Selected African States, 1980-1987**

| Country | Nominal Devaluation in % | Aver. Annual Changes in Consumer Prices in % |
|---|---|---|
| GP1 | | |
| Ghana | 5490.3 | 49.9 |
| Sierra Leone | 2836.9 | 74.0 |
| Zaire | 3914.4 | 53.4 |
| Zambia | 1106.8 | 27.5 |
| GP2 | | |
| Madagascar | 406.1 | 18.5 |
| Malawi | 171.1 | 15.2 |
| Nigeria | 634.5 | 16.4 |
| Sudan | 500.0 | 28.6 |
| Tanzania | 683.9 | 30.4 |
| GP3 | | |
| Cameroon | 42.2 | 10.7 |
| Kenya | 81.9 | 10.9 |
| Cote d'Ivoire | 42.2 | 5.8 |
| Burkina | 42.2 | 4.9 |
| GP4 | | |
| Ethiopia | 0.0 | 21.2 |
| Liberia | 0.0 | 3.6 |
| Rwanda | -14.2 | 5.4 |

*Impacts on Income Redistribution*

Reliable and consistent data on income distribution is not available for SSA. Our analysis in this regard is thus essentially conceptual. Some have argued that overvaluation of currencies leads to skewed income distribution since it discriminates against agriculture in favor of import substitution industry which employs only a small percentage of the population (Cleaver, 1985:24). Implied in this argument is that devaluation, by favoring agriculture over industry, will bring about a more equitable distribution of income. There is, however, a problem with this analysis. Devaluation improves the relative prices of cash crops in local currency. It also raises the prices of imported agricultural products which in conjunction with price decontrols may raise the demand for and the relative prices of local agricultural products. Both these developments raise the incomes of cash crop producers and those of surplus producing farmers. The impact of devaluation on the subsistence sector, on the other hand, can very well be negative. There is lack of data on what percentage of the SSA peasantry is engaged in the production of export-oriented cash crops, what segment of it

is capable of producing surplus food and what portion of it is essentially subsistent. As already noted, devaluation in Ghana contributed to the increase in producer price of cocoa from 12,000 cedis per tonne in April 1983 to 174,000 cedis per tonne in April 1989. However, only about 18% of Ghana's farmers grow cocoa and 94% of the gross cocoa income goes to 32% of the cocoa producers who are large farmers (Araka, et al., 1989:7). If the small size of the marketed portion of the produce of SSA farmers (see Ghai and Smith, 1987:60-67) is indicative, the SSA peasantry is essentially subsistent and so before it can benefit from devaluation and price decontrols it needs to have access to productivity raising agricultural inputs and raise its productive capability. In this regard, devaluation can only hurt by raising the prices of imported inputs such as fertilizers and thus denying the subsistence peasantry of access to such inputs. Devaluation thus may impair the transformation of the subsistence sector into a surplus producing exchange economy and also worsen income distribution. Furthermore, it may worsen the discrimination against food products relative to cash crops since it is geared to making exports more profitable than non-traded goods although food production may also benefit to some extent due to increases of prices of imported food products.

Devaluation, through its impact on general prices, also shifts resources from wages to profits and thus promotes reverse income redistribution. For instance, with three steep devaluations in Mozambique between January 1987 and January 1988, the official exchange rate against the U.S. dollar was slashed from MT40 to MT450 (Africa Recovery, March 1988:9). With these devaluations overall prices rose about 210% while wages rose by only about 70% (Africa Recovery, March 1988:12). This reverse income redistribution impact has several implications. As we have already noted, it affects the general level of output by lowering aggregate demand. It also leads to social conflict which, in turn, leads to increased appropriation of resources for security and also to more authoritarian regimes.

## Conclusion

A comparative analysis of the performances of devaluation and State intervention in the valuation and allocation of foreign exchange was beyond the scope of this paper. Considering the self-serving nature and sometimes the sheer incompetence of many governments in SSA, allocation of foreign exchange by government policy through rationing of foreign exchange or through other policies such as a multiple exchange rate policy, import controls, and subsidizing exports may be ineffective as proponents of devaluation point out. However, the findings of this study also do not justify the importance that devaluation has been given in the adjustment programs for the recovery of African economies. First, the evidence does not support that past appreciation of real exchange rates is at the root of Africa's economic problems. Secondly, Due to the low price elasticity of world

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demand for primary exports, devaluation is unlikely to lead to significant improvement of balance of payments as long as African economies remain undiversified. Thirdly, while the results of the tests do not allow us to conclude that devaluation does not lead to export diversification in the long-run, it is likely that its impact in this regard is also exaggerated since diversification requires much more than devaluation. In light of these findings, and also considering that devaluation may aggravate many of SSA's economic problems by fueling economic contraction, inflation and reverse income redistribution by failing to increase export earnings, the importance that devaluation has been given in the economic reform programs may need to be scrutinized more carefully.

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