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DEPARTMENT OF ECONOMICS
RESEARCH MEMORANDUM

**STRUCTURAL ADJUSTMENT AND DIVERSIFICATION
IN MINERAL EXPORTING DEVELOPING
COUNTRIES**

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STRUCTURAL ADJUSTMENT AND DIVERSIFICATION
IN MINERAL EXPORTING DEVELOPING COUNTRIES

The case of Zambia

by

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Structural adjustment and diversification in mineral exporting developing countries - The case of Zambia

§ 1. Introduction.

For mineral exporting developing countries (MEDCs) the major factor necessitating adjustment policies in the late seventies/early eighties are the lower commodity prices in real terms as compared to the previous decade. Structural adjustment becomes necessary when the fall in prices is no longer regarded as a temporary fluctuation but rather as a reflection of the secular trend. In addition, mineral exporting countries may have to anticipate the future depletion of the mineral resource.

More as a derivation of the two factors mentioned above, structural adjustment is needed to allow for high debt service obligations, deteriorated terms of trade, price distortions and slow growth in the OECD countries.¹⁾ Postponement of structural adjustment in response to falling mineral prices, led to mounting debt service obligations. The deterioration of the terms of trade is a direct consequence of falling mineral prices and the vulnerability of MEDCs to external shocks.²⁾ Price distortions already occurred in the period of relatively high mineral prices, in accordance with the theory on the 'Dutch Disease'. The slow growth in the OECD countries following oil price increases in the 1970s not only diminished demand for mineral exports but also decreased the opportunities for alternative ways to earn foreign exchange.

These structural factors resulted in balance of payments deficits, slow or negative growth rates and government budget deficits. The latter are of special relevance in MEDCs because of the strong fiscal linkage which characterizes these economies (as compared to agricultural exporters).³⁾

The unsustainability of the imbalances in the 1980s made structural adjustment inevitable. The falling revenues from mineral exports being regarded as the major structural change, the challenge is to compensate

for the shortfall in foreign exchange receipts. This can be brought about by a contraction in spending on tradable goods or by an expansion in the production of these goods. The former is associated with a restrictive fiscal and monetary policy (expenditure reduction) while the latter requires intervention in the real exchange rate (expenditure switching). Both require major changes in production and consumption patterns.

The rising debt repayment obligations and changes in the external environment such as increasing prices of imports and increased interest rates put additional pressure on the implementation of these measures. More severe interventions will therefore be needed to allow not only for the falling revenues from minerals but also for this deterioration in the external environment.

Interventions should necessarily be directed towards the traded goods sector. Because only in this sector, compensation can be found for the deteriorated external environment. As stated before, adjustment policies in general consist of two parts: expenditure reduction and expenditure switching policy. As the IMF puts it: in general, external balance cannot be simultaneously achieved (with internal balance) without employing at least two separate policy instruments, one acting to reduce domestic expenditure and the other to change the composition of foreign and domestic expenditure between foreign and domestic goods.⁴⁾ Expenditure reduction can be achieved through fiscal and monetary policy. Measures to induce expenditure switching include exchange rate adjustments, import restrictions and tax or subsidy schemes. The IMF prefers the former because other measures tend to result in inefficient patterns of resource use.

The success of adjustment policies largely depends on the mixture of both kinds of policy measures and the consequences on wages, prices, interest rates, imports, tariffs and credits. Furthermore, within the macro-economic framework which is characterised by both kinds of policies, policy makers may wish to emphasise the development of certain sectors in the economy and/or to influence the distribution of income. So, apart from the macro-economic combination of adjustment measures, the success of the

program will depend on its impact on sectoral developments. A third factor will be the unexpected changes in the external environment such as sudden shocks in commodity prices.

The starting point for this analysis will be the combination of expenditure reduction and switching policies. The extent to which these policies work their way through the mineral dependent economy brings us to developments on a sectoral level and to variables such as wages, credit expansion, investment, prices etc. After looking at the theoretical aspects of adjustment policy in the next paragraph (paragraph 2), adjustment problems and policies of the mineral dependent economy of Zambia will be analysed extensively (paragraph 3).

The Zambian economy is traditionally characterised by a large comparative advantage in mineral exports. The advantage decreases when depletion is expected in the foreseeable future and mining has already shifted to lower grade ores. This situation is aggravated by falling output prices. The economy now has to change over from a situation in which foreign exchange came in relatively easy to a situation where new comparative advantages have to be identified and exploited. It is most likely that these advantages will be less explicit as compared to copper mining. Thus, adjustment should be implemented to induce a reduction in production costs to make other exports internationally competitive.

These considerations briefly illustrate the huge problems a mineral exporting country like Zambia faces in its effort to change over from a relatively comfortable foreign exchange position to a situation in which other resources have to be exploited. The prospects for other exports than copper are further frustrated by transport problems and high transport costs of landlocked Zambia. The comparative advantage of high grade copper ores could easily compensate for these transport costs. For other exports, however, compensation has to be found in lower production costs. On the other hand, high transport costs form a strong natural protection for the import-competing sector.

Paragraph 3 analyses the nature of the problems and prospects of a change over from the mineral dependent economy of Zambia to a more diversified economy. The analysis is based on the theoretical considerations about adjustment in MEDCs of paragraph 2.

Paragraph 3 is subdivided in several sections in accordance with the emphasis put on different aspects of adjustment policy. After 1974, Zambia saw its terms of trade deteriorate but was able to secure external finance for its current account deficit. In the period until 1980 (paragraph 3.2) some expenditure reduction and switching measures were implemented but only to a relatively small extent in the hope that copper prices would recover from their fall in 1975. Nevertheless, some conclusions can be drawn based on the success of devaluation and fiscal/monetary restriction. In the 1980s the policy of borrowing and postponing adjustment became unsustainable and Zambia had to subordinate itself to conditions imposed by the IMF. Until the end of 1985 (paragraph 3.3) the emphasis was placed on a monetary restrictive policy. After 1985 until the break with the current IMF program in 1987, when foreign exchange was auctioned, switching policy was the major device. This period will be analysed in paragraph 3.4. After the break with the IMF in May 1987, Zambia has reimposed a fixed exchange rate and price control measures. The period can hardly be described in terms of structural adjustment but gives the impression of crisis management to cope with the reduced availability of foreign exchange. Paragraph 3.5 describes some of the measures the government is taking to improve the economy. In section 4 conclusions will be drawn. The paper starts with the theoretical aspects of expenditure reduction (paragraph 2.2) and expenditure switching (paragraph 2.3) policies.

§ 2. Expenditure reduction policy and expenditure switching policy.

§ 2.1. Introduction.

Starting point for the analysis in this paragraph is a situation with a current account deficit in a MEDC. The deficit is assumed to be caused by

a deterioration in the terms of trade. Initially, the country can postpone any adjustment and finance the deficit from external sources or run down its reserves. This means that the country actually starts to 'live beyond its means'. If the deterioration in terms of trade is not reversed, the deficit will become unsustainable, either because available reserves become exhausted or external finance can no longer be secured. This means that something has to be done internally. From paragraph 1 it is already clear that there are basically two types of policies to counteract current account deficits: expenditure reduction and expenditure switching policies. The former seeks to reduce excess spending over income thus improving the balance of payments situation indirectly while the latter directly seeks to reduce imports and increase exports. It is generally accepted that both policies form the nucleus of the adjustment process and that a proper combination of the two is the best approach to counteract a persistent current account deficit. Problems arise when decisions have to be taken on the policy mix and on ways and means to minimise the negative (social) consequences of adjustment policies.

IMF programs emphasise expenditure reduction policy to remedy a current account deficit because '...it is generally easier to reduce absorption than to increase production. For this reason, policies affecting absorption are often first put in place when a rapid decline in a current account deficit is mandatory'.⁵⁾ Expenditure switching policy in these programs is rather to be considered as supportive to the general aim of expenditure reduction. Devaluations are mainly used to discourage imports and to improve the viability of the mineral export sector.⁶⁾ The main objective of devaluation in Fund programs is therefore to support expenditure reduction, not primarily to induce expenditure switching. This emphasis on expenditure reduction policy may be influenced by the different time horizon of both policies. While expenditure reduction policy is directed towards short term results, expenditure switching policy contains the more structural elements of adjustment and takes a longer period of time to yield results. Therefore, the World Bank can play a critical role in the formulation of adjustment policies by emphasizing the structural elements in it. A Bank program contributes to a Fund program in that it '...permits the Fund to rely less on demand restraint

measures in restoring external equilibrium, and thus in turn reduces the likelihood that Fund-supported programs would adversely affect growth in the short term'.⁷⁾ This discussion illustrates that, despite the acceptance of a combination of both policies to remedy current account deficits, the emphasis put on certain aspects of the adjustment policy plays a critical role.

§ 2.2. Expenditure reduction policy.

In a country which is faced with a current account deficit, expenditure reduction policy mainly aims at removing excess spending over income. Secondary objectives may be a reduction of inflation and an increase in savings. The major instrument for this policy is a reduction in credit supply. The underlying assumption of this policy is that the deficit on current account is caused by excess spending over income. One might argue that the deficit is not caused by excessive spending but rather by a deterioration of income. But in case a country cannot influence the income side, e.g. because minerals prices have declined, solutions have to be found on the spending side. This indicates that an expenditure reduction policy is a short term policy to improve the current account balance. It does not primarily aim at changing the structure of the economy in the long run, although it may be beneficial for the restructuring process.

The logic of the argument for a contraction of spending seems obvious. The success of the policy, however, depends largely on the way it is implemented. The broad instrument of credit restraint should be further specified for sectors and categories of expenditure. In a MEDC, the government is likely to be the main source of excess spending. Because of the strong fiscal linkage with the mining sector, government income is highly dependent on mineral revenues. When prices of minerals decline, (as was the case in the mid seventies and for most minerals again in the early eighties) government revenues from the mining sector decline even more rapidly. Large budget deficits result and reductions in government spending become inevitable (unless the tax burden is increased). An expenditure reduction policy in this situation is thus directed towards a

reduction of the government budget deficit through credit constraints from the banking institutions.

Despite the general objective of reducing the budget deficit, governments may still be able to secure the larger part of scarce credits at the cost of credits to the private sector. Within the private sector, the same kind of transfer of the credit restraint problem takes place between large scale industries on the one hand and small scale industries (and households) on the other. The latter would in the end bear the brunt of the overall credit restraint.⁸⁾ Similarly, expenditure reduction through credit restraint is not necessarily directed towards consumption but may hamper investments as well (including productive government investments). If the credit squeeze is not adequately rationed, companies may even lack resources to finance their working capital, let alone new investments. To cope with these distributional issues, the IMF usually proposes to define a norm for credit supply to the private sector. In practice, however, the minimum level of private sector credit is mostly not achieved because '... these exercises are subordinated to the central objective of controlling overall credit expansion'.⁹⁾

The Fund relates private sector demand for credit to the national income. National income, however, may be affected by the credit crunch through a lack of credit for working capital and because of a reduction in aggregate demand.¹⁰⁾ The latter not only affects imports and exportables, but also demand for import substitutes and non-traded goods.

In support of the restrictive monetary policy, interest rates could be increased. This will encourage domestic savings and consequently increase supply of capital. In addition, it may have the beneficial effects of reducing consumption expenditure and discouraging capital intensive investments. On the other hand, however, the costs of capital increase which may affect investment decisions. Furthermore, increased interest rates affect government expenditure in a way that it increases interest payments to the banking system. It may thus contribute to an increase in the budget deficit.

With a fall in aggregate demand and a lack of working capital, a credit squeeze will have an overall contractionary effect on the economy. Both producers of traded and non-traded goods will be affected by it while the instrument mainly aims at reducing domestic spending on traded goods. The traded goods sector is then expected to use its excess capacity for an increase in exports. The possibilities for this increase, however, will, among others, depend on the competitiveness of the sector. The expenditure reduction policy by itself does not provide incentives for the traded goods sector, unless it is assumed that prices of non-traded goods will fall in response to demand reduction. Theoretically, this makes it possible to reach complete adjustment without exchange rate devaluation.¹¹⁾ In practice, however, there will be some kind of downward price rigidity and domestic producers will be reluctant to lower their prices. A reduction in spending will thus lead to excess supply and unemployment. While the policy may lead to an improvement in the external balance, internally the economy actually contracts. To stimulate domestic production under demand contraction, the price relation between traded and non-traded goods should be changed. A devaluation of the exchange rate will lower the price for non-traded relative to traded goods. The production costs of the latter sector decrease in terms of output prices, which may encourage the sector to expand. The traded goods sector may thus be able to compensate for loss of employment and output in the non-traded goods sector, which is an unavoidable result of expenditure reduction policy. An expenditure reduction policy, therefore, should be supported by expenditure switching policy.

It is concluded that an expenditure reduction policy on its own is likely to lead to contraction in the economy. The policy is biased towards a short term reversal of current account deficits. When the public sector is seen as the main source of excessive domestic demand, which is most likely in MEDCs, expenditure reduction will primarily affect this sector. Besides, the increased scarcity of credit and probably its higher price requires additional and more specific measures to ensure distribution of credit to be in line with national priorities.

§ 2.3. Expenditure switching policy.

Expenditure switching policy is preferably effected through exchange rate devaluation. This may shift expenditure to domestically produced goods while resources will be diverted to production of traded goods. The major short term objective of expenditure switching policy in a situation of unsustainable current account deficits is to reduce imports. In the medium term it may also have the more important effect of increased production of traded goods, both import substitutes and exports. It implicitly means a greater openness of the economy which does not necessarily mean export orientation since expansion of the traded goods sector may to a large extent be found in the import-substitution sector.

The reduction of imports through devaluation depends on the demand elasticity of the price for imports. For countries which have been experiencing current account deficits for years, the elasticity tends to be low because these countries have already been forced to ration their imports. Devaluation will, however, certainly lead to a contraction of spending on domestically produced goods because it raises the prices of traded goods which implies a reduction of real income (income effect).

The other objective of an expenditure switching policy is to encourage the production of traded goods. The traded goods sector can in this way compensate for the contractionary effects of both expenditure reduction and expenditure switching policies. But, more important, the sector should broaden the country's export base and make it less dependent on imports. This is the more structural aspect of the adjustment process. It should enable the country to respond to decreasing (mineral) export revenues and, eventually, to increasing debt repayment obligations.

The expenditure switching policy, to be effected through nominal devaluations, is most likely to lead to a contraction of output in the non-traded goods sector. This sector sees its costs rising especially if traded goods are used as inputs, while demand decreases because of the income effect. On the other hand it may benefit from a substitution effect of demand from traded goods to non-traded goods because of the price

increase in the former sector. The net result, however, most likely being negative, economic activity will change over from the non-traded goods sector to the traded goods sector. This change over requires flexibility in the economy and a longer time period than an expenditure reduction policy to yield results with respect to the current account.

The success of an expenditure switching policy depends on several factors: the extent to which prices in the non-traded goods sector and wages increase following the devaluation, the viability and exploitation of other export oriented activities, the capacity utilisation in the traded goods sector, the international competitiveness of the import substitution sector and the availability of credits to the traded goods sector. These factors will be analysed below with special reference to MEDCs.

Devaluation will almost inevitably lead to a higher inflation rate in the economy since it raises prices of traded goods. Parts of the inflationary effect may be counteracted by abolishing import tariffs at the same time. This will prevent import prices from rising in accordance with the devaluation. But it may not be sufficient to prevent inflationary pressure on the economy. An increase in the general price level can only be prevented by lower prices of non-traded goods due to demand contraction. This is not likely to happen for the same reasons as mentioned in the foregoing section and, in addition, because producers of non-traded goods will be confronted with rising input prices. If, however, prices of non-traded goods rise at the same rate as prices of traded goods, the effect of devaluation on the latter sector will be nullified. The traded goods sector will see its costs rise to the same extent as output prices and its competitiveness will decrease. To prevent prices of non-traded goods from rising, a expenditure reduction policy is necessary. So, here again the need to combine expenditure switching policy and expenditure reduction policy is stressed.

The same kind of reasoning can be applied to wage increases. If wages are allowed to rise following a devaluation, the traded goods sector will not benefit fully from the devaluation. In practice, devaluation will most likely lead to a fall in real wages. MEDCs, however, tend to be high wage

economies.¹²⁾ The mining sector is usually the wage leader, especially during times of high mineral prices. Strong miners unions are able to secure wage increases which spread over to the rest of the economy. The wage level in these countries is therefore typically relatively high. Subsequently, in a period of adjustment, devaluation can be considered as a measure to bring down the real wage rate. However, a devaluation will also raise or restore profitability in the mining sector which may provoke new wage demands by the miners. A reduction in real wages is thus more necessary in MEDCs but at the same time more difficult to achieve.

MEDCs that have been relying for years on their mineral resource for export earnings will have limited experience with export markets. Identification and exploitation of other comparative advantages is thus likely to take considerable time. At the same time, managerial skills have to be developed in the field of exports other than minerals. Providing incentives through a devaluation therefore requires additional measures to bring about the desired expansion of exports.

If the traded goods sector is actually working with excess capacity, production expansion can be realised without large new investment expenditure. In that case, domestic producers of traded goods may be able to respond in the short term to the incentive of devaluation.

Expansion of output in the import substitution sector, however, is hampered by the contractionary effects on spending of both expenditure switching and expenditure reduction policies. This sector may thus be induced to search for export markets for its products. In MEDCs, however, the international competitiveness of the import substitution sector may be questioned. Protection, together with the high capital intensity of many industries in these countries, makes the sector not very efficient. Devaluations (together with tariff reforms) do not guarantee a viable position of this sector. A change over to exports may, therefore, not be feasible for a large part of the import substitution sector. The expansion of this sector must be found in production of importables which become increasingly expensive because of the devaluation. For this kind of

expansion, new investments will be needed, with the exception of product lines with excess capacity.

From the factors mentioned above, it is clear that a large part of the expansion of the traded goods sector must be found in new investments. This outcome tends to conflict with the instrument of credit restriction under an expenditure reduction policy. So, although the traded goods sector sees its opportunities to expand improve, it may not be able to find finance to do so. This will put additional pressure on the distribution of credit under adjustment programs. Expenditure switching will also increase the need for external finance in the adjustment period.

Finally, the effects of expenditure switching on the distribution of income should be taken into consideration. As mentioned above, real wages are likely to decrease under this policy. But the effects may differ for different categories of workers. Workers involved in the production of traded goods, where value added in terms of output prices increases, may be able to secure wage increases. Their real wage will further depend on the share of traded goods in their consumption basket. In the non-traded goods sector, however, contraction prevails and workers may be confronted with unemployment, at least in the short term, and decreases in their real wages. In the medium term, the total effect depends on the output response of the traded goods sector. Even when it is assumed that production in the traded goods sector will eventually expand and compensation is found for unemployed workers from the non-traded goods sector, additional policy measures are needed in the short run to protect the most vulnerable social groups. This protection, although a major governmental task, is likely to be jeopardised by its objective to reduce the budget deficit.

From this section it is clear that an expenditure switching policy on its own will not bring about the desired improvement in the current account balance. It has to be supported by expenditure reduction policy to minimise the inflationary impact of devaluation. Furthermore, measures should be taken to enable the traded goods sector to expand.

§ 2.4. A combination of expenditure reduction and expenditure switching policies.

From a macro-economic perspective, a combination of expenditure reduction and expenditure switching policies seems to be the most promising adjustment policy. Both policies will reinforce each other, but there are also areas of conflict. Through its income effect, the expenditure switching policy reinforces demand reduction. This may lead to a relaxation of the restrictive fiscal/monetary policy needed to achieve external balance.

Conversely, expenditure reduction policy may lead to lower prices of non-traded goods. It thus adds to the objectives of expenditure switching policy. This effect, however, has been excluded here.

Conflicts arise with regard to inflation, credit supply and austerity, to mention some of these. While expenditure reduction policy aims at reducing inflation, expenditure switching policy tends to raise the domestic price level. The desired expansion of traded goods production following the devaluation conflicts with the objective of reducing credit supply under expenditure reduction policy. The austerity measures to reduce the budget deficit must be brought in line with the need to protect vulnerable social groups during the period of adjustment, i.e. until the expenditure switching policy starts to yield results.

Both kinds of policies have a different time horizon. Expenditure reduction policy will have an immediate impact on the government budget deficit, aggregate demand and the current account deficit. A policy to encourage expansion of output in the traded goods sector will take years to yield results. The only short term effect on output may be an improvement in capacity utilisation. For a further expansion, new areas of investment need to be identified. It may take a few years before new production facilities are in full operation. Output expansion in agricultural activities may take less time to be realised. Especially in MEDCs, with a high food component in total imports, agricultural development should be emphasized in the adjustment period. The different

time horizons of both policies give rise to questions about the timing of implementation. An expenditure switching policy should support an expenditure reduction policy because of the contractionary effect of the latter. This effect, however, will be immediate while the positive results of devaluation on output are expected to occur in a later stage. In the meantime, the contractionary effect of demand reduction should be minimised. Increased donor support to maintain a certain level of aggregate demand until expansion of the traded goods sector is realised may help to overcome this problem of timing.

Inflation is another area in which both policies are not fully complementary. Expenditure reduction policy through credit restraint and public sector austerity will mitigate inflation by reducing aggregate demand. Under an expenditure switching policy, however, inflation is, by definition, caused by cost-push factors. It raises prices of traded goods while prices of non-traded goods may also rise to the extent that traded goods are used as inputs. Therefore, expenditure reduction policy in a period of devaluations, may not be sufficient to prevent prices of non-traded goods from rising. This is partly a matter of timing, for it may take some time before all prices in the economy have responded to the new exchange rate. Prices for exports and imports will respond sooner than prices for import substitutes and non-traded goods. Moreover, since non-traded goods are not fully produced out of traded inputs, there is no reason why prices of non-traded goods should rise at the same rate as traded goods.

It is concluded that, in order to combine an expenditure reduction policy with a perspective of growth and employment, it should be implemented simultaneously with an expenditure switching policy. For countries with acute and severe balance of payments problems, it is tempting to consider the current account deficit as the major problem to be solved and to device a policy mix accordingly. However, making an expenditure reduction policy the cornerstone of adjustment in MEDCs, one runs the risk of prolonged economic contraction and increases in unemployment and poverty. Multilateral financial institutions tend to urge for measures which directly influence the current account position of debtor countries. This

may lead to unbalanced attention for an expenditure reduction policy and a neglect of other objectives than the immediate reduction of a current account deficit. On the other hand, an expenditure switching policy, particularly in a country with a low import price elasticity, will not result in substantial improvements in the current account in the short run. It takes time and external assistance for the expenditure switching policy to take effect in terms of an expansion of the traded goods sector. The best policy mix can only be judged upon in the actual situation of a particular country. It may therefore be useful to analyse how a mineral exporting developing country like Zambia has combined these two policies in order to adjust the economy to falling copper prices in the mid 1970s and early 1980s.

§ 3. Zambia.

§ 3.1. Introduction.

The Zambian economy is characterised by its dependence on mineral exports. At the end of colonial rule in 1964, copper accounted for 95 percent of export earnings while exports made up 60 percent of GDP. The decline in copper prices after 1975 had a severe impact on the economy. However, adjustment could be postponed until the beginning of the 1980s. By that time, the country had to adjust not only to falling terms of trade but also to increased debt service obligations. The emphasis of adjustment was initially on expenditure reduction policies. After 1985, with the introduction of a foreign exchange auction, expenditure switching became the dominant policy. Zambia may thus fit into the theoretical framework as outlined above.

At Independence, the manufacturing sector held a share in Zambian GDP of only six percent. Between 1963 and 1966, copper prices increased by almost 125 percent in real terms and remained relatively stable until 1974, with a small dip during 1971 and 1972. Real GDP grew on average by 5.6 percent annually between 1965 and 1974. The dependence on copper exports, however, is only one aspect of the general dependence of Zambia on external

factors. Apart from copper prices, the development of Zambia is to a large extent determined by such factors as weather conditions, oil prices and geographic location. Major aspects of the latter are the liberation struggle in neighbouring Zimbabwe, the frontline position vis a vis South Africa and the long and partly unreliable transport routes to the harbours in the region.

Between 1965 and 1974, the government influence on the economy increased. In 1969, the fiscal linkage between mining revenues and government income was reinforced when the government became the major shareholder in mining activities. The country embarked on an import-substitution strategy which was biased towards providing inputs for the mines and production of final consumer goods. Investments were directed towards large scale capital intensive production. After 1969, public investment was dominated by the takeover of existing companies. Government final consumption expenditure increased from 12 percent of GDP in 1964 to 19 percent in 1974.

Manufacturing output grew on average by more than 10 percent between 1965 and 1974, partly because of direct government investments. This figure contrasts with a growth rate of agricultural output of less than 2 percent. The development policy emphasised growth in the manufacturing sector which became protected by import barriers. In contrast, agricultural output remained unprotected and was subject to a government pricing policy while prices of agricultural inputs increased. The internal barter terms of trade for the peasant farmer deteriorated by 30 percent between 1964 and 1973.¹³⁾

The share of the tertiary sector as a whole in GDP (at factor costs) increased from 30 percent in 1964 to 35 percent in 1971 and remained stable thereafter.

The period of high copper prices from 1964 to 1974, shows similarities to what is generally referred to as the 'Dutch Disease'.¹⁴⁾ The increased revenues of the booming sector (mining) led to wage increases and, through the spending effect, to higher prices for non-traded goods. Wage increases started from the mining sector and were followed by public sector workers and transport workers. This led to wage increase demands in other sectors as well. On average, wages of Zambians increased by ten percent a year

between 1964 and 1974. Between 1964 and 1970, the consumer price index (which only partly reflects the price increase of non-traded goods) increased by about 45 percent. This figure compares to an increase in prices of manufactured goods from industrial market economies (MUV-index) of only 17 percent.¹⁵⁾ This implies that producers of traded goods in Zambia (other than minerals) experienced cost increases (wages, non-traded goods as inputs) in relation to international output prices. In this period, the nominal exchange rate was fixed and so the real exchange rate appreciated and the Kwacha became overvalued in terms of prices of international traded goods.

A resource movement effect, the other symptom of Dutch Disease, cannot be observed with regard to the mining sector, due to its capital intensity. On the other hand, the rural-urban migration in Zambia can be regarded as an aspect of the resource movement effect. Employment creation and a relatively high wage level in protected and non-traded urban sectors and deterioration of the terms of trade in rural areas provided major incentives for this migration. It implied the withdrawal of resources (labour) from traded goods activities in agriculture. With total employment in the wage sector increasing by almost 4 percent per annum in the boom period, agricultural employment faced an almost zero growth rate. The urban population has increased at an annual growth rate of about 7.5 percent since 1963 while presently about 50 percent of the population is living in urban areas. This figure is the highest in sub-Saharan Africa.

In an overview of the boom period the most marked features are high real growth rates, major efforts by the government to develop educational and health provisions, urbanisation and increased government control of the economy. The latter included price controls, subsidies, direct investments and the takeover of companies. Both non-traded and traded goods sectors benefitted from increased aggregate demand. But of the latter, only the protected part was able to adjust its prices to increased domestic costs. Agricultural prices as well as imports of agricultural products were regulated by the government, who kept producer prices below import/export parity. Prices for non-traditional exports are, by definition, related to international traded goods prices.

In 1974, copper prices started to fall. In real terms, the copper price declined by almost 46 percent in 1975. A small improvement occurred in 1979 and 1980, but prices declined even more dramatically thereafter. In 1984, a price level of only 40 percent of the 1974 level (in real terms) was reached. An improvement in prices has been recorded for 1987 and 1988, while for 1989 prices are expected to fall slightly. With its heavy dependence on copper exports, the Zambian economy was extremely hard hit by the decline in copper prices after 1974.

Compared to 1964, export earnings from copper had fallen by 65 percent in real terms in 1984. In this year, Zambia earned only 28 percent of its earnings on copper exports in 1970. In 1974, mineral revenue made up more than 50 percent of total government revenue. After that year, mineral revenue accounted for less than 5 percent of total revenue and in some years even became negative. Together with the fall in prices, copper production in Zambia declined after 1974. The volume of copper exports in 1986 was more than 30 percent below its 1974 level. According to Unctad statistics¹⁶⁾ the purchasing power of exports (defined as the value index of exports deflated by the import unit value index) had dwindled in 1985 to only 20 percent of its 1974 level.

Until 1980, the economic policy response to falling copper prices can be characterised by reluctance to adjust to the new situation. Zambia was able to secure external finance for its current account deficit while waiting for an economic recovery through an improvement in copper prices. In the meantime, the government tried to reduce imports by imposing import quota's and some exchange rate devaluation. Although the late 1970s cannot be characterised by any specific adjustment policy, the results from attempts to reduce imports and to change the value of the exchange rate may be of interest for the analysis of economic policy before and after 1985. After 1980, opportunities for borrowing dried up and the influence of multilateral institutions like the IMF and the World Bank increased. The adjustment programs in the years until 1985 focussed on demand management to reduce the current account deficit. This policy mainly relied on limiting credit supplies with the aim to reduce the government budget deficit. Devaluation of the exchange rate was a minor part of the

programs, with the objective to make imports less attractive. By the end of 1985, the emphasis switched to an expenditure switching policy, with the introduction of a weekly foreign exchange auction. With some interruptions, the auction was continued until 1987 when the government decided to break with the current IMF program.

In the next paragraphs, the implementation and the problems and prospects of the two types of economic policy, expenditure reduction and expenditure switching, will be analysed.

§ 3.2. Postponement of adjustment; 1975-1980

The fall in copper prices in 1975 is reflected in a fall in export earnings and in government revenue. As a consequence, real GDP declined by almost 2.5 percent in 1975. Net savings decreased dramatically. Initially, there was no reduction in government expenditure in response to falling revenues. To finance its budget, the government became increasingly dependent on domestic, and later, foreign borrowing.

Economic policy in the late 1970s focussed on a reduction in import expenditure by means of import restrictions, limited devaluations and attempts to reduce the budget deficit. The different aspects of these policies will be outlined below.

Import restrictions such as tariffs had already been imposed before 1975. The tariff structure aimed at protecting the production of those raw materials or manufacturers' inputs that were being produced locally or that could directly be sold to consumers. Essential goods and capital goods were exempted from import levies. This most likely has encouraged investments in capital intensive production. There were no duties imposed on basic food and agricultural imports, but imports were strictly regulated by granting exclusive import rights to large scale (state) monopolies. The trade policy was thus biased towards industrial production of final consumer goods and tended to neglect the production of intermediate goods. Furthermore, the relatively high rate of protection

allowed domestic producers to raise their prices above import parity, which had an inflationary effect on the economy.

After 1975, the tariff structure was replaced by more restrictive measures like quota's and import licences. The priorities as prevailing under the tariff system remained unchanged. The more severe import restrictions again have induced price increases in the economy. A reduction in imports was indeed effected. The volume of imports fell by 30 percent between 1975 and 1980. Apart from the import restrictions, this reduction of imports was brought about by a reduced availability of foreign exchange, reductions in government expenditure and the devaluations.

After the shock in 1975, the budget deficit was reduced in 1976; from 21.5 percent of GDP to 14.2 percent. A further reduction was effected in 1979. Both reductions were effected mainly through reducing domestic lending by the government (inter alia to parastatal companies). Nevertheless, the deficit remained high and had to be financed through domestic and foreign borrowing. In 1976, almost 35 percent of total government expenditure was financed by domestic borrowing. After 1979, foreign borrowing became the main source of financing the budget deficit. Domestic borrowing caused a crowding out effect on credits to the private sector. In 1974, the government absorbed less than 20 percent of domestic credit, in 1980 this figure had risen to almost 75 percent. Overall credit creation increased from 22 percent of GDP in 1974 to 63 percent of GDP in 1980. The figures indicate that the contractionary effect of reduced export earnings on consumption was partly compensated through domestic and foreign borrowing, especially by the government. Thus, a situation of excess spending over income was created.

One of the reasons behind this situation was the general trust in a recovery of copper prices. Another reason may have been the relatively easy access to foreign credit because of the existence of copper (and cobalt) reserves in Zambia. On the expenditure side, high spending by the government was enhanced by external factors such as bad weather conditions in 1978 and 1979. Apart from its effect on the current account, the subsequent food imports forced the government into higher outlays for subsidies, thus preventing a reduction in the budget deficit.

Zambia concluded standby arrangements with the IMF in 1973, 1976 and 1978. All three arrangements emphasised the need to reduce spending, especially by the government. The government budget deficit and the subsequent increase in the money supply was seen as the major problem facing the country. Under the arrangement of 1976, producer prices for maize were increased by 25 percent while subsidies on consumer prices, which had been introduced since 1965, were reduced by 60 percent. To support these measures, the programs prescribed devaluations of the Kwacha with the aim at reducing import expenditures.

As already indicated above, the success of the programs in reducing government consumption was limited. Nevertheless, the attempts to reduce the budget deficit together with the lower copper export revenues had a contractionary effect on the economy. In this period, real GDP growth can only be observed in 1976 and 1980. Particularly investment expenditures were hard hit by the contractionary effects of the bust period. Gross fixed capital formation declined from 38 percent of GDP in 1975 to 18 percent in 1980, while the share of total consumption expenditure in GDP remained constant and the difference between imports and exports of goods and services declined. From these observations, together with the relative reduction of credit to the private sector it may be concluded that government borrowing was mainly used to maintain consumption at a constant level. Thus, the contractionary effect of the bust period was mainly on investment expenditure. Apart from the different propensities to consume of the government and the private sector, this may have been caused by the lack of foreign exchange to finance investments or to obtain spare parts. The latter caused underutilisation of capacity in existing import dependent industries and discouraged new investments.

As mentioned above, the expenditure reduction policy was supported by exchange rate devaluations in 1976 and 1978. Both devaluations aimed at discouraging imports and improving the profitability of the mining sector. The latter would increase government revenue and reduce the deficit. The devaluations were not specifically intended to encourage expansion in the traded goods sector. This can be illustrated by the fact that both devaluations were not even sufficient to compensate for the difference in

inflation between Zambia and its trading partners, during the foregoing decade. Despite the devaluations, government revenue from the mineral sector became zero or negative between 1977 and 1979. The effect on the volume of imports cannot be measured because of the simultaneous effects of other measures. The same holds true for the effect of devaluation on the price level. It is, however, striking that inflation in 1976 nearly doubled as compared to previous years. The total devaluation of about 26 percent between 1975 and 1980 was negated by an increase in the consumer price index and an increase in wages of both more than 100 percent.

The period under review can be characterised by postponement of adjustment through credit creation and foreign borrowing and by the continuation of the symptoms of the Dutch Disease. Both expenditure reduction and expenditure switching policies in this period were insufficient to generate prospects for a recovery from the adverse effects in the economy of falling mineral prices. The budget deficit had increased from 9 percent of GDP in 1979 to 18 percent in 1980 while the balance on current account showed no improvement. External debt increased from 1.4 bln. dollars in 1975 to more than 3.2 bln. dollars in 1980. Because of the middle level income status of the country, only a small part of the loans were granted under 'soft' conditions. The real appreciation of the exchange rate, originating from the boom period and continued during the subsequent bust, together with the relatively large extent of the non-traded goods sector, including heavily protected industries, are typical for the Dutch Disease.

The postponement of adjustment measures is not only reflected in a continuation of current account deficits but also in a lack of incentives for the traded goods sector. The sector suffered from the relatively high domestic wage and price level while imports came in relatively cheap due to the overvalued exchange rate. The devaluations of 1976 and 1978 were insufficient to change this situation. Apart from the other reasons mentioned above, the lack of prospects for the traded goods sector may explain the reduction in investment expenditure.

From this period it can be learned that an overall contraction of the Zambian economy is likely to hit investment expenditure

disproportionately, especially if the domestic cost level for the traded goods sector is not improved. The fiscal linkage in a mineral exporting developing country like Zambia plays a dominant role. The government reaction to falling (mineral) revenues causes crowding-out effects while the government also reduced its own lending activities. Apart from a lack of resources to expand production, the traded goods sector lacks prospects for competitive production, due to the symptoms of Dutch Disease. As outlined in general terms in section two, this should be remedied by an adequate expenditure switching policy together with credit allocation to priority sectors.

§ 3.3. Demand management and contraction; 1981-1985

In the beginning of the 1980s it became clear to the Zambian government and its creditors that copper prices would not recover in the short term. The conditions for external credits were sharpened. More severe adjustments in the Zambian economy became unavoidable. In the IMF programs in the period 1981 to 1985 again the emphasis was on reduction of spending. The burden of expenditure reduction was laid on the government which was seen as the major source of excess spending over income.

The economic policy in this period is characterised by the more outspoken objective of reducing expenditure in order to reduce drastically the current account deficit and make funds available for debt payment obligations.

In this period, three arrangements with the IMF were concluded, two of which were canceled prematurely. The first program started in 1981 and was scheduled to run until 1983. It included an overall credit ceiling and arrangements to reduce the budget deficit through a reduction of subsidies. The program was broken off in July 1982 because Zambia did not meet the program targets for reduction of payment arrears and for limiting credit supply. Copper prices had declined after the recovery in 1979 and 1980. The losses of the mining sector were financed through the domestic banking system which led to excess credit supply. In addition, poor rains

during the planting season and the subsequent food imports in 1982 implied a further deterioration of the current account balance.

After the government had introduced some modifications in the agricultural policy and the Kwacha had been devalued by 20 percent in the beginning of 1983, a new arrangement with the IMF was concluded in April 1983. Apart from restrictions in credit expansion the arrangement included a more flexible exchange rate policy. The program was scheduled until March 1984, but part of the IMF credit remained undrawn because Zambia did not meet the criteria for reduction of payment arrears.

In May 1984 a new arrangement was concluded with the same objectives as the previous ones. In addition it included measures to increase agricultural producer prices. Furthermore, exporting companies could henceforth retain 50 percent of their foreign exchange earnings. Although debt repayment and reduction of arrears did not meet IMF criteria, the agreement was not canceled. Instead, the Zambian government agreed to start auctioning of foreign exchange in October 1985. This decision probably prevented a premature breakdown of the '84 program which was due to run to January 1986.

The limited success of IMF programs in this period calls for a closer examination of economic developments. The emphasis in these programs was on expenditure reduction policy, supported by devaluations from 1983 on. The first question to be answered is whether these policies were indeed implemented. In a second phase the outcome should be related to the implementation.

Efforts to reduce the budget deficit in this period were highly influenced by external factors such as weather conditions and copper prices. A reduction in the budget deficit can indeed be observed in 1981 and 1983, but a disappointing agricultural season forced the government into high spendings on subsidies in 1982. This raises the question whether adjustment programs should make provisions for this kind of external influence. The impact of external circumstances on economic development stresses the need to overcome dependence on copper exports and to develop agricultural activities. The scope for any macro-economic adjustment program seems limited

as long as it can only be implemented in 'normal' years. Especially because normal years turn out to be a rare event in Zambia.

It thus becomes hardly possible to relate reductions in the government budget deficit to improvements in the current account deficit. In 1981 f.i. the budget deficit was decreased from 18.5 percent of GDP to 12.9 percent. However, in the same year the current account deficit increased because of a decline in copper prices. In 1983 and '84, when the budget deficit stabilised around 8 percent of GDP, the current account deficit was indeed reduced. The reduction in the budget deficit was effected through minimising the lending activities of the government and through reducing capital outlays. The distribution of credit among the government and the private sector remained stable, whereby the private sector obtained around 30 percent of total credit until 1984. But the effects on investment were again disappointing. Gross fixed capital formation decreased from a share in GDP of about 18 percent in 1980 to 10 percent in 1985. In 1984 and 1985, consumption of fixed capital even exceeded gross fixed capital formation. Thus, the possibilities for any structural recovery were actually non-existent.

The decrease in investment expenditure finds its causes in both supply and demand constraints. The continuous slide in export earnings and the attempts by the government to pursue an expenditure reduction policy led to demand contraction and overcapacity. On the supply side, the reduction in imports (the import volume was reduced by two thirds between 1980 and 1985) led to shortages of spare parts and intermediate goods.

These considerations pertain to both the traded and the non-traded goods sector. The development of the non-traded goods sector depends critically on domestic demand. In a situation of demand contraction, the traded goods sector may shift its emphasis to external demand, provided it is competitive on world markets. As mentioned above, the competitiveness of the Zambian traded goods sector was *inter alia* hampered by an overvalued exchange rate. Between 1979 and 1982, the exchange rate was fixed to the SDR, resulting in a real appreciation of more than 11 percent in these years. More as a means to discourage imports than as a measure to

encourage production of traded goods, the exchange rate was devalued in 1983 by 20 percent. After this devaluation it was allowed to depreciate further. The depreciation more than outweighed inflation in this period, what is reflected in a depreciation of the real effective exchange rate of more than 26 percent from 1983 to 1985 while the nominal effective exchange rate depreciation amounted to more than 42 percent. The supply responses to this devaluation will be outlined in the next paragraph where devaluation is the dominant subject. It should be noted, however, that the exchange rate was highly overvalued in 1983 partly because of differences in inflation rates between Zambia and its trading partners in foregoing years. The devaluations in the period 1983 to 1985 probably have been sufficient to compensate for this difference. A comparison of the MUV index and the Zambian Consumer Price Index adjusted for depreciations, shows that, starting in 1964 as a base year, the divergence between these two is removed in 1984. The divergence in price levels originated from the spending effect in the late 1960s. The depreciation of 1983-85 thus implies that the competitive position of Zambia in 1984 was about the same as in the beginning of the 1960s. This means however that compensation still would have to be found for differences in (developments in) productivity and, especially for exports, for the high transport costs from Zambia. Thus, the exchange rate remained overvalued. Nevertheless, the traded goods sector, and especially the import competing part of it, undoubtedly benefitted from the devaluations, except where its import content was very high.

In general it can be concluded that the current account deficit was indeed steadily reduced after 1981. The most important factor in this respect seems to be the lack of foreign exchange, including capital imports. Reductions in the budget deficit were ambiguous and only partly contributed to the reduction of the current account deficit. A further crowding-out effect of credits to the government was halted in this period. Nonetheless, the investment rate decreased further. Together with the loss in export earnings this led to negative growth rates in 1982, '83 and '84. Differences with the earlier period were essentially based on reduced availability of foreign finance. This forced the government to reduce its budget deficit and to restrict imports. Imports were further

discouraged by the devaluations from 1983 onward. Thus, on a macro-economic level, prospects for economic recovery were actually diminishing. Investment expenditure declined while the economy contracted.

On a sectoral level, the contraction mainly took effect through reduced output in the manufacturing sector, followed by commerce and community, social and personal services. The agricultural sector, however, shows a remarkable recovery in the years following the drought in 1982. Copper production decreased from more than 600,000 tons in 1980 to almost 480,000 tons in 1985.

The agricultural sector benefitted from some modifications in agricultural policy, introduced by the government in 1982. A higher priority, at least on paper, was given to traditional farming while plans for large scale state farms were abandoned. Instead, incentives were given to large scale commercial farmers to turn to more export oriented production. Producer prices were increased and the marketing system was liberalised. After the drought in 1982, agricultural output increased by 8.6 percent in 1983, 5.6 percent in 1984 and 9.3 percent in 1985. In 1985, the country reached self sufficiency in maize. The government effectively reduced subsidies to the agricultural sector on inputs such as transport and fertilizer in 1983 and 1984. This contributed significantly to a reduction of the budget deficit in these years. The burden of de-subsidisation was primarily borne by consumers.¹⁷⁾

Here the effects of expenditure reduction policy become more apparent. Adjustment to price distortions in agriculture was combined with efforts to reduce the budget deficit. The general decontrol of prices, which was effected by the end of 1982, must have been beneficial to the manufacturing sector as well. Output in this sector, however, did not respond. Actually, manufacturing output in 1983 and 1984 was below the 1982 figure. Obviously, the sector suffered more from demand contraction and shortage of foreign exchange than the agricultural sector. The government tried to encourage exports from the agricultural and manufacturing sectors by introducing a 50% retention scheme for non-traditional exporters. The scheme enabled exporters to meet their import requirements and was indeed regarded as a major incentive.

The devaluations from 1983 on mainly aimed to improve the viability of the mining sector. The losses of the sector in previous years were indeed reversed but a substantial contribution to government revenue cannot be observed in 1983 and 1984. In 1983, Zambia obtained external finance of US \$ 300 mln. for a rehabilitation program of the mines. This was seen as a first step in the recovery process after which resources could be diverted to other industries. But in the light of the foregoing analysis it is rather to be considered as a closure of the vicious circle in which Zambia got caught. Diversification was hampered by a lack of financial resources. To generate these resources, finance could, however, only be secured for the mines, what made the country even more dependent on its mineral resource.

The expenditure reduction policy, in this period, although implemented only partially in terms of the budget deficit and credit supply, succeeded in reducing the current account deficit. The reductions were, however, insufficient to allow for debt repayment obligations. The policy also succeeded in limiting inflation while prices were decontrolled and the Kwacha was devaluated. Decontrol of prices by the end of 1982 led to a relatively moderate increase in inflation from 12.5 percent in 1982 to 17.8 percent in 1983. On the other hand, the policy contributed to a contraction in the economy. Investment expenditure decreased and GDP actually declined. Part of the burden of the expenditure reduction policy was passed on to the consumers, who saw their real income decline, while unemployment increased. In short, the period lacked any prospects for a recovery of the economy. Under persistently falling mineral revenues the country would be forced to reduce its expenditures continuously. A further recovery of the agricultural sector would be hampered by decreasing domestic demand, lack of imported inputs and an overvalued exchange rate. Despite the reductions in imports, the policy failed to generate resources to service debt repayment obligations.

Because of this unsatisfactory outcome of adjustment policies until 1985, the government decided to a major policy change by the end of 1985. The measures implied a further liberalisation of the economy including abolishment of import licences and quantitative restrictions, decontrol of

interest rates and abolishment of price subsidies. The major action to be taken was the introduction of a weekly foreign exchange auction, starting in October 1985.

§ 3.4. Foreign exchange auctions and switching; 1985-1987

The period under review coincides with the foreign exchange auction from October 1985 until April 1987. In May 1987 the government decided to break with the current IMF program. It mentioned the deterioration of living standards and the mounting debt payment obligations as the main reasons behind this move. Inflation had, according to official statistics, increased from 37 percent in 1985 to 52 percent in 1986. The value of the Kwacha declined from K 2,2 per US\$ before the auction to K 21 in April 1987.

The emphasis of economic policy in this period was clearly on expenditure switching with the objectives to reduce imports, to improve the profitability of the mining sector and to boost exports. Expenditure reduction policy included further efforts to reduce the budget deficit through cuts in the subsidy bill and an increase in interest rates. However, the expenditure reduction policy failed to keep inflation under control while expenditure switching did not bring the desired expansion in the traded goods sector. Both observations indicate that the areas of conflict as outlined in paragraph two above, played a dominant role in this period. As mentioned there, these conflicts are strongly related to the environment in which the adjustment process takes place, being a mineral exporting developing country.

Apart from a purely economic analysis, the failure of the adjustment program in this period can also be approached from the political side. One might argue that the IMF has not adequately analysed the political viability of the program. The beneficiaries of it were not the political most powerful groups.¹⁸⁾ The riots at the end of 1986, which followed the removal of maize meal subsidies but which were essentially an expression of general discontent with the deterioration of living standards,

contributed to the breaking down of the program. Furthermore, the slow release of resources from donor countries and suspension of releases by the IMF had a severe negative impact on the program. The Zambian government could be blamed because it failed to control public expenditure, although this issue is related to the general performance of the program. Apart from that, the public was not very well informed about the economic and social consequences and prospects of the program. Finally, the turbulence of changes in the economy put too much pressure on the managerial capacity of the political and business leadership. All these factors, some of which are strongly related to economic performance, have contributed to the failure of the program and therefore add to the explanation from the economic side as presented in this section.

The implementation of the program was the subject of continuous disputes between Zambia and the IMF. As far as devaluations are concerned, it cannot be denied that the auction system led to a huge fall in the value of the Kwacha whereby the currency was even becoming undervalued by the end of 1986.¹⁹⁾ The disputes focussed on the regulations for the auction system, making the IMF and donor countries to withdraw their support for the system in the second half of 1986. The international donor community argued that the interventions of the Bank of Zambia in the auction system actually stimulated higher Kwacha bids for dollars. The implementation of expenditure reduction policy is more difficult to analyse because it is related to the devaluation, the debt repayment obligations and the increase in interest rates. Interest rates were raised from 14.5 percent in 1984 to 25 percent in 1985, increasing dramatically the claims of the domestic banking system on the government. Through the devaluations, the government foreign debt in Kwacha terms also increased making it even more difficult to reduce the budget deficit. This is one of the major areas of conflict of the two policies. The same holds true for the efforts to reduce the subsidy bill while, through the devaluation, the costs of agricultural products were on the increase because of rising costs of transport and fertiliser.²⁰⁾ On the other hand, the government budgets in this period are an indication of major efforts to reduce current expenditure. In 1986, civil service staffing was to be reduced from 80.000 to 60.000 while charges for medical services and boarding fees for schools

were introduced. Discussions with the IMF during this period focussed on the reduction of subsidies, the regulations for the foreign exchange auction and the rescheduling of payment arrears to the Fund. The implementation did not fully meet IMF criteria.

Supply constraints

With the emphasis on expenditure switching, the major objective of economic policy in this period was to expand production in the traded goods sector and to reduce imports. As observed in earlier sections, the volume of imports had already declined by about thirty percent in the period 1975 to 1980, while the reduction accelerated in the next five years with a decline of more than 65 percent. Thus, imports tended to become increasingly inelastic to price increases. The volume of copper exports had been declining since 1976, due to supply and transport constraints, while the mines necessarily shifted to lower grade ores. In general, mining activities tend to react very slowly to price incentives. Thus, the major response was to be expected from the other, non-mining, traded goods sector.

The domestic market for traded goods was actually contracting, except for some import-substitutes which could no longer be imported because of the shortage of foreign exchange. The devaluation should improve the competitiveness of the traded goods sector whereby excess capacity in the import substitution sector could be used for exports and export oriented activities could be expanded. Such a supply response, however, cannot be observed in Zambia. The reasons for this are closely related to the nature of the mineral dependent economy and the simultaneous efforts to reduce spending under falling mineral export receipts.

First it should be noted that the import substitution industry was mainly concentrated in two branches: final consumer goods (with a large import component) and inputs for the mines. This structure originated from the boom period as mentioned before. Both industries were hit by the fall in mineral revenues and the subsequent decline in aggregate demand. The in-

puts for the mines were in most cases too specific to be suitable for exports. A limited outlet for these products could only be found in the Zairean copper mines. The scope for exports of final consumer goods is also limited because of the large import component and because many of them were not yet up to the international standards. Moreover, these industries have got used to producing behind tariff barriers. Thus the prospects for a large part of the import substitution industry to expand production for exports were restricted.

The expansion of already existing export activities looked more promising. The output of the non-traditional export sector consisted largely of agricultural products in which Zambia has a comparative advantage due to a mild climate and ample reserves of cultivable land. The sector is, however, very small. In 1987, it still accounted for only six percent of total export earnings. Even if high growth rates were realised here, the non-traditional export sector would not be in a position to make up for the shortfall in export receipts in the short run. Nevertheless, the non-traditional export sector would have been one of the major beneficiaries from the expenditure switching policy.

An important factor determining the prospects of expansion of non-traditional exports is the transport situation of landlocked Zambia. According to IMF statistics, Zambia has one of the highest cif/fob factors in the world. To be competitive on world markets, Zambia has to overcome its transport disadvantage through very low production costs. The high grade copper ores provided Zambia with a comparative advantage. The comparative advantage in other fields is likely to be less explicit. In order to lower production costs, Zambia will be forced to further reduce its real wage level in terms of traded goods prices. A limited outlet for exports may be found on the regional market. But many countries in the region produce similar goods for exports while South Africa and Zimbabwe both have more productive economies.

It should be further noted that in Zambia about 70 percent of manufacturing output originates from parastatal companies. These companies may need other incentives than changes in output prices to expand

production. Moreover, many companies have a monopoly position and do not respond quickly to pressure to boost output.

Another restriction for the targeted increase in traded goods production is provided by the lack of foreign exchange. Excess capacity not only resulted from demand contraction but also from a shortage of imported inputs. The retention scheme helped to overcome this problem, but many companies were still locked in this vicious circle. It would help to introduce an export credit scheme for these companies. The Zambian government has, at various occasions, promised to set up such system, but it never came into being. Companies were still reported to receive export orders which they could not accept due to a lack of foreign exchange. Despite the objective to boost exports in this period, no provisions were made in the program to supply exporting companies with foreign exchange credits.

Expansion of traded goods production for the internal market is not very promising, due to the contraction in the economy. On the other hand, MEDCs tend to be large food importers while neglecting their agricultural sector.²¹⁾ Zambia is no exception to the rule, with a low agricultural growth rate until 1982 and a high share of food imports in total imports. The food selfsufficiency ratio has actually declined between 1964 and 1980. 1976 was the last year of net maize exports. Self sufficiency in maize was reached again in 1985. But the food situation remained vulnerable, expressed in the need for maize imports in 1986. Wheat self-sufficiency does not exceed the 15 percent level. Agricultural expansion can be regarded as the major area to develop. The sector is, however, highly regulated by the government. A devaluation would lead to higher prices for inputs like transport and fertilizer which are subsidised by the government. If the budget is to be reduced, these costs should be transferred to the producer. Agricultural producers, in turn, should be allowed to increase output prices to import/export parity. Devaluation would thus provide a major incentive to increase agricultural production. But it would put the burden of adjustment unilaterally on the consumer when prices of basic food are allowed to increase. Any adjustment program

should therefore include measures in the field of wage policy or a safety net to protect the poorest groups.

In 1985 and 1986, producer prices were increased, mainly to allow for higher costs of imported inputs. Consumer prices, however, remained constant, forcing the government into even higher spending on subsidies. This way the devaluation worked against the policy to reduce subsidies. A way out of this dilemma should be provided for in an adequate adjustment program, which was not the case in the arrangements between Zambia and the IMF for 1986. The IMF seems to have given priority to the deflationary effect of a reduction of subsidies because this would diminish the budget deficit. This, in turn, could have a positive effect for the consumers, particularly the poorest ones, who usually suffer the most from rapid inflation. But this is a very indirect and uncertain mechanism to protect poor consumers. They should be protected for a drastic deterioration in living standards by more direct measures.

The factors mentioned above all add to the general conclusion that a short term supply response could not be expected from the devaluations. Supply constraints, related to the mineral dependent structure of the economy, prevented this. The development of wages and prices formed another obstacle for a rapid supply response.

Wages and prices

It is recalled that wages were allowed to rise by more than 10 percent a year in the boom period, mainly because mineworkers unions were able to secure high wage increases. The increases spread over to the rest of the economy, leaving Zambia with a relatively high wage level by regional standards. This development is not uncommon for MEDCs.²²⁾ But it diminishes the prospects for development of other traded goods activities. In other words, the change over to traded goods production required a more severe deterioration in real wages as compared to countries with a relatively lower wage level. Between 1978 and 1984, wages in non-agricultural activities increased by 55 percent while the low income consumer price index increased by 126 percent. The deterioration was accelerated by the higher inflation rates in 1985 and '86. In 1985, the

real purchasing power of incomes was already below the 1967 level. The deterioration in the real wage rate seems inevitable for an improvement of the competitiveness of the traded goods sector. But it should lead to an increase in employment opportunities to make it socially acceptable. Given the supply constraints outlined above, this could not be expected in the short term. Moreover, a lower real wage rate is likely to result in lower demand for small scale industry goods and services. This, in turn, has a negative impact on employment.²³⁾ Thus the real wage reduction in 1985 and '86 only led to spending contraction and a deterioration in living standards without any compensating effect in the economy.

Probably the only positive impact has been a reduction in demand for imports and a subsequent improvement in the current account balance. This implies that the foreign creditors were the only beneficiaries of the deterioration of living standards in Zambia. The liberalisation measures starting with the foreign exchange auction should have included compensation measures or at least a safety net for the social groups most severely hit by the deterioration in living standards. Especially as a recovery in employment can only be expected in the medium term.

On the other hand, the huge decline in real wages might still have been insufficient to restore the competitiveness of the traded goods sector. Given the relatively high initial wage level, a further deterioration may be needed. Especially because other traded goods activities will inevitably have a much lower comparative advantage as copper exports. But even if competitiveness of Zambian traded goods is fully restored, the supply response of the sector will be limited due to the factors mentioned above.

It is not only the real wage level, but also the developments in the price level which determine the prospects for the traded goods sector under an expenditure switching policy. In case prices are allowed to increase accordingly, the effect of devaluation is negated. According to official statistics, this happened only partly in Zambia. Inflation rates in 1985 and '86 amounted to 35 and 56 percent respectively. Based on these figures, the real effective exchange rate depreciated by 7.5 and 51.8 percent in '85 and '86 while the nominal effective exchange rate

depreciated by 20 and 65.9 percent. So devaluations were not fully nullified by domestic price increases.

Areas of conflict

As mentioned before, expenditure reduction policy could not fully be implemented during this period. The government was unable to reduce its expenditure, partly because the devaluation and the increase in interest rates forced the government into higher spendings to service its domestic and foreign creditors. Moreover, the existing subsidy structure led to increasing expenditures under expenditure switching policy. The subsequent growth in the money supply added to the inflationary effect of the devaluation. Thus, instead of supporting the expenditure switching policy by controlling its price effects, the expenditure reduction policy actually stirred up further price increases. It is, however, doubtful whether it would be possible to actually reduce government expenditure under these circumstances. The conflicting areas dominated the mutually supporting areas. A consistent approach was needed which would take into account these conflicting areas. The ongoing depreciations in the second half of 1986, coming after a period of stabilisation, can partly be explained by the increase in inflation rates. Thus an inflation-devaluation spiral occurred with a harmful impact on the adjustment process. Downward pressure on the value of the Kwacha was further caused by the modifications in the auction system introduced by the Bank of Zambia. The modifications led to uncertainty about the future availability of foreign exchange. Moreover, the modifications provoked the withdrawal of foreign support for the system leading to reduced supply of foreign exchange on the auction floor.

The lack of consistency between fiscal/monetary and exchange rate measures may have been caused by the absence of an integrated program. The discussions with the IMF mainly served to secure external support and were dominated by regulations for the auction system and the determination of other policy variables. The discussions, however, did not result in a program in which policy measures were integrated and which included compensation measures to protect the most vulnerable groups. Moreover, a clear outline

of the targets of economic policy in the medium term was missing. The foreign exchange auctions can be considered as an experiment, the outcome of which should determine future programs for the Zambian economy.

The first lesson to be learnt is that a rapid supply response cannot be expected from expenditure switching in this environment. Increased supply of traded goods in the short term can only be expected from increased capacity utilisation in some industries.

In the second place, expenditure reduction policy should be brought in line with the expenditure switching policy. In practice, this means that compensation has to be found for increased government expenditure caused by the devaluations. If the foreign creditors stick to their demands for debt repayment, the budget deficit is likely to increase. Therefore, a ceiling in debt repayment obligations should be negotiated which allows the government to adjust the exchange rate without immediate pressure on the budget from the foreign debt. Debt repayment obligations could be increased once the reform program starts to yield results. On the revenue side, the government should maximize its income from the mining sector. The windfall gains of this sector, caused by the devaluation, should be taxed by the government. Increased government revenue can thus be used to compensate certain vulnerable groups in society that suffer most from the inevitable inflation. Part of the revenues, however, should be used to support that part of the traded goods sector which has a comparative advantage. In Zambia, this seems to be first of all the agricultural sector that can increase the production of both import substitutes and exportables.

Furthermore, the access of the traded goods sector to foreign exchange should be improved. The sector's need for foreign exchange likely increases initially because of efforts to increase production. Foreign support to set up an export credit scheme may be considered.

The allocation of foreign exchange should become subject to more strict government control as compared to the auction system. Under the auction system, the government was not able to effectively control imports of luxuries. Moreover, foreign exchange was not necessarily allocated to

priority sectors in the economy. Of the total amount of dollars disbursed during the first year of the auction, the agricultural sector obtained only 6 percent.²⁴⁾ The allocation of foreign exchange, therefore, cannot be fully left to market forces. During the restructuring process, government control over the allocation of foreign exchange seems desirable although it will be difficult to fully avoid privileged allocation and parallel markets. Government control should not prevent the exchange rate from moving to a more realistic level. Identification of the exchange rate which is considered to reflect the real value of the currency should precede decisions about devaluation. Any idea of what the real exchange rate should be was lacking during the auction system. Furthermore, increased government control over foreign exchange allocations should go along with a clear and detailed identification of priority sectors and industries.

This identification implies that choices have to be made in advance about the development of industrial activities. The tariff structure and the relatively high wage level have been in favor of capital intensive production in the past. This kind of production, however, is vulnerable to changes in the availability of foreign exchange. Moreover, it cannot contribute substantially to the creation of employment. Employment creation becomes increasingly important in Zambia, where almost 50 percent of the population is living in towns, while only a fraction is employed in the formal sector. The contraction in the economy in the 1980s has emphasized the need for new employment opportunities. Adjustment programs tend to lead to additional unemployment due to contraction of the non-traded goods sector including the government. These considerations should lead to a reconsideration of the development strategy.

The same way of reasoning can be applied to the agricultural sector. Initially the government encouraged large scale production and the introduction of state farms. This had led to a neglect of small scale farming while self-sufficiency in food production was not reached. The strategy was partially reversed in the beginning of the 1980s. It should be noted, however, that devaluations without further policy measures on a sectoral level may shift agricultural development into an undesired

direction. Small scale farmers may be unproportionally affected by an increase in transport costs. They may also not be able to raise funds to finance increased fertiliser costs, especially when interest rates are also raised. In general, access to credits is easier for large scale industries as compared to small scale ones. The volume and access may even be more important variables than the interest rate. Credits to small scale industries are assumed to involve higher supervision costs while large scale industries, in general, will have closer contacts with bank managers. Credit constraint and devaluation should therefore include measures on a sectoral level to ensure that macro-economic policy is in line with priorities in subsectors.

The choice for small scale and labor intensive production may initially imply a slower pace of output growth as could be expected from large scale projects. It implies that Zambia has to resist pressure from creditors for a short term debt repayment scheme. This can only be defended if the development strategy is based on a well designed and detailed program of how the adjustment process will be carried out. From the creditors some patience should be demanded for the sake of a more sustainable and less dependent development of Zambia. Adjustment programs so far have given too much emphasis on the need to fulfill debt repayment obligations in the short run. This way, Zambia had to adjust to too many external changes at once. The postponement of adjustment in the late 1970s led to the need to adjust to both falling terms of trade and increasing debt repayment obligations in the 1980s. The failure to meet these obligations led to the breakdown of several programs, thus hampering further adjustment efforts.

§ 3.5. Recent developments; 1987 to present

The period after the break with the IMF-inspired policy in May 1987 can neither be characterised by expenditure switching policy nor by expenditure reduction policy. The exchange rate was again fixed to the US dollar at a rate of K8 = \$1. It was not until November 1988 that the exchange rate was devaluated to K10 per dollar. With official inflation

running at 43 and 60 percent respectively in 1987 and '88, this clearly implied a real appreciation.

The period shows some similarities with the post-independence decade. The Zambian go-it-alone strategy coincided with a rising trend in copper prices. The exchange rate was not adjusted for inflation differences and became increasingly overvalued. This, in turn, prevented further diversification in the economy. Structural adjustment was again postponed. The present policy neglects the internal need to restructure the economy. The inevitable adjustment process will thus become more difficult to accomplish.

With regard to the budget deficit, the break with the IMF brought some relief. The government decided to impose a ten percent ceiling on debt servicing through which the provisions in the budget could be reduced by 25 percent. Combined with other measures this implied a decrease in the budget deficit from 14 percent of GDP in 1987 to 9.5 percent in 1988. However, due to reduced donor support in these years, - obviously related to the break with the IMF - the larger part of the deficit had to be financed from domestic sources. This again led to unbalanced growth in the money supply and fueled inflation.

Following the decision of the Zambian government to break with the current program, the IMF and the World Bank withdrew their support and in their footsteps the international donor community drastically reduced development aid. Most donor countries concentrated their criticism on the formal break of Zambia with the IMF program. This way, the Zambian government is held responsible for the failure of economic policy after 1985. But, as shown above, the IMF-inspired program contained some inconsistent measures, implying that it is not only the Zambian government who is to blame. This calls for a more critical approach of donor countries towards economic policy in Zambia. Decisions about donor support should be based on economic policy in Zambia, not on the formal step to break with the program. The fact that the outcome of the adjustment policy after 1985 did not fully come up to expectations calls for a review of economic policy recommendations, not for a withdrawal based on formal steps.

On the positive side it should be noted that the break with the IMF at least brought some stabilisation in the economy. The uncertainty under the auction system had made it very difficult to carry out any planning exercises for the economy. Furthermore, social unrest could hardly be controlled in that period. It should also be noted that the attempts by the government to reduce dependence on imports were reinforced after the auction. Companies were encouraged or even forced to look for local resources for their production process.

But the deterioration in living standards, which was the main reason for the break with the IMF, was not halted after May 1987. The scarcity of foreign exchange due to reduced foreign credits and donor support and the growth in the money supply are the main causes of spiraling inflation. The period also shows the revival of parallel markets for essential goods. It is striking that during the last two years, even in official statistics, increases in the consumer price index for low income groups, exceed the index for high income groups. The higher incomes, with a larger share of imports in their consumption basket, benefitted from the revaluation of the Kwacha in May '87.

The act of breaking with the IMF-inspired policy was more convincing than the Zambian substitute for these measures. The break may even have inspired the IMF to reconsider its adjustment policies. In the meantime, the IMF has created some facilities like the SAF and ESAF which may be more suitable for countries like Zambia. The failure of adjustment efforts before 1987 cannot only be blamed on Zambia, as was shown in the previous paragraphs.

Zambia may find itself under increased pressure to conclude a new arrangement with the IMF. Internally, the need for adjustment has not decreased. External relations deteriorate because of the imposed ceiling on debt servicing. This situation cannot be sustained for long. Payment arrears increase rapidly while the prolongation of internal imbalances will make it more difficult to carry out reforms in the future. So far Zambia has been able to postpone this inevitable step towards adjustment thanks to increased copper prices and a good agricultural season in 1988.

But the need for donor support has Zambia already brought back to negotiations with the IMF.

§ 4. Conclusions

In this paper the basic elements of structural adjustment have been related to the properties of the consumption and production structure of MEDCs. The balance between expenditure reduction policy and expenditure switching policy determines the outcome of the adjustment process. The timing and the adoption of policy measures influences the balance. Too much emphasis on fiscal/monetary policy, i.e. expenditure reduction, leads to an improvement in the current account balance while growth perspectives are actually decreasing and unemployment rates rise. Diversification, which should be one of the main objectives of structural adjustment in mineral dependent economies, will not be effected because of a lack of resources and prospects. This was what happened in Zambia in the first half of the 1980s. The current account deficit and the budget deficit decreased but GDP growth and investment expenditure became negative. Under falling terms of trade, no perspectives were created for a substantial recovery of non-mineral sectors.

Too much emphasis on expenditure switching policy, on the other hand, will lead to diversification in the medium term. But it needs to be supported by adequate fiscal/monetary policy to control inflation. Devaluation, by definition, results in a rise in the price of traded goods and there is not much expenditure reduction policy can do about this. The broad instrument of overall expenditure contraction will be insufficient. The other, indirect, inflationary impact is channelled through the government budget. Government expenditure is likely to rise because of increased expenditure on subsidies and because debt servicing increases in domestic currency terms. Expenditure reduction policy should focus on this indirect effect of devaluation. These aspects of devaluation should be provided for before the devaluations take off. In Zambia, the government budget could not be controlled during the auctions because no measures were implemented

to counteract increased expenditures. Economic policy in this period, therefore, became based on ad hoc measures.

The objective of structural adjustment programs in MEDCs should be a diversification of the economy through expansion of traded goods production. Devaluation provides the incentive for the traded goods sector only if prices for non-traded goods remain relatively constant. This depends on the design of expenditure reduction policy. But even then, as became clear from the Zambian experience, the traded goods sector cannot be expected to respond in the short run. The supply response is closely related to the mineral dependent structure of the economy. The switching policy requires flexibility in the economy. Domestic rigidities and lack of mobility of productive factors may prevent expansion of the output of traded goods.

First, there is the issue of real wages. From a macro-economic point of view, real wages should behave in the same way as prices of non-traded goods i.e. real wages should decline in terms of traded goods prices. MEDCs tend to have a relatively high wage level. This means that wage earners will be confronted with a severe decline in their real income, particularly when the devaluation goes along with reforms in the budget deficit resulting in a decrease of consumer subsidies. The decline in real wages may become unsustainable, calling for additional measures to protect the most vulnerable groups in society. In the medium term, new employment opportunities may compensate for the deterioration in living standards.

A supply response of the existing import-substitution sector is hampered by the contraction in domestic demand. The structure of the sector does not make it very suitable for exports either. It has mainly concentrated its activities on production of final consumer goods and inputs for the mines. The positive exception will be the agricultural sector, which may respond quickly to incentives and which will be able to export once it has supplied the domestic market.

The scope for exports is further limited because, for a long time, only the mining sector was involved in this branche. Consequently, experience

with export markets is very limited, especially in the field of marketing. If exports other than minerals still account for only a small part of total exports, as in the case of Zambia, the sector cannot be expected to compensate substantially in the short term for the fall in export revenues from minerals. On the other hand, the small size of the non-traditional export sector should make it easier to support expansion of this sector with subsidies or other incentives. Such support would not draw too heavily on the government budget deficit.

A supply response of non-mining sectors is further restricted by the continuous pressure to weight support for the mineral sector against support for other sectors. It can be argued that increasing the viability of the mining sector through new investments will, eventually, also lead to increased government income. The Zambian government has not been able to resist these arguments from the mining sector, thus diverting resources away from other sectors. But also donor countries have found it more easy to support the mines instead of identifying other areas eligible for support. The donor community may be motivated by the need to secure a constant flow of copper to its industries. But the Zambian government should ask itself if the mining sector is still the most viable sector for investment. Internally, such considerations will, however, be influenced by the strong political power of the mining sector.

Specific for the Zambian case is its transport problem which severely restricts its possibilities to expand export production. Less specific may be the government intervention in the production structure through parastatal companies. If these companies are less sensitive to price incentives, devaluation will not necessarily have the desired effect on production in these companies.

The low elasticity of supply in the traded goods sector adds to the conclusion that, even under a balanced expenditure reduction and expenditure switching policy, structural adjustment will be a time consuming process. In Zambia, this process was postponed until the beginning of the 1980s. By that time, the country not only had to adjust to falling terms of trade but also to increased debt service obligations. The adjustment policies

from 1983 onward had the objective to boost traded goods production and debt servicing.

In an economy which is highly dependent on mineral exports and where the terms of trade continue to decline, diversification should, in the short term, be given priority over the obligation to service the foreign debt. Diversification of the economy will not be effected if too much emphasis is put on a short term reversal of current account deficits and on debt servicing.

In Zambia, the IMF stressed the need to meet payment arrears in the beginning of the 1980s. It can be argued that this not only led to the breakdown of several programs but also to the postponement of adjustment in terms of diversification. The need to reduce expenditure in the short term implied a neglect of the need to diversify the economy.

It can also be argued that a relaxation of debt repayment obligations will give countries like Zambia the time to identify the most appropriate development strategy. In Zambia, priority should be given to small scale farming and labor intensive industries. Although this strategy will take a longer time period to yield results, it may, in the end, prove more sustainable than a strategy based on quick yielding projects.

Given the supply constraints in the economy, a diversification strategy will inevitably be a medium term strategy. In the meantime, provisions should be made to manage the foreign debt. In the case of Zambia, this means that the country needs the time and the money to carry out an adjustment program based on an expenditure switching policy. Zambia only had this time and the money in the years just after the copper boom. It then should have handled the symptoms of the Dutch Disease. But the government failed to take appropriate measures to effectively encourage diversification of the economy in this period. With hindsight it can be argued that some painful decisions taken by that time would have prevented the hardships of going through adjustment in a later stage when the debt burden has increased and the terms of trade have declined even further. In the 1980s, adjustment mainly concentrated on expenditure reduction under pressure of international creditors. By the time switching policy became

the major device, the debt burden had increased dramatically. Moreover, the shock therapy based on foreign exchange auctions could only work in a flexible economy which is able to respond in the short run to price incentives.

It is striking that, after the break of Zambia with the IMF-program in 1987, the Fund has introduced new facilities which may also be more suitable for the Zambian situation. The SAF and ESAF facilities, established in March 1986 and December 1987 respectively, enlarged the availability of conditional finance to low-income developing countries. The facilities aim to support medium term structural adjustment with the assistance of both the World Bank and the IMF. This co-operation leads to a more structural approach to adjustment as compared to the former IMF standby programs. But programs under SAF or ESAF arrangements are still expected to achieve a substantial strengthening of the balance of payments position within the rather short three-year program period.

Furthermore, the facilities do not include provisions to restrict debt servicing during the program period. For many programs to be successful it will be necessary to determine a ceiling of debt servicing as a percentage of export earnings or government expenditure. These percentages could be raised once the adjustment policy starts to yield results in terms of traded goods production. Apart from the financial support from IMF and World Bank, a country like Zambia needs donor support to smooth the adjustment process. This may help to avoid areas of conflict between expenditure reduction and expenditure switching policies.

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Noten

- 1) Streeten (1987).
- 2) Nankani (1979), pp. 47-51.
- 3) Conversely, production and consumption linkages of the export sector with the rest of the economy are less strong.
- 4) IMF, (1987), p. 6.
- 5) IMF (1987), p. 6
- 6) In Fund programs, exchange rate devaluation is typically specified as a prerequisite. 'The Fund relies on the expectation that the demand contraction brought about by the tightening of credit, together with the "demand-switching" induced by the exchange rate devaluation, should make it possible to correct the external balance while maintaining the economy in full operation'. (IMF-Survey, August 10, 1987, p.5)
- 7) Michaelopoulos (1987), p. 52.
- 8) Fitzgerald (1989), p. 13.
- 9) IMF, Supplement on the Group of 24 Deputies' report, August 10, 1987.
- 10) Bacha (1987), p. 1463.
- 11) A price decrease of non-traded goods may both stimulate demand for these goods and encourage production of traded goods. The latter may occur because production costs (wages, non-traded goods as inputs) decrease in terms of output prices. Moreover, excess capacity in non-traded goods production may be used for the production of traded goods. These assumptions, however, are regarded as highly unrealistic.
- 12) Nankani (1979), pp. 31-33.
- 13) Fry (1979), p. 74.
- 14) Gordon and Neary (1982), Gordon (1984 and 1977). See also: Evans (1986), Neary and van Wijnbergen (eds.) (1985), Roemer (1985), Gunning (1987).
- 15) The MUV index as published by the World Bank is used as an index for traded goods prices. The index reflects US dollar values of exports from industrial market economies (France, Germany F.R., Japan, United Kingdom, United States) to developing countries.
- 16) Unctad (1987).
- 17) Sano (1987), p. 567.
- 18) Kydd (1988), p. 244.

- 19) Meijer, van Manen (1987), pp. 157-163.
- 20) Sano (1987).
- 21) Nankani (1979), pp. 42-47.
- 22) Nankani (1979), p. 33.
- 23) Fitzgerald (1989), p. 8.
- 24) Ncube (1987), appendix VII.

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