

# Making Adjustment Work for the Poor

*A Framework for Policy Reform in Africa*

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A World Bank Study



*Making Adjustment Work for the Poor*

*A Framework for Policy Reform  
in Africa*

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## Foreword

This document is produced as part of the work undertaken under the Social Dimensions of Adjustment (SDA) Program in Africa. This initiative is cosponsored by the United Nations Development Programme (UNDP), the African Development Bank, and the World Bank, and is also supported by several bilateral and multilateral aid agencies, with the World Bank as executing agency. To date, thirty-two governments have asked to participate in this program.

The program aims at thoroughly integrating social dimensions into economic and financial decisionmaking. To do so, it pursues several parallel tracks:

- first, within each country, a special institution building effort is being launched to strengthen national capability for policy analysis and project identification, preparation, and implementation. This includes coordination mechanisms, training of nationals, and some limited foreign technical assistance
- second, country-specific studies dealing with poverty alleviation and economic policy are being undertaken. These would serve as an inventory of existing knowledge, a baseline for monitoring future change, and a foundation for proposals for specific actions
- third, developing an adequate data base for analysis of social issues and formulating socioeconomic policy through monitoring surveys and integrated household surveys
- fourth, and perhaps most important, by improving our understanding of the links among conceptual, empirical, and policy issues involved

in the integration of social and economic policies and programs.

This document deals with this last track and represents the state of present thinking on these issues, as well as contributions by the authors. The broad theoretical underpinnings of the SDA policy approach are explained. This sets the boundaries for investigative studies on the social dimensions of adjustment and provides the necessary economic rationale for empirical work to be both consistent across countries and helpful for policy design. The document then applies this conceptual framework in a real-world setting by outlining an empirical framework for data analysis. The objective of this presentation is to provide guidance to researchers and practitioners in assembling and analyzing the necessary data in order to achieve the objectives of the SDA initiative. The document then explores the major policy issues that must be faced by governments to integrate social dimensions in the design of their structural adjustment programs and development plans. It should be perceived as the start of an ongoing examination of these issues, an examination of great urgency in Africa, but of truly universal interest.

It is important for readers to know, however, that in parallel to pursuing these questions, the SDA initiative also supports governments in the formulation of social action programs to respond to the pressing needs they face. These social action programs are based on inadequate data bases in many cases. They represent, however, the best judgments that can be brought to bear on

these issues in the given country and are in no way a substitute for the parallel in-depth work being done at the country level or at the conceptual level.

Ultimately, as these various streams (institution building, conceptual thinking, data base development, and social action programs) are being implemented, they will need to become ever more

integrated. They are managed in the countries and at the Bank by the same teams, and the synergies will undoubtedly become more apparent over time. With such efforts, the thorough integration of the social dimensions into economic and financial policies will gradually become a reality. We hope that this document will prove a useful contribution on this long and arduous road.

Ismail Serageldin  
Director  
Technical Department  
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## *Executive summary*

Adjustment is best considered as the implementation of comprehensive reforms of macro and micro policies, in response to various shocks, and to rectify inappropriate past policies that have hampered economic performance. These shocks have adversely affected the whole range of economic policy objectives, including the balance of payments, price stability, full employment, economic growth, the protection of the environment, and equity/poverty reduction. Shocks, whether internal or external, affect all policy objectives, and not simply the balance of payments, price stability, and growth which are the traditional focus. We are here concerned with how adjustment programs have affected the wider social objectives of governments, and especially poverty reduction.

While policy responses to shocks have been varied and complex, there are basically three courses of action that governments have taken: finance the external current account deficit through capital inflows; reduce the deficit to the level of available external capital through tightening capital and trade restrictions; or implement policy adjustments to restore a viable balance of payments position through export expansion and import substitution. Most adjustment programs in Africa consist in varying degrees of a currency devaluation, a reduction in the government deficit in order to bring expenditures into line with real resources, a liberalization of domestic product markets, bringing domestic prices into line with world prices, trade and exchange liberaliza-

tion, and institutional reforms. Trade policies, public enterprise and agricultural policies account for about two thirds of the total number of policy conditions set under adjustment lending in 15 African countries recently reviewed by the World Bank. However, while 70 percent of exchange rate policy conditions were fully met, only 57 percent of agricultural policy conditions and 55 percent of trade policies were met in practice. Policies directed at changing relative prices tended to be more successfully implemented than those requiring institutional change.

In considering the social effects of adjustment, it is necessary to establish analytically the links between the macro economy on the one hand and the micro economy of households and enterprises on the other. This link between the macro and the micro, termed the "meso" (or middle), comprises: markets (both product and factor, formal and informal); and infrastructure, this consisting of economic infrastructure (roads, communications, irrigation) and social infrastructure (health and education services). The objective is to establish how the macroeconomic processes initiated under adjustment programs affect households, which requires an empirical understanding of mesoeconomic linkages.

The standard international trade model, based on the Meade-Salter-Swan model is a useful starting point for analyzing these issues. Consider a small, open economy which is a price taker in international product markets. If the domestic relative price of exportables to importables ( $P_x/P_m$ )

is fixed, they can be combined into a composite commodity — tradables. The domestic price of tradables ( $P_t$ ) will be determined by the prevailing world price and the exchange rate. Since nontradables are by definition not traded in world markets, their price ( $P_n$ ) is determined entirely by domestic supply and demand.

Four major effects of an expansionary monetary and fiscal policy can be derived. First, it will lead to a current account balance of payments deficit, since the increased demand generated for tradables will raise imports, and direct exports to the home market. Second, the excess demand for nontradables will raise  $P_n$ , so that  $P_n/P_t$  will rise, inducing resource transfers into nontradables. Thirdly, factor prices will change in response to these sectoral shifts: in the short run, real wages will fall if workers consume sufficient nontradables; in the long run, they will fall if the tradables sector is relatively labor intensive. Finally, increased government expenditures may affect the economic and social infrastructure, depending on the nature of the fiscal expansion. Macroeconomic disequilibrium has affected all the main elements of the meso economy. If a terms of trade decline is superimposed on a situation of general fiscal expansion, the effects on the meso economy noted above are modified. Notably, with  $P_x/P_m$  falling, resource transfers will tend to be out of exportables and into importables and nontradables. Moreover, if governments raise  $P_m$  further through tariffs or import controls, resources will be drawn from exportables and nonprotected importables into nontradables and protected importables.

In a similar fashion, the model can be used to show the meso effects of adjustment policy. First, there are effects on product markets. A combination of exchange rate adjustment and fiscal/monetary contraction will initiate fundamental relative price movements in favor of tradables, causing resource switching into that sector. There may also be changes in relative prices within the tradables category. Second, the adjustment-policy package will affect labor markets, the outcome depending on the time perspective taken, and on the structure of the market. In a competitive labor market the movement in the real wage depends on workers' consumption propensities in the short run, and on relative factor intensities in the long run. The theory is strictly agnostic about how real wages will change — it is simply an empirical matter. If the labor market (or a section of it) is not competitive, the real-wage effects of a switching

policy are modified significantly. If wages in the nontradables sector are subject to nonmarket determination (as for example when nontradables comprise mainly public sector services), workers there may experience a cut in their real wage, and the tradable/nontradable (informal/formal) wage gap will narrow. If adjustment leads only to a reduction in aggregate economic activity, however, the wage gap may widen. Finally, the infrastructural effects of adjustment are likely to be critical in Africa. The evidence suggests that price responsiveness in the region is significantly slower than elsewhere in the developing world, and this is undoubtedly due to the deterioration of the economic and social infrastructure.

There are a number of ways, therefore, in which the household economy, and the welfare of its members, can potentially be favorably or unfavorably affected by adjustment policies and the related meso events. One adverse event can set off a whole chain of unfavorable events. For example losing a job, in leading to loss of income, may result in asset sales in order to protect consumption, resulting in a fall in self-employment. If consumption levels fall, nutrition and health status can deteriorate, labor productivity will fall as a consequence, and further damage to employment prospects will occur. But the reverse of this is that a suitable policy intervention can set in motion favorable effects for household welfare. These vicious and virtuous circles suggest that households can move from better- to worse-off states in relatively short periods, and that some policy interventions can be effective in setting households on upward "income escalators."

However, welfare outcomes depend on the household's behavioral response to the external shocks. In order to make a meaningful assessment of how shocks and adjustment programs affect welfare, models are needed which explain the decisionmaking process of the household, and thus predict its response to variations in the parameters of its economic environment. These models should capture African households' dual roles as both units of consumption and production, and the interdependence of the household's production and consumption decisions. Such household models should also explicitly recognize socially determined constraints on the activities of women. These create allocative inefficiencies, since the labor resources of the household are not allocated in accordance with its members' marginal productivities.



Households will be affected as buyers and sellers in product markets, as hiring in (or out) services from labor markets, and by the economic and social infrastructural changes that are induced through destabilization and adjustment. How precisely poor households are affected obviously depends on two key sets of factors: the nature of the mesoeconomic changes that are induced; and the characteristics of the household — whether it is a net buyer or seller of tradable goods, which markets (official/parallel) it trades in, whether it hires in labor services, or depends on its own labor in generating primary income, whether it has access to schools and health services, and whether it is well served by roads and communications.

The role and importance of a national information system becomes critical during the adjustment process. The policymaker requires relevant and timely data in order to select the composition and sequencing of adjustment measures. Information is required at each of the macro, meso and micro levels if policymakers are to know what changes are affecting households over time. It is important to view information requirements in the context of a hierarchical information system, where data and empirical analysis are explicitly considered at each of the three levels. The hierarchical information system is a way of systematically viewing the body of data currently available, identifying gaps and deficiencies, and their relationship to potential analytical tools and constructs. The system must be capable of measuring the main national aggregates (such as national product and income, the balance of payments and the various components of aggregate expenditures) and subaggregates (such as sectoral output and sectoral allocations of productive resources). It must also be capable of tracing how the productive activities which generate these aggregates, allocate the resulting incomes to the various factors of production and on to the households which possess them. In this way, the system should be able to trace the process through which income flows are allocated to household groups.

Information requirements at the macro level include the basic macroeconomic, social and demographic data necessary to service the macroeconomic accounts and to derive core macro indicators. The macroeconomic accounts consist of the national accounts, public finance, balance of payments and monetary data, all of which are fundamental to the analysis of adjustment. Data relating to meso-level activities are also critical.

Markets are not generally observable as physical entities and therefore information about how they function must be derived indirectly. There is the important additional problem of identifying the existence and operation of parallel markets. By their very nature, information on these might be difficult to obtain and, of course, one might expect adjustment to reduce parallel market activities overall. Information at the micro level is almost entirely derived from the household surveys. While the ultimate interest is in individual well-being, for survey purposes the household is to be chosen as the sampling unit, in preference to possible alternative social units.

The hierarchical information system is intended to feed into a policy-orientated analytical framework that must be capable of (i) performing "counterfactual" experiments by tracing what might have occurred had an alternative set of policies been applied; and (ii) tracing through these effects to households. Since most models which satisfy (i) are limited in the degree of disaggregation that they can reasonably accommodate, they need to be supplemented by data analyses that satisfy (ii). Thus, the analytical strategy for techniques to investigate macro-meso linkages, through which counterfactual type experiments would be feasible, together with a survey-based meso-micro analysis of household welfare.

The *key policy problem* is how to assist target groups without at the same time causing distortions in economic mechanisms. If the latter are severe, neither economic recovery nor the poor will be helped. The foundations of sustainable growth will never be secured if Africa's human capital is allowed to "depreciate". Adjustment transmits its effects to target groups through the meso economy: the fabric of markets and economic infrastructure which links households to the wider economy. This highlights how the deterioration of Africa's meso economy has determined the distribution of the costs and benefits of adjustment policies. That there are gainers and losers from policy reforms is an inescapable part of the adjustment process in its early stages, since the structure of output and expenditures undergoes substantial change. But who gains, and who loses, is critical.

Policy interventions concerned with the social dimensions of adjustment must recognize the twin problems of *poverty* and *vulnerability*. The former concerns the level of income (or expenditure) of a household in relation to some standard, while the

latter relates to the influence of external shocks on the household and its ability to cope with them in avoiding serious welfare loss. This suggests three main groups for policy concern. The *chronic poor* whose situation is caused by multiple deprivations, such as low productivity due to poor health and nutrition, poor access to productive assets, etc. This poverty is deep-rooted, existing before the recent deterioration in economic circumstances and the implementation of adjustment programs. The *new poor* who are above the poverty line prior to the shock and adjustment measures, but have fallen into poverty as a result. And other *vulnerable groups* who remain above the poverty line but are severely affected by adjustment and therefore merit policy consideration. Using the criteria of poverty and vulnerability permits a further refinement in the classification of households — going from broader socioeconomic groups to more specific target groups. These are defined as those households whose poverty and/or vulnerability call for policy attention.

The first step in ensuring that adjustment contributes to social objectives is to orientate programs towards supply-expansion through appropriate policies and external finance. The strategy towards overall fiscal and monetary balance is critical to this. Macro imbalance implies that domestic demand exceeds domestic supply, either because of supply shocks, or because of overexpansionary domestic demand policies. If uncorrected, this situation leads to a loss of foreign exchange reserves and creditworthiness. Adjustment cannot therefore be postponed. One critical element of adjustment is how much room for maneuver governments have in maintaining their fiscal deficits. They can finance deficits either through printing money ('seignorage'), or borrowing (from at home or abroad). Each of these has its own constraints. Given the shallowness of domestic financial markets, most African governments have limited opportunity to borrow domestically. Given the inflationary effects of seignorage, and the limits to foreign borrowing, they generally have to reduce fiscal deficits during adjustment, simply to restore macro balances. This obviously reduces their room for maneuver to protect various components of expenditure which are important for social policy.

This suggests that the composition of the fiscal adjustment is critical for social policy objectives, and priorities need to be established with care. First, a set of *core expenditures* benefiting the poor

must be determined. These consist of the programs which are most costeffective in reaching the poor, and whose real levels of expenditure must be maintained or raised. At the stage of planning and priority setting, all expenditure categories should be viewed as adjustable in order to make room for core items. Two broad categories of core expenditure can be identified: economic expenditures which raise the income-earning potential of poor groups; and social expenditures which enhance their human capital. Economic expenditures directed at raising the productivity of the poor include agricultural research and extension services, small irrigation schemes, feeder roads, credit and marketing services, and so on.

The rehabilitation of primary health and primary education is critical to protecting social expenditures. An emphasis on rural and urban clinics serving low-income groups, basic drugs, immunization, the screening of children and mothers for nutrition and health programs, and the provision of safe water and improved sanitation, are all health priorities. Likewise, the priority in education is to renew the growth of primary school enrolments among poor children, and to improve the quality of education by securing supplies of basic educational materials. Replacing cost-ineffective food subsidies by targeted food-interventions is complementary to the task of reorientating social provisions. Combined nutrition and health programs are one means to better targeting, and measures of selective subsidization should be explored.

*Monetary targets* are one of the key instruments for attaining macro balance. While their primary objective must be a reduction in inflation and the external deficit, there are opportunities in their application to favor borrowers among the poor. The application of credit ceilings on the public sector in favor of credit to the private sector may in itself push more funds towards the poor. Within overall credit ceilings priority can be given to loans to smallholder agriculture. There is much evidence that poor producers can use more credit profitably, but that they are disadvantaged by government interventions in credit markets which favor large borrowers, and by a lack of collateral which limits their access to banks. The former problem is reduced by financial liberalization which raises incentives to lend to smaller borrowers. Credit to the poor is, in most cases, best improved by group-lending schemes, which have a high success rate, especially in reaching women.

*Currency devaluation* is another major instrument of macro policy. It will affect poor households as producers and consumers of tradables and nontradables, and as wage earners. Many poor households in Africa are engaged in producing tradables, so there is every reason to believe that they will benefit from a devaluation. It may be, however, that the price signals from a devaluation never reach the household producers because of the imperfect functioning of product markets. If the market is monopsonistic, traders may not pass on price increases to the farm gate. To enhance the benefits of a devaluation to such households, complementary meso-level policies may be required in order to improve the functioning of markets and to ensure that poor farmers benefit. The improvement of the economic infrastructure will also enhance any beneficial effects of devaluation in providing better access to favored product markets. If poor households produce nontradables (and especially if they use imported intermediate inputs such as fertilizers), they will be adversely affected by devaluation. The key to raising their incomes lies in creating alternative production patterns which may require complementary policies, such as targeted extension services that aim to encourage farmers to adjust production, or credit services that may be essential if farmers are to move into the market-oriented production of tradables. Through raising official food prices, devaluation can benefit the rural poor but tends to hurt the urban poor, because of the differences in their employment and expenditure patterns. It is crucial that a macro policy (such as devaluation) which raises food prices is coordinated with targeted food subsidies in order to dampen the effect on poor groups.

Liberalizing import restrictions improves efficiency and reduces general poverty through tilting incentives back in favor of food and export agriculture, and by promoting labor-intensive industrialization. Since liberalization changes relative prices, similar considerations apply in tracing its poverty implications to those discussed for devaluation. It affects the poor as producers, consumers and wage earners, and the net effect depends on the economic activities of poor households. Similarly, complementary policies (such as improving the functioning of product and credit markets, rural economic infrastructure, targeted extension services, etc.) can enhance favorable effects for the poor, and avoid any adverse repercussions.

The shift in output towards exports and efficient import substitutes should promote a more labor-intensive pattern of production than in the past. The employment gains from this (in terms of raised real wages and higher levels of employment) are likely to be reaped over the medium- to long-term. In the short run, employment prospects may not be so beneficial. It is likely that real wages will fall, especially in the formal sector, and there may be increases in unemployment, mainly of a frictional nature, but also arising from factor market imperfections. Policies to ease these short-run adverse effects are of two broad types: those which improve the operation of labor markets, through, for example, raising the mobility of labor, providing training and reemployment schemes; and those which provide emergency employment, frequently in public works.

There are at least two major problems in deciding on a conceptual framework for analyzing the social effects of adjustment. First, the policy research problem is itself a major undertaking. The analytical challenges that are faced in establishing how macro- and sector-level policies affect households and the well-being of individuals are serious and should not be underestimated. One of the major outcomes of the theory is that there are no ready answers — the problem is highly complex and can only be resolved in the last analysis at the empirical level. And, of course, the empirical problems that are raised are just as challenging.

The second problem arises from the heterogeneity of the Sub-Saharan African region to which this framework must apply. It must at the same time be general enough to apply to all the diverse economic and social circumstances of the region, and specific enough to be of use in guiding the policy and investigative initiatives at the country level. Because of this, we have persistently issued warnings that the analytical framework is not meant to be strictly applied in each and every case. For some cases, the assumptions we have made are a reasonable approximation, but for others, there may be a need for further refinement. Our purpose is to establish a structured way of thinking about the problem. At the heart of this structure is the simple device of dividing the research task into two stages: first identifying macro-meso interactions and then dealing with meso-micro effects.

The most important conclusion that the theory offers (apart, that is, from indicating that the subject is inherently difficult, and that the theory is

inevitably inconclusive) is that adjustment policies can set in motion changes in the economy, which have profound and pervasive effects on markets, infrastructure and households. Attempts to raise household incomes which ignore (or even run counter) to these deep-seated changes, are both misplaced and counterproductive. While

the theory is of little use in analyzing the myriad detailed changes that adjustment programs inevitably involve, it is at its most useful in uncovering these more fundamental economywide effects. Without it, the policy maker would not be able to see the wood for the trees.

# 1

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## *Introduction*

There are at least two important reasons for focusing on the social dimensions of adjustment in Africa at the present time. First, it is now some sixteen years since the first oil shock of the 1970s, and since then the developing countries of the region have experienced economic turbulence, shocks, and disequilibrium. After the commodity price boom of the mid 1970s, most countries faced a persistent decline in their terms of trade, caused in part by a general Organisation of Economic Cooperation and Development (OECD) recession. Interest rate hikes have compounded their debt problems, while internal shocks (notably the sustained drought of the early 1980s) have considerably weakened their capacity to deal with macro imbalances. In all of this, the poorer groups in African societies have suffered; with little margin above subsistence, many of them have found little room to maneuver.

Second, with a return to a longer-term policy perspective, greater emphasis is now being given to restoring sustainable growth in these countries. Given this perspective, it is now both feasible and essential to give more careful thought to the social dimensions of adjustment — to consider how poorer groups in society can be encouraged to participate in the recovery; to examine how the health and education of the societies are likely to be affected; to investigate the effects on food security and nutrition — in short, to trace how structural adjustment policies will ultimately affect the well-being of the populations involved. The social dimension, however, is not only important for equity. Unless human capital is pro-

tected, sustainable economic growth in many African countries will itself be threatened.

### **The meaning of adjustment**

We begin by clarifying what is meant by adjustment and adjustment policy in developing countries, a subject on which the literature is not always in agreement. The terms “adjustment,” “structural adjustment,” and “stabilization” are commonplace. Yet the use of these terms is often imprecise and inconsistent. Adjustment is best considered as the implementation of comprehensive adjustments in macro and micro policies, both to respond to various shocks and to rectify inappropriate policies that have hampered economic performance, the fundamental objective of which is to restore sustainable economic growth. The shocks include both the environmental, such as adverse weather, and the external, for example, terms of trade declines. These shocks have adversely affected the whole range of economic policy objectives, including the balance of payments, price stability, full employment, economic growth, the protection of the environment, and equity/poverty reduction. Shocks, whether internal or external, affect all policy objectives, and not simply the balance of payments and price stability, which is the traditional focus of concern. We are concerned here with how the adjustment programs have affected the objective of poverty alleviation and the wider social objectives of governments.

A useful summary of the “language of adjust-

ment" is to be found in a World Bank report (1988a, p. 23), which distinguishes among the following:

- *stabilization*: policies (generally relying on demand management) to achieve sustainable fiscal and balance of payments current account deficits and to reduce the rate of price inflation

- *structural adjustment*: reforms of policies and institutions covering microeconomic (such as taxes and tariffs), macroeconomic (fiscal policy), and institutional interventions; these changes are designed to improve resource allocation, increase economic efficiency, expand growth potential, and increase resilience to shocks

- *adjustment*: policies to achieve internal and external balance and changes in the structure of incentives and institutions, or both; where the emphasis is on the former, it can be identified as stabilization, where on the latter, as structural adjustment

- *structural adjustment lending*: World Bank lending that supports structural adjustment; this generally provides import financing and is relatively quick disbursing; it is possible that some elements of a structural adjustment lending will have stabilizing effects (for example, reducing the fiscal deficit)

- *sector adjustment lending*: World Bank lending in a sector, focusing on institutional and microeconomic distortions; this is also usually quickly dispersing.

Stabilization on the one hand and structural adjustment on the other should be regarded as two types of adjustment response by African governments. In restoring internal and external equilibriums, stabilization is intended to realign domestic absorption with domestic supply, whereas structural adjustment is designed to change the equilibrium configuration itself (Buiters 1986).

### The policy problem

The relation between structural adjustment and poverty can be analyzed from two broad perspectives. It can refer to the "social" or "transitional" costs that are incurred as the economy is moved from one time path to another. With a longer-term perspective, the "steady-state" effects of structural adjustment on poverty can be assessed. The former deals with the costs incurred by the various socioeconomic groups while the regime of controls is dismantled and new policy instruments applied. The latter assesses the pov-

erty effects as the economy assumes its new growth path. The challenge for the policymakers is to identify the set of adjustment policies that will induce the participation of the poor in the process of recovery and growth. This essentially implies that an ex ante approach is to be preferred, whereby policy interventions that enhance social dimensions are identified as much as possible before a structural adjustment program is applied — that is, at the policy design stage.

Adjustment programs are conceived primarily in terms of their economywide effects — to achieve macroeconomic targets. Many of the policy instruments have an essentially macroeconomic profile — exchange rate policy, fiscal and monetary policy, producer prices, and so on. The principal problem is to establish the effects of these policies on households, which interact in varying degrees with the economy at large. As a basis for policy appraisal, the SDA program must establish analytically the links between the macro economy on the one hand and the micro economy of households and enterprises on the other. This link between the macro and the micro, termed the "meso,"<sup>1</sup> comprises the following key elements:

- *Markets*, and other resource allocative mechanisms, are the main links between the macro economy and individual households. These include product and factor markets, both official and parallel markets. Adjustment will alter the market conditions faced by households and enterprises through changing relative prices or the quantities traded in the markets. It might also change the characteristics of marketing institutions, and thereby influence the way in which market signals and opportunities are transmitted to households.

- *Economic infrastructure* is a crucial part of the meso economy in Sub-Saharan Africa. Its provisions are directly determined by macroeconomic policy, including public expenditures on physical infrastructure and support services. These can have a noticeable effect on the primary incomes generated in the micro economy. In many cases the effects of market changes on the incomes of individual households will be conditioned by economic infrastructure. We include here the provision of support services (such as agricultural extension services) that influence the generation of primary incomes by households.

- *Social infrastructure*, consisting of health, education, nutrition support, and other transfers, affects the returns households obtain through market opportunities. These services also have

direct effects on household welfare, especially in the case of health services.

The objective, therefore, is to establish how the macroeconomic processes initiated under adjustment programs affect households, which requires an empirical understanding of the mesoeconomic linkages. Conceptually, the SDA faces two major research challenges. First it must establish the main links between events in the macro economy (notably internal and external shocks and the consequent adjustment programs) and the meso economy, the latter determining the *intervening variables* that communicate these changes to the households. Second, it must establish in what ways these intervening mesoeconomic variables affect individuals and households in both the short run (during which households do not respond to the mesoeconomic changes) and the

longer run (after allowing for various household responses).

### **An outline of the book**

We begin by examining the mesoeconomic effects of destabilization (Chapter 2) and adjustment (Chapter 3), on the basis of which the effects on households will be assessed. Chapter 4 reviews the determinants of household welfare and the nature of the household economy. Chapter 5 brings the various threads together by assessing how the mesoeconomic outcomes are likely to influence household welfare. The empirical implications of this conceptual framework are then reviewed in Chapter 6. Chapters 7 and 8 review the strategic policy issues that are involved and define the room for policy maneuver.

# 2

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## *Macroeconomic disequilibrium*

We first consider the macro economy, and specifically the economic imbalances that have occasioned the whole adjustment process in African countries. Our objective is to explain how the various sources of macroeconomic imbalance might affect the "real" economies of Africa and (in Chapter 5) how these changes are likely to influence households. Much of the literature on adjustment and poverty ignores the distributive effects of the period of disequilibrium prior to the implementation of adjustment policies. The effects of the adjustment on the incomes of various groups cannot properly be explained without reference to how they fared during the disequilibrium phase. Understanding how these economies are destabilized, and the consequent effects on households, is essential if observed changes in African poverty are to be understood.

### **The causes of macroeconomic disequilibrium**

In the 1980s African countries experienced large current account deficits, high inflation rates, and low growth. Indeed, in many countries these problems first emerged in the 1970s. Balance of payments problems across the region are the most immediate sign of economic difficulty since, in highly open economies, the external position is crucial to overall economic performance. But all of these difficulties are visible symptoms of underlying disequilibrium in the operation of their economies. In many cases, these problems have arisen from *inappropriate policies* (World Bank 1984, p. 37; Zulu and Nsouli 1985, p. 1) consisting of:

- over-expansionary fiscal and monetary policies, in turn associated with narrow tax bases and the poor performance of public enterprises
- domestic pricing policies biased against agriculture, especially with regard to producer prices, frequently underpinned by overvalued currencies.

In addition, African economies have suffered two types of *shock*:

- external shocks, including higher oil prices, lower prices for primary commodities, and increases in the real interest rate on commercial debts
- environmental shocks resulting from an increased variability in rainfall patterns.<sup>2</sup>

These four sets of factors have contributed to economic distress in almost all African countries, although their relative importance varies across the region and for individual countries at different times.<sup>3</sup> Clearly, these movements in the terms of trade and the domestic economic strategy are not unrelated. Buoyant commodity prices for many countries in the mid to late 1970s raised expectations about resource availability that were not realized. Thus the decline in the terms of trade in the 1980s was in part the cause of over-expansionary fiscal policy in many countries, since the policy was based on false expectations of future price movements (as well as national and political ambition).

The region's net barter terms of trade fell sharply in the 1980s, but the decline was from historically high levels in 1980-81. The IDA-eligible low-income countries of the region have



been affected most severely. They suffered a sharp decline in their terms of trade through the 1970s (mainly as a result of the oil price hikes), and although the 1980s have brought a measure of stability for them, their terms of trade remain lower than in the past. Middle-income oil-importers enjoyed a rapid rise in their terms of trade in the 1970s, followed by a general decline in the 1980s. Although commercial borrowing cushioned these countries initially, the rapid decline in finance availability has meant that more fundamental policy adjustments have been required (see World Bank and UNDP 1989).

### Policy sequences in Africa

We have seen that the causes of economic difficulties in Africa involve a combination of domestic policy orientation and multiple shocks. Governments have varied in their policy responses. But while recent events have been complex, there are basically four courses of action that governments take to deal with balance of payments problems:

- finance the current account deficit through additional external capital inflows
- reduce the deficit to the level of available external capital inflows through tightening capital and trade restrictions
- undertake macroeconomic stabilization policies to restore internal and external balances, mainly through fast-acting restrictive monetary and fiscal policies
- implement structural adjustment policies at both macro- and microeconomic levels, involving market and trade liberalization and institutional policy reforms.

Under the terms of the definitions introduced above, the last two are *adjustment* strategies. Each of these strategies has implications for the other main targets of macroeconomic policy — the inflation rate and the growth rate. In addition each has ramifications for employment and income distribution and for the political economy within which governments operate. Their preferences affect the weight assigned to each of these policy objectives in the final choice of strategy. At the same time governments operate within constraints imposed by the structures of both the domestic economy and the international economy. These, too, affect the ranking of policy objectives.

The first two strategies — financing and exchange controls — are often viewed as alternatives to each other and to the third strategy, ad-

justment. Each of the first two strategies contains inherent weaknesses, however, that make them incapable of producing solutions to the kinds of problems experienced by African countries over the last decade. Nevertheless, they only appear to be alternatives to adjustment in the early stages of macroeconomic difficulty. But for various reasons, financing followed by exchange controls is often chosen as the policy response in the early stages. Only later is serious adjustment undertaken. Many African countries have taken up the three strategies in sequence: first additional external finance is sought, then exchange controls are tightened, and then concerted adjustment is implemented.

Obviously this is a stylized picture of the process that countries experience. In particular, the financing and import-compression strategies often overlap. In Sub-Saharan Africa the access of most non-oil-producing countries to international commercial finance has been limited when compared with Asia and Latin America. Most low-income African countries reached the limits of international borrowing early on in their present difficulties, and therefore quickly resorted to intensifying exchange controls. Although governments have sometimes applied adjustment measures in the early stages, these have often taken second place to seeking finance and intensifying exchange controls. Thus a devaluation may take place, but often it has been of insufficient size compared with the scale of the currency's overvaluation. In addition, it is generally not coordinated with sufficient monetary restraint, so that the real exchange rate eventually resumes its upward trend because domestic inflation grows ahead of the world inflation rate.<sup>4</sup> Examples of African countries that have taken action quickly after an external shock are relatively few.<sup>5</sup> So while a stylized picture has been presented, it approximates the actual path that African governments have followed (see Zulu and Nsouli 1985, p.3).

A further complication is that a number of countries have started along the path, but have then doubled back. They have gone through the sequence from financing to import restriction to adjustment, but have then abandoned adjustment and reverted back to earlier strategies. This has frequently been related to changes of government — for example, those that occurred in Uganda during the 1980s and in Ghana during the 1970s. Temporary windfalls have also led to the relaxation of adjustment efforts begun in an earlier period — for example, the coffee price

boom in the mid-1970s contributed to the relaxation of the adjustment efforts made by coffee-growing countries such as Kenya after the first oil price shock. The boom in the copper price in the same period delayed Zambia's adjustment to the unfavorable long-term trend in the world copper price (World Bank 1981, p. 29).

In addition, the history of events over the last decade is not one of African countries having to adjust to a one-off shock only. In the 1980s African countries have found their economies shocked from both the import side (including sharp increases in the prices of imported energy and intermediate and final goods) and the export side (lower commodity prices). Aside from these external shocks, many have suffered internal, environmental shocks to their agricultural sectors, often occurring simultaneously with the external shocks. Adjustments dealing with the first round of shocks have had to be extended and widened to cope with these new shocks. Consequently macroeconomic targets that would have been achieved, given the measures applied, have sometimes not been realized because of a fresh deterioration in the world economy or new droughts.<sup>6</sup> Given the structure of African economies, delayed responses to the implementation of adjustment policies have been inevitable, so that a time lag exists between the start of a vigorous adjustment program and the realization of all its objectives. Finally, although large groups of countries in Africa have suffered from similar shocks at the same time (for example, the non-oil-producers in 1978-80), others (the oil producers) benefited during the same period. The gainers and losers were reversed after the oil price began to fall back in the mid-1980s, and countries such as Nigeria are now having to implement adjustment programs.

### An analytical framework

Our concern in this section is to trace analytically how these destabilizing factors might influence the real economies of the region, particularly the meso economies. In Chapter 5, we explore how these mesoeconomic changes affect households. The approach adopted here is to explain macro-mesoeconomic processes (at least initially) by using the standard international trade or "orthodox" model based on the Meade-Salter-Swan, or "dependent-economy," model. This has proved both popular and useful in analyzing the real economy implications of macroeconomic and

trade policy measures in small, open economies (for example, see Dornbusch 1980; Lal 1984, 1986, 1988; and Corden 1985; for applications to African countries, see Collier 1988, Collier and Lal 1986, Collier et al. 1986, and Devarajan and de Melo 1987).<sup>7</sup> We use this model to explore some of the main consequences of destabilization and, in Chapter 3, to trace the effects of macroeconomic adjustment.

The framework that we present here has two features that bear mention at the outset. First, it assumes initially that the economies are at full employment and that there is sufficient wage-price flexibility to maintain this status. It is debatable whether this assumption is appropriate for African cases and, in the last analysis, this can only be decided empirically, on a country-by-country basis. Of course, alternative models are available that involve an explicit recognition of structural rigidities (for example, Taylor 1983) or of quantity rations in product and factor markets (Cuddington, Johansson, and Ofgren 1984).<sup>8</sup> Second, and perhaps more important, it is a comparatively static *equilibrium* framework. It can reveal something about the dynamics of change in an economy responding to various shocks, but it has to be admitted that this is not its strength. Its main advantage is that it is well understood, and it is a simple yet powerful tool for showing how policy instruments influence real economies.

Before proceeding to the framework, some words of caution are in order. What is needed ideally is a model that is applicable to all Sub-Saharan African countries. Clearly, this is quite out of the question in any exact sense. What we are obliged to present, therefore, is a framework based on stylized facts, which, although unable to capture the full complexity of economic interactions during adjustment, and certainly not the variety of economic structures and experiences in the region, will highlight critical relationships that apply to a greater or lesser extent in all countries. As Collier (1988, p. 1) argues:

At their best such models, by dispensing with complex but minor detail, clarify major consequences of policies which might otherwise have been obscured. At their worst they are a misleading caricature, dangerous because of their apparent rigour.

The orthodox model is presented to structure our thinking about these issues — it is not intended to be strictly applied in each and every

case. There will certainly be departures from the real world, and some of these may be critical. The actual mesoeconomic effects can only be determined empirically. The general applicability of the model to the African situation is reviewed below, however, and alternative approaches are briefly discussed.

#### *Tradables and nontradables*

At the core of dependent economy models is the distinction between "tradable" and "nontradable" goods and services. Nontradables are goods and services whose prices are determined by domestic supply and demand. This is due to the nature of the good involved (for example, public services, housing, and construction) or because transport costs prohibit either the import or the export of the good in question and insulate it from world markets. Tradable goods are those that cross frontiers and, in theory, their prices are determined directly by world market conditions, so that for a "small" economy<sup>9</sup> tradable prices are assumed to be exogenously given. One of the more important problems encountered in using this type of classification of product markets is that commodities can switch categories, frequently in response to the type of policy change under investigation. The most important reasons why goods are nontraded are commercial policy (for example, prohibition of imports) and transportation costs. Taking the transportation markup to be  $q$  and the world price of a commodity to be  $P^*$ , the domestic price must be equal to or less than  $P^*/(1+q)$  for it to be exportable (assuming no trade taxes or subsidies). Similarly, for the commodity to be importable, its domestic price must be greater than  $P^*(1+q)$ , as otherwise its importer would not be able to compete with domestic suppliers. Thus we have a range of domestic prices for which the commodity is nontradable — neither an exportable nor an importable. This range is simply given by

$$P_x \leq P^*/(1+q) < P_n < P^*(1+q) \leq P_m.$$

The difficulty here is that a commodity price can cross these boundaries and move from being nontradable to being either an exportable (if the domestic price falls sufficiently) or an importable (if the price rises). Although we assume away changes in commodity classifications in the simple analytical framework presented below, the country-based empirical work would clearly have

to identify where such changes occur.<sup>10</sup> A second difficulty is that commodity classifications may change geographically. A certain commodity may be importable at or near the port of entry, but as transportation costs increase its price in remoter areas, it may become entirely insulated from world markets. This problem may have become more acute under adjustment, because transportation networks in Sub-Saharan Africa have deteriorated, and costs have risen accordingly.

There are sectors with outputs that clearly fall under the tradable label, such as production of cash crops for export. Similarly, many government services are unquestionably nontradable. In between these pure cases, there lies a grey area of conceptual ambiguity. Our preference is to include any sector that is protected by severe import quotas under the nontradable banner, since changes in the world price will leave domestic prices unaffected and will only influence the margins obtained by importers. Furthermore, our inclination (at least for most countries in Sub-Saharan Africa) is to treat food production as tradable.<sup>11</sup> Food, in contrast to manufactured products, is rarely protected. In the last analysis, however, the categorization has to be country-specific.

The definition of "tradable" production is bound to raise serious conceptual and empirical problems when applied to African economies. We employ the tradable-nontradable distinction here because it allows us to use a class of models that capture the main macroeconomic processes powerfully and simply, and because it is essential to an understanding of how macroeconomic policy instruments will influence relative product prices and resource allocation. In practice, goods have to be ranked in terms of their "tradability," so that we can say that one good is more tradable than another, in that its domestic price is open to greater influence by world prices.<sup>12</sup>

#### *A three-sector model*

In order to illustrate how destabilization and adjustment policies have important mesoeconomic effects, consider a simple three-sector economy.<sup>13</sup> Aside from assuming that the country is a price taker in world markets (which is an assumption held throughout this section and the next), we also begin by assuming that:

- two tradable commodities are produced, an exportable ( $X$ ) and an importable ( $M$ ). Their prices ( $P_x$  and  $P_m$ , respectively) are given by world

markets, with  $P_m$  taken as the numeraire; we assume that the nominal rate of exchange ( $e$ ) is fixed; a nontradable ( $N$ ) is also produced, its price being  $P_n$

- $P_n$  is determined by domestic supply and demand factors, the latter being partly dependent on monetary and fiscal policy — other things being equal, an expansionary fiscal-monetary policy will raise  $P_n$

- for simplicity, all three commodities are only for final consumption and are not used as intermediates in the production process; in addition, exportables are only consumed abroad, domestic consumption being confined to importables and nontradables

- product and factor (labor and capital) markets are perfectly competitive, so that the economy is in equilibrium on its production frontier; product and factor prices are assumed (initially at least) to be flexible

- capital is sector-specific in the short run, so that only labor reallocations can change the output mix in the economy; in the long run, both capital and labor may be reallocated between sectors.

With the terms of trade ( $P_x/P_m$ ) fixed, exportables and importables can be combined into a Hicksian composite commodity — tradables ( $T$ ). This composite proves useful in analyzing the effects of policies (such as devaluation) that are designed to change the real exchange rate ( $P_n/P_x$ ). Once the external terms of trade change, or should governments adjust trade interventions (changing  $P_x/P_m$ ), however, the composite breaks down. With the relative price of exportables and importables influenced by both external shocks and discretionary policy, the use of the tradables composite would be difficult to justify.

In such a model, the domestic price of exportables ( $P_x$ ) will be determined by the world price, the exchange rate, and any export taxes or subsidies imposed. Similarly, the importables price ( $P_m$ ) will be given by the world price, the exchange rate, and any import controls or tariffs in place. The price of nontradables ( $P_n$ ) will be determined by domestic demand and supply conditions. The demand for nontradables will depend, in part, on fiscal and monetary policy, which will therefore play an important part in determining  $P_n$ . There are thus three relative prices defined in such a model, only two of which are independent:

$$P_n/P_m = P_n/eP_m^*(1+k)$$

$$\begin{aligned} P_x/P_n &= eP_x^*/P_n^* \\ P_x/P_m &= P_x^*/P_m^*(1+k) \end{aligned}$$

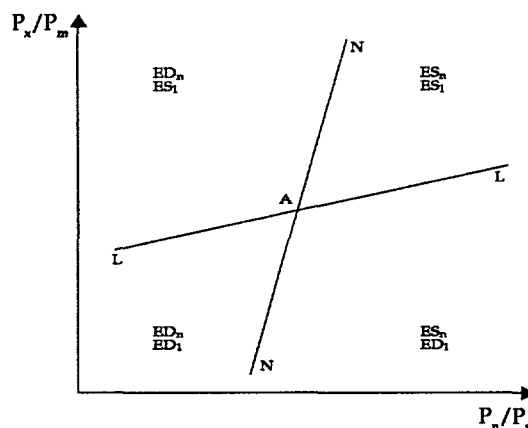
where  $e$  is the nominal exchange rate,  $k$  is the tariff rate (or equivalent), the asterisk refers to world prices, and where there are no taxes or subsidies on exports. The two independent relative prices are  $P_x/P_m$  and  $P_n/P_m$ , the former depending on the international terms of trade and on the trade restrictions imposed, while the latter will be determined by the exchange rate and the domestic money supply (which determines the price level of nontradables).

$P_x/P_m$  and  $P_n/P_m$  are traced on the vertical and horizontal axes, respectively, in Figure 2.1. This means that no change in  $P_n/P_m$  occurs for vertical movements, and no domestic terms of trade changes occur horizontally.  $NN$  is a locus of values of these relative prices, which gives equilibrium in the nontradables market. Along the curve, the supply and demand for nontradables are equal, so that

$$D_n(P_n/P_m, y, M/P) = Y_n(P_x/P_m, P_n/P_m, K_n).$$

In other words, the  $NN$  locus (which is in relative-price space) is drawn on the assumption that real income ( $y$ ) and real money balances ( $M/P$ ) are constant. Changes in any of these will shift the curve. The  $NN$  curve can also shift in response to movements in capital stock ( $K_n$ ) into or out of the sector. Thus, if capital is transferred out of the tradables sector into nontradables, the  $NN$  curve would shift to the left. To the right of  $NN$ ,

Figure 2.1



nontradables will be in excess supply and to the left, in excess demand.  $NN$  is positively sloped, and its slope will be greater than a ray through the origin (Collier 1988, pp. 2-3).

Similarly, the  $LL$  locus denotes values of these relative prices that give equilibrium in the *money market*, assuming that real income, asset demand, and money supply are constant. That is,  $LL$  satisfies

$$M_s = M_d(P_m, P_n) : A, y, M_s/e.$$

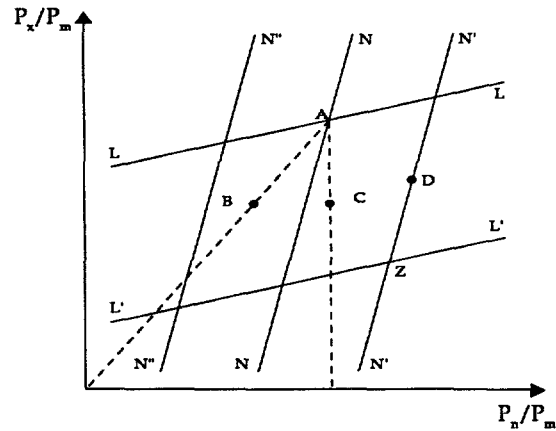
Again, with the locus drawn in relative-price space, it will shift with changes in asset demand ( $A$ ), real income ( $y$ ), and money supply expressed in foreign currency ( $M_s/e$ ) —  $e$  being the rate of exchange.<sup>14</sup> With the price level too high below  $LL$ ,<sup>15</sup> the money market is in excess demand, while above the locus, the market is in excess supply. If money supply were to increase (caused either endogenously by a balance of payments surplus or exogenously through discretionary policy), the  $LL$  curve would shift downward. As drawn, Figure 2.1 shows that full equilibrium is at  $A$ , with both money and nontradables markets being in equilibrium. It follows (from Walras law) that there is zero excess demand in the tradables market and that the balance of payments is in equilibrium. With this simple apparatus, we can now analyze how destabilization and adjustment may influence these key relative prices.

For purposes of exposition, we shall trace the changes in the economy following what may be considered typical destabilizing processes in Africa. Since the different sources of destabilization have conflicting effects on the positions of the curves, the net outcome is theoretically ambiguous. We show for illustrative purposes one possible outcome. Country-specific experiences can of course be accommodated in this framework (see Korayem 1989).

#### *Terms of trade shocks and inappropriate macro policies: the case of financing*

As we have already noted, excessive expansion of the public sector was associated with optimistic expectations of resource availability in general, and movements in the terms of trade in particular. To simulate this combination of a deterioration in a country's terms of trade combined with an expansionary fiscal and monetary policy (which is financed through foreign borrowing), we assume that an initial equilibrium

Figure 2.2



exists, which is then disturbed by these two influences.

The deterioration in the terms of trade reduces real incomes ( $y$ ), and thereby shifts the  $NN$  locus to  $N''N''$  (Figure 2.2). The initial movement of the system depends on whether the deterioration is due to an import or an export price shock. With an import price shock (for example, with the two oil price shocks), the economy will move to a position such as  $B$  ( $P_x/P_m$  will remain unchanged initially), while an export price shock would take the economy to  $C$  (with  $P_n/P_m$  unchanged). As drawn, the market for nontradables is assumed to move into excess supply.

At the same time, expansionary fiscal and monetary policies have shifted the  $LL$  curve to  $L'L'$ . The expansion in real money balances will cause demand for nontradables to increase, and the  $NN$  curve will shift back to the right to  $N'N'$ . As depicted in Figure 2.2, the nontradables market is now assumed to move into excess demand, with the monetary expansion more than compensating for the deflationary effects of the terms of trade deterioration. Thus, with no change in discretionary policy, the economy is jolted into a disequilibrium situation, with  $Z$  signifying the combination of relative prices that would reestablish equilibrium in all markets, but with disequilibrium prices (at  $B$  or  $C$ , depending on the nature of the terms of trade shock) prevailing. Assuming no further changes in the terms of trade (or in government trade policy), the excess demand for nontradables at  $B$  or  $C$  will cause  $P_n$  to rise until the equilibrium in the nontradables market is restored (at  $D$ ).<sup>16</sup> This is partly because demand for nontradables will fall with the price rise, but also because factor reallocations from

exportables and importables will raise the supply of nontradables.

Thus, the combination of a deterioration in the country's terms of trade and an expansionary fiscal and monetary policy might be associated with a movement in the key relative prices from  $A$  to  $D$ , through either  $B$  or  $C$  (depending on the nature of the terms of trade shock). Full equilibrium, however, is not restored, because the money market is in excess supply and, by implication, there exists excess demand for tradables and a balance of payments deficit. The combination of these shocks, in taking the economy from  $A$  to  $D$ , is seen therefore to lead to a decrease in  $P_x/P_m$ , an increase in  $P_n/P_m$ , and a decrease in  $P_x/P_n$ .<sup>17</sup> These relative price changes will then signal resource reallocations, specifically from exportables into nontradables and importables.

These shocks, however, will also induce changes in factor markets as resource transfers take place between the sectors. Following Edwards (1988a), and assuming that exportables are the most labor intensive while importables are the least, we can trace the effect of a terms of trade shock on the factor markets. Recall that the shock results in a decrease in  $P_x/P_m$ , and the domestic effects of this may be fueled further by increasing import controls, that will have the effect of decreasing the relative price further.<sup>18</sup> With resource flows out of the labor-intensive exportables sector and into capital-intensive importables, the terms of trade shock will lead to long-term adjustments in factor markets that raise the rental rate and lower wages. Insofar as poorer households derive their income from selling their labor services, these shocks are likely to hit them particularly hard.<sup>19</sup> Edwards (1988a) also analyzes the short-run effects, in which capital is sector-specific. In this case, a terms of trade deterioration will decrease the production of exportables, increase the production of importables, but have ambiguous effects on the production of nontradables. Similarly, the effect on the real wage is ambiguous and will depend on the consumption bundle of workers. (A simple framework for analyzing these short-run effects is presented in Chapter 3.)

Under this scenario direct effects on the supply side will also occur as the cost of credit falls with the expansion of the money supply, and producers find it cheaper to borrow from the banking system.<sup>20</sup> Overall, the effect of monetary expansion on aggregate supply is likely to be small and highly concentrated in most African countries compared with other developing regions — for

example, Latin America — where the distribution of credit, although unequal, is more disbursed, and thus the supply-side effects of credit expansion can be expected to be greater. Insofar as formal credit is concentrated in the public sector and urban services and industries, which are mainly nontradable (see below), the effect of monetary expansion on the supply side of the product market will reinforce the effect on the demand side of the associated real appreciation to further shift output toward nontradables.

Drawing all the threads together, we may now summarize the effects of a terms of trade shock combined with a fiscal and monetary expansion. It has caused:<sup>21</sup>

- $P_x/P_m$  to fall
- $P_n$  to rise, so that  $P_x/P_n$  falls
- resource reallocations from exportables to nontradables and importables
- real wages to fall in the long run, with ambiguous short-run effects.

These are some major mesoeconomic effects of destabilization on product and factor markets. There would also be effects on the other components of the meso economy — namely the economic and social infrastructure. Insofar as the disequilibrium has been caused by expansionary domestic fiscal and monetary policies in the countries concerned, there may be direct effects on these elements. It is also possible that the period of destabilization is associated with major institutional changes — for example, in marketing — which have a powerful influence on the meso economy. The fall in the price of exportables may be aggravated by these changes if government marketing boards keep producer prices below market levels as a means of raising revenue. These effects, of course, can only be determined at the empirical (country) level.

#### *Effects of import compression*

The limit to the financing strategy is reached when the supply of external finance becomes inadequate to meet the rising current account deficit. At this point the government concerned may choose to implement an adjustment program. Many governments, however, resort instead to a reliance on tightening import restrictions and exchange controls as a balance of payments strategy. It is the real economy effects of this strategy that concern us here. Both tariffs and quotas are generally in place prior to the onset of severe balance of payments problems, since they are instruments

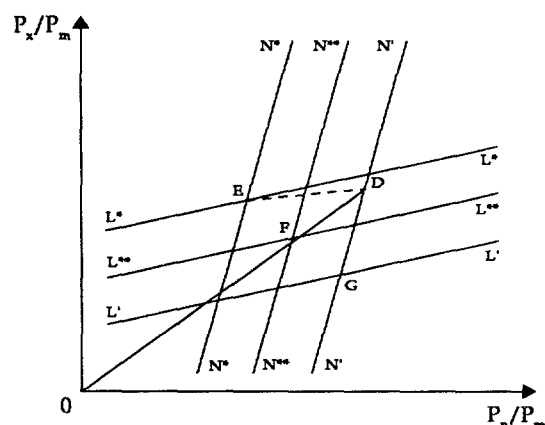
of import-substituting industrialization. In situations of balance of payments crisis, resorting to quotas has been the main way of extending protection, although tariff rates are also raised.

In our simple three-sector model, a government can intervene by changing the level of trade restrictions, the rate of exchange, and the budget deficit and money supply. Figure 2.3 depicts the situation immediately following the destabilizing events that were illustrated in Figures 2.1 and 2.2. To restore equilibrium, policy choices should involve some combination of fiscal and monetary contraction (shifting the  $LL$  curve upward toward  $D$ ) and trade policy changes to decrease  $P_x/P_m$  and  $P_n/P_m$  — that is, an increase in protection that would raise  $P_m$ . One solution is at  $E$ , involving total reliance on exchange rate and monetary policy, which would shift  $LL$  to  $L^*L^*$  and  $NN$  to  $N^*N^*$ .<sup>22</sup> In this case, no import controls are imposed, and no policy induced change is made in  $P_x/P_m$ . This adjustment mechanism can readily be analyzed using a two-sector dependent economy model, because the adjustment process leaves  $P_x/P_m$  unchanged and shifts the economy horizontally in terms of Figure 2.3. Governments may wish to adjust trade policies to restore a compatible and sustainable combination of policy instruments. An increase in tariffs or import quotas would lower both  $P_x/P_m$  and  $P_n/P_m$ , and move relative prices along the ray  $OD$  (say to  $F$ ). The degree of fiscal and monetary contraction (shifting the  $NN$  and  $LL$  curves) necessary to restore equilibrium will consequently be reduced, taking the economy to  $F$  (rather than to  $E$ ).

If government policy can be characterized as initiating a movement from  $D$  to  $F$ , it is clear that it places much greater emphasis on a decline in  $P_x/P_m$  (that is, an increase in import protection) than the movement from  $D$  to  $E$ , which is achieved through increases in  $P_x/P_n$  and  $P_m/P_n$  (as a result of devaluation and fiscal contraction). The movement from  $D$  to  $E$  would be associated with a general shift of resources out of nontradables into both exportables and importables, whereas the movement from  $D$  to  $E$  implies resource reallocations from nontradables and exportables into the importables sector.

These import restrictions, however, will not only affect relative prices in product markets. They can also result in quantitative adjustments in these markets that will have far-reaching effects on both the meso economy and on the households. Applying quotas to imports cuts the supply of tradable goods, but it does not reduce

Figure 2.3



the level of demand for tradables if the government maintains its expansionary fiscal and monetary stance. In addition, if the government is forced by the foreign exchange shortage to restrict importable intermediate goods, domestic production of both tradables and nontradables will fall; the size of the fall will depend on how the scarce import quotas are rationed among sectors and the possibilities of substituting home-produced inputs for imports in the production process. Thus, in addition to the contraction of available goods from the cut in imports, aggregate domestic supply will also fall through the reduction in domestic output of both tradables and nontradables.

With aggregate demand continuing to grow and aggregate supply reduced, the inflation rate will increase, given that the tradables market can no longer clear itself through sucking in imports. As inflation accelerates, many countries tighten price controls. Consumers accordingly find themselves rationed in the controlled markets. But with monetary policy driving excess demand in goods markets, equilibrium prices steadily move above controlled prices. Sellers and buyers therefore have an incentive to establish parallel markets. With the imposition of import quotas and price controls, economic rents become increasingly important determinants of household incomes. Households with access to the increasingly scarce commodities can make large gains as the prices of those goods rise in parallel markets. Access to scarce consumer goods is generally gained through rationed import licenses and smuggling goods from neighboring countries. These are Directly Unproductive Profit (DUP) seeking activities, where DUPs are defined as

activities that give pecuniary gains to those engaged in them, but with no corresponding output of goods or services.<sup>23</sup> Since these activities take resources away from productive activities, they shrink the economy's production possibilities for such goods (Srinivasan 1985, p. 46).

The rise in the overall inflation rate (as measured by uncontrolled parallel market prices) will be accompanied by changes in relative prices (again measured through parallel markets). The real exchange rate will continue to appreciate because its course is driven by the excessively expansionary monetary policy. Thus, the relative price of nontradables to exportables will continue to move in favor of nontradable activities.

Given the rise in the prices of consumer, capital, and intermediate goods and static nominal producer prices, the real price received by the farm household will fall. While agriculture as a tradable activity will be disfavored under this policy scenario, within agriculture incentives tend to shift toward food crops and away from export crops through the operation of the parallel market. The domestic parallel market is usually much larger for food crops than for nonfood export crops. Thus food producers, faced with low official prices, find it easier to redirect their sales to the parallel market, while export crop producers, unless they can smuggle their produce to neighboring countries with better prices, must continue to sell most of their output to the state at controlled prices. Thus, the structure of parallel market prices favors food over export production, and farmers redirect their resources into food. Since both food and export crops are grown on most small farms, this is relatively easy for them to do. Over time, with demand expanding as the budget deficit widens, the structure of prices between food and nonfood export crops on the parallel market will shift further toward food. This will compress the income differential enjoyed by export farmers over food farmers (Lele 1985).

With aggregate supply now restricted by the tightening of import controls, excess money balances build up as the government budget deficit continues to generate a monetary supply expansion in excess of money demand. As the current account deteriorates further, the government, unable to obtain financing, further restricts imports. In the early stages of the crisis, priority has usually been given to imports of key intermediate inputs. But as the external situation deteriorates further, a position is eventually reached where cuts begin to be made in intermediate im-

ports, rationing the available supply among producers. As import constraints tighten, capacity utilization and output fall. This is exacerbated by the high dependence of import-substituting industries on intermediate imports, the result of previous macro and trade policies.

Unless the government reverses its policy of keeping producer prices low, real producer prices continue to decline as inflation accelerates, thus reducing the incentive to produce cash crops. Moreover, even if producer prices are raised at this stage, the supply response of smallholders may be limited, because they are now rationed as buyers in the consumer goods market. Extra cash no longer buys them "incentive goods." Imports of intermediate inputs for farming are also rationed, and typically larger and better-off farmers gain more access to the rationed inputs than smaller and poorer farmers (World Bank 1986a). This, together with the fall in capacity utilization of domestic agroindustries and the effects on the crop collection and transport systems, further disrupts agriculture.

In the labor market, the contraction of capacity utilization leads to short-time work and increasing redundancies. Up to this stage employees in the protected import-substituting industries have been relatively favored, particularly through the sharing out of excess profits into higher wages. The contraction of employment in the manufacturing sector will put pressure on money-wage levels, and the degree to which reduced labor demand is translated into reduced employment or reduced wages will depend on the flexibility of wages. Faced with demand constraints in the labor market, the urban unemployed will look for alternative incomes. With the contraction of formal sector job opportunities, new labor market entrants will look increasingly to the informal sector for their survival. Employment in the informal sector accordingly increases during such periods. Nevertheless, aggregate real incomes are now falling with the decline in formal sector activity, so total sales of informal sector products tend to decline as well. Accordingly, informal producers find themselves competing for a shrinking market, and average incomes in the sector usually decline.

The contraction of gross domestic product (GDP) reduces the government's revenue base, which in turn raises the public sector deficit, thus adding to inflationary monetary expansion. The revenue base also stagnates, because as market prices rise above controlled prices, a larger num-



ber of sales are conducted through parallel markets. Incomes generated in parallel markets avoid income tax. Moreover, sales taxes are usually set as a given percentage of the controlled price level, so that the difference between the price on the parallel market and the controlled price is effectively not taxed.

With imports cut and domestic supply rationed, governments increasingly find that they are unable to maintain both economic and social infrastructure. The effective supply of public goods

falls; for example, schools and clinics cannot provide their previous levels of education and health care because of the increasing scarcity of school books, drugs, and so forth. Like the strategy of financing the trade deficit, the option of reducing the deficit through cutting imports does not solve the underlying disequilibrium and the economy remains unstable. Unless corrected by sufficient policy adjustments, a spiral of falling output and imports is generated that feeds on itself.

# 3

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## Adjustment

In the previous chapter we saw how economies can be destabilized by both inappropriate policies and a variety of shocks. If governments rule out entirely the correction of policies in the form of an adjustment program, they have two choices: either to find external financing for the trade deficit or to compress imports. Each of these approaches has implications for the meso economy, which we explored in previous chapters. We now take up the story at the point at which the government has decided to tackle the fundamental distortions underlying the internal and external imbalances through the implementation of a comprehensive adjustment program.

As we have already noted, adjustment can be achieved through stabilization, which mainly involves short-run demand management, and through structural adjustment, which introduces microeconomic and mesoeconomic interventions to the adjustment process, often involving institutional reforms. Stabilization and structural adjustment are not alternative modes of adjustment, and many countries implement stabilization packages in agreement with the International Monetary Fund (IMF) and through structural adjustment programs with World Bank support. The latter essentially take a medium- to long-term policy perspective. Before considering how these policy responses may affect the elements of the meso economy, we briefly review the types of adjustment response that have been observed in Africa.

### Adjustment policies in Africa and their macro effects

A number of recent studies (for example Balassa 1988a; Thomas and Chhibber 1989; World Bank 1988a, 1988b; and World Bank and UNDP 1989) have made an assessment of structural adjustment lending (SAL) and its impact in the developing world. These studies provide useful information on the experience of African countries with structural adjustment. The first and obvious question that has to be addressed concerns the *content* of the structural adjustment programs: what were the policy instruments manipulated under the programs. In its review, the World Bank (1988a, p.88) provides a useful summary, which is repeated in Table 3.1.

There are three major implications of these results. First, adjustment lending by the World Bank in the African countries reviewed has embraced a wide range of policy interventions, with energy being the only sector not covered in Africa as much as elsewhere. More attention seems to have been paid to public expenditures, public enterprises, agricultural policy, and (surprisingly) industrial policy in SAL conditionality in Africa. Although (for reasons given in the table) the data are difficult to interpret, the evidence also suggests that exchange rate interventions are more likely in adjustment policies in Africa than elsewhere. Trade policies, public enterprises, and agricultural policy account for 61.8 percent of the total number of policy conditions set under ad-

**Table 3.1 The policy content of World Bank lending operations**

(percentage of total number of loans with conditions in various policy areas)

	SSA	All countries
1. Exchange rate <sup>a</sup>	30.8	15.7
2. Trade policies	76.9	78.4
3. Fiscal policy	61.5	64.7
4. Budget/public expenditure	69.2	51.0
5. Public enterprises	61.5	52.9
6. Financial sector	38.5	39.2
7. Industrial policy	53.8	25.5
8. Energy policy	7.7	23.5
9. Agricultural policy	76.9	49.0
10. Other	23.1	13.7

Note: Lending operations under structural adjustment and sector adjustment loans in Africa (Ghana, Kenya, Malawi, and Zambia) and 11 other countries.

a. Since the IMF has responsibility for exchange rate policy, these figures underestimate the importance of exchange rate conditionality in the Bank's adjustment lending.

Source: World Bank (1988a), Table 4.2.

justment lending by the Bank in Africa (World Bank 1988a, Table 4.1).

Second, while these data give an indication of the content of the loan agreements, they do not necessarily reflect the ex post operation of policy instruments. Some attempt was made in the World Bank review to assess the extent to which these policy conditions were implemented. It found significant variations in the ability of governments to undertake the specified policy intervention: while 70 percent of exchange rate policy conditions were fully met in the 15 countries investigated (four of which were in Sub-Saharan Africa), only 57 percent of agricultural policy conditions and 55 percent of trade policy conditions were fully met. The report concludes that "the policy areas where implementation has been most successful are those involving changes in prices such as exchange rates, interest rates, or agricultural and energy prices; those where political sensitivities are the least . . . and those where institutional changes . . . are not required" (World Bank 1988a, p. 90). There was some evidence that the policy performance of African countries was not as effective as performance elsewhere. The differences in the proportions of all policy conditions fully met, however, (just over 52 percent in African countries compared with 60 percent for the others) is unlikely to be significant in such a small sample.

Finally, the World Bank study found that in most cases there were four or five *key policy conditions* in each structural adjustment program, most of which concern trade policy (35 percent), public expenditure and fiscal policy (19 percent), public enterprise reforms (14 percent), and pricing policy (especially agriculture and energy pricing, comprising 14 percent). While the Bank study reports only the figures for all 15 countries, it is likely that similar orders of magnitude apply to Sub-Saharan African countries (except the role of energy pricing policies which were not a feature of most Sub-Saharan African programs).

**MACRO EFFECTS.** Before we apply our analytical framework to the mesoeconomic effects of these policies, we shall briefly summarize the main macroeconomic effects of the adjustment programs as reported by the World Bank (1988a). This study attempted to assess the impact of adjustment programs on performance indicators,<sup>24</sup> and it adopted a simple methodology for evaluating whether adjustment enhanced the performance of these indicators. Two approaches were adopted: the first compared the performance indicators during the three years before the first year of an adjustment program with the performance during the following three years; the second compared unweighted average values of the indicators for all countries in receipt of adjustment lending (AL countries) with those of other countries in each country group (NAL countries). The latter method was to compare the change in the indicators between the three-year periods before and after the implementation of the adjustment program with the change in the indicators experienced by countries not in receipt of adjustment loans. Our interest obviously lies in the results for Africa.

The results for the Sub-Saharan Africa country group reported by the World Bank are given in Table 3.2 (overleaf). The numbers in the table indicate the number of countries in the AL group that performed better than the NAL control. The sign indicates whether the direction of change in the average value of an indicator was better (+) or worse (-) in comparison with the same indicator for the NAL group. These data show that the performance of Sub-Saharan Africa AL countries is decidedly mixed when compared with the control group. There is evidence in these results of a general improvement in the two key imbalances — the balance of payments current account and

**Table 3.2 Relative performance indicators for 15 SSA countries**

Indicator	Value
1. GDP growth	7 (-)
2. Investment/GDP	6 (-)
3. Export growth	10 (+)
4. Real exchange rate	11 (+)
5. BoP C/A deficit/GDP	8 (+)
6. Budget balance/GDP	6 (+)
7. Inflation	5 (-)
8. External debt/GDP	9 (+)
9. Debt service/exports	7 (+)

Note: Number of AL countries: 15; number of NAL countries: 22.  
Source: World Bank (1988a: Table 2.4a).

the budget deficit. The former seems to have been brought about by expenditure switching policies, as evidenced by the favorable indicators of export growth and the real exchange rate.<sup>25</sup> The external debt situation also improved compared with the control group. The longer-term effects, however, are not so favorable. Three key indicators reveal an unfavorable comparison with NAL countries — GDP growth, the investment-GDP ratio, and the rate of inflation. The first two of these suggest that the longer-run prospects for rapid growth have not been enhanced through the policy interventions that have been made. The poor inflation performance suggests that the favorable real exchange rate indication may not continue into the future.

These findings are similar to a number of other recent studies — for example the World Bank and UNDP (1989), Balassa (1988a), Sahn (1989), World Bank (1988b), Thomas and Chhibber (1989), and ECA (1989).<sup>26</sup> Taking the combined evidence of these studies, questions undoubtedly remain over how responsive sectoral and aggregate output in the region has been to the price signals of structural adjustment. A slow supply response in aggregate output suggests that a longer time perspective may be required to induce more rapid growth. We shall return to this important question. Moreover, institutional changes (which many regard as critical to improving growth performance) require more time and are more difficult to achieve, even under adjustment lending instruments (World Bank 1988a, p. 90).

## An orthodox framework for analyzing meso effects

### Devaluation-expenditure reduction

**PRODUCT MARKET EFFECTS.** This review of adjustment policies in Africa and their effects would suggest that our analytical framework must incorporate both expenditure-switching policies (depreciating the real exchange rate and increasing the growth of agricultural production, exports, and import substitutes) and expenditure-reducing policies (as evidenced by the budget balance performance indicator). While there is evidence in the studies mentioned above that institutional changes have been slower to implement, so that our model may be a reasonable account of the effects that have been experienced, it must be acknowledged that this framework is only an approximation, intended to structure our initial thinking. In many countries, institutional reforms can have fundamental and dynamic effects on the economic system — effects that cannot be handled in this simple comparative, static framework.

To trace a policy combination of devaluation and fiscal/monetary contraction, we retain the apparatus described in the previous chapter. For this policy package, we can assume that  $P_x/P_m$  remains unchanged, since in our simple model (with no intermediate demands) this relative price is unaffected by either a change in the nominal exchange rate ( $e$ ), or in  $P_x$ . Figure 2.4 illustrates the movement in relative prices as a policy combination of devaluation and fiscal/monetary contraction is applied. Recall that following the destabilizing events traced in the previous section, the economy is in disequilibrium at  $D$ , on the  $N'N'$  curve (that is, in internal equilibrium) but off the  $LL$  locus — the money market being in excess supply. This means that there is an excess demand for tradables — a balance of payments deficit. A judicious combination of fiscal/monetary contraction (shifting the  $NN$  curve to the left to  $N^*N^*$  and the  $LL$  locus to  $L^*L^*$ ) and devaluation, taking the economy horizontally to  $E$ , will restore both internal and external balance.

The key indicator of this switching policy is the depreciation of the real exchange rate,  $P_x/P_y$ , which induces a shift in production from nontradables to tradables. A switching policy therefore affects the *product markets* by changing the relative price regime in favor of tradables. This is illustrated in Figure 3.1, in which the production possibilities

of nontradables and the composite tradables are represented by the  $N^*T^*$  curve. In the initial disequilibrium situation (point  $D$  in Figure 2.4), production is at  $x$  and expenditure is at  $y$  — there being equilibrium in the nontradables market, but an external deficit of  $xy$ . A policy of reducing absorption (from  $OA$  to  $OB$  measured in nontradables) and exchange rate devaluation (shifting the price line from  $AA'$  to  $BB'$ )<sup>27</sup> will restore external and internal equilibrium, with both production and expenditure shifting to  $z$ . According to this interpretation, adjustment must involve a depreciation in the real exchange rate, which will in turn induce resource shifts into the tradables sectors (exports and imports).

This simple model predicts an across-the-board increase in tradables prices — all tradables (whether imports or exports) will benefit from the devaluation to the same extent and will be in receipt of resource reallocations. In reality, however, some tradables prices will be raised by more than others and will benefit from greater resource inflows. First, if there is a parallel market for foreign exchange, a devaluation will have complex effects on exchange rates, because it will directly affect the official exchange rate and only indirectly change the unofficial rate, so that the relation they bear to each other may well change. This means that the price of tradables exchanged in the official market will change relative to those exchanged through parallel markets. If exportables are more likely to be exchanged at official rates and importables at parallel rates, a devaluation may change  $P_x/P_m$ . This is the basis of Lele's (1985) explanation of the increase in the price of food crops (exchanged through parallel markets) relative to export crops (marketed through official channels).

Second, if some importables are subject to quantitative restrictions, devaluation will have first-round effects on their prices — it will simply affect the trading margins of the importers. Third, since resource reallocations are responsive to value added in the sector (and not simply the output price), tradables that use imported intermediate inputs will not attract resources as much as sectors that do not, even though the percentage increase in the output price is the same. Thus, if an agricultural sector uses imported fertilizers and other inputs, the net resource allocative effect of the devaluation may be negligible.

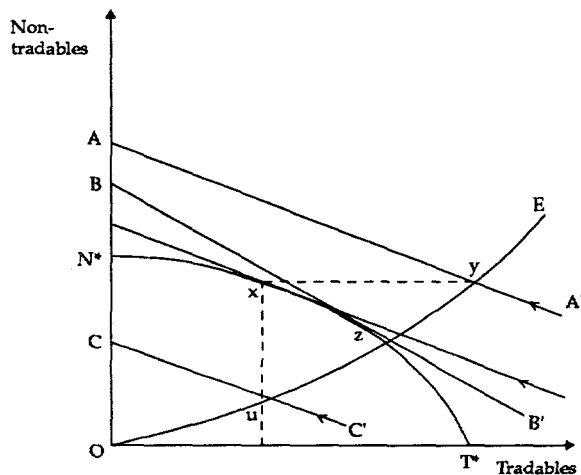
Finally, an adjustment package may entail other policy instruments (such as reduced tariffs, prod-

uct market liberalization, marketing reforms, and the like) that affect both prices and quantities. Thus, the relative price changes brought about by the combined devaluation and fiscal contraction will be modified by these policy-specific changes. In addition, quantitative constraints may be lifted as a result of adjustment, and these somewhat profound changes in product markets can have important implications for households.

This account of the adjustment process underscores two key elements of a switching strategy. First, it must be possible for policy interventions to change the underlying structure of relative prices — that is, change the real exchange rate. Governments can only manipulate nominal instruments (such as the money supply and the nominal rate of exchange). Whether the application of these instruments leads to the desired change in relative or real prices will depend on accompanying macroeconomic policies and the structural characteristics of the economy. If these lead to an increase in  $P_x$ , the real exchange rate depreciation will be reduced, or even prevented altogether (Edwards 1988b, p. 29). These include: a continued fiscal/monetary expansion; real wage resistance through, for example, collective bargaining or wage indexation; and the use of imported intermediate inputs. On the basis of twenty-eight devaluation episodes, Edwards (1988b, p. 38) estimates that a 10 percent devaluation results in a 7 percent real exchange rate depreciation in the first year, falling off to 5 percent by the third year, other things being equal. The erosion of the devaluation is even greater if an expansionary monetary policy is applied following the devaluation.

If  $P_x/P_m$  is subject to some form of rigidity, adjustment cannot be achieved through switching. With no change in relative prices, adjustment would have to rely on expenditure contraction, along the income-expenditure ray ( $OE$  in Figure 3.1, overleaf). To correct the external deficit, total expenditure would have to be cut to  $OC$  (measured in nontradables), which would take the economy to  $u$ . However, the restoration of external balance is achieved only by sacrificing internal balance and creating factor unemployment, since the economy is necessarily drawn within its production frontier. With price rigidity, therefore, the nature of the adjustment process must change — involving greater short-run costs in terms of output loss. This "fix-price" case is considered in more detail below.

Figure 3.1



The theory also highlights the key role played by price responses in the adjustment process. Even if governments can effect changes in the underlying structure of relative prices, the achievement of internal and external balances requires positive supply responses and resource flows into the tradables sector. Changing the price signals should therefore be considered as a necessary but not sufficient condition for successful structural adjustment. If there are weak supply responses and impediments to resource reallocations, expenditure reduction (as opposed to production switching) would again have to bear the main burden of the adjustment. While the short-run price responsiveness of total agricultural output (agriculture being the most important tradable sector in most African countries) has generally been found to be low (Bond 1983 and Binswanger 1989), there is evidence that agricultural production for export has been price responsive. Cleaver (1988) has compared agricultural growth rates in African countries that have implemented exchange rate depreciations and other pricing policies with those that have not. Although there was little difference in growth rates in the 1970s, agricultural output growth in the adjusting countries has increasingly outstripped that experienced among nonadjusters. These data suggest that export production has responded to adjustment policy, but the evidence is too aggregative to be conclusive at this stage. A number of factors (risk aversion, poor market articulation, inelastic supply of factors of production, and the like) combine to suggest that supply responsiveness in significant tracts of economic activity in Africa (especially in agriculture) is

slower than the orthodox model requires. The key to the medium-term price response in Africa lies in the implementation of nonprice reforms, such as in marketing, infrastructure, credit, and the like (Sahn 1989, pp. 72-76).

*Expectations* over the probable outcome of an adjustment program will also be important. If the program is credible in the view of the public, in the sense that the government is expected to persevere with its new policies, the shift in relative prices will be viewed as permanent, and productive resources will be reallocated accordingly. But reallocating resources to tradables can be very costly to agents if the adjustment program is canceled and the policy bias against tradables is resumed. So, with uncertain expectations about the program, agents will delay their decisions about resource allocations as they gather information. New programs most often lack credibility when there is a history of past policy reversals. In Africa this has been all too common and governments, if they are committed to adjustment, must send out very clear signals that policy changes will be sustained.

Insofar as devaluation conveys the message that the government now intends to shift resources into tradables, it enhances the credibility of the adjustment program, and therefore raises private sector confidence about investing in tradables. Action at the microeconomic level to encourage greater price flexibility will also help — in particular, inappropriate micro pricing policies that create price rigidities need to be eliminated. In summary, adjustment programs, which include devaluation and suitable microeconomic reforms, can maximize the rate at which resources will move into tradables, and can therefore minimize resource unemployment costs. Thus, the way programs are designed has a major bearing on the issue of social costs under adjustment.

Before concluding this discussion of product market effects, it is important to emphasize the critical role played by meso-level institutions in transmitting the signals generated by policy to the economic agents concerned. The model defined above assumes that product markets are generally competitive and that an increase in the commodity price in the market (whether it is the domestic or the foreign market) is enjoyed by the producers (allowing for the transport and handling markups). But we know that this is not always the case. Whether the price signal ema-

nating from a policy change reaches its targeted destination depends on the nature of the markets concerned and, in particular, on the institutions serving those markets. In the context of recent adjustment efforts, there is evidence that some farmers are not receiving the full benefit of the economic reforms because of the activities of middlemen (perhaps we should call them "mesomen") who fail to pass on the potential price increase to the producers (see, for example, Thomas 1989 and Thomas and Weidemann 1988). When the nature of product markets is monopsonistic in this way, there can be no assurance that policy reforms will achieve their desired effects. It may be that the instances cited are exceptions to the general rule, but even if this is the case they may well be important exceptions. If the exceptions apply mainly to poorer groups of farmers, for example, it would have profound implications for the social dimensions of adjustment.

**LABOR MARKET EFFECTS.** We now move to consider the effects of adjustment on the *labor markets*, since many poor households rely on the sale of labor services as the main means of livelihood. To do this, we distinguish between short-run and long-term effects. In the *short run*, the switching effects of a real exchange rate depreciation will induce a movement of labor into tradables and out of nontradables. For this to happen, the real product wage ( $W/P_i$ ,  $i = n, t$ ) must decrease in tradables (to encourage increased employment) and increase in nontradables (to induce the release of labor).<sup>28</sup> The effect on the real consumption wage (which is the nominal wage deflated by the consumer price index — the latter being a weighted average of tradable and nontradable prices) will therefore be ambiguous and depend on the consumption bundle of workers. If wage earners consume mainly nontradables, their real wages are likely to rise in the short run.

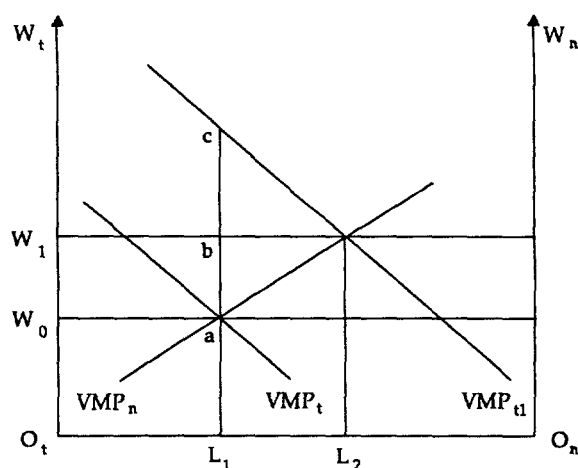
While in theory the movement to point *z* in Figure 3.1 entails a smooth adjustment around the production frontier so that total output remains constant, this is unlikely to occur in practice. Transitional unemployment may arise as the economy moves between these positions. Nontradable activities will generally contract faster than tradable activities can expand, especially if the latter require the rehabilitation of equipment and new investments. Hence, total output may fall in the short run, and factors will

be unemployed in this period while awaiting their reallocation to tradables. This transitional unemployment will gradually be reduced as tradable activities expand, because they are more labor-intensive than nontradables.

*Long-term* effects, the real effects of the adjustment process described, will depend on the relative factor intensities of the tradable and nontradable sectors. With full factor mobility between sectors, it is clear that production switching toward the tradables sector will redistribute incomes toward factors used relatively intensively in the tradables sector. Since the tradables sector is likely to be relatively labor-intensive (compared with nontradable) in most African countries, production switching would, at existing factor prices, lead to excess demand for labor. The increased demand for labor in the expanding tradables sector will exceed the supply of labor yielded by the contracting nontradables sector. With labor in fixed supply, the real wage rate will rise in the long run (Knight 1976 and Lal 1984).

For what follows, it is helpful to illustrate the short-run and long-term labor market changes diagrammatically. The horizontal axis of Figure 3.2 allocates total labor supply ( $O_t - O_n$ ) to the two sectors, measuring labor in tradables from the left and in nontradables from the right. The vertical axis measures the wage and marginal productivity in the two sectors in terms of the nontraded good. The original demand-for-labor curves (the value of the respective marginal product of labor curves — *VMP*), associated with production at *x* (in Figure 3.1), give  $O_t L_1$  labor in tradables and  $O_n L_1$  in nontradables. With flexible wages, the labor market clears at the wage  $W_0$ .

Figure 3.2



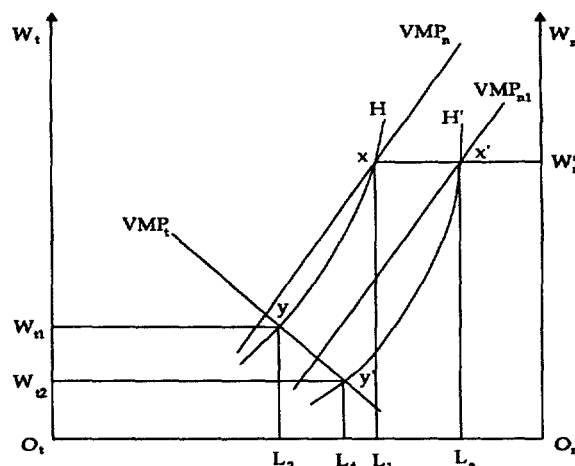




not affect the production of tradables, since with  $W/P_t$  unchanged, there will be no incentive for producers to change output. But the nontradables sector will take the brunt of the contraction. Therefore, while the  $VMP_t$  schedule is unaffected by adjustment,  $VMP_n$  shifts downward. With the wage fixed (at  $W_n^*$ ) in nontradables, employment takes the brunt of the adjustment, falling to  $O_n L_3$ . Unemployment rises to  $L_4 L_3$ , and employment in tradables rises to  $O_t L_4$ . But note that the wage in the informal tradables sector falls to  $W_{t2}$ . Adjustment through fiscal contraction is thus seen to work through employment changes in the formal (nontradable) sector and wage changes in the informal sector.<sup>33</sup> Again, the prospects for workers depend very much on the sector of occupation — those in tradables this time take a greater real-wage cut than those in nontradables. They gain, however, through increased employment opportunities (in contrast to the employment reduction in nontradables).

The analysis of Figure 3.4 assumes that a wage cut in the informal sector is feasible. But suppose that  $W_{t1}$  is already at or near the subsistence floor, and that further downward movements are simply not feasible. No employment expansion in tradables can occur, so the displaced workers from nontradables ( $L_1 L_3$  in Figure 3.4) and the unemployed who now abandon their job search in the nontradables sector will either find it difficult to find employment in tradables, or, if they do succeed, will cause some workers previously employed there to lose their remunerative employment. Either way, some workers will become destitute as a result of adjustment. If adjustment relies heavily on expenditure reduction rather than switching, and if the free market wage in the economy is already at or near subsistence, the prospects for workers, and especially the poor among the working population, are grim indeed. This result points to a scenario that some observers have suggested is typical of African countries in recent years. With real wages having fallen significantly during the 1980s, it is suggested that little room remains for a labor transfer process of the sort suggested by the orthodox model. The retreat into subsistence activities (even in urban areas where food cultivation is increasingly common), together with the influence of extensive kinship networks, combine to suggest that there will be little labor movement to the rural (tradable) sector. Clearly, this is an important empirical matter (see ILO 1988c for a review of some recent evidence).

Figure 3.4



Which nontradable sectors contract will be largely determined by policy during this period. The contraction in nontradables is induced by a cut in the government budget deficit (associated with monetary restraint). Some of the fall in nontradables will therefore be a *direct* result of a cut in government activities. Overall budget priorities will determine which public activities are cut. The first to go are usually temporary employees, and the hiring of new employees is generally curtailed. Although the "output" of public services is reduced, the government may not, at this stage, decide to shake out its permanent work force; it may prefer to leave this until later because of implementation difficulties. Much of the contraction of nontradables could fall on urban services, which, contrary to the assumptions underlying Figure 3.4, might be in the informal sector. With the latter characterized by a flexible labor market, the fall in demand will affect remuneration rather than employment, and this is exacerbated by the entry of workers made redundant from other nontradable activities who seek informal employment as a last resort.

**CREDIT MARKET EFFECTS.** In most African countries fiscal contraction is closely associated with monetary contraction, so that adjustment is usually associated with significant changes in the credit market. The credit markets invariably consist of a formal market, which is dominated by the organized, modern banking system, and an informal, or "kerb," market. The former is directly subject to the restraints that are imposed under monetary contraction, while the latter is affected only indirectly. Typically, a credit squeeze will reduce the supply of credit in the organized banking system,

so that many borrowers have to shift to the informal market to obtain their credit requirements. Because interest charges are fixed (and generally low) in the organized market, such borrowers face increased interest charges on their new debt. Interest rates in the kerb market, which are flexible, will therefore rise as the credit contraction in the formal market pushes more borrowers into the kerb market. Thus the effect of monetary contraction is to restrict the availability of credit in the organized market and to increase interest rates in the kerb market.

In some programs the fixed interest regime of the formal market (referred to as a "repression" of the money market in the literature) is dismantled, so that interest charges are allowed to settle at their market-clearing values. Thus, in addition to any decrease in credit availability in the formal market, borrowers may face increased interest charges in the market as well. How this affects the various borrowing units will clearly depend on their credit dependence and on which of the credit markets they rely on for their credit needs.<sup>34</sup>

**INFRASTRUCTURAL EFFECTS.** One of the interesting features of Bond's (1983) study is the relatively low long-run price responsiveness of total agricultural output in Africa, which is in contrast to evidence from elsewhere in the developing world (see Binswanger 1989, Table 2). An explanation of why this is so must lie in what has been happening to the infrastructure of the region. In addition to markets, the meso economy involves the infrastructure, and to obtain a complete picture of the real-economy effects of adjustment, it is important to take into account how these infrastructural elements have been affected. The evidence that is available suggests that agricultural output is particularly sensitive to both economic and social infrastructure (Binswanger 1989, Lele 1986, World Bank 1989d, Moock 1986, Jamison and Moock 1984). This may be particularly true of the physical infrastructure in Africa, given the already large transport margins that usually apply.

If the expenditure cuts applied as part of an adjustment program adversely affect the provision of economic and social infrastructural services, there may well be a weak or nonexistent response to the relative price signals the same program is communicating. These questions, along with issues relating to *institutional* changes

at the meso level (for example, in the operation of marketing institutions), can only be addressed properly at the empirical (country) level. Our purpose here is to highlight their significance and to ensure that they are given proper consideration.

In assessing the impact of adjustment programs on infrastructure, care must again be taken to make the correct comparisons with the pre-adjustment period of economic decline. Chapter 2 has shown that with the compression of imports and the decline in public resources caused by poor economic performance, the effective delivery of economic and social services has almost always fallen sharply prior to the adoption of a comprehensive donor-supported adjustment program. If governments fail to adjust comprehensively, or they pursue adjustment insufficiently, the economy's ability to generate sufficient tax revenues to finance infrastructural expenditures will remain weak. Without such revenues (and in the absence of external financial support), governments are forced to cut social and economic infrastructural budgets, whether they want to or not. Failure to adjust, or insufficient adjustment, reduces the government's room for maneuver in its budget decisions. In such situations maintaining infrastructure by increasing taxation is not a sustainable solution, since without sufficient adjustment the taxable economic base continues its decline.

If reductions are made in social budgets, special attention must be paid to the preadjustment incidence of such expenditures and the changes in that incidence under adjustment. There are serious inequalities in access to public health and education services in many African countries. Reductions in such social expenditures, if they occur without major changes in the incidence of the service, will disproportionately affect the size of benefit received by better-off households who are the main consumers of such services. Nevertheless, while these households may suffer larger cuts in such services than poorer households, the latter may be more critically affected, because even a small reduction could have a critical effect on their health status and human capital. Furthermore, the application of reductions in health budgets could be skewed toward cutting services mainly used by the poor. This is an empirical matter that can only be resolved through the careful examination of trends in social expenditures and their composition. Greater benefits to

the poor from public health and education services can still be achieved despite reductions in total expenditures.

#### *Effects of liberalization*

Given the prevalence of import controls during the preadjustment phase, there is an obvious opportunity for many African governments to remove these controls and liberalize product markets. Trade reforms are currently under implementation in many structural adjustment programs in Sub-Saharan Africa. As Table 3.1 indicated, trade policy conditionality was present in over three-quarters of adjustment loans to Sub-Saharan African countries (and import policy in particular has been a feature of many programs — World Bank 1988a, pp. 54-56). The principal objective of these reforms is to adjust the domestic relative prices of tradable goods into line with world relative prices. Thus, if governments had been relying on import controls, tariffs or export taxes and subsidies, domestic relative prices tended to deviate from world prices, causing a policy-induced distortion in resource allocation. Generally, import controls and tariffs create systematic biases against the export sectors and against unprotected import-competing sectors. This is because the imposition of these controls leads to an appreciation in the real exchange rate.<sup>35</sup> To correct for these biases, structural adjustment frequently involves the dismantling of import restrictions. This can take the form of replacing tariffs for import controls and reducing the level and spread of tariff rates. The net effect is to shift the domestic relative price in favor of exportables and and/or unprotected importables and to lead to resource reallocations accordingly.

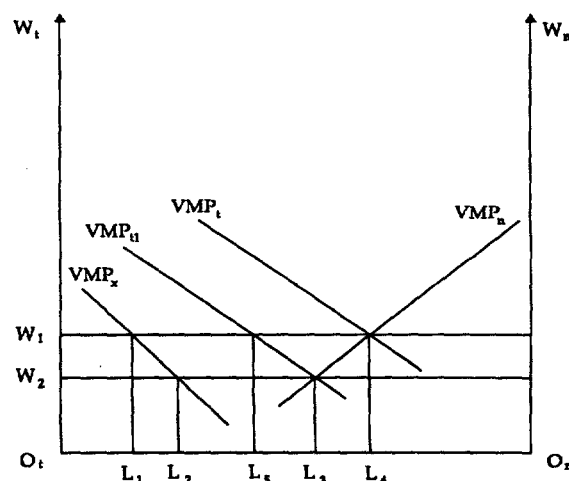
**PRODUCT MARKET EFFECTS.** The mesoeconomic effects of trade liberalization can be readily analyzed using the Dornbusch-Collier model outlined earlier. In this case,  $P_x/P_m$  is raised through a discretionary policy that reduces  $P_m$ . This will result in a decline in  $P_n$ , assuming that nontradables and importables are gross substitutes and that  $P_n$  is sufficiently flexible. Referring back to Figure 2.3, assume that the economy is in equilibrium at  $F$  (with the equilibrium loci being  $N^{**}N^{**}$  and  $L^{**}L^{**}$ ). A trade liberalization would take the economy to a point such as  $D$ , thus creating excess supplies of both money and nontradables.  $P_n$  would therefore fall to clear the nontradables

market. These relative price changes (increases in  $P_x/P_m$  and  $P_x/P_n$ ) will lead to predictable resource reallocations toward exportables and out of both importables and nontradables. At the same time, these resource flows will affect the factor markets, only now there will be a tendency for the real wage to rise and the rental rate to fall, as long as the factor intensity assumptions we made earlier are maintained (Edwards 1988a).

**LABOR MARKET EFFECTS.** As with other structural adjustment policies, trade liberalization will have predictable effects on the labor market, and these can be demonstrated using a slightly modified version of Figure 3.2.<sup>36</sup> To trace the labor market effects of liberalization, we must distinguish exportables from importables. The demands for labor in exportables and importables are summed horizontally from the left in Figure 3.5, with  $VMP_x$  indicating labor demand in exportables and  $VMP_i$  total labor demand in the tradables sector (note that demand for labor in importables is the horizontal distance between the two curves). As before,  $VMP_n$  indicates labor demand in nontradables. Assume initially that the wage is fully flexible, but that  $P_n$  is inflexible downward (we shall review both assumptions presently).

The reduction of tariffs and/or controls will reduce the price of importables, resulting in a downward shift in  $VMP_i$  (with  $VMP_x$  constant). Assuming no change in  $P_n$  (so that  $VMP_n$  is unchanged), this will lead to a short-run decline in the wage (from  $W_1$  to  $W_2$ ). The effect of this on the real consumption wage is again ambiguous, depending on workers' consumption propensities. The real wage in terms of exportables and

Figure 3.5



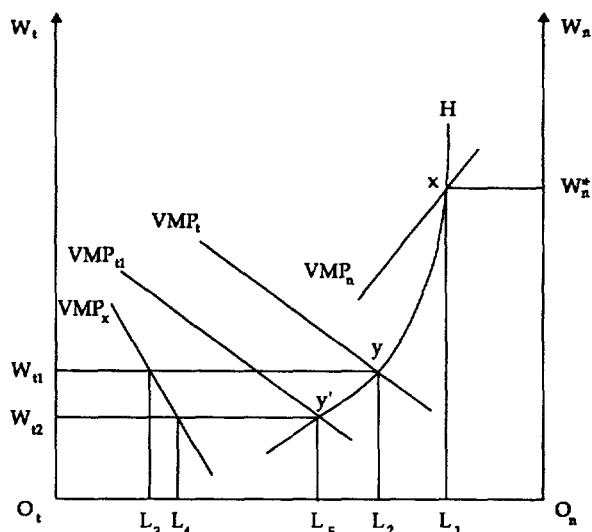
nontradables will certainly decline, but it will rise in terms of importables (the fall in the wage being less than the decline in  $P_m$ ). Trade liberalization will therefore cause labor transfers out of importables and into exportables (where employment rises by  $L_1L_2$ ) and nontradables (employment increasing by  $L_3L_4$ ). The implications for income distribution and poverty are likely to be favorable — it is more likely that workers in the favored sector (exportables) will be low-paid and unskilled compared with those in importables.

If it is assumed that  $P_n$  is flexible downward then we know that with nontradables and importables, gross substitutes,  $P_n$  will fall, thus shifting  $VMP_n$  downward. The qualitative results just described (that is, labor transfers out of importables into exportables and nontradables and an ambiguous change in the real consumption wage) hold even when  $P_n$  declines, as long as the three goods are gross substitutes in consumption and production and that the income effect never exceeds the substitution effect (Edwards 1988a, p. 173).

But suppose that the wage is inflexible downward and remains at  $W_1$  following the liberalization. This would create unemployment, equal to  $L_5L_4$ , and there would be no labor transfers into exportables and nontradables. Obviously, over time, as capital moves out of importables into the X and N sectors, the labor demand curves will shift, thus restoring a long-run equilibrium and full employment. But until that happens, wage inflexibility has meant that liberalization results in labor unemployment. This result prompted Edwards (1988a, p. 178) to observe that “this possible short-run unemployment effect might call for a second-best argument in favor of a gradual reduction in tariffs,” the pace being dictated by the speed of capital transfers across the sectors. There are also arguments that suggest that if the pace of liberalization is too slow, the capital market may not pick up the signals (Mussa 1986). This suggests that there is an optimal pace of liberalization that would minimize the short-run unemployment costs.

Now consider the case of partial wage inflexibility, with the nontradables sector hiring labor in the formal (fix-wage) labor market. Assume a fixed wage of  $W_n^*$  in the sector, restricting employment to  $O_nL_1$  (Figure 3.6). The initial equilibrium is at  $y$ , with  $O_nL_3$  workers in exportables,  $L_3L_2$  in importables, and  $L_2L_1$  unemployed (while searching for protected jobs in nontradables). The decline in  $P_m$  following import liberalization shifts

Figure 3.6



$VMP_i$  to  $VMP_{i1}$ , which induces a fall in the free market wage (to  $W_{i2}$ ). This causes an increase in employment in exportables (to  $O_nL_4$ ) and a decrease in importables employment (to  $L_4L_5$ ). With no change in nontradables employment (we assume for simplicity that  $P_n$  is fixed), search unemployment rises. While the real consumption wage in the fixed wage (nontradables) sector is certain to increase ( $W_n$ ,  $P_x$  and  $P_n$  are unchanged and  $P_m$  has fallen), the real consumption wage effect is ambiguous elsewhere. Note that liberalization leads to a conflict of interest among working people — those in the protected sector gain, while other workers may lose (or certainly do not gain as much).

#### An alternative framework: adjustment with unemployment

The theoretical interpretation of adjustment used above views the process as a movement along the production frontier, with resource transfers between sectors as the main equilibrating mechanism. This assumes that there is sufficient wage and price flexibility to ensure that the economy remains at full employment and that there are no “structural” rigidities that prevent the smooth flow of resources between the sectors. Once we allow for the price and other rigidities, the orthodox model becomes less convincing, since switching effects may no longer be reliable. The main equilibrating mechanisms of the “structuralist” school are changes in aggre-

gate output and in income distribution (Taylor 1983, 1988). It is not our intention here to review the range of these models, but rather to focus on the Keynesian model, which involves adjustments in output. To avoid cluttering the mind, our preference is to remain within the dependent economy class of models, in which the fundamental distinction between tradables and nontradables is retained.<sup>37</sup> Dixit (1978), Cuddington (1980, 1981), Cuddington et al. (1984), and Neary (1980) have applied the disequilibrium framework of Barro and Grossman (1971) to the dependent economy case.

In the short-run version of the basic model, three markets are analyzed—two product markets (tradables and nontradables) and the labor market. Given the small country assumption, producers and consumers of tradables do not face any quantity constraints in their product market because they can sell or buy as much as they wish in the world market at the given price. Although (under fixed exchange rates) the domestic price of tradables is fixed, no quantity rations are imposed in the tradables market.

Two main price inflexibilities are introduced into this framework —  $P_n$  and the money wage will be assumed to be fixed, so that market clearing can no longer be guaranteed. Because nontradables are by definition only produced and consumed domestically, the fixed price ( $P_n$ ) will lead to either buyers or sellers being rationed at the short end of the market. Moreover, rationing in one market will lead to further rationing in other markets, so that the firms who are unable to sell what they wish in the  $N$ -product market will reduce their labor demand accordingly. In the labor market, therefore, demand will be below its notional level simply because of a ration in the product market. Similarly, if the wage is set too high, an excess supply of labor would ration households seeking to sell their labor services. They would only be able to sell what the firms are willing to hire. Thus, actual employment would be determined by the demand for labor, and unemployment would persist.

The central proposition of these models is that the failure of any market to clear will spill over into other markets. Thus, if there is excess supply in the labor market, households constrained in the amount of labor they wish to sell will reduce their demands for commodities, thus affecting product markets. In the same way, firms constrained in a product market (because of excess

supply in the market) will be obliged to reduce output and employment. The effective demand for labor will therefore be constrained by the rationing of firms in the product market. The net effect of such rationing in labor and nontraded product markets might be a continuing "disequilibrium" in which unemployment persists. Given the constraint faced by households in selling labor services, their effective demands for nontradables will be lowered. Faced with this low level of effective demand, firms would be obliged to reduce output. This level of output would then lead to a constrained demand for labor, limiting household incomes and demands, and so on. The economy would finally settle at a point where the *effective* demands and supplies in the two markets (labor and nontradables) are equal. But this temporary equilibrium is consistent with the persistence of nonzero excess *notional* demands in any of the two markets.

Assume that both  $P_n$  and  $W$  are set above their market-clearing levels, so that excess supply pervades both markets, and Keynesian unemployment is said to exist. What are the effects of adjustment under such rationed regimes? It should be remembered that with unemployment in the economy, adjustment need not require a reduction in aggregate absorption to reduce the trade deficit. In principle, this can be achieved through devaluation alone, since the slack in the economy creates room for tradable output to expand and to correct the external deficit. Before considering the meso effects of devaluation, however, we shall trace briefly the effects of a policy of expenditure reduction.

### *Fiscal policy*

Since the levels of tradables output ( $Y_t$ ) and employment ( $L_t$ ) are determined by the firms' profit-maximizing behavior, aggregate demand management policies will have no effect on the sector. This applies even if the government reduces spending on tradables — firms will simply direct more of their output to foreign demand. The same is not true, however, for nontradables. Decreased government expenditure on nontradables (as part of a fiscal and monetary contraction) will reduce output in the sector according to the familiar multiplier process,

$$dY_n/dG_n = 1/[1 - (dD_n/dY)P_n] > 0$$

where  $G$  is government spending,  $D$  the level of demand, and the denominator equals one minus the marginal propensity to spend on nontraded goods. A general fiscal contraction — involving, for example, a decline in government spending on both tradables and nontradables — will have unambiguously beneficial effects on the trade balance. The reduced spending on tradables will reduce imports of tradables dollar-for-dollar. The decline in spending on nontradables will reduce private sector demand for imports because of the decline in employment and incomes generated by the nontradables sector.

The effects, then, of fiscal contraction under the assumptions of this fix-price, Keynesian two-sector model are as follows: the trade balance will improve and incomes and employment in tradables will remain unchanged; although the real consumption wage in nontradables remains constant, the level of employment falls. General fiscal contraction will not typically lead to an across-the-board decline in incomes. It will leave some incomes largely unaffected but reduce the incomes of others drastically. When it comes to the poverty effects of expenditure reduction, therefore, it is critical whether the poor are engaged in sectors that are sensitive to reductions in aggregate demand.

#### *Devaluation*

Devaluation will lower the product wage in the tradables sector and therefore increase  $Y_t$  unambiguously. This has a directly beneficial effect on the trade imbalance ( $Y_t - D_t$ ). But the increased incomes generated (through increased employment and enhanced profits in the tradables sector) will raise the levels of demand  $D_t$  and  $D_n$ . The increase in  $D_t$  will have an adverse effect on the trade imbalance, while the change in  $D_n$  will stimulate the production of nontradables.

Two important differences from the basic model therefore emerge in the case of Keynesian unemployment. First, a devaluation will not necessarily improve the balance of trade; the net effect will depend on the relative magnitude of the different price and income effects. Second, the increase in  $Y_t$  is not at the expense of  $Y_n$ , as in the full employment model. Under Keynesian unemployment, both  $Y_t$  and  $Y_n$  increase as a result of a devaluation; this is made possible by a reduction in the level of unemployment.<sup>38</sup> The neat theoretical reasoning employed in the full em-

ployment model to trace the primary distributive effects of devaluation no longer applies. With output in both sectors increasing, and with unemployment falling, the net effect on incomes is quite different.

As  $W$  and  $P_n$  are fixed (by assumption) and  $P_t$  is raised through the devaluation, the real consumption wage certainly declines. This induces the increase in employment in both  $T$  and  $N$  sectors. So in contrast to the orthodox equilibrium model above, the real-wage effect is unambiguously adverse in the presence of unemployment. The net effect on labor's real-income share, therefore, will depend on the relation between the cut in the real consumption wage and the increase in employment. This, in turn, depends on the real-wage elasticity of demand for labor. Even if it were shown that labor's share falls as a result of devaluation (with an increase in employment insufficient to counteract the effect of the real-wage decline), there can be no presumption that poverty has increased.

The beneficial employment effect predicted by this simple Keynesian model of adjustment arises from the demonstration that a devaluation is expansionary — it raises the level of aggregate economic activity by raising demand for tradable and nontradable goods. Nevertheless, there are reasons to suppose that this may not always be true, that a devaluation may turn out to be contractionary. If devaluation shifts income distribution toward high savers, if imported intermediate inputs figure prominently in production costs, and if the general price rise following a devaluation reduces real money balances sufficiently, aggregate demand may decline. If this is the case, devaluation offers very little for the working population — a decline in real consumption wages and an increase in unemployment.

This is clearly an empirical matter, but there are specific reasons for anticipating expansionary effects in Africa. This is because of the adverse output effects of the extreme shortage of foreign exchange in the pre-devaluation period, during which the exchange rate is misaligned. Purchasers find themselves severely rationed in the foreign exchange markets, which leads to rationed supplies of imported goods. If intermediate inputs are unavailable, there are adverse direct effects on output. But when imported consumer goods become rationed (or simply unavailable), there can be adverse indirect effects on output, because

producers are denied access to "incentive" goods (Bevan et al. 1987). As devaluation removes this rationing in the foreign exchange market, it restores the needed supplies of intermediate and "incentive" consumer goods, facilitating an increase in output. As Taylor (1988, p. 29) puts it, "a scenario along these lines helps explain part of the success of recent forex-intensive Bank/Fund programmes in Sub-Saharan Africa."

#### *Other supply and institutional rigidities*

The Keynesian model we have just considered embraces two sources of rigidity — fixed  $P_n$  and  $W$ . The result is that policies have their effects mainly through quantity adjustments. Once relative prices change in the model (for example, a depreciation in the real exchange rate), output is assumed to respond smoothly. In some respects, therefore, the Keynesian model does not go far enough in dealing with two distinctive characteristics of many African countries that influence this story — the slow supply response to relative price signals and the institutional rigidities that can influence the mesoeconomic outcomes of policy intervention.

Rigidities that typically occur in African countries arise from three broad categories:

- price rigidities, which are the result of public sector interventions in markets that lead to the emergence of parallel markets alongside official markets; to deal with such structural characteristics, a fix-flex-price model (after Taylor 1983) would be appropriate
- institutional rigidities, which go beyond the role that parastatal organizations play in the markets; these would include the prevalence of the household enterprise, in which production and consumption decisions are closely related (this is discussed in further detail below); as an illustration of this, the behavior of risk-averse smallholders might be quite different from "orthodox" enterprises if they retreat into subsistence production
- physical rigidities, which constrain supply and the capacity of smallholders to respond to market signals; we have already mentioned the importance of infrastructure in this context — if enterprises are not well served by economic infrastructure (especially physical infrastructure), their capacity to raise output may be severely limited.

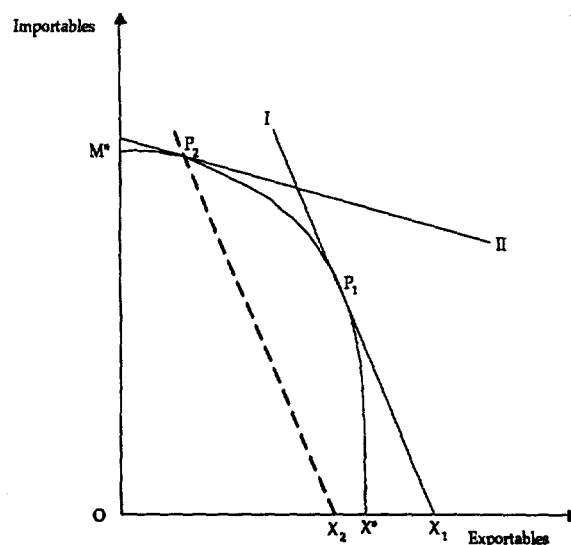
#### **The growth factor**

In this section we develop our story further by examining more closely aspects of recent adjustment experiences in Africa. We shall highlight some important features that arise from the predominance of import compression in many African countries.

An import-compressed economy is characterized by poor output performance, high inflation, and extensive shortages. It must be emphasized that the preadjustment situation in the majority of African countries is almost never characterized by satisfactory growth in output or employment. The overall picture is not one of fast-growing economies going into recession because of a balance of payments and financial crisis and the application of stabilization measures. Donor-supported programs with their associated finance can raise total output, even in their early stages.

Aside from attracting increased bilateral and multilateral aid, policy reforms will increase the confidence of commercial lenders. The injection of foreign exchange from both concessional and commercial sources will raise capacity utilization where imports of intermediate inputs have previously been compressed. The distribution of this extra foreign exchange will vary depending on the sectoral priorities of the adjustment program, and the recovery in capacity utilization will be uneven across sectors. In most donor-supported programs agriculture and its supporting infrastructure, as well as factories producing agricultural inputs, are given priority. With the begin-

Figure 3.7



In their early stages donor-supported programs also begin to reform inappropriate policies that have caused the misallocation of resources — reducing the gap between domestic and world prices for export crops is one example. Figure 3 illustrates the case where domestic relative prices are set to discriminate against exportables. Assume that the world relative price is given by the price line  $I$ , while the imposition of import controls (or tariffs) shifts the domestic price to  $II$ . Domestic output is at  $P_2$ , so that exportables output valued at world prices is  $OX_2$ . Removing these distortions shifts the economy to  $P_1$ , and there is an unambiguous gain in the output of exportables to  $OX_1$  valued in world prices (Kanbur 1987c). This gain will contribute to the increase in total output in the early stages of the program. If this growth process is achieved during the first years of the program, some of the social costs can be reduced. Our earlier discussion presented a rather static picture of the adjustment process and did not fully capture the dynamics of an economy recovering from import compression, because attention was directed to the movement around

Figure 3.8 introduces the growth effect. Again assume that preadjustment expenditure is at  $y$  while the production point is  $x$  on  $N^*T^*$ , thus yielding a trade deficit of  $xy$ . The real exchange rate  $P_w/P_x$  is given by  $AA'$ . Our previous analysis showed that a program of demand deflation plus devaluation depreciates the real exchange rate to  $BB'$  giving a new production point  $z$  and the elimination of the trade deficit. The output of nontradables falls to  $N_2$  while that of tradables rises to  $T_2$ . If at  $N^*T^*$  productive capacity is underutilized,<sup>40</sup> an injection of foreign exchange, plus an improvement in resource allocation through the removal of distortions, would move the production frontier to  $N^{**}T^{**}$  in the short term — say the first year. Policymakers could then include this supply expansion in their calculations and would accordingly need only to cut absorption to  $OC$  rather than  $OB$  in the case of no output growth. Similarly, the size of the nominal devaluation will be less. This adjustment package would yield a real exchange rate depreciation of  $CC'$  (which is less than the depreciation to  $BB'$  under no growth), and the new production point would be at  $v$ . Now compare the preadjustment output configuration at  $x$  with the post-adjustment configuration at  $v$ . Total output is higher at  $v$  (since the economy is now on  $N^{**}T^{**}$ ), and the output of both tradables and nontradables is higher, although because nontradables have increased by less than the rise in tradables, the *share* of nontradables in national output has fallen. The deficit has been eliminated and the structure of output shifted to tradables. We do not suggest that these movements will be smooth, because only some of the rise in tradable output can come from the restoration of capacity utilization. The issue of transitional unemployment raised in the previous section still applies.

- the impact of adjustment on households receiving incomes from nontradable activities will be less than in the no-growth situation because there need now be no absolute fall in the output of nontradables; but, overall, income distribution will still shift toward tradable producers and away from nontradable producers



- transitional unemployment will be less than in the no-growth situation, because sellers of labor will find a better market with the economy growing

- because the real exchange rate depreciation is less under the growth scenario, the "knock-on" effect into higher nominal prices will be smaller than in the no-growth situation — so households hit by the rise in nominal prices due to the increase in  $P_i$  will suffer less of an effect

- because the required cut in absorption is less under the growth scenario, the government will have more leeway to protect social expenditures; social services are nontradables and a degree of expansion in their facilities may be possible since some growth in nontradable output is viable under tradable-led growth.

It must be emphasized that these benefits only occur because the growth process engendered by the adjustment package and donor support is based on tradables taking a larger share of (growing) output. In Chapter 2 we saw that the growth process based on a rising share of nontradables associated with macro destabilization was not sustainable. Under the present scenario, tradable-based growth is sustainable because of the accompanying policy shifts and finance. The growth in output engendered by the foreign exchange injection and the restoration of capacity utilization is a one-off effect — full capacity utilization can be recovered, but further large increases in output will not occur until new investments make their effects felt. Similarly, policy distortions against

exportables can only be removed once, so the initial increase in output that their removal creates is also a one-time gain (although it may take several years for the effect on output to be completely realized).

These reforms do, however, provide a policy environment that is conducive to productive investment, so in that regard their effects are lasting; in the second phase of the adjustment process, planners will begin to engage in further policy reforms, particularly major trade and financial liberalization. But the stock of policy reforms that can be undertaken will gradually diminish (provided the adjustment program stays on course). Consequently, while some growth — perhaps sizable — can be achieved in the early stages of the adjustment program when starting out from a base of capacity underutilization, sustained growth over the medium to long term depends on the magnitude of the new investments made and their rates of return. The evidence reviewed above, however, would throw some doubt on the growth and investment performance of many African countries undertaking structural adjustment. Why many of the countries reviewed in the World Bank studies that were mentioned exhibited such poor growth performance indicators is beyond the scope of this paper. It must be pointed out, however, that most countries implementing structural adjustment programs in Africa have been faced with multiple shocks, which makes growth an increasingly difficult policy objective to attain.

# 4

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## *The determinants of welfare*

Having established in principle the main mesoeconomic effects of adjustment, we must now turn to consider the micro economy — that is, the households at the center of the social dimensions. Before developing a choice-theoretic model of household behavior, we shall begin with a much broader perspective. Our purpose here is to establish the most fundamental relationships in the determination of individual and household welfare. We proceed in stages, beginning with a careful examination of the *individual*, and moving on to consider *household* and then *intra-household* and *inter-household* interactions and activities.

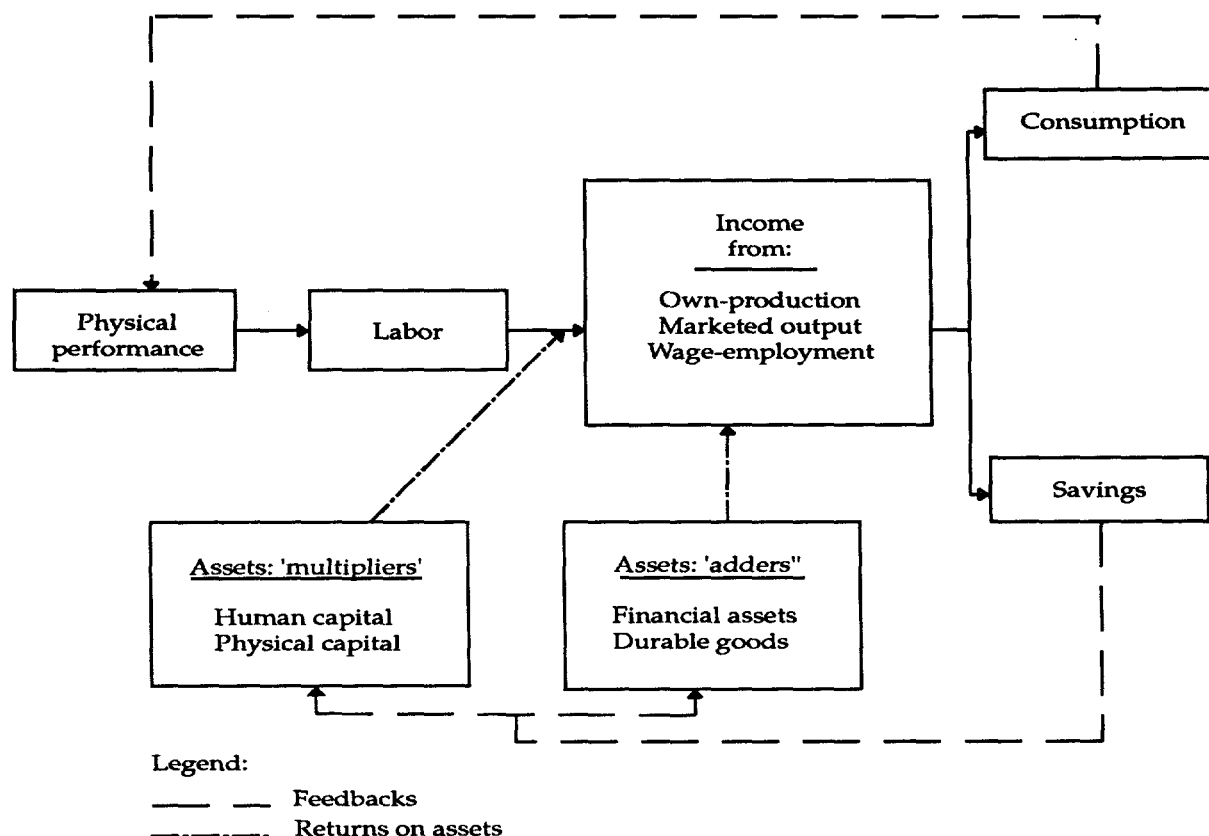
### **Individual welfare**

The “well-being” or “welfare” of individuals in African societies is the outcome of complex economic and social processes. In this section we examine the relationships among physical performance, labor input, income generation, and the consumption-investment decision. Our discussion is based on Figure 4.1, which sets out the main links between these variables in the form of a flow diagram and describes a single individual who is able-bodied and working. We start with her physical performance, which determines the amount of work she is capable of undertaking in any given period. Ignoring for the moment the role of assets, we can see from Figure 4.1 that she obtains an income, which may be in the form of wages or receipts from the sale of goods and services. An income can also be “imputed” for

the value of the goods that she produces for her own consumption. In the next stage, goods and services are purchased for consumption, and some income is saved for investment.

These consumption and investment decisions, in turn, feed back into her physical performance. The first feedback (indicated by the broken line in Figure 4.1) is that between consumption and physical performance. She needs goods and services for their “material characteristics” — for example the calories, proteins, and the like of food; the warmth of clothing, and so forth. These elements, in combination with the personal characteristics of the individual (for example, her metabolism), determine her physical performance. That performance, or “functioning,” (Sen 1987) has many dimensions. Most obviously the level of nutrition is critical in determining physical performance, although there is much debate over the exact relationship between, for instance, calorie intake and human energy (see Pacey and Payne 1985, chapter 3). The ability to purchase health services is also crucial. The interactions among consumption, nutrition, health, and work performance are likely to be critical, because there may be significant productivity gains from improving the well-being of the poor. Thus “poverty alleviation” may serve to further the aims of the structural adjustment program itself, and expenditures that raise the nutritional levels of sections of the population should be considered as investments that will yield favorable productivity outcomes in the future. For much of rural Africa it is likely that the distinction between

Figure 4.1 The determination of an individual's welfare



"consumption" and "investment interventions" will be blurred. These relationships are certain to be complex. For example, not all consumption expenditures will improve nutrition, so that increases in income and consumption will not necessarily improve nutrition. This will obviously depend on how consumption is allocated among alternative food and nonfood goods.

The second feedback — between savings and the process of income generation — is shown in the bottom half of Figure 4.1. Savings are used to acquire assets. Personal savings are among the principal determinants of asset acquisition in most low-income countries. Formal credit markets are thin, and access is generally confined to higher-income — often urban — groups. Poorer people must resort to informal credit markets, including borrowing from their kin. Consequently, asset acquisition through borrowing is not shown in Figure 4.1, in order to focus on the savings-investment decision.

Assets can be classified into four kinds: human capital, physical capital (which can include physical infrastructure services), durable goods (for example, a house), and financial assets. These

yield incomes but they do so in different ways. Human and physical capital increase the productivity of the worker. In this way they multiply the return that would be generated by labor alone. Returns are usually ascribed to human and real producer assets (their marginal products) and valued independent of labor. But actually these returns cannot in most cases arise independently of labor, while labor can still generate a return independent of access to many assets. We therefore follow Lipton (1985, p. 1) in describing human and real producer assets as "multipliers" of labor productivity. Financial assets such as savings accounts, as well as stocks and bonds, also yield incomes in the form of interest and capital gains. Some durable goods, such as housing, yield rent incomes. Owner-occupied housing is a major source of unearned income in developing countries, and rents must be imputed (see Grootaert 1982a, p. 19). Lipton terms such additions to the income generated by work as "adders."

Figure 4.1 shows the returns to these different types of assets. Of course the distinction between income-adding and income-multiplying assets is

not watertight. Durable goods can also be said to play some role in multiplying labor productivity — for example, work efficiency will eventually fall if someone is homeless. Owners of physical assets may choose to rent them to others rather than use them directly. In such cases the owner adds the rent to her income stream while the borrower uses the asset as a productive input. It is therefore the *relative* importance that a particular asset plays in either directly adding to income or multiplying labor productivity that is the determinant of our two-fold classification. As we noted above, economic and social infrastructure are important elements of the meso economy; they transmit the effects of macroeconomic policies to individuals.

Although our exposition of Figure 4.1 has proceeded in linear fashion from the individual's performance to consumption and savings, we can see that, with the addition of the feedbacks, a person's physical performance exists within a system, and both determines and is determined by the system. Obviously we have presented a stylized picture of the individual's circumstances to capture some of the most basic elements of her economic life. But of course the individual's welfare is not just determined by her own actions and resources. Most people take part in *social units* (or networks) in which decisions about production and consumption are made, and which act as conduits for the transfer of resources between individuals. Such participation can enhance (or diminish) the welfare outcomes for the individual. It is to these interactions that we now turn.

### The economy of the household

People are usually located in several overlapping social networks at the same time. The nuclear and extended families are obviously two such social units. The household is another. A number of criteria can be used to define the household. Those commonly employed include: members have a common source of major income; they share a common source of food; and they sleep under the same roof or within the same compound (Casley and Lury 1987 p. 163). But the criteria used to identify households must be relevant to the local situation, since their size and characteristics show wide variations by principal occupation, locality, and country. The household may consist of a single family, but in Africa they commonly comprise several families, kin, and even persons with no kin relationship. It

is possible for families to be spread among several households, either temporarily or permanently. For example, a married woman while young may continue to live in her father's household, while her husband lives under a separate roof.

The household is an important social unit because within it many of the decisions concerning individual members' activities and their consumption (and thus their welfare) are made and its physical properties — that it is a collection of individuals with an identifiable location — makes it a useful *sample unit* in survey work. It must be emphasized, however, that households are embedded in wider social networks, their lineage group for example, whose actions partly determine their members' welfare. Given the importance of the household as a decisionmaking unit, we need a conceptual framework to analyze its decisions over the allocation of resources. Two key issues are raised in the analysis of the household. The first is the role of the household as both the producing and consuming institutional unit. Whereas in much of orthodox economic theory the firm is assumed to be the producing unit and the household the consuming unit, quite different institutional arrangements must be assumed for developing countries. This is especially the case in Africa given the predominance of agricultural activities in total employment and the limited share of formal employment in most countries.

The second issue that has to be addressed concerns how household decisions are made — are they reached collectively or does one individual or group dominate the process? A related issue is whether we can correctly speak of a "household welfare function," since there may be conflicts of interest within the household. In theoretical work, individuals are aggregated into households on the assumption that they possess identical preferences based on identical tastes (Deaton and Muellbauer 1980). Household decisions are then analyzed in the same way as those of a single individual. Why people should group themselves in a household is usually analyzed as a secondary problem, but it is generally assumed that they make up a family. Sen (1983a) calls this arrangement the "glued-together family."<sup>4</sup> Alternatively a "despotic family" is one in which the head of the family takes all the decisions, so that family behavior is simply a reflection of the head's choice function. These are polar cases — in the former, members of the household are as-

sumed to share the same preferences; in the latter, the preferences of the household head alone are relevant.

Major problems exist, however, in using either the concept of the “glued-together” or the “despotic” family.<sup>42</sup> Preferences, particularly those that arise from age and sex differences, can differ widely among family members, so that they will allocate family resources in different ways. The eventual allocation of resources will differ, perhaps substantially, from that under “glued-together” or “despotic” families. These difficulties apply with equal force to the unit of the household because large numbers of people can be involved in decisions about its collective resources.<sup>43</sup> In such circumstances, assuming a single-household utility function is even less valid than making such an assumption for a single family unit.

To get around these difficulties, two approaches may be taken. In Becker’s (1981) model of the “super-trader family,” members are assumed to maximize their individual utilities without regard to social norms. They trade with each other at implicit prices, and this determines the allocation of resources and such important decisions as marriage. This model could be transferred to the larger unit of the household. Nevertheless, while these trades do occur within families, and more commonly in larger household units, we concur with Sen that to focus on such trades alone — and to assume that all the stringent conditions for market equilibrium are met despite the absence of actual prices — is an unsatisfactory starting point for analyzing intra-family and intra-household behavior.

A second approach is to assume that family and household relations contain both cooperative and conflicting elements, which can yield many different arrangements, depending on the bargaining strengths of the individuals involved (Sen 1983a, p. 375; Schultz 1989, p. 10-17). This approach does not deny that social norms play a large role in determining the “space” within which such bargaining takes place. For example, women have a lower social status than men in many countries and this limits their bargaining power. Taking a bargaining perspective of the household allows us to focus directly on the inequalities that can be present within that unit and to explain some important phenomena. For example, in certain situations we may observe an increase in household income (perhaps under adjustment) that does not yield an improvement

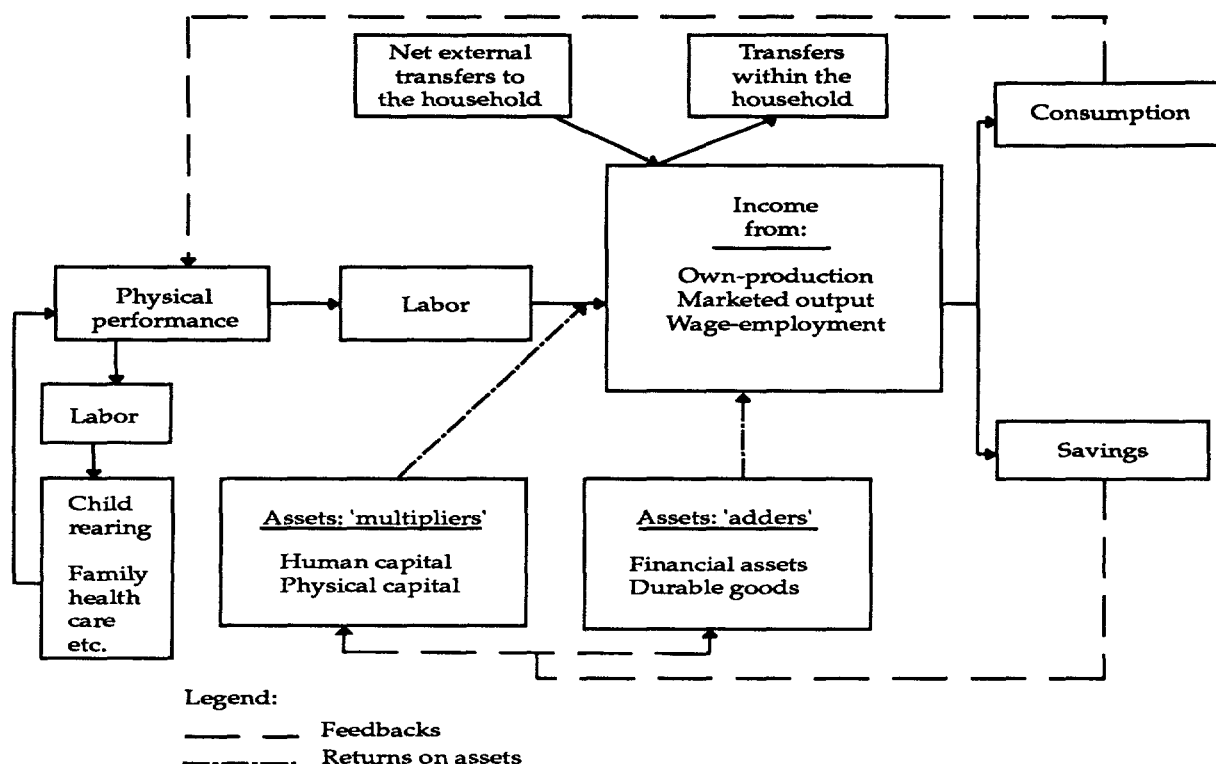
in the nutrition of all household members. This may be related to the respective positions of men and women in households.

Taking a disaggregated view of the household allows us to focus on *intra-household transfers* as important sources of individual welfare. Some individuals are effectively subsidized by “taxing” other household members. At the extreme ends of the life cycle — infancy and old age — those transfers may represent a person’s only access to resources. Furthermore, in any one period some household members will be less productive through ill-health or pregnancy. But not all transfers are made to safeguard the recipient’s minimum needs, and some individuals may command larger household “subsidies” through their bargaining power.

In Figure 4.2 (overleaf) we depict as a flow chart some of the components of the household economy. This is an elaboration of the single-person economy of Figure 4.1. The physical performance of those able to work determines their labor effort, which, together with the returns on the household’s assets, generates income (either in the form of wages or market sales; we impute a value for own-production). That income is effectively taxed to provide transfers within the household, and the remainder is distributed for the consumption of the workers and for savings. Such “household-taxation” may take different forms. For example, in households that are entirely self-provisioning, the harvest may be divided, with some of the working members getting less food than others depending on their “tax rate.” Alternatively wages and the income from sales of produce may be pooled and then redistributed or used to buy consumption goods that are shared, but not in proportion to the cash contributions of the household members. Not all income may be pooled — an individual may retain some or all of the income she earns, but nevertheless receive transfers from within the household.

A final and crucial dimension must be added to our household framework. Time and other household resources must be allocated to the bearing and rearing of children, to the provision of health services, to the education of household members (for example, in cultivation), and to the daily tasks of household maintenance such as cooking, cleaning, washing clothes, carrying water, firewood collection, and house building and repair.<sup>44</sup> As with the production of other goods and services, the sustained production of these

**Figure 4.2 The household economy**



items requires that the household's physical performance be adequately maintained. Therefore, in Figure 4.2 physical performance determines childrearing and the provision of household services, and these feed back into physical performance so that we effectively have a "closed loop" in that part of the flow diagram. The burden of these home tasks usually falls disproportionately on females, with often deleterious consequences for their welfare. We return to the "gender-division of labor" in the next section.

### Analyzing household behavior

Faced with a multiplicity of household decisions, we need a suitable framework for their analysis if policy effects are to be correctly understood. Within such a framework, different models of household decisionmaking can be analyzed consistently, and cause and effect can be assessed in a quantitative manner. The question therefore arises of what "choice-theoretic" framework is appropriate in the African context. Ideally, what is strictly required is a model of heterogeneous nonpooling household units in which individu-

als are to varying degrees responsible for production and income and expenditure decisions. At present, such a model does not exist, although there is a growing awareness of the need for an initiative in this direction (Fapohunda 1988). The conceptual presentation that follows therefore takes the glued-together (or despotic) household as its starting point.

Our previous discussion highlighted the dual role of the African household as both a unit of consumption and a unit of production. Not all households fulfill this dual role in Africa, but a majority of them do, and this creates special problems for predicting the consequences of policies. Within the majority of African households there is an interdependence between consumption and production decisions, so that decisions on output also directly affect consumption and labor supply, and vice versa. Changes in the parameters determining one aspect of household behavior also affect others. For example, a change in the market wage will not only affect a household's labor supply, but may also influence its labor demand (because the household is a producing unit). Moreover, the level of home

production will be affected (because the returns on such an activity relative to market work will change), together with the level and pattern of household consumption. A similar chain of interrelated effects could be specified for other policy shifts such as alterations in consumer and producer prices. All these effects must be identified if a comprehensive assessment is to be made of the welfare impact of policy changes.

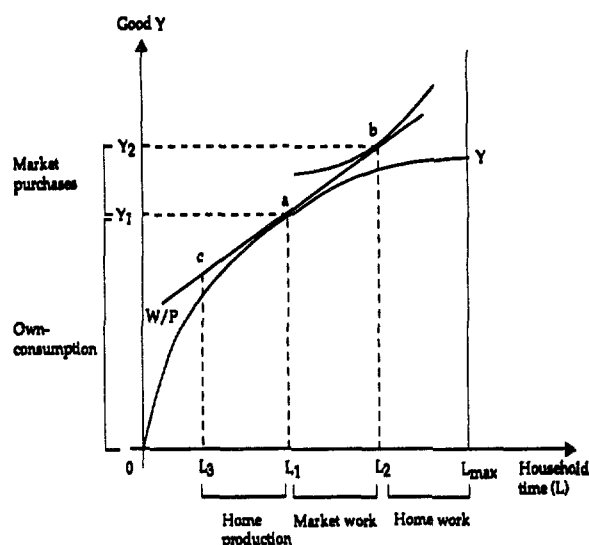
These different facets of the typical household are well recognized by the new class of models of agricultural households.<sup>45</sup> But the arguments apply with equal force to other household types, for example those in the urban informal sector. Much of the work in this area has been undertaken in the Asian context, a region that differs from Africa in several important respects, including relative factor scarcities and tenurial arrangements. But the studies of Africa undertaken thus far have already yielded important insights: for example, Low's (1986) analysis of food security in Southern Africa, Smith and Strauss' (1986) work on nutrition in Sierra Leone, and Braverman and Hammer's (1986) analysis of pricing policies in Senegal, to name a few. With these concerns in mind we proceed to outline a simple household model. The analysis is then extended to consider the distribution of welfare *within* the household. We should repeat the sentiment expressed above about the purpose of simplified or model representations of the real world: these should be an aid to our thinking on the issues, and not an intellectual straightjacket.

#### *A basic household model*

The model presented here is a simple version of the Barnum and Squire (1979) and Singh, Squire, and Strauss (1986a, 1986b) class of models. The basic model assumes that household utility is maximized subject to a production function, a time constraint, and an income constraint. The time of household members can be allocated to the household production of goods (for sale or their own consumption), to home work (concerned with household maintenance and reproduction), to (labor) market work, and to leisure. These models therefore take a "full income" (Becker 1965) approach.

Consider the simplest case in which the household has a single utility function (equivalent to the "despotic" or "glued-together" household, discussed earlier). Further assume that the

Figure 4.3



household can either produce or purchase a commodity — labeled  $Y$  on the vertical axis of Figure 4.3. The horizontal axis measures household time. The equilibrium of the household in *production* is given at point  $a$ , where  $W/P$  (which is the real wage) is tangent to the household production function ( $OY$ ).<sup>46</sup> The household produces  $Y_1$  units of output using  $L_1$  units of its time. The household's equilibrium in *consumption* is given at point  $b$ , where  $W/P$  is tangent to the household indifference curve. We see that the household is willing to devote  $L_2 - L_1$  units of its time to market work in order to obtain  $Y_2 - Y_1$  units of good  $Y$  through market purchases. The household has a maximum of  $L_{\max}$  units of time at its disposal, and so the remaining time,  $L_{\max} - L_2$ , is free for other activities. This segment could be labeled "leisure," but since the household has to produce nonpurchased goods and services ( $Z$  goods such as childcare, food preparation, and so forth), we label this segment "home work," although it will inevitably contain some pure leisure time as well.<sup>47</sup> In this simple model the household engages in three sets of decisions concerning:

- allocation of its members' time among the production of  $Y$ , market work, and home work (which produces  $Z$  goods)
- allocation of its *nonlabor factors of production* among these activities
- allocation of its *consumption* between market purchases of  $Y$  and home production of  $Y$ .

One important feature of this model is the decision by households to buy or sell labor services. In the situation described, the household is as-

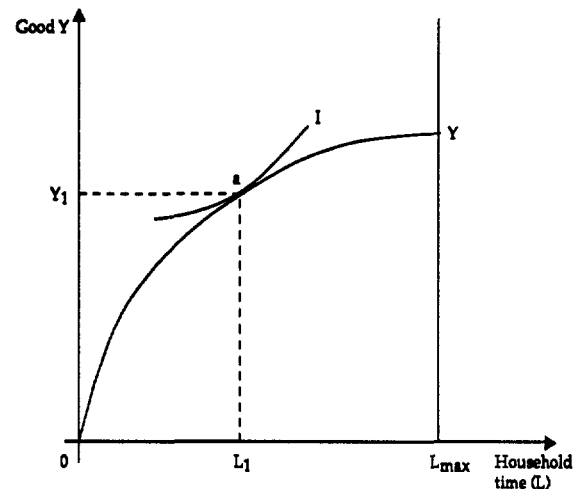
sumed to sell its labor services to finance consumption in excess of its own production. Alternatively, the household may be consuming at a point such as *c* (indicating a stronger preference for leisure), in which case it must be buying-in labor services. In this case, the production point remains at *a*, but the household is seen to hire in labor services ( $L_3 - L_1$ ) in producing its output, thus generating for itself more available time for leisure and home work ( $L_3 - L_{\max}$ ). It is immediately apparent that all these decisions will be revised if wages or prices change in the markets facing the household, an obvious key point for analyzing the welfare impact of adjustment.

#### *Analytical models in the African context*

One major determinant of model structures appropriate to Africa is the characteristics of the markets in which households engage. In the model presented above it is implicitly assumed that households engage in "complete markets" for goods and labor services, so that household decisions are made with reference to a set of exogenous prices.<sup>48</sup> Whether this condition is met or not has important implications for modeling the functioning of the household economy, since the structures of such models are dependent on the assumptions made concerning the markets that households face. The basic model described in Figure 4.3 depicts the main features of a class of models that has been developed for analyzing households that face complete goods and factor markets. These models are *recursive* in character. First the household sets its level of output by the maximization procedure that we described above. To do this it needs information on the price of output, the wage rate, and technological relationships (described by its production function) between inputs and outputs. In the structure of these models, the household's production decision is made *separately* from its consumption and labor supply decisions (Singh, Squire, and Strauss 1986b, p. 7). Consumption and labor supply decisions, however, are dependent on production decisions because the latter determine household profits, which are a component of income and therefore affect consumption and labor supply. The model is recursive in character because the production equations are solved first and the resulting solutions are fed into the household's consumption and labor supply equations.

When a complete labor market exists, the

Figure 4.4



valuation of the household's labor time is given by the market wage. A household that can neither sell nor hire labor will still value its labor time, but this will be done subjectively, and this valuation will accordingly vary across households. This situation is depicted in Figure 4.4. Again we have a household production function (*OY*), and household income equals its output because there is no opportunity for market work. The household can still sell its product or consume it entirely. The equilibrium point for this household is at point *a*, where the marginal rate of substitution of leisure for income (the "subjective wage") is equal to the marginal product of labor (Ellis 1988, p. 110). Since preferences, and thus the shape and position of indifference curves, differ across households, the marginal product of labor will vary.<sup>49</sup>

Similarly, the presence of a complete goods market allows the amount of output produced to be determined independently of the amount consumed since the household can always buy or sell the good at the market price. When neither factor markets nor goods markets exist, the household must make all its producer, consumer, and labor decisions *simultaneously* — it can only consume what it produces and use its own labor (Singh, Squire, Strauss 1986b, p. 6). Consequently, in models describing such households, the production solution cannot be made independently of the consumption solution (production is *nonseparable*): the model must be solved simultaneously rather than recursively.

Separability also breaks down when markets are absent for some important goods that may be



produced within the household. For example, if any of the commodities consumed or used as inputs into household health production are absent, then to attain the desired level of health production the household cannot rely on buying in the required amount of health inputs, and must divert labor resources away from home production activities to produce the nonmarketed commodities (Pitt and Rosenzweig 1986, p. 158). The production of marketed commodities thus becomes dependent on consumption (of health goods). This is an important point if household welfare is to be analyzed in all its dimensions.

In short, it is obvious that great care must be taken in the assumptions made about market completeness if analysis is to be appropriate to the African context. Aside from incomplete markets for labor services and goods (including health goods), the absence of markets to cover risks (insurance) and imperfect capital and land markets must be noted as a general feature of Africa. These issues apply with special force to the situations of small farmers, a key policy target group. Much market imperfection is related to low levels of infrastructural development, particularly transfer and communications, which aside from their vital role of distributing goods and services bring buyers and sellers together and establish the information flows that are the basis for all markets. Many of the services that provide the essential, but often overlooked, context for proper market functioning are "public goods," provided by government rather than private markets themselves (Stiglitz 1988, p. 98). The depletion of infrastructure, which is a common feature of many countries, has retarded the market participation of households. Participation has also fallen prior to current adjustment efforts because inappropriate policies have reduced the benefits of market participation and increased its costs.

Thus the context in which analysis is to be undertaken is changing, and analytical developments must be sensitive to this. In the first place, of course, the model underpinning any empirical work can no longer be recursive, so that production and consumption decisions must be simultaneously determined. The household may not have any access at all to labor markets, in which case earnings functions of the kind usually estimated in household models become irrelevant. If households have partial access to a market (for example, if casual work is offered only sporadically), some probability of such work needs to be

assessed in making judgements about the effect of changing market wages on the household. It would also be necessary to respecify any migration function that contains origin and destination income earning opportunities for such households, since their *perception* of these opportunities will be affected by their lack of complete market access. The returns to information gathering for such households are likely to be significantly higher than for those in constant communication with the market on a day-to-day basis.

### The distribution of welfare within households

The model presented in the previous section assumes that a single household utility function exists — in other words, the multiple-person household is analyzed in the same manner as a single-person household. Our previous discussion, however, emphasized the importance of different preferences among household members and differences in their circumstances caused by both social and economic factors. This, as we noted, applied with particular force to the gender division of household labor, especially in Africa. We therefore need to extend our household model to provide some insight into this.

#### *The gender division of labor*

Of special interest in the African context is the gender division of labor, which is frequently observed in rural farming communities and has been the subject of much recent research. In general, women tend to be relatively specialized in food crops rather than cash crops.<sup>50</sup> This division is particularly prominent in the forest areas of West and Central Africa: men provide 80 percent of the labor for commercial tree crops, but on average only 9 percent of the labor for the root food crops (Guyer 1986, p. 396). This specialization reflects that while women do some work in cash crop fields, their work on food crops, whether in jointly or separately worked fields, takes up most of their time.

In Figure 4.5 (overleaf), we drop the assumption that the household has a single utility function in order to consider a two-person household, consisting of a man and a woman, each with a specific utility function. In this model each person is responsible for producing a different good.<sup>51</sup> The left-hand vertical axis measures the quantity of good *Y*, which is produced by the man only,

while the quantity of good X, which is produced by the woman, is measured on the right-hand vertical axis (the output of both goods is measured in the same unit). This model can be taken to describe a farm household, but it could also apply to urban informal producers. The horizontal axis measures the time input of the man and the woman. We define a separate production function for both individuals (OX for the woman and OY for the man).

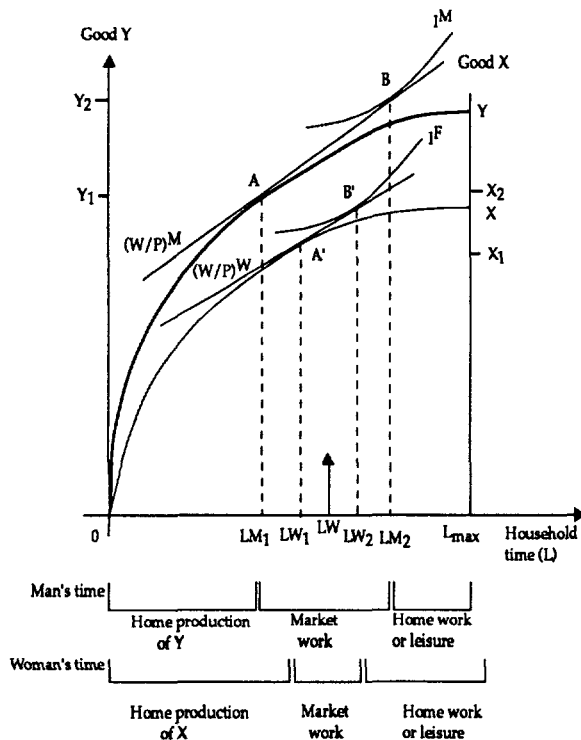
Given their relative productivities and the real wage that each can obtain in the labor market, the equilibrium of both persons in production and consumption are shown. The production equilibrium for the man is given by point A, while he consumes at point B. This gives him a time allocation of  $O - LM_1$  for the home production of Y,  $LM_2 - LM_1$  for market work, and  $L_{max} - LM_2$  for home work and leisure. The woman's production and consumption equilibriums are given A' and B' respectively. Her time allocation is  $O - LW_1$  for the home production of good X,  $LW_2 - LW_1$  for market work, and  $L_{max} - LW_2$  for homework and leisure. As shown, the woman would be responsible for more home work or could have more leisure than the man. Time-use studies in Africa (as well as for other developing regions) show much longer working hours for females than for

males (Birdsall and McGreevey 1983, p. 5), so it would be common for the man to take a high proportion of  $L_{max} - LM_2$  as leisure, with the woman taking most of  $L_{max} - LW_2$  time for home work; thus, in total the woman would work longer hours than the man.<sup>52</sup>

Figure 4.5 shows just one possible outcome among many for the division of labor by gender in the household. The time dispositions of the two sexes, their participation in market employment relative to self-employment, and their levels of output are determined by the relative prices they face, their preferences, and their respective production functions. As in the basic household model, adjustment can change all these outcomes by altering relative prices, production functions, and preferences. The net effects of adjustment now become more complicated, for the preferences, production functions, and applicable sets of relative prices facing men and women can change by different amounts and in different directions. Thus, when men and women face different sets of relative prices in goods and factor markets, adjustment can affect the gender division of labor within the household by changing the structure of those relative prices. Similarly, uneven changes in the production functions of men and women can arise from policy revisions. It is thus possible that the welfare outcomes of adjustment for men and women may vary by degree, and sometimes in direction. Intra-household transfers — which are not represented in the model of Figure 4.5 — may change in a compensating fashion, thus influencing the net outcome.

In the above model the gender division of labor is determined by the comparative advantages of the respective sexes; for example, males undertake more market work than females because their wage rate is higher (Gronau 1973). Social obligations and customs may predominate over individual preferences, however, especially for women, so that outcomes may not correspond to marginal utility principles in some (or many) cases (Ellis 1988, p. 181). This can affect all the segments of a woman's time disposition. For example, women may be precluded from engaging in certain household production activities by social customs backed up by community sanctions. Other "barriers to entry" may be more indirect, for example when women lack access to a factor of production important in a particular product line. These circumstances, rather than their comparative advantages, may dictate the respec-

Figure 4.5



tive specialization of men and women in the production of goods  $Y$  and  $X$  in the above example. Similar constraints can apply to women selling factor services, especially labor.

Women can be constrained in either home production or market work by the time involved in reproduction and household maintenance. Thus, in Figure 4.5 the women's time involved in home work may be constrained to amount  $L_{\max} - LW$ , which is greater than amount  $L_{\max} - LW_2$ , the period determined by her preferences and the applicable set of relative prices. Social custom may determine that males will undertake only a limited amount of home work (and of a particular type), so that male time has a low substitutability for female time in home work.

Socially determined constraints on the time allocation of women have two important effects. First, these constraints induce allocative inefficiency within the system. Thus, insofar as the labor resources of the household are not allocated in accordance with its members' respective comparative advantages, output, and thus household income, is lower than it would otherwise be. Such inefficiencies may be an important source of female poverty, as well as a contributor to the overall poverty of a household. Second, the low substitutability of male and female labor time in specific activities reduces the ability of women to reallocate their time in accordance with changes in market and nonmarket opportunities. This has important effects on the welfare outcomes of adjustment, again both for women individually and for the household unit.

We have listed the respective production functions, preferences, and applicable relative prices of male and female household members as subject to change under adjustment. We must now add a fourth item to this list: the social customs themselves, which determine (and are determined by) the social and economic status of men and women. These, too, can change under adjustment, since policy revisions, by altering the parameters under which household members control resources and allocate their time, alter the balance of household bargaining power. Programs of poverty alleviation implemented under adjustment will also have their effects on this balance. As the balance of household bargaining changes, so too may the wider social norms it underpins. Consequently we must not paint too static a picture of the respective constraints affecting men and women; adjustment can cause complex shifts in the structure of such bargaining.

### *Mean household income as an indicator of welfare*

To what extent does knowledge of a household's mean income give us a reliable indicator of its members' welfare? Consider again the example of a two-person household in which the man farms an export crop and the woman separately farms a food crop. Further assume that the return on labor is higher in export crop production than in food crop production. The male earns a higher income than the female. Say he earns \$120 while the female earns \$80. Total household income is therefore \$200, while the mean household income is \$100. Now assume that out of his earnings the male transfers \$10 to the female, and retains the rest. Post-transfer, the incomes of the male and the female are \$110 and \$90 respectively. The variance of the within-household income distribution is lower after the transfer than before.

The degree to which mean household income provides an indicator of an individual member's income therefore depends on how far their pre-transfer incomes differ and the size of the net transfers between them. If all income is pooled, the mean household income is a perfect indicator of its members' incomes. With no pooling, the gap between the household's mean income and that of the individual member rises as the variance of the within-household income distribution increases. In summary, when the pre-transfer income gap between the male and female is large and pooling is small, then mean household income is a poor indicator of the female's income (and thus of her overall welfare if we measure this by income levels).<sup>53</sup>

### *Implications for inequality and poverty measurement*

There are basically two broad problems that arise from a research design that takes the household, rather than the individual, as its basic unit of analysis and data collection. First, it may preclude (or at least make difficult) a detailed investigation into welfare effects of specific groups within the household (such as females or children). This is particularly the case when data on individual-level expenditure or consumption are required. Second, the calculations of estimates of inequality and poverty (either for the whole population or subgroups) will be biased, since they ignore intra-household income variations.

Haddad and Kanbur (1989) have assessed the direction and size of the biases arising from the use of mean household income rather than in-

come at the individual level. They conclude that by ignoring within-household income variance, the use of mean household income is certain to underestimate the true variance of individual incomes, and this underestimate can be quantitatively significant (of the order of 30 percent). The effect on measures of poverty are ambiguous, however — using mean household income might over- or underestimate poverty, depending on the underlying distributions involved and the poverty index selected. For example, taking the simple headcount measure of poverty, a poverty index calculated using mean household income will understate the true (individually based) poverty level if the poverty line is less than mean individual income (which of course is equal to the average of all household mean incomes).

However, Haddad and Kanbur also demonstrate that it is unlikely that the patterns (or orderings) of both inequality and poverty measures will be affected by ignoring intra-household inequality. They conclude that the collection of individual data is important if *levels* of inequality and poverty are required. But if the object is to identify only the patterns of inequality and poverty across socioeconomic groups, there would seem to be little point in incurring the heavy costs of individual inquiries.

### Household expenditures

The level and pattern of household expenditures is a crucial dimension of living standards. A household's expenditure on items of consumption and intermediate goods for its economic activities can be subject to large changes during adjustment. The level of consumption provides a more direct measure of household welfare than income (Deaton and Case 1987, p. 1). Expenditure includes outlays for commodities and services, both purchased items and those produced for own-consumption. Even if income data can be constructed for individual household members, some household members have little or no income of their own because of their position in the life cycle, and thus consumption levels are more relevant for assessing their welfare.

One method for analyzing intra-household issues is the equivalence scale technique, which uses data on total household expenditures to compare expenditure patterns across households with different demographic and gender characteristics (Deaton and Muellbauer 1980, p. 191). Effects on household expenditures of differences

in household composition can be represented in terms of "outlay equivalents," defined as:

the additional total expenditure that would generate the same change in expenditure on the good in question as does the presence of an additional person of each demographic type [Deaton 1987, p. 2].

Certain goods are usually consumed only by children, while for other goods it can be presumed that their consumption is mainly by adults (for instance, alcohol and items of adult clothing). Additional children will not generate a direct demand for "adult goods," but outlays on such goods will have to be reduced to release resources for goods consumed by children. Therefore, the outlay equivalents for additional children on adult goods should be negative. This result can be used to test for age and gender biases in the household's allocation of expenditures — a phenomenon of key policy interest. For example, the reduction in expenditures on adult goods will be larger following the birth of a male child than a female child if discrimination against girls exists (Deaton 1987, p. 3). Similarly, the ratios of adults to adult goods can indicate whether there are differences by age and sex in the allocation of goods within the household.<sup>4</sup>

The equivalence scale technique thus uses cross-sectional data to build a picture of intra-household expenditure inequality at any one time. If the technique is applied to data sets from successive years, an understanding can be gained of how intra-household welfare is changing as adjustment proceeds. It can be used to pick up changes in intra-household welfare that are being generated by adjustment policies that have varying effects on different household members. For example, if a particular policy is benefiting males, and they are not increasing their transfers to other household members proportionately, this can be identified by the equivalence scale method. The advantage of the equivalence scale technique is that it uses data on *total* household expenditures. To apply equivalence scales, expenditures do not need to be broken down by household member. Expenditure data can accordingly be provided by the household member with the most knowledge of household expenditures. In addition to gathering household expenditure data, it is desirable to undertake more direct measures of individual welfare, such as weight-for-age and height-for-age, particularly for children. Such

anthropometric measures describe the "output" of the household's activities. In the Living Standards Measurement Survey (LSMS) for the Côte d'Ivoire, for example, the heights and weights of all household members are recorded (Grootaert 1987, p. 138).

Why is the household used as the sampling unit in cases where policymakers are concerned with the welfare of individuals? For example, data on child nutrition could be collected by drawing a random sample from all the children in a given community, or using schools or health clinics to locate individuals of interest. Much valuable data are currently collected on child welfare from sample units outside the household: for instance, the National Nutrition Surveillance System in Botswana reports (on a monthly basis) the nutritional status of all children under five attending health clinics (Stewart 1987, p. 266). These data are useful for policy because they are timely and they are collected within an organizational structure that rapidly feeds information on deteriorations in nutritional status to executing agencies. Such systems are extremely valuable in times of rapid economic change in providing an early warning system. For many policy purposes we need to place information on the individual's welfare in the context of his or her economic environment. Nutritional surveillance exercises can provide some important information on this environment: for example, the national surveillance exercise in Botswana disaggregates data on child nutrition on a regional basis, and further by villages, cattle posts, and settlements (Stewart 1987, p. 266). This information, along with data on food supplies and agricultural conditions in the areas concerned, allow executing agencies to monitor, analyze, and intervene. Transfers, for example, can be mobilized in times of drought and more general distress.

Such exercises, however, do not permit the analysis of child malnutrition in relation to household characteristics. Policymakers need to know not only the level of child nutrition within a community, but also its distribution across households of differing characteristics. This need to relate individual characteristics with those of the household arises from the requirements of policy design. Since consumption data and anthropometric measures describe the end results of the processes occurring within the household (of work and giving and receiving transfers), such data by themselves tell us little about the *causes* of

the observed welfare changes. These causes may lie on the consumption side of the household's activities, the production side, or within the intra-household transfer mechanisms. Consequently, although consumption and anthropometric data alone may identify a problem — for example, a deterioration in child nutrition — they are insufficient for analyzing its causes and for prescribing solutions.

Having anthropometric or expenditure data alone allows us to respond with special feeding programs and other such measures. But to design policy interventions that reduce the root causes of malnutrition requires an understanding of the economic activities of the child's social unit. Thus, the kind of data policymakers require depends on the type of poverty alleviation strategies they intend to pursue. If the direction of attack is mainly to be through secondary income transfers, data that signal a problem on the consumption side of the household are sufficient. But attacking poverty through people's primary incomes — generated by employment and self-employment — requires information on both the production and consumption sides of household activity. Whether the focus of poverty alleviation should be on people's primary or secondary incomes will depend on the situation at hand. Accordingly, we need a data set that integrates all the main dimensions of household activity and that allows analysis of within-household welfare issues when necessary.

### Interactions between households

Although many important decisions are made at the household level, households are in turn embedded within wider social networks whose functioning has important effects on them (Guyer and Peters 1987, p. 206). The most important of these is the lineage group, comprising a cluster of households bound together by ties of marriage or blood, and under the control of an elder (Swindell 1985, p. 33). Control of vital productive assets, such as land, is frequently vested in kinship groups, with the seniors determining the "use rights" of its members.<sup>55</sup> While such social groupings are most important in rural communities, large numbers of urban dwellers maintain their links with them. Such networks mobilize transfers to households in times of distress through taxing other network members. This reduces the variability of household income, a major concern for people living close to subsis-

tence levels and for whom insurance and other inter-temporal capital markets are unavailable (Grootaert 1987, p. 32 and Binswanger and McIntire 1987, p. 82). These characteristics have importance for analyzing both the welfare impact of adjustment and the policy interventions that can be made for poverty alleviation, and we shall frequently refer to their operation.

While households undergo periodic changes in their size and composition (for example, following marriage or the death of the household head), they may also divide or combine in response to "shocks": illness of family members, displacement, drought, the creation of new market opportunities, and so forth. The wider social networks may also suffer displacement, and the social structure in which households function needs to be viewed as a dynamic process. Various forms of inter-household cooperation can be noted. Within rural communities households frequently cooperate with each other over work arrangements — for example pooling their labor at harvest time, sharing childrearing and food preparation. Households make "implicit" contracts with each other over the sharing of work loads, either on a regular basis or to provide assistance to each other in times of personal distress. Such contracts may be underpinned by ties of kinship, although this is not always the case. Implicit contracts reinforcing reciprocal rights and obligations can exist over a large number of activities. By providing safety nets they reduce risk and make households less risk-averse than if they operated on their own (Peters 1986, p. 136).

The importance of affirming and strengthening ties between households will lead to the periodic distribution of gifts of cash, food, or manufactured goods. For example, farmers sometimes distribute "harvest gifts" to important allies within the village (as described, for example, by McMillan 1987, p. 306, in Burkina Faso). Such gifts often form important components of the "exchange-entitlements" of households and individuals, and household survey questionnaires need to be designed to identify these. It is important to correlate such transfers with household characteristic, in order to analyze their role. Several hypotheses concerning the function of these gifts suggest themselves: transfers may take higher than average shares in the incomes of poor households or, alternatively, they may be disproportionately concentrated among wealthier households. Since such transfers provide the

primary "social security" in most countries, it is important to verify changes in their importance and the pattern of their distribution during periods of adjustment. Adjustment, through changing the incomes of donors and recipients, may generate important shifts in the structure of inter-household transfers. For instance, poor families may find their social support weakened or strengthened by changes in the incomes of their donors.

Aside from transfers and the sharing of factors of production, households also interact with each other through the market — more specifically through the product, labor, and credit markets. Thus some of the contracts within the household's village may be explicit — for example, over the provision of labor services, or sharecropping arrangements. Credit markets will also exist within villages. The relative role of market and nonmarket mechanisms in the allocation of goods and services across communities will vary by region and by country. As development proceeds, market transactions will increasingly take over from other ways of allocating resources. As farm productivity rises, more output will become available for sale, and greater opportunities will arise for selling produce as private and public investments are made in marketing. The extension of public goods such as transport facilities will increase the access of remote regions to markets. In turn, the greater availability of modern consumer goods will increase the incentives to sell produce and to move from barter to a greater use of money. Finally, urbanization weakens the extended community, and households resort more frequently to market transactions with each other.

The increased role of market transactions in the distribution of goods and services will lead to further specialization in the division of labor as greater market opportunities allow households to concentrate on their comparative advantages. Some will find that they no longer need to produce certain goods themselves because these can be obtained more favorably through the market. Activities that were undertaken to minimize the risk of shortfalls in income may be cut back if households perceive that the market offers less income risk, or provides a better safeguard than own-production. Changes in the size and characteristics of product markets will, in turn, lead to changes in both the size and characteristics of factor markets. The development of product

markets has been one of the factors behind a reduction in the importance of communal mechanisms of allocating resources within African societies.

In sum, households will interact with other institutions, not only with other households. Depending on the circumstances of the country and region concerned, they may enter markets in which firms are buying and selling — both product and factor markets. In the case of the credit market, they may have direct dealings with the organized banking system or other financial intermediaries. Of course, they may be taxed by local or central government, or receive services provided by the state (such as agricultural extension services, marketing services, health and education services, and the like). Thus, we must distinguish the market and nonmarket interactions between the household and other households, firms, and the state. We emphasize these otherwise obvious points because adjustment, together with the macroeconomic disequilibrium that precedes it, causes changes in the *structure of markets*, the relative roles of *market and nonmarket mechanisms* in allocating resources, and the degree of *market integration of households*. Changes in the “market parameters” under which households operate can have profound effects on their welfare.

### The meaning and measurement of poverty

Any assessment of the social dimensions of structural adjustment must deal with the effects of policy reform on poor households. For this, measures of poverty must be devised. These measures cannot hope to capture the full complexity of poverty, but they are unavoidable if policymakers are to understand how their interventions affect the degree of poverty in the community. Our intention here is not to review all the available measures, but to focus only on one class of indicators that has proved useful in the analysis of poverty and adjustment interactions. Two broad issues arise in the measurement of poverty: the establishment of the *poverty line* and the choice of a *single index* to measure poverty. These are considered in turn.

The literature on poverty has been concerned with the respective merits of absolute and relative concepts of poverty (Sen 1983b reviews much of it). Recent work has questioned the usefulness of absolute poverty, because what constitutes

poverty in one society (at a given time) may not be the same for another society (or the same society at a different time). In restating the “absolute” case, Sen (1983b) distinguishes between the “capabilities” that incomes confer and the goods and services needed to produce them. Poverty, according to this view, is the absolute absence of certain critical capabilities —including avoiding shame, community participation, and self-respect. But the bundle of goods required to provide these capabilities varies from place to place and from time to time, and it is in this respect that poverty is relative. If the absolute aspect of poverty is ignored, as Sen (1983b, p. 156) puts it, “poverty cannot — simply cannot — be eliminated and an anti-poverty program can never really be quite successful.”

The debate about whether absolute or relative concepts are appropriate is simply about the appropriate choice of *poverty line*, and this is certain to be a subject that would need further clarification for each country. Biases in the measurement of poverty (for example, the neglect of within-household income variance discussed above) tend to become more problematic when the poverty line is considered sacrosanct, since this implies that the level of poverty has some real policy significance. If the poverty line selected is somewhat arbitrary (for example, in selecting a line that considers 30 percent of the population as poor), the biases often become less serious, since they rarely affect the pattern or ranking of poverty across groups in the society.

But this is only one, albeit fairly crucial, dimension to any measure of poverty. Apart from the selection of the poverty line itself, the degree of poverty will depend on three basic factors:

- the *incidence* of poverty, as measured by the numbers in the total population living below the poverty line
- the *intensity* of poverty, reflected in the extent to which the incomes of the poor lie below the poverty line
- the degree of *inequality* among the poor, in that transferring income from the poorest to the better-off poor should raise measured “poverty.”

Any index or measure of poverty should ideally reflect all three of these dimensions. Moreover, for our purposes, we need an index of poverty that can be used to assess the effects of adjustment. Since adjustment frequently entails changing the sectoral composition of output — from nontraded to traded goods, from import-competing to ex-

porting sectors, and favoring agriculture — our poverty index must be decomposable across sectors (Kanbur 1987a). We propose that the typical presentations of poverty (usually by region in a country) should be supplemented with measures by socioeconomic group, with the choice of groups partly determined by the relation each bears to the markets and other elements of the meso economy. In other words, if the structural adjustment programs feature changes in the price of a particular food (for example, maize), it would be important to estimate measures of poverty for maize producers and consumers separately from other groups. The measure must therefore be subgroup decomposable.

A useful index that meets this requirement is suggested by Foster, Greer, and Thorbecke (1984). Their class of poverty index takes the following form:

$$PV_{\alpha} = (1/n) \sum_{i=1}^q [(Y_p - Y_i)/Y_p]^{\alpha}$$

where  $Y_p$  denotes the poverty line,  $n$  the total population, and  $q$  the number of income earners below the poverty line. Essentially the index takes the poverty gap of each poor person as a fraction of the poverty line,  $(Y_p - Y_i)/Y_p$ , raises it to the power  $\alpha$ , sums over poor units, and divides by the total population. Not only does this index take into account the incidence and the intensity of poverty, it is also sensitive to the degree of inequality among the poor. This is governed by the value of  $\alpha$ , which determines how sensitive the index is to transfers among the poor. For  $\alpha > 1$ , transfers from the poorest to better-off poor groups will increase the measure of poverty.

This class of poverty measures is flexible in two important respects. First,  $\alpha$  is a policy parameter that can be varied to reflect correctly poverty "aversion". If  $\alpha = 0$ , it can be readily shown that  $PV$  simply becomes,

$$PV_{\alpha=0} = q/n = H$$

where  $H$  is the head-count ratio, that is, the proportion of total income-receiving units below the poverty line. Note that if  $\alpha = 0$ , it simply means that the measure is entirely indifferent to how poor each poor unit is — it does not matter how far below the poverty line each poor person is.

Therefore, with  $\alpha = 0$ , the index is simply the head-count ratio. Alternatively, with  $\alpha = 1$ , the poverty index becomes

$$PV_{\alpha=1} = (1/n) \sum_{i=1}^q [(Y_p - Y_i)/Y_p] = HI$$

where

$$I = (1/q) \sum_{i=1}^q (Y_p - Y_i)/Y_p$$

is the "income gap" ratio.  $I$  is simply the average of the poverty gaps expressed as a fraction of the poverty line.  $PV_{\alpha=1}$ , or  $HI$ , therefore takes into account how poor the poor are and reflects both the incidence of poverty (as reflected in  $H$ ) and its intensity (as given by  $I$ ). The  $PV_{\alpha=1}$  measure, however, is insensitive to income distribution among the poor. Transferring income from the poorest unit to a richer (but still poor) unit will leave  $PV_{\alpha=1}$  unchanged (both  $H$  and  $I$  will be unaffected). For this to be reflected in the index, greater weight has to be given to the poorest income earning units. This can be achieved in this class of poverty indexes by assuming values of  $\alpha$  in excess of unity. With  $\alpha > 1$ , a transfer of one dollar from the poorest units to other (better off) poor units will increase the poverty index. In short, the  $PV_{\alpha}$  class of poverty indexes suggested by Foster, Greer, and Thorbecke (1984) permits the user to specify  $\alpha$ , and thereby select an index that reflects his or her aversion to poverty.

This class of poverty indexes is flexible also in that it is subgroup decomposable. The "overall" index of poverty can be shown to comprise the summation of poverty indexes among all the subgroups in the population. If the study population consists of  $m$  groups or sectors, then,

$$PV_{\alpha} = \sum_{j=1}^m x_j PV_{j\alpha}$$

where  $PV_{j\alpha}$  is the poverty index of group  $j$  and  $x_j$  the population weight of group ( $j = 1, \dots, m$ ),  $\sum x_j = 1$ . This decomposition property is useful in analyzing poverty changes because it generates both overall indexes in each country and breaks these indexes down for each socioeconomic group and sector under consideration (see Kanbur 1988 for a recent analysis along these lines).



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## *The effects of destabilization and adjustment on households*

Thus far, our analysis has traced how destabilization and adjustment lead to significant mesoeconomic changes in both markets and infrastructure. We have also explored the main features of the household economy, including the factors that have a bearing on the welfare of individuals within the household. We come now to bring these two elements together by tracing how the mesoeconomic changes we have observed are likely to affect the household and the welfare of its members. Again we should reiterate that the purpose here is to outline a way of structuring thinking on these issues, rather than pretending to represent household effects in their entirety throughout the region.

### **Household incomes under macroeconomic disequilibrium**

To trace the effects of this policy scenario on household incomes, assume a one-off rise in the money supply because of a rise in the budget deficit. Ignore for the moment the issue of whether this policy is pursued in successive years, and assume that the level of national output is fixed. We employ a number of simplifying assumptions in order to illustrate the most important distributional effects. At the end of this section we discuss these assumptions further, but show that while relaxing some assumptions increases the complexity of the processes, the conclusions of the simpler model are not fundamentally altered. Recall that excess monetary expansion will lead to an increase in the price of

nontradables, while tradable prices will remain constant, under the assumption that their domestic prices are given exogenously by world market conditions (and that there is no change in the terms of trade).

We begin with household-based production activities since these have been identified as one of the most important sources of household income in Africa. The value of a household's output is given by the price of the good or service multiplied by the quantity produced. Prices are exogenous to households, but they do have some control over the level and composition of their output. In the very short run, when households cannot adjust their allocation of factors among activities, they will be confined to producing the same goods and services that they did before nontradable prices began to rise. Thus, in the very short run, with the composition of output fixed, the effect of the monetary expansion on the value of household output will be determined entirely by the shift in relative prices toward nontradables. The nominal incomes of households producing nontradables will accordingly increase. We can label this the *impact* effect. Nominal incomes could remain constant in the tradables sector if this sector does not use nontradables as intermediate goods (and given that tradable prices remain constant). Otherwise they will fall.

One outcome of special interest is that, holding all other parameters constant, the distribution of income will shift in favor of urban households during a period of destabilization, because they engage more in the production of nontradables

than do rural households, whose production activities are concentrated on tradable agricultural products. Urban households that produce items protected through quotas will gain the most, since the scale of their protection rises as the real exchange rate appreciates. Given that it will be urban households with the largest factor endowments that receive the largest gains, we can expect a rise in the level of income inequality in the urban sector. This, combined with the location of most poor households in the rural sector, will mean that a rise in the overall level of income inequality is a likely outcome.

As time elapses households will attempt to shift resources into the production of nontradables as a result of the destabilization, and possibly importables if the terms of trade have declined. Within the household-based production unit, labor is the easiest resource to reallocate — the household's capital resources are invested in equipment that may not be so easily transferable to nontradable activities. The period when only some factors can be reallocated will be labeled the *short run*, while the *long run* begins when it is possible to reallocate all factors.

Incomes from household-based production activities will be affected not only by the prices at which households sell, but also the prices at which they buy. First, consider purchases of intermediate goods. Recall that in theory, if importable goods are pure tradables, their domestic prices will remain unaffected (assuming a fixed nominal exchange rate) by the government's monetary expansion, since the market for importables immediately clears at given world prices through further imports in response to extra domestic demand. Thus, producers of nontradables find that the value added (and hence their implicit profits) of their goods and services is increasing, because their output prices are rising but the costs of their imported intermediate inputs remain constant. The effects within the tradable household will depend on whether they use nontradables as intermediate goods. If they do not, their value added — and therefore their nominal income — will be unchanged. Households that use nontradables as intermediate goods will see their value added and nominal income fall.

Households will also consume tradable and nontradable goods in different proportions. If households producing nontradables consume only their own nontradables, and thus purchase only tradables, their cost of living basket will

remain unchanged. This, together with the increase in the price of the goods they sell, will unambiguously raise their real incomes. Nontradable households will be hit by the increase in the prices of their purchased consumer tradables; this, together with the unchanged prices for the goods they sell, will unambiguously reduce their real incomes. The households affected the most severely in this sector will be those who purchase large amounts of intermediate nontradable goods and have large shares of nontradables in their consumption baskets.

In summary, we will observe a shift in real income shares toward households in nontradable sectors. With terms of trade shocks also causing macro disequilibrium, relative prices were also shown to move in favor of importables. The relative price configuration of the move from *A* to *D* in Figure 2.2 would affect the various households, the manner depending on the proportions of their sales and purchases of importables, exportables, and nontradables. Some households may find themselves not only switching production to nontradables, but also to protected importables. What will happen to poverty? While the rise in real incomes in the nontradables sector will be unevenly spread depending on the ownership of factors and so forth, low-income households will benefit, and this may be sufficient to bring some of them above a defined poverty line. How many of them cross this threshold will depend on the distribution of income within the sector and the magnitude of the real income increase among poor households.

At the same time, poor households engaged in the production of tradables (and especially exportables) will find their real incomes declining, with a consequent increase in poverty. The net effect on poverty in the country will therefore depend on the relative strengths of these opposing effects and on the ability of households to switch from tradable into nontradable (or protected importable) activities (Kanbur 1987c, Demery and Addison 1987a). One hypothesis is that nontradable goods, because they consist mainly of urban services and domestic manufactures, take a higher share in the consumption baskets of wealthier households than poorer households, whose consumption basket is more heavily weighted to (tradable) foods. So with tradable prices constant, and nontradable prices rising, the cost of living of better-off groups is more affected than the cost of living of the poor. This may offset some of the negative impact on

the poor resulting from their high participation rate in tradables.

What of households selling factor services? Under the impact effect with no factor mobility between the tradable and nontradable sectors, factor sellers in the nontraded sector will gain higher money incomes because the demand for all factors will rise. If labor is underemployed in the sector, most of the initial benefits to labor will accrue in the form of higher employment rather than higher wages. Over the longer term as factors become mobile, they will flow from tradable to nontradable sectors. Recall that public and private service employment is classified as nontradable, while formal manufacturing — and to a degree some informal manufactures — are afforded sufficient protection to make them nontradable goods. In such circumstances the direction of labor flow will be toward public and private service employment together with nontradable formal and informal manufacturing, and away from tradable agriculture.

The final outcome for sellers of factor services will depend, as we have shown, on the structure of the labor market. In the simplest case, the short-run effect was determined by their consumption propensities and in the longer run by the relative factor intensities of these activities. Ranking sectors by factor intensity is a difficult business in developing countries. We know that most smallholder agriculture is labor-intensive in Africa and uses relatively little capital. Informal manufacturing is also labor-intensive, as are the public and private service sectors. The formal manufacturing sector, however, is generally characterized as relatively capital-intensive because of the promotion of cheap capital imports through overvalued exchange rates and explicit subsidies to capital users. So the final outcome for factor-sellers will depend on the shares of these activities in the nontradables sector. If nontradables amounted to only labor-intensive informal activities, the long-run effect on the wage of the shift to nontradables would be small. But if nontradables are dominated by capital-intensive manufactures then the wage would fall in the long run. If sections of the labor market are subject to some form of imperfection, however, the real-world outcome would be different, depending on which sector was affected.

The analysis of this chapter has so far been conducted under the assumption that while the composition of total output can change, the level of output itself remains fixed. If we relax this

assumption and assume that the government either maintains or raises its budget deficit in successive years, and thus continues to add excess money balances to the system through financing its deficit from bank borrowing, then the level of output may increase in a Keynesian manner through the pull of rising aggregate demand. The demand for both tradables and nontradables will grow, which will induce a growth in the output of both types of goods. Thus, we may observe a pattern of economic growth in which tradables take a declining *share* of total output, but their absolute production level rises. Households producing tradables may see their incomes increasing if this growth process is achieved, but not by as much as households in nontradables.

Nevertheless, such demand-induced growth is unlikely to be sustainable for a long period of time in most African countries because of their supply constraints. While these supply constraints can be reduced by appropriate investment strategies, public investments in Africa have generally yielded low returns during periods in which macro and micro policies have been inappropriate (World Bank 1986a, p. 1). Thus, a rapid reduction of supply constraints is unlikely during the policy scenario under discussion, especially given the disincentive effect of the real exchange rate appreciation on agriculture. With domestic supply increasingly constrained, and demand continuing to expand, the inflation rate will eventually accelerate, and may generate its own momentum as price- and wage-fixers adjust their forecasts upward.

The acceleration in nominal inflation will hit households with a high dependence on market purchases to meet their needs. Poor urban households, while they may have benefited from the swing to nontradables, are likely to be the most substantial losers from high inflation rates. Rural households dependent on wage employment may also lose, although many are still paid predominantly in food in Africa, which will reduce the effect on them. Subsistence farmers will be relatively protected in good years, but may be very vulnerable if drought drives them into a food market that is undergoing rapid inflation. Inflation will also redistribute income among savers. Households that hold their savings in cash will be hit the hardest. Deposit rates are set by governments in many African countries and have not generally kept up with the rate of inflation. Households dependent on such income will lose out unless they are able to transfer their

savings into foreign currencies. Loss of confidence in the domestic currency as a store of value will encourage capital flight, both legal and illegal. Wealthier households have more access to international stores of value and will adjust the share of domestic financial assets in their portfolios. Households holding their savings in commodities — for example, cattle — may actually gain as the prices of their savings assets rise.

### A framework for considering the household effects of adjustment

Chapter 3 established the effects of adjustment policies on the meso economy. To draw the threads of our argument together, we now summarize these effects and describe briefly how they will influence households. The main meso effects of the adjustment policies reviewed here are:

- an increase in  $P/P_n$  in product markets
- possible changes in relative prices within the tradables category — for example, formal and informal tradables
- resource reallocations from nontradables into tradables
- a short-run increase in  $W/P_n$  and decrease in  $W/P_t$
- short-run real consumption wage changes that are dependent on consumption propensities and the structure of the labor market
- long-run changes in the real wage that depend on factor intensities
- short-run or transitional increases in labor unemployment; also changes in search unemployment
- increases in domestic interest rates and cuts in credit availability
- cuts in government expenditure, with implications for economic and social infrastructure.

Evidently the effects of these changes on the various socioeconomic groups in any country undertaking structural adjustment will be quite complex. They will depend on the choice of policy instruments, the nature of the markets involved and of the institutional setting of the meso economy, and the characteristics of the households in each group. Consider households that possess only their labor — that is, the households that comprise the urban poor and the rural landless. For such households the labor market and the social infrastructure will hold the key to how they are affected by adjustment. Under an expenditure-switching adjustment strategy, the short-run effect on the real wage will depend on

the consumption behavior of the households involved. Since we know that  $W/P_t$  will decrease and  $W/P_n$  will increase (assuming full employment), households that consume mainly nontradables may find their real incomes rising in the short run, while those consuming mainly tradables will face a cut in real incomes.

Added to these real wage effects, households may face deteriorations in employment prospects, especially during the transition period. Households experiencing unemployment among their members will obviously respond and seek job placements in expanding sectors. This may require some additional skill acquisition, or it may involve geographical migration. The time such households take to perceive the need for these responses and their capacity to make the adjustments are critical in determining their share in these transition costs. It may be that for certain households, some advantage may be gained from direct micro interventions (such as retraining or relocation grants) by the government. This type of assistance will reduce the transition costs, reduce the welfare loss of such households, and at the same time enhance the capacity of the economy to achieve its structural adjustment objectives. Changes in the “social wage” — benefits transferred to laboring households by the state — should also be taken into account. Adjustment may well reduce the provision of these benefits through cuts in food subsidies, other transfers, education and health expenditures, and so on. The incidence of such cuts falling on the various households is essentially an empirical issue.

Many poor households in Sub-Saharan Africa possess productive assets other than their labor: they include those engaged in the urban informal sector and smallholder groups producing agricultural commodities. Changes in the product markets affect these households not only as consumers (or purchasers in these markets) but also as producers (or suppliers to the markets). Similarly, changes in the labor market may affect these households in their capacity as hirers of labor services and not only as sellers. Because of this, the mesoeconomic effects on such households are rather more complex. Despite this complexity, it is possible to set out a range of possibilities using the simple microeconomic framework discussed in the previous chapter — namely, the recent literature on agricultural household models (Singh, Squire, and Strauss 1986a).

We shall take for illustrative purposes the recursive version of these models, which is valid

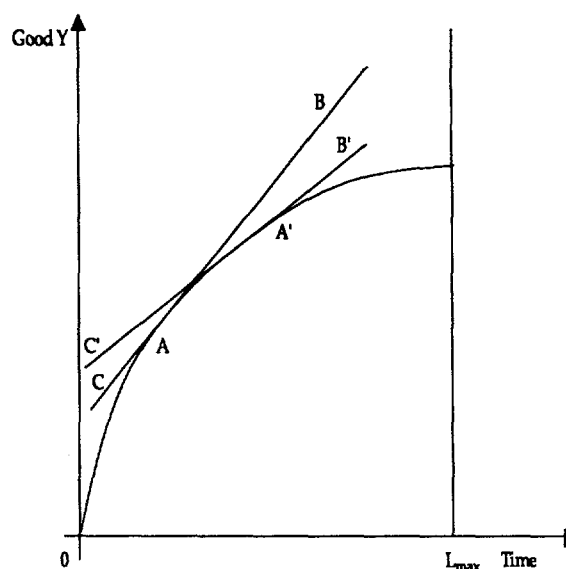
for cases where households are price takers in product and factor markets. With the recursive model, it is possible to analyze the effects of these mesoeconomic changes in stages, beginning with the household's output decision and moving on to evaluate the consumption effects. In order to trace the effects on the household of the changes induced by adjustment using this class of models, it is helpful to proceed in stages, utilizing the simple framework described in Chapter 4.

We begin by tracing how households are affected by the *relative price* changes induced by an adjustment program. In terms of our simple household model, this is depicted by a change in the relative price,  $W/P$ . If the household produces and consumes tradables, this ratio is likely to fall during adjustment, whereas producers of nontradables will experience a rise. Assume initially that the household produces and consumes only one commodity — a tradable food good. Using the framework that was presented in Figure 4.3 (and repeated in Figure 5.1 for convenience) we can trace how its production and consumption decisions are affected by the relative price change.

Assume that adjustment reduces  $W/P$ , rotating the price line to  $(C'/B')$ . The first effect is to increase the level of production of the tradable good from  $A$  to  $A'$ . This occurs independently of consumption decisions and whether or not hired labor is used. But how the household's utility is affected by this relative price change will depend on whether it is selling or buying labor services. It clearly falls for households that sell labor services, with the consumption point being drawn in from  $B$  to  $B'$ , and this will involve a cut in both the consumption of food and leisure and home care. It is only households that buy-in labor services that will gain, their consumption point expanding from  $C$  to  $C'$ . Thus, although all households increase output as a result of adjustment, only those buying labor services are likely to gain.<sup>56</sup>

This analysis is useful in showing how consumption and leisure and home care can be adversely affected for some producing households, even though they may be producing the commodity favored by adjustment. The main drawback of the analysis is the assumption of only one commodity consumed, since relative product price changes are generally crucial elements of an adjustment program. We therefore proceed to the next stage and analyze how a household may be affected if it produces one commodity and

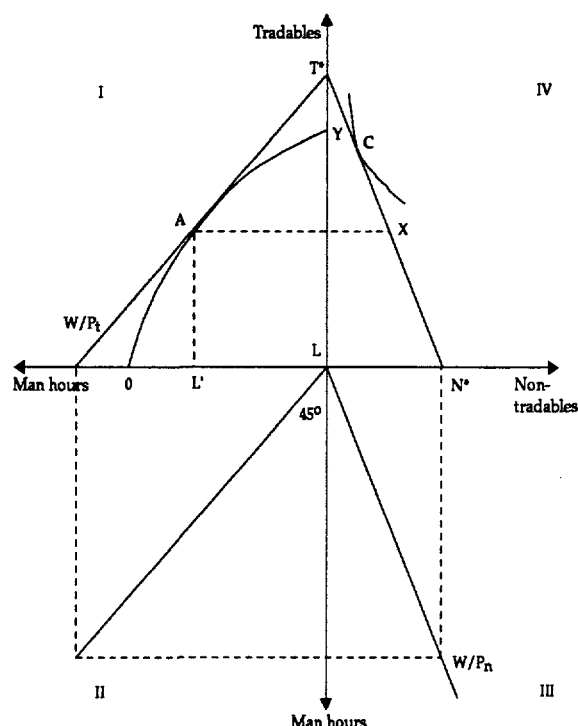
Figure 5.1



consumes another. In modifying the analytical structure used in Chapter 4, we assume that the household produces one commodity (say the tradable commodity,  $T$ ). It consumes both  $T$  and a nontradable ( $N$ ), with market prices of  $P_t$  and  $P_n$ , respectively. We shall assume also that the consumption of these commodities alone yields utility to the household, which means that no utility is gained from leisure (or housework as defined in our earlier discussion).<sup>57</sup> Figure 5.2 (overleaf) depicts the initial equilibrium of the household prior to the adjustment program. The *production* decision is derived in quadrant I, which traces household labor time horizontally against total household output (of  $T$ ) vertically. The initial production point is at  $A$ .

Because, under our assumptions, maximizing utility is equivalent to maximizing income (leisure yielding no utility), the household will devote all its available time to work, either in own-production or in market work. To derive consumption, we must identify the consumption possibility set facing the household. In maximizing the availability of  $T$ , the household would devote  $OL'$  to producing  $T$  and all the proceeds of its market work to buying  $T$ . Since each unit of labor devoted to market work yields a real return of  $W/P_t$  in terms of the tradable,  $LT^*$  is the maximum consumption point for tradables.<sup>58</sup> To maximize its consumption of nontradables, the household will be required to devote all the proceeds of its market work to purchasing  $N$ , and at the same time sell all its output of tradables in exchange

Figure 5.2



for nontradables. This gives a maximum consumption of  $LN^*$ . Household equilibrium is then given at the point of tangency of the indifference curve and the budget constraint ( $N^*T^*$  in quadrant IV). Consumption points to the northwest of X on the budget line indicate that the household consumes  $T$  in excess of its production, so that it is a net purchaser of the commodity it produces. Similarly, the household must be a net seller of  $T$  if its consumption point is to the southeast of X. The household in the case of Figure 5.2 is assumed to be a net purchaser of  $T$ , consuming at C.

Now consider a decrease in  $W/P_t$  and an increase in  $W/P_n$  brought about through adjustment. This will increase the production of tradables from  $T_1$  to  $T_2$  (Figure 5.3). These relative price changes will also change the budget line in quadrant IV, from  $N^*T^*$  to  $N^{**}T^{**}$ . The consumption (and welfare) effects will depend on the original consumption point. For households originally consuming along the segment  $ZT^*$ , the relative price change will involve a welfare loss, while households along  $ZN^*$  will experience a welfare gain. Note that it is possible for some households to be net purchasers of the good in question, yet gain from the increase in the relative price of  $T$  (that is, households originally consuming along the segment  $XZ$ ). The reason for this is that the households also consume

nontradables, and their price has fallen (relative, that is, to the nominal wage). This reduction in  $W/P_n$  obviously benefits the household as a consumer and more than compensates for the increase in  $P_t$ . Even if  $W/P_n$  were to be held constant for discrete changes in  $W/P_t$ , however, many producers who were previously tradables-deficit households become net surplus households as a result of the production increase brought about by the increase in  $P_t$ . For some of these households, a rise in  $P_t$  will be beneficial, even though they were net consumers prior to the price changes brought about by adjustment.

Similar, although opposite reasoning may be applied to households that produce nontradables and purchase tradables in the marketplace. For such households production would decline, and net sellers of  $N$  would experience welfare losses. The effects on net purchasers would depend on their consumption bundles. To summarize, the effect of changes in product and labor markets on production will be to unambiguously increase the output of tradables and reduce that of nontradables. It will also cause predictable reallocations of labor time, with tradable households reducing supplies and increasing demands for labor, and nontradable households increasing their supplies (or reducing their demands) for labor. The net effect on household welfare will also depend on the consumption preferences of the household groups.

This simple framework abstracts from a number of real world complications that are clearly important. In the first place, households may produce both tradables and nontradables, so that changes in the relative price structure will induce them to *switch resources* in response. A key determinant of the net welfare effect would be the extent to which such production switching is possible in both the short and long term. Similarly, they may use *intermediate* commodities in the productive process, and the price changes of these commodities will have to be taken into account in computing the net effect of adjustment policies on the rates of return that can be obtained. Farmers relying on tradable inputs (such as fertilizers) may find farm profits declining during adjustment, even though the output price is rising. Activities that are intensive in the use of nontraded inputs (such as irrigation) will receive stronger positive price inducements.

One of the main characteristics of poorer rural households in Africa is *risk aversion*, a factor that is ignored in this framework. Faced with a seri-

ous threat to both livelihood and survival, some risk-averse farmers may choose to return to subsistence, and turn away from market opportunities. If this is the case, the relative price shifts that are signaled in the market may not evoke the output response predicted by this basic orthodox framework. One of the most important reasons that rural households are risk-averse lies in their imperfect access to credit. Because of this, they are unable to finance periods of poor output and income through borrowing against future income streams. This restriction on inter-temporal substitution makes them all the more vulnerable to unanticipated changes in their economic circumstances. Credit policy is therefore viewed as an essential complement to price policy, especially in the context of rural Africa.

The framework also abstracts from issues of inter-temporal choice that households face. Households will be affected by changes in the *credit markets* that we have observed result from monetary contraction. Again, they will face either increased quantitative constraints in the market, so that they simply cannot obtain the

amount of credit they need at the existing rate, or they will find interest costs increasing. The effect of these changes in the credit market are more likely to be indirect in the African context — they will have adverse effects on farm productivity (on the ability of households to purchase inputs in a timely manner), farm incomes, and thereby on household welfare.

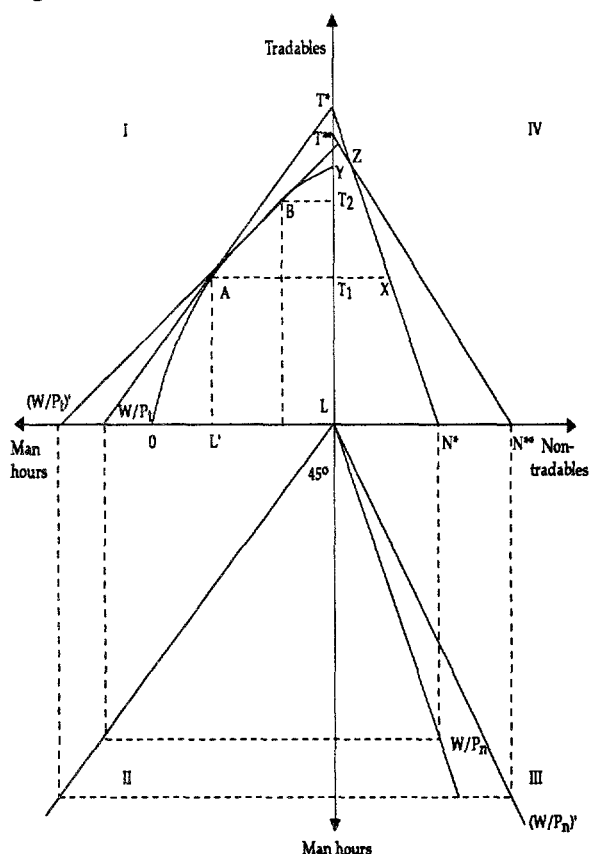
Finally, such household enterprises will be affected by changes in the *economic and social infrastructure*. Both of these will influence farm productivity and profitability. A reduction in physical infrastructure services and other farm support services is certain to impose constraints on farm profitability and the ability of farmers to respond to the relative price opportunities offered by structural adjustment. These “conditioning” effects have been largely ignored in the adjustment literature, and yet they are likely to be very important for many groups of African smallholders. In many African countries the physical infrastructure serving some rural areas has seriously deteriorated, so that access to needed input and output markets has become significantly more difficult. The fact that prices in urban or near-urban markets have improved may be of little relevance to farmers in remoter areas.

Similarly, services that enhance human capital (such as health and education) may have indirect effects on farm productivity<sup>29</sup> in addition to any direct effects on household welfare. These social changes will also influence household welfare directly (and not only through raising economic productivity) and it is to these direct effects that we now turn.

### Other aspects of household welfare effects

Thus far our concern has been to establish how adjustment influences the economic welfare of the household. The theory suggests that the best single indicator of this is aggregate household expenditure per capita or per adult equivalent. But because we are primarily interested in the welfare of the individual, this must only be considered as a proxy. It is a proxy in two senses. First, it assumes that measuring household-level indicators will give us a reasonable measure of the welfare of its individual members; second, it assumes that the economic circumstances of the household is a useful indicator of its welfare. We have already noted that income distributions within households can change, which undermines the use of household-level indicators as proxies

Figure 5.3



for individual welfare. We now turn to the second set of issues surrounding our proxy — the importance of noneconomic determinants of welfare.

The two principal sets of influences on household welfare are health and education, including such variables as malnutrition, morbidity, mortality, number of years schooling at various levels of attainment, and so on. These can be assessed through direct indicators at the individual level. It is customary for household surveys to collect information on the educational attainment and health status of household members. But these indicators are essentially outcomes of a complex process, so that *understanding* what it is that determines these outcomes requires that we go beyond the indicators per se. These outcomes can only be properly understood in the context of the economic circumstances of the household (which has been the focus of our attention thus far) and its socioeconomic environment.

Thus, when it comes to understanding the determinants of these noneconomic elements of individuals' welfare, economic circumstances will condition to a large extent the social processes. For example, even if food is available in the market, if the household does not possess the exchange entitlements to gain access to these supplies its members will experience malnutrition and many of its associated health problems. This is why our principal focus has been on economic variables. But it has to be said that this is certainly not the complete picture. There are many influences on the individual that do not originate in the economy and are not captured by an indicator such as household expenditure per capita, critical though that indicator is. For example, if the available water supply in the locality is inferior, diarrheal diseases and infant mortality will be commonplace, and raising mean household incomes will in itself be insufficient. What is required in such circumstances is either an education program to raise awareness of the need to boil water or an improvement in water supply.

We can distinguish noneconomic determinants of these direct influences on welfare at three levels — macro, meso, and micro. At the macro level, government expenditure decisions in the social sector can have profound implications for individual-level outcomes. The evidence on the extent of cutbacks at the macro level in Africa suggests that social sectors have been somewhat protected during periods of austerity. Meyers (1986) reports that in most countries of the region, social sector spending was to some extent protected. However, Sahn (1989, p. 39-52) found a more uneven picture in his examination of the recent evidence. Some countries increased their allocations to the social sector following adjustment (for example, Ghana and Kenya), while in others significant declines were noted (Tanzania, Mauritius, Senegal, Togo, and Zimbabwe).

These macro-level adjustments will manifest themselves in noticeable meso level changes, with the social infrastructure responding to resource availability. These changes (in both the quantity and quality of services) will have direct effects on individual social welfare that can be quite independent of the household's economic circumstances. The nonavailability of schools, teachers, medical services, doctors, health care workers, and so on will have independent influences on individuals in the community.

Finally, social welfare outcomes at the individual level will be determined by household characteristics that extend beyond the purely economic characteristics that were discussed in the simple framework above. These include the age, race, religion, and education levels of the household head and mother (in the case of infant health outcomes), household size and composition, and so on. Tracing the determinants of individual-level social welfare from the macro, through the meso, and down to the household levels is the key to gaining an understanding of how adjustment policies have influenced social welfare both directly and indirectly (through changing economic circumstances).



# 6

## *Data and analysis implications*

### **Structural adjustment, income distribution, and data analysis**

Adjustment policies, generically defined, have two primary objectives. First, they seek to improve the balance between aggregate supply and demand through a reduction in unsustainable deficits in the current accounts and a corresponding easing of inflationary pressures (this is usually referred to in the literature of policy reform as the stabilization program). Second, they attempt to foster a medium- to longer-run reallocation of resources toward the more productive sectors of the economy by promoting changes in the incentives structure. It is axiomatic that the success of a government in reducing an unsustainable gap between aggregate supply and demand will depend on the policies chosen and the ability to coexist with, or modify, the country's institutional and policy setting. The particular policy path chosen generally involves placing constraints on aggregate demand through monetary and fiscal instruments as well as moving to expand supply response by overcoming supply bottlenecks through changes in the market and institutional environment. Under these circumstances, policymakers face the challenge of selecting the best combination of policies, not simply choosing between either demand-restraint or supply-enhancing alternatives.

Seen in this light, the role and importance of national information system becomes critical. How are policymakers to know what is the "best" combination of policies unless they have a viable

data base from which to draw necessary inferences? Equally important from the standpoint of the social dimensions of adjustment, policymakers need to know how different socioeconomic groups have fared under past and current policies if they are to determine the distributional (that is, welfare) implications for these same groups, with consequences over the more immediate and more distant time horizon. In short, the policymaker requires relevant and timely data in order to choose the content and sequencing of adjustment measures with the express purpose of not only making improvements in the macro aggregates — correcting account imbalances that triggered the need for economic reform in the first place — but also of recognizing the distributional impact of adjustment policies and either modifying them to the extent possible or taking compensatory actions.

But there is another reason for having timely and accurate data for policymaking. With changing price and factor relativities, economic reform implies that there will be new economic "gainers" and new economic "losers" as a result of the reform process. The previous gainers may not necessarily be the losers after the reform has occurred, and the prior losers may continue to be the losers after adjustment. Whoever the gainers and losers are, however, both will be affected in different ways by the changing policy environment as new outputs, prices, incomes, and factor rewards accrue to specific groups. For planning purposes, it is desirable to know whether the resulting distributional changes represent a per-

manent state or whether they are a temporary state as the economy moves toward a new equilibrium point. Likewise, the policymaker would like to know if the distributional outcomes are induced by policy or are the result of systemic or institutional constraints outside the realm of individual policy instruments. These are research issues that can only be addressed through a systematic, quantitative analysis and are, as yet, largely unresolved in the general range of work underway on the effects of adjustment policies.

The point is that knowledge about the reasons for these distributional consequences has important implications for the design of poverty-reduction measures or programs of a more compensatory nature. If a negative distributional impact for a specific socioeconomic group is deemed to be temporary, then the resulting project or program intervention would no doubt be a function of the transitory nature of the economic displacement. Conversely, if the negative impact only adds to the preexisting distress of a target group, then program design will require that longer-term poverty alleviation objectives be kept in mind. For policy and program purposes, data on various socioeconomic groups are indispensable if one wants to understand the relative and absolute as well as short- and long-term ways in which these groups are influenced by changing economic conditions. Clearly, in an ideal state, data and a formal analysis are complementary tools and should be developed in tandem. In practice the dynamics are very different and, perhaps with a few notable exceptions, data provision usually lags behind data needs to support policy analysis.

### Statistical initiatives in Africa

The preceding section highlighted the rationale for strengthening data collection and analysis with a view to improving the design and implementation of adjustment measures while ensuring the well-being of vulnerable socioeconomic groups. This section now shifts to an analysis of what can be done to improve the interaction between policymakers — the data users — and the national statistical offices — the data collectors. It includes a brief review of recent statistical developments in Africa. The premise underlying this section is that the national information systems of most African countries are not yet to the point of being able to provide the kinds of data required by policymakers in order to formulate and system-

atically monitor the social dimensions of adjustment.

Even before the current concern with economic reform, African governments had come to recognize the institutional weaknesses of their national statistical services. The situation was compounded as the austerity of recent years resulted in further cutbacks in already emasculated statistical offices, witnessing the cancellation of a number of statistical programs launched in the 1970s. Budgetary cutbacks are a resulting condition, not an initial cause of the problems facing African statistical offices. Instead, it has been the incongruity between what policymakers have expected of information services and what statistical services have in fact been capable of delivering that lies at the heart of the problem.

It should not be inferred, however, that this situation has arisen solely because of the inability of the statistical offices to adapt to changing conditions. The problem appears to be the result of actions and misconceptions by both users and collectors. Policymakers have not always known what kinds of data they need, or they have had unrealistic expectations of data requirements as policy conditions have evolved. At the same time, statistical offices have established "separate agendas" in which information programs have developed from the collectors' perspective without proper reference to the potential users of the data.

The inclusion of social dimensions in the policymaking process establishes an unequivocal requirement for African governments to review their information services. Policymakers will need a clear picture of what changes are occurring to various segments of the population during and after the process of adjustment. In order to meet this requirement, an ongoing process of planning and analysis is essential, predicated on a national information system that is capable of providing quantifiable measures of changes over time in key social and economic indicators for specific socioeconomic groups.

The basis of a *demand-driven* statistical system is therefore an explicit enunciation of policy objectives and a concomitant understanding of the kinds of information required to determine progress in attaining those objectives. Having a demand-driven system does not imply that policymakers unilaterally decide what should be the format and content of data presented. A great deal of interaction will no doubt be required between users and collectors to pinpoint

the relative strengths and weaknesses of the national information system and to ascertain the gaps in and reliability of the data while the national information service is undergoing institutional change.

The need for greater interaction also implies the establishment of mechanisms to ensure closer links between the statistical offices and their clientele in the various ministries. One of the prerequisites is the creation of a *users' committee* for promoting communication among planners, analysts, and statistical offices. Yet the users' committee should be seen as only a part of the interaction, and this dialogue should not be limited solely to the higher levels of intra-governmental contact. Naturally, the exact format of such linkages will vary from country to country, but the important common goal is to break down the traditional isolation that has existed between statistical offices and their counterparts in the line ministries.

The creation of such channels of communication can be expected to have three related effects. First, the statistical office will develop its own vested interest in meeting the data requirements that have been agreed to within the various inter-agency mechanisms. At the same time, the traditional users will develop a greater understanding of the potential capabilities and limitations of chosen statistical methods, and this should result in fewer false expectations by policymakers. A second effect is that statistical offices may cease to be viewed as a strictly "neutral party" in the policy debate. This development can have various institutional implications, although in many countries statistical offices have not been completely impartial during major policy debates. Based on their expertise in data analysis, statistical offices should be treated as an active participant in the decisionmaking process even if their role is not necessarily to take a position on any given issue. A third and by no means insignificant effect is that when the policymaker is convinced of the higher utility of more user-oriented data, he is more likely to encourage, if not actually lobby for, larger resources for statistical offices.

At the time of independence most African states inherited very rudimentary statistical systems (Chander 1989). The demand for statistics had been minimal in the pre-independence period, but in the immediate post-independence era the establishment of development plans created a fresh demand for macro-level data, especially in the form of national accounts and basic demo-

graphic statistics. Besides the immediate and continuing resource constraints, especially in the form of a limited availability of trained personnel capable of mounting censuses and surveys and processing data, there also existed the problem surrounding the application of inappropriate methodologies that were originally created for use in the developed world or in Asian countries. The resource problem was well recognized, resulting in technical assistance programs to mitigate its effects by funding skilled expatriates and, to a lesser extent, by training local staff in statistical techniques. The methodological problem has been less widely understood, it is certainly controversial, and it has proved to be far less tractable.

The methodological problems are of two kinds. First, there is a problem of devising essentially new techniques of estimation and measurement. For example, in spite of the importance of agriculture in all African countries it is recognized by most analysts that estimates for agricultural production are generally weak and unreliable. Recent studies indicate, however, that in certain circumstances traditional crop-cutting techniques can be replaced by direct questioning of the farmer, for a fraction of the cost and with a considerable gain in precision of the estimates. The second methodological problem is more difficult to resolve and concerns the wholesale use of "internationally determined" frameworks, definitions, and classifications. Because "internationally determined" systems — such as the national accounts, classifications of commodities and trade, and concepts relating to production and the definition of the household unit — have generally been derived from experience in modern industrialized countries, they are not easily applied to the situations that prevail in the developing world, particularly in Africa.

Although this presents a rather bleak picture of statistical development in post-independence Africa there have been a number of important initiatives. These initiatives, supported by the United Nations, Economic Commission for Africa (ECA), the European Communities, the World Bank, and other multilateral and bilateral donors, cover the whole spectrum of economic statistics (including price and production statistics), social and demographic statistics and, more recently, natural resources and the environment, but the coverage is patchy and uncoordinated.

In the social and demographic sphere, including health and nutrition, key initiatives have in-

cluded the World Fertility Survey, UNFPA African Census Program, Inter-Agency Food and Nutritional Surveillance Programme, and the Food and Agriculture Organization (FAO) Global Early Warning System. For price statistics, a number of African countries have participated in the International Comparisons Project with support from the European Communities, while a concern with the national accounts in developing countries has prompted discussions on revising the United Nations System of National Accounts (SNA).

An important development at the micro level has been the United Nations National Household Survey Capability Programme (NHSCP). The program was set up in 1979 to serve the twin goals of helping developing countries to build a national survey capability and to collect data on a wide range of socioeconomic and demographic issues. In countries where the NHSCP has been effective the set of surveys most frequently undertaken has consisted of agricultural, income-expenditure, demographic, and labor force surveys. In a few countries, health and nutrition, housing, literacy, and other more specialized surveys have also been undertaken.

In the early 1980s the Living Standards Measurement Study (LSMS) was launched by the World Bank as a research program. It had four broad objectives:

- collection of high quality data through specially designed multi-subject integrated household surveys
- rapid tabulation of results for immediate use
- analysis of data
- development of national capabilities for the regular collection of data. A survey methodology has been developed within the LSMS project and was adopted for use in Côte d'Ivoire, Ghana, and Mauritania.

These new initiatives at the household level in Africa — the NHSCP, the LSMS, and now the SDA program — are, however, all geared to sets of objectives that differ quite markedly. In the short or medium term there clearly needs to be close coordination between agencies to avoid potential duplication or even conflicts of purpose. There is an urgent need to develop coherent strategy for information and statistical systems. Good, appropriate, and timely statistics are essential and urgently needed (Stewart, 1987a). This is just as important in the case of social and de-

mographic data as it is in the sphere of economic statistics.

As indicated above, while there are certain countries and particular fields of inquiry where significant improvements in statistical capability have certainly taken place, there is much still to be done. At the same time, it is clear that not all of these deficiencies can be rectified in the short or even the medium term, so it will be necessary to establish some priorities for the immediate future. In turn, it may be necessary to revise quite dramatically the existing emphasis toward generating production-oriented economic statistics and to address more directly the measurement of the well-being of people, and of subgroups of households in particular. But the establishment of these priorities and revised emphases ought not to obscure the need for urgent action across the board to meet the statistical needs that are now so manifest.

#### **A hierarchical information system**

The monitoring and evaluation of the socioeconomic effects of adjustment policy on different subgroups of a country's population is, by any measure, a difficult undertaking. No matter what the level of development of the national information system, it is a task requiring a firm conceptual underpinning and a well-delineated methodology based on available resources. The effects of changing macroeconomic conditions and adjustment responses are transmitted down to the micro or household level after passing through an intermediate level of socioeconomic activity — the meso economy. The main ingredients of this process (markets and infrastructure) were reviewed earlier. The argument put forward is that a combination of changes in both markets and infrastructure determine how the individual household or enterprise reacts to the new economic conditions. The overriding objective, therefore, is to establish how the macroeconomic processes initiated under adjustment programs ultimately affect households. In turn, this entails a process of data collection and analysis at the same three levels of socioeconomic activity. Knowledge of each level is necessary if policy-makers are to know *what* changes are occurring to these groups over time as well as to provide the ingredients necessary to explore *how* these changes have occurred.

The national information system, referred to

**Table 6.1 A hierarchical information system**

(1) Level	(2) SDA focus	(3) Analysis	(4) Constructs	(5) Data
Macro	<i>Policy</i> <ul style="list-style-type: none"> <li>• Monetary, fiscal and exchange rate policy</li> </ul>	<ul style="list-style-type: none"> <li>• Macro-economic models: <ul style="list-style-type: none"> <li>- Aggregate (RMSM)</li> <li>- Multisectoral (CGE)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• National accounts</li> <li>• SAMs</li> <li>• CPI</li> <li>• BOP</li> <li>• Macro-indicators</li> </ul>	<ul style="list-style-type: none"> <li>• Economic, trade, financial statistics</li> <li>• Social and demographic statistics</li> </ul>
Meso	<i>Effects</i> <ul style="list-style-type: none"> <li>• Markets</li> <li>• Economic and social infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Sectoral and institutional studies</li> <li>• CGE</li> <li>• Multimarket models</li> </ul>	<ul style="list-style-type: none"> <li>• SAMs</li> <li>• Food balance sheets</li> <li>• Sectoral quantity and price indices</li> </ul>	<ul style="list-style-type: none"> <li>• Community surveys</li> <li>• Price statistics</li> <li>• Production statistics</li> </ul>
Micro	<i>Impact</i> <ul style="list-style-type: none"> <li>• Individual and household welfare</li> </ul>	<ul style="list-style-type: none"> <li>• Household models and analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Poverty profiles</li> <li>• Social indicators</li> </ul>	<ul style="list-style-type: none"> <li>• Household surveys: <ul style="list-style-type: none"> <li>- Economic</li> <li>- Social</li> <li>- Anthropometric</li> <li>- Demographic</li> </ul> </li> </ul>

earlier, enables the body of data currently available to be assessed and identifies the gaps and deficiencies that exist. It is especially useful to view these data as components of a *hierarchical information system* corresponding to the macro, meso, and micro levels of analysis. Data on some of the macro and meso variables are already collected as inputs to policy formulation in most African countries even though there is a recognizable variation in the quantity and quality of the data produced on a country-by-country basis. But data on the operation of micro-level units emphasize households, and it is clearly important to examine how this fits within the framework of a national information system.

Table 6.1 is a simple representation of a hierarchical information system. It has five columns and three rows. Column 1 simply represents the three levels of economic and social activity, the macro, meso, and micro levels. Correspondingly, column 2 indicates the decisionmaking focus and, in particular, it shows how macroeconomic *policy* is transmitted through *effects* at the meso level

through markets and infrastructure before having an *impact* on individual and household welfare. The arrows indicate the direction in which these effects are transmitted through the hierarchy. It could reasonably be argued that this is an oversimplification and that not all policies are macroeconomic. Some, such as trade, sectoral, and pricing policies affect market conditions directly and should be described more accurately as meso economic policies. But the ultimate impact is on household welfare just the same.

Columns 3, 4, and 5 collectively represent an empirical framework for social dimensions analysis. These columns set out a distinction between analytical methods on the one hand and the data collection exercise on the other, although, as already emphasized, the two activities are (or should be) inextricably linked. The columns refer to "analysis" (column 3), "constructs" (column 4), and "data" (column 5). Column 3 illustrates some of the empirical analyses (whether these are models or analytical studies) that could be carried out at each of the three levels. These

analyses depend on data, and columns 4 and 5 draw a further distinction between the raw data sources (surveys, censuses, or returns) and the constructs used to assemble, organize or present these data for analytical use. This distinction is important for our subsequent discussion, but for the present it can be observed that the "constructs" are essentially neutral to the kinds of policy analysis that may stem from them. In other words, they are simply the means of distilling the information gathered at the source. Examples of constructs include organized accounting representations such as the national accounts, tabulations (one- or multiway classifications), and even summary statistics and indicators. The choice of the appropriate constructs to be derived from the raw data may well be controversial; nevertheless, it should be appreciated that the analysis and inferences that are subsequently drawn from them may be subjected to even wider debate. It is therefore useful to distinguish between "analysis" and "constructs" in this way.

The *household surveys*, including surveys of the informal sector, are the main, if not the only, source of information at the micro level, and it is important to establish how these surveys can be utilized alongside data that are available at other levels. At the meso level, for example, a key requirement will be for detailed price information both for commodities and factor services, especially wage rates. But this may need to be supplemented by enterprise and other sector and institutional surveys. It is at this level that information from a *community survey* would logically fit. The macro level of the information system includes much of the data currently available and published by national statistical offices in support of macro-level economic policymaking. Some of these data are simply aggregations of information originally obtained at the meso level, such as sectoral production and some enterprise and public sector statistics. But others are truly macro-level data and include, for example, central government statistics and external finance and trade statistics. Many of these data sets are assembled and published in the national accounts, but it should be recognized that such arrangements of the data are by no means unique and could be utilized in alternative accounting frameworks.

In recent years there has been a widespread interest in the design, construction, and use of social accounting matrices (SAMs) to assist in the analysis of development policy and planning is-

sues (Pyatt and Thorbecke 1976, Pyatt and Round 1985). A SAM<sup>60</sup> is simply an accounting framework used to record the flows in an economy during a certain accounting period. It is based on the same principles in input-output accounting, but the primary purpose of a SAM is to show more of the circular flow of income between institutions (especially households) and production sectors. In other words, whereas the input-output system emphasizes the interdependence between production sectors per se, the SAM is intended to show much more of the interrelationships between production structure and income distribution, as well as capital flows and transactions with the rest of the world. Compilation of a SAM draws from a wide range of economic data sources, and any deficiencies in data immediately become apparent. Hence, it could play a potentially important role as an organizing framework and a representation of economic data in any natural information system. But there are some particular features of SAMs that might make them especially relevant to our concept of a hierarchical information system.

One of the principal aims in computing a SAM is to show how the incomes of different household groups are derived from factor and nonfactor (transfer) income sources. In particular, factor incomes are earned by household members selling their labor and other factor services in the factor markets. Producers purchase these factor services and use them to produce commodities that are sold on the product markets. In part these are purchased and consumed by households. Expenditures (or outlays) from one account in the system are recorded as incomes to another account, so the mapping of expenditures and incomes is recorded explicitly. This is the essence of the circular flow of income represented in a SAM. But, in principle, a SAM can be of any dimension and record any amount of detail, and it would depend on the data availability and the required detail for policy and analytical purposes. As an economy-wide accounting system, however, it will always contain the basic macroeconomic balances, and hence it might form a major component in the range of macro-level data constructs. Equally, if different sectors, commodities, and types of factors are distinguished, it will provide a useful link to meso-level data and information. In most SAMs this is a major focus. Finally, and given the emphasis on the distribution of income across different socioeconomic groups of households and other institutions, a

SAM will further link directly to micro-level data provided by household surveys. Thus a SAM is probably best regarded as an example of an information framework that bridges the macro, meso, and even micro levels.

It is entirely debatable whether a SAM will — or even should — form the key element in the hierarchical information system. The estimation of transactions in a full and detailed SAM may seem an ambitious prospect for the countries in Sub-Saharan Africa that are barely able to compile conventional national income accounts. Its potential is merely noted at this juncture, especially in its role as an organizing framework and consistency check for economic data from widely differing sources. Furthermore, the SAM relates only to economic transactions and does not even purport to include other economic data (stocks, prices, and the like) and social and demographic data.

### Information requirements at the macro level

#### *Basic components*

Information at the macro level is still the most widely available form of data about the economies of Africa. It is usually prepared by national statistical offices, although some key data are assembled and even published by ministries and other public departments, banks and the corporate sector. The range of information covers the fields of economic statistics and social and demographic statistics, as well as natural resource and environmental statistics. A large proportion of the information available about any particular country is usually presented, or at least summarized, in its national statistical bulletins or abstracts. There is no universal requirement, agreement, or consensus among statistical offices in Sub-Saharan Africa or anywhere else regarding which statistics should be produced, or even when or how they should be produced. Nevertheless, the data requirements of government agencies and international institutions do generate a core set of key statistics, although these are by no means available on a regular basis or in a timely fashion in more than a few countries of the world.

Let us review the broad categories of data generated at the macro level. Macroeconomic statistics may be conveniently grouped into the following fields:

- national accounts

- government finance
- external trade and balance of payments
- money and banking.

A similarly broad categorization of social and demographic statistics would include:

- population
- health
- nutrition
- education and literacy
- labor.

Other fields of statistics such as natural resources and the environment are excluded from these lists. At the present time, macro-level environmental data are virtually nonexistent, in spite of the growing concern about the effects of economic development on the depletion of natural resources in Africa and its ecology more generally. Their exclusion ought not to imply that such data are unimportant. The effects of economic policies on the ecological system have both a direct and an indirect bearing on the relative well-being of groups in society. In most cases, the groups who are most vulnerable in economic and social terms are also among the first to suffer from the consequences of ecological shifts and resource depletion.

A major element in the array of economic statistics available for any country is the *national accounts*. In terms of the hierarchical information system presented earlier in Table 6.1, however, the national accounts should be thought of as a data “construct” since they are a derivative of a potentially wide range of source data. It is well known that the national accounts are the main source of information for the basic macroeconomic balances of an economy, and should therefore include estimates of aggregate expenditure and income as well as output. In practice many African countries are still a long way from being able to assemble much more than estimates of output, usually at a sectoral level roughly corresponding to the two-digit International Standard Industrial Classification (ISIC) classification, together with some estimates of aggregate components of expenditure. In achieving this, most countries follow the United Nations guidelines as represented in the SNA (United Nations 1968) for the conceptual definitions and basic methodology. Nevertheless, no country in Sub-Saharan Africa can be said to be anywhere remotely close to implementing the SNA in its entirety. The actual data sources for compiling the national accounts on the output side usually comprise purpose-built surveys and some informal inquiries.

ies, but they also include censuses (agriculture, industry, distribution, and the like) wherever these are available. It is common to find output estimated according to the "net output" method whereby raw materials (intermediate inputs) are subtracted from gross outputs in order to arrive at sectoral value added. Direct estimates are usually obtained for fixed capital formation, change in stocks, government expenditure, and net exports of merchandise trade, with private consumption estimated as a residual from the identity relating output to expenditure. The data on net exports are derived from customs and excise information; government expenditure data are supplied from the government auditor, while information on aggregate investment is often estimated by a specially conducted survey within the statistics office. There are obviously wide variations between countries with regard to the quality of estimates and the procedures they adopt. It is still probably fair to represent the *status quo* in Africa as one where there is a heavy emphasis on measuring output, and to a far lesser extent expenditure, while there is a virtually complete absence of income measurement at the aggregate level.

Statistics on *government finance* and the economic activities of government, generally defined, constitute one of the stronger data sets available to national statistical offices. For budgetary purposes such information is usually timely and reliable. In theory the same ought to be true of state and parastatal enterprises and of marketing boards and other quasi-public sector authorities, but data are not always quite so readily available nor consistent in quality.

In most countries the compilation of statistics on *external trade and the balance of payments* is derived from several basic data sources, including customs and excise returns (for merchandise trade) and the central bank (for financial and capital transfers). It is curious that the more restrictive the trade and currency regime, the greater is the statistical office's capability to compile reliable estimates of official (that is, legal) external transactions, although it is well known that such restrictions usually have the effect of driving a greater proportion of transactions underground. An important additional point is that the balance of payments statistics, rather like the national accounts, ought to be viewed as a data construct — a source of secondary data — even though all countries tend to follow quite closely the conventions laid down

by the IMF in compiling their accounts. At the margin, however, there are some minor differences in the treatment of external transactions between the IMF recommendations and those of the SNA.

Within the category of data on *money and banking* is a large and often mixed body of statistical information. At the macro level most of the relevant information is supplied by the central bank or monetary authority in accordance with IMF guidelines, as well as possibly by the ministry of finance. Some of the information is very reliable; for example, there are often good time-series data on money in circulation and the net issue of government securities and other liabilities. But in the banking sector as a whole there are rarely sufficient data to assess the flow of funds among financial institutions with any degree of reliability.

Although the range of macro-level economic data available for African countries is patchy and incomplete, the situation regarding social and demographic statistics is, in most countries, far worse. Macro-level data on *population* include all the basic statistics on population levels, fertility, mortality, and migration. These are initially obtained from a population census, perhaps augmented with some sporadic attempts to maintain annual or interim updates. But macro-level statistics on *health, nutrition, and social variables* are rarely available in composite form. Nor is there necessarily a high priority for such data at the macro level. In most instances it may be far more important to be able to measure these factors for population subgroups such as social groups that have previously been identified as poor or vulnerable. Nevertheless, at the macro level it could be important to estimate the scale of a particular problem, such as an epidemic or food crisis, and there are good examples where, as a result of international action, data have become available through the assistance of agencies such as FAO, World Health Organization (WHO) and United Nations Children's Fund (UNICEF).

#### *Core macro indicators*

At a very early stage of developing an information system capable of monitoring the social dimensions of adjustment, the only practical means of measuring performance might well be to derive sets of core macroeconomic and macro-social indicators. These are simply summary statistics derived from the basic macroeconomic aggregates



and broad social and demographic data, and are therefore purely descriptive. As measures of performance however, it is desirable that they should be clear, unambiguous, easily computable, and sensitive to changes in policy. The problem is that many macro indicators are not very sensitive to policy changes, especially with regard to effects. Nevertheless, they may have some value in describing the status quo. Moreover, they may be the only information available in the short term prior to the introduction of purpose-built surveys and a more detailed data gathering exercise.

The composition of the two groups of macro indicators is by no means fixed but some examples may help to illustrate their nature and diversity.

#### *Macroeconomic indicators*

- Economywide: GDP growth rate, inflation rate, external debt (percent of GDP), debt service (percent of GDP), exchange rate, interest rate
- Government sector: tax revenues, social expenditures, fiscal resource gap
- Country risk indicators: export commodity concentration ratio, import non-compressibility ratio, institutional investor country credit rating.

#### *Macro-social indicators*

- Health and nutrition: infant mortality; morbidity indicator, health status (population per doctor), nutritional status
- Education: adult literacy rate, primary school completion rates.

One main advantage of the core macroeconomic indicators is that they can be computed independently of the existence of a fully integrated and consistent set of macroeconomic accounts. Thus, they depend only upon the calculation of the broad aggregates and measures of macroeconomic performance. The macro-social indicators shown above are predominantly examples of what are usually termed *status indicators*, and simply indicate the current health, nutritional, and social status of the population or segments of it. Another set of measures is usually referred to as *process indicators*, or *input indicators*, and are geared toward measuring the influences on social well-being. Examples of these would include: the prevalence of breastfeeding, availability of potable water, primary school enrollment rates (process indicators), and real government expenditures per capita on social services (input indicators) (Stewart 1987a).

Although the computation of core macro indicators may seem an attractive option, their limitations must be emphasized. First, as we have

noted, they are not always very sensitive to policy impulses, especially in the short term. For example, global indicators of social well-being such as child mortality, literacy rate, and life expectancy at birth may take many years to show any appreciable change. Second, it may not be possible to compute macro-level indicators that can assess the well-being of subgroups, so they are of strictly limited use in monitoring many social dimensions issues. If it is possible to compute these core indicators, especially macro-social indicators, in a timely fashion and at a regional or district level, then their power as a descriptive device and policy monitoring tool would increase substantially. Third, core macro indicators based on observed performance preclude the possibility of carrying out detailed counterfactual experiments other than those based on a continuation of past trends. Fourth, it is very difficult to establish causality — or even association — between variables based on indicators, especially if there are lags in the impact of adjustment policy. Nevertheless, and in spite of the many drawbacks, core macro indicators may be a first systematic step toward analysis based on available data and somewhat better than proceeding on the basis of *a priori* suppositions and *ad hoc* judgements.

#### *Macroeconomic accounts*

Part of the process of macroeconomic adjustment is to focus on stabilization policies that are designed to achieve internal and external balance in the economy. This essentially means rectifying the imbalance between aggregate demand and aggregate supply. In order to understand and analyze the effects of these policies at the macro, as well as at the meso and micro levels, it is first necessary to establish the basic economic accounting balances for an open economy. These reflect a fundamental concept in economics that every transaction can be viewed as a mutual exchange between two parties so that, in aggregate, receipts must balance expenditures or outlays. There are two basic macroeconomic identities relevant to the analysis of adjustment. First, there is the national accounts balance, which measures the flow of goods and services in the economy; second, there is the balance of payments, which measures the (current account balance of) transactions with the rest of the world. To these could be added a third accounting balance, usually referred to as the monetary survey (using IMF ter-

minology), which measures the flow of monetary creation or flow of funds. As will shortly be demonstrated, these accounting identities are interdependent. It is of course important to distinguish these accounting "balances" from the notion of "equilibrium". The former are simply identities that always hold, even if the economy is in disequilibrium, as it usually is. Also it should be noted that these identities refer to "flows" and not to "stocks," which, in any case, are notoriously difficult to measure for any economy.

A discussion of the empirical aspects of the national accounts and balance of payments cannot really proceed further without some reference to the underlying concepts of economic activity involving production, consumption, and accumulation. Macroeconomic analysis usually relies on being able to define a set of aggregates for production, consumer expenditure, government expenditure, investment, exports, imports, and so on. But many of these aggregates are ill-defined, they are often imprecise, and are always conceptually troublesome. This is one reason that it may be useful to refer to these as "constructs" and to distinguish them from the "data" that are used to form estimates in any given circumstance. It is also an important distinction because subsequent reference to the meso and micro levels of activity may well lead to some reassessment of what the macro-level aggregates really ought to constitute. At the present time, however, all empirically determined macroeconomic models tend to be based on aggregates assembled according to the concepts and definitions set out in the United Nations SNA and the IMF balance of payments manuals (although many of these basic concepts are currently under review). For example, a fundamental concept is to establish a measure of output. This may be defined as the aggregate value of all the final goods and services a country produces annually — GDP. But different views exist on what should constitute productive as opposed to nonproductive activity, how intermediate consumption differs from final consumption, and even where one should draw the demarcation line between final consumption and investment. These are often difficult questions that may never be satisfactorily resolved. While it is possible to proceed on the basis of generally accepted current definitions, the implications of any variations in them could materially affect any set of estimates.

NATIONAL ACCOUNTS. The GDP, expressed at market prices can be represented as

$$(1) \quad Y = C_p + C_g + I_p + I_g + (X - M)$$

where  $Y$  is GDP,  $C_p$  and  $C_g$  are private and government current consumption,  $I_p$  and  $I_g$  are private and public investment (and include the change in stocks), and  $X$  and  $M$  are, respectively, the exports and imports of goods and services. Alternative aggregative measures of economic activity are gross national product (GNP), which is GDP plus net factor payments from abroad (NFP), and gross national income (GNI) which is GNP less net unrequited transfer receipts paid abroad (NTR).<sup>61</sup> It is well known that such measures can differ quite substantially depending on the magnitude of international transfers. Equally, the disposition of gross national income can be expressed as,

$$(2) \quad \begin{aligned} Y + \text{NFP} - \text{NTR} &= C + S \\ &= (C_p + C_g) + (S_p + S_g) \\ &= C_p + S_p + T \end{aligned}$$

where  $T$  represents total tax revenue,  $S_p$  is private savings, and  $S_g$  is government saving, defined here as equal to tax revenue less government current expenditure. From (1) and (2), and some rearrangement,

$$(3) \quad (S_p - I_p) = (C_g + I_g - T) + [(X + \text{NFP}) - (M + \text{NTR})].$$

The left-hand side of (3) gives the net flow of saving from the private sector into the financial markets, while the right-hand side sums the government's demand for deficit finance and the foreign sector's demand for funds to finance its current account deficit. Needless to say, this third equation has obvious importance in structural adjustment discussions.

BALANCE OF PAYMENTS. The balance of payments identity is simply a way of showing the current account balance (BOP) and how it is financed. A current account surplus ( $\text{BOP} > 0$ ) equals the excess of income received by domestic residents over their expenditure,

(4) BOP = Gross national income — domestic expenditure

$$= (Y + NFP - NTR) - (C_g + C_p + I_g + I_p)$$

$$= (X + NFP) - (M + NTR)$$

and from (3),

$$(5) \quad BOP = (S_p - I_p) + (T - C_g - I_g)$$

$$(6) \quad = \Delta NFA$$

where  $(S_p - I_p)$  represents the private surplus,  $(T - C_g - I_g)$  the government surplus, and  $\Delta NFA$  the change in net foreign assets. Equivalently, a balance of payments deficit implies a decrease in net foreign assets. Thus, for instance, if net savings in the private sector are zero, a public sector fiscal deficit automatically implies a deficit in the balance of payments account, and hence a decrease in the holding of NFA. The decrease in NFA would be realized by a decrease in foreign exchange reserves held by the central bank by an increase in government liabilities held abroad, or by compensating changes in both elements so that there is a net decrease overall.

The balance of payments identity helps us to focus on the alternative policy measures that a government can pursue to correct external imbalances (Helmert 1988). Three policy measures could be designed to address BOP deficits as expressed through (4), (5), and (6). The first are termed *expenditure-reducing policies*, and these consist of monetary and fiscal policies. Examples include the reduction of government expenditures (or raising taxes), which would lead to an increase in the government surplus, or the pursuance of policies to curtail investment or increase saving in the private sector. Under *ceteris paribus* assumptions either of these would lead to a reduction of the BOP deficit [(see (5)]. The second class of measures are termed *expenditure-switching*, and these operate directly on trade flows [(see (4)]. Thus, for example, trade policies involving a change in the regimes of quantitative restrictions, tariffs on imports, export subsidies, and changes in the real exchange rate would all lead to a switching of expenditures among domestic goods, exports and imports. The third category could be termed *financial policies*, and these would arise when a current account deficit is financed by reducing net foreign assets as indicated in expression (6). We often find combina-

tions of all three categories of these policies encapsulated in macroeconomic stabilization programs.

#### Measurement problems

Some standard, though largely unresolved conceptual problems relating to the measurement of economic activity are especially relevant in the African context. It may therefore be pertinent to draw attention to these problems at this juncture insofar as they have a direct bearing on our measurement of the social dimensions of adjustment. For example, a major conceptual problem relates to defining the appropriate boundary of production, which, in turn, means defining the point at which nonmarket activities should count toward the measure of output or income (Havrylyshyn 1977; Hill, 1977; Kusnic and da Vanzo 1980, and Pyatt 1987). This is important because no imputation is currently made for certain activities, such as gathering firewood, on the grounds that they are "nonproductive." In more developed economies, however, "equivalent" products would be included because they are traded in a market (for example, fuel). There are many quite difficult conceptual issues that come into sharp focus as soon as we begin to integrate macro and micro data outside the confines of the household economy and within the scope of macroeconomic conventions (Ruggles and Ruggles 1986).

One significant practical problem concerns the estimation of private consumption ( $C_p$ ). This is the largest single aggregate on the expenditure side of the national accounts, and yet it is usually estimated as a residual. Even if a household expenditure survey exists, it is not common practice to use it to estimate  $C_p$ . The SNA includes a recommendation that the national accounts be estimated through the commodity balance approach and, in principle at least, this would have the virtue of helping to reconcile inconsistencies among estimates obtained from different sources. The basis of the 1968 SNA is a proposal that each country compile a set of input-output tables. In this way supplies of commodities can be matched with dispositions, and the inter-sectoral (inter-industry) transactions representing intermediate consumption can be netted out to leave the aggregates consistently estimated. The problem is that African statistical offices rightly view the SNA system as being too demanding and fundamentally unworkable in its present form. As a result there is rarely any attempt to incorporate

any data sets that might lead to reconciliation problems. This is basically why it is usually preferred that personal consumption expenditure be estimated as a residual. It is a worrying outcome nonetheless, because if the national accounts estimates of personal consumption at the macro level are relied on to provide the basic information on individuals' living standards, the margins of error are likely to be enormous. So there must be some early improvement in national accounting procedures, at least in regard to personal consumption as it is currently defined.

### Information requirements at the meso level

The meso level has already been established as crucial in determining how changes in policy at the macro level ultimately affect individuals and households at the micro level. This intermediate level has been defined to include two key elements — *markets* and *infrastructure* — that serve as conduits of policy between the macro and micro level. The recognition of the meso level has prompted the need to examine two stages in our analysis: the "macro-meso" stage whereby macro policies affect market conditions and social and economic infrastructure, and the "meso-micro" stage, in which changes in the meso economy affect households. The establishment of the role of the meso economy and the two-stage analytical approach implies the need to examine very carefully the intervening variables in the process. In particular, it is necessary to establish the information requirements and the range of possible empirical approaches in order to carry out an effective two-stage analysis. It should be recognized that some of the important changes that take place in the meso setting may be qualitative rather than quantitative, which are not usually observed very well empirically. Nevertheless, and in spite of these caveats, there is a significant number of quite tractable analytical and empirical approaches that involve information that either already exists or can be readily identified as a priority requirement in a survey or information gathering exercise. It is the purpose of this section to set out these requirements in a systematic fashion. To facilitate this, our initial discussion will be organized around each of the two conduits in turn to establish the role they play and their possible implications for empirical analysis.

### Markets

There are many ways of characterizing the markets in an economic system. In the first instance it is useful to make broad distinctions among product, factor, and financial markets, and possibly asset markets as well, although the latter could be viewed as a set of markets that overlap the markets for goods (physical assets) and financial assets. Markets can be of several types. They can be either more or less formal, and official or parallel. Macroeconomic adjustment policies directly or indirectly affect all these markets by altering market conditions through changes in relative prices and the quantities traded. Most households trade in at least one of these markets and, indeed, many African households trade in all of them in their various capacities as consumers and producers of products and as suppliers and users of factor services. Hence, if market conditions change, so will the well-being of individuals, and it will all happen in a complex and not easily predictable way. It is for this reason that we need to examine in a little more detail the range of possible effects of adjustment policies on the conditions prevailing in each of these markets.

**PRODUCT MARKETS.** A basic distinction was made earlier among three categories of products: exportables, importables, and nontradables, where tradables can be considered as comprising exportables and importables. We saw that nontradables are a class of goods and services produced and distributed only within the country. This can be because of high transport costs or commercial policy obstacles. Tradables, on the other hand, are goods that cross frontiers and, in theory, their prices are determined by world market conditions. This distinction proved useful in establishing some basic results in the context of a highly stylized, three-sector model on how adjustment policies are likely to affect market conditions, and hence the well-being of households. In practice the distinction between tradables and nontradables is more arbitrary and, as regards data requirements, it usually means that quite detailed commodity disaggregation is necessary.

Starting from the position of an external imbalance (which can be expressed in terms of an excess demand for tradables), we can consider first the effects on the product market brought about by an expenditure-reducing package consisting of fiscal and monetary contraction. The reduction in domestic demand, designed to bring the exter-

nal account into balance, will result in an excess supply of nontraded products. The question now arises of how this excess supply can be eliminated. The theory is that if the price of nontradables is perfectly flexible, they will move downward to clear the nontradables market. In other words, the price of tradables relative to nontradables (the real exchange rate) will rise, thus changing the relative profitabilities of the two sectors. There will be a tendency for resources to shift out of nontradables and toward tradables.

In practice, product markets will respond to these policies in a variety of ways and it will be crucial to find out how they might operate in order to assess the social impact. To begin with it must be said that the assumption about flexible prices has limited application to Sub-Saharan African countries. This is partly because of adverse expectations in the sense that producers of nontradables may be reluctant to lower their prices when demand falls if they believe that policy reversal is possible. But it is also a result of the inherently oligopolistic nature of much of the manufacturing system and to the fact that many African countries start from a position where stringent controls and strong government intervention are in force. All these factors underlying price rigidities tend to slow down the process of adjustment. Expenditure-switching policies such as devaluation or tariff reform are designed to directly influence the change in relative prices in favor of tradables, and hence speed up adjustment. Devaluation has a tendency to be inflationary, however, and tariff reform will also adjust the relative prices within the tradables category between exportables and importables, so it is by no means insignificant to know just how this realignment of prices comes about in assessing the overall social impact.

It should be noted that in practice the distinction we have drawn between tradables and nontradables is not clear-cut, and this can complicate empirical analysis when we move beyond the simplified two-sector model. In some instances sectors such as construction, housing, and government services can be clearly designated as nontradables and others, such as the main export commodity, as tradables. In general, however, tradability is a matter of degree rather than some absolute division.

It is important to introduce one more feature of the real world at this point. Many African countries begin their adjustment programs from posi-

tions where *parallel markets* exist alongside the official markets for certain commodities, including the market for foreign exchange. Many of these are illegal and involve smuggling or illicit dealing in goods obtained under quota at a price below the true scarcity cost. Empirical information is therefore not easily obtained. One consequence of parallel markets, however, is that economic rents will accrue to some members of society and not to others. Hence, if market liberalization reduces the activities in parallel markets, marked distributional and social consequences will result. Furthermore, the shift from parallel to official markets could exaggerate our measure of output change and of the amounts traded, and there is some evidence to suggest that this could be substantial.

The effects of the relative price and output changes in the product market referred to above impinge on households in a variety of ways. In terms of the three-sector distinction, some basic results are immediately clear. For example, as consumers, the beneficiaries will be households that consume relatively more nontradables than tradables. But many households are also producers who will be affected by the shifts in relative producer prices, the implication being that tradables producers (for example, small-scale agricultural activities) will benefit most from the increase in the relative price of tradables. In restricting our attention to the product market implications, the net effect on household well-being might be ambiguous and need to be assessed empirically in each case.

**FACTOR MARKETS.** Many households rely on the sale of labor services to derive wages for their livelihood. But in Sub-Saharan Africa there are also many households, especially those engaged in the urban informal sector and smallholder groups producing agricultural commodities, that hire as well as sell labor services. Therefore, households will feel the effects of adjustment through changes in the factor markets as well as in the product markets, which will add further complexity to an overall assessment of the effects on particular household groups. A few features of the factor markets need to be examined in the context of empirical analysis and information requirements.

One of the main objectives of adjustment is to switch resources from nontradables into tradables production. In assessing the implications for the factor markets, however, we must distinguish

between the long and short-run consequences. In the short run, the transition is unlikely to be smooth and unemployment will probably rise as the economy adjusts. There are two principal reasons for this. First, non-tradable activities will generally contract faster than tradable activities can expand, especially if the latter require the rehabilitation of equipment and new investment. Hence, factors will be unemployed for a time while awaiting their reallocation to the tradables sector. Second, the expenditure-reducing package usually involves curtailing government services and hence a direct retrenchment of government employment. In the long run, however, real wages will adjust and move toward a new equilibrium, but whether these are higher or lower will depend upon the relative factor intensities of the tradable and non-tradable sectors.

An important dimension in the labor market concerns the existence of a traditional informal sector alongside the organized formal sector. The informal sector is sometimes closely aligned with the nontradables sector because many people work as artisans and petty traders. A substantial part of the production of tradable goods in agriculture is also informal, so the distinction is not nearly so clear cut. What is fairly clear is that the informal sector is significantly affected during the adjustment process. For example, as a result of deflationary measures there will be employment contraction in the formal nontradables sector (for example, a cut in government employment) because employers have little alternative in the organized labor market but to "shake-out" excess labor. The redundant formal sector workers will now tend to move into the informal sector. This will include a move into urban services even though the demand for these services may also have contracted. A major characteristic of the informal sector, however, is that it is a very flexible labor market, so that a fall in demand will tend to affect remuneration rather than employment. Thus the labor markets in the formal and informal sectors may reflect very different features. There will be wage resistance in the organized sector, while the informal sector will act as the "residual pool" of labor during the adjustment phase (Scobie 1989), with employment rising and average income declining. It is also suggested that labor may flow more easily between formal sectors (nontradables to tradables) than between the formal and informal sectors within tradables or nontradables. We often have

very little information about the informal sector, and yet these kinds of outcomes could have significant bearing on how adjustment affects the poor in society.

In carrying out a detailed analysis of the labor and other factor markets during adjustment it is important to recognize the existence of several quite distinct markets. We have just referred to the feature of labor market segmentation in which the market for a particular kind of labor is divided into the formal and informal components, and where the structure of wages does not mirror the distribution of skills and human capital. It will be useful to distinguish labor markets in other ways too: by employment status (self-employed, employer, employee); by level of education attained; by gender; and by region, especially if labor is geographically immobile. It might be necessary to identify different forms of capital (distinguishing housing from other capital, for example), especially because of the relative immobility of capital among production sectors in the short or medium term. Only by observing the relative changes in the factor markets, and the remuneration of labor in particular, can we begin to see how the primary income generation of households is affected by adjustment.

**FINANCIAL MARKETS.** Although households will be principally affected by changes in the product and factor markets, they may also be affected by changes in the credit markets resulting from monetary contraction. They will either face increased quantitative restrictions in the market, so that they simply cannot obtain the amount of credit they need at the existing rate, or they will find interest costs increasing. Poor households have very limited direct access to financial markets anyway, so the effects on them will depend largely on the extent to which the policy effects in the formal market spill over into informal markets. Again we see that the informal and parallel markets play an important role. In the pre-adjustment phase, credit may be available in parallel markets but at a premium rate. Liberalization might bring with it some narrowing of the differential between interest rates, although tight monetary controls will generally keep rates high. Note also that the rationing of foreign exchange in the pre-adjustment era has often created official and parallel markets in foreign currency with multiple exchange rates that have persisted well into postadjustment. Of course, it is not necessarily the case that changes in all

these markets will have a major direct impact on the poorest households. Information is needed to monitor the changes and their influence.

### *Infrastructure*

It has already been asserted that economic and social infrastructure forms a crucial part of the meso economy in Sub-Saharan Africa. By "infrastructure" we usually refer to publicly provided physical capital and government services. The subdivision into economic and social components comprise the following:

- Economic infrastructure: major elements of physical infrastructure such as roads, irrigation, and transport facilities, and current expenditures on a range of support services such as agricultural marketing and extension services
- Social infrastructure: capital expenditures on schools and hospitals and current expenditures on health, education, and nutrition.

Bearing in mind the nature of the expenditure-reducing elements of adjustment policies and the limited scope for increasing tax revenues without endangering the very objectives of policy, the brunt of adjustment will tend to fall on reduction in government expenditure, and especially on infrastructure provision. Clearly, changes in the provision of economic and social infrastructure will have a direct and major impact on some households, but only a limited and indirect impact on many others. In assessing the social dimensions of adjustment it is therefore imperative that these impacts be assessed in a methodical and consistent way.

A direct effect of this overall reduction in economic infrastructure will be felt by households operating as producers. For example, a reduction in physical infrastructure and other farm support services is certain to impose constraints on farm profitability and hence on the ability of farmers to respond to the improvement in agricultural prices brought about by structural adjustment. These kinds of effects have been largely ignored in the adjustment literature, and yet they are likely to be important for many groups of African smallholders. Furthermore, in many African countries the physical infrastructure serving many rural areas has seriously deteriorated, so that access to the necessary markets has become significantly more difficult. In these circumstances, improvement in prices in urban or periurban markets may be of little relevance to

farmers in remote areas. It is clear that information is required on how these economic infrastructural effects are likely to affect smallholder productivity and income. A further point is that many of the effects may not be immediately apparent if the overall reductions have taken the form of maintaining current expenditures at the expense of withdrawing capital projects.

Reductions in social infrastructure will affect households both directly and indirectly. A cut in the provision of teachers, for example, will directly affect the incomes of households whose members are teachers, but the cuts would also affect those households who receive fewer (or inferior) educational services. The indirect effects of human capital enhancing services (such as health and education) may be felt through a lowering of labor productivity. The effects of reductions in social infrastructure, though possibly more pervasive than economic infrastructure, may disproportionately affect some groups. Rural areas may fare worse than the influential middle- and upper-income urban classes in regard to both health and education services. Once again it will be a central aspect of the SDA program to seek systematically the information needed to monitor the differential effects of reductions in social and economic infrastructure — for example, whether there is any decline in health facilities or in books available in education, and so forth. Such data are not routinely collected and must therefore be sought as part of an overall survey initiative at both the community and the household level.

### *Data and information*

Information for meso-level analysis must be sought from several key sources. In all Sub-Saharan African countries this will involve the introduction of new surveys to supplement available data sources. Unlike the major macro-level institutions (central and regional government, central bank, customs and excise departments) or the micro-level institutions of households with which we are ultimately concerned, the meso level is not observable in an institutional sense. We do not observe markets as physical entities and therefore we cannot directly derive information about how they function. At the same time, our interest in economic and social infrastructure is not simply with reductions in expenditures *per se*, but more in terms



of the flow of services derived from this expenditure. Hence, information has to be sought from individuals and households across all groups in society to ascertain the overall impact of changes in infrastructural provision.

At the national level, meso-economic data are available chiefly on product prices, wages and other labor force data, and sectoral production.

Information on *prices* has been accorded a relatively high priority by national statistical offices, especially following the widespread participation by African governments in the International Comparisons Project (ICP). Although the prime purpose in collecting this information has been to compile purchasing power parities, there is usually some parallel attempt to compute a consumer price index (CPI) to provide the basic measure of a country's rate of inflation. The main problem here, however, is not so much the price data but the determination of the weights of the index. In the past this has been one of the principal reasons that statistical offices have conducted household expenditure surveys, and it clearly requires that expenditures be obtained at a substantial level of commodity disaggregation. Producer price series and import and export price statistics are generally far less prevalent, except for a few major products such as those representing the principal export commodities. Similarly, information on wage rates is virtually non-existent, with a few notable exceptions such as public sector occupations.

Data on *employment and earnings* can be derived from several possible sources. One major source is sometimes a purpose-built labor force survey. These are usually carried out fairly infrequently. Yet when they are undertaken they clearly provide the very best information on labor force participation, occupational structure, earnings, and general labor force characteristics available. A population census also provides some baseline information on employment, as do some production censuses and surveys. It must be noted that the information obtained from production surveys is usually meagre and it is rarely possible to utilize it in any subsequent analysis. Likewise, although some partial information on earnings can sometimes be gleaned from income tax and social security returns, these sources suffer heavily from a problem of bias and non-coverage. Like output, however, the measurement of employment is fraught with difficulties brought about by adapting concepts borrowed rather too freely from the developed world to economies where

they are often inappropriate or inapplicable.

As noted earlier, some *sectoral production* statistics are routinely generated as part of the compilation of the national accounts. Individual line ministries, such as agriculture, usually play a key role in this process. In addition to the requirements for estimation of the current value of output, it is usual to find estimates of real or constant price output (or possibly just indexes) as well as series of physical outputs for some selected commodities. Various methods exist to obtain these estimates, but there is a heavy reliance on measuring physical changes with a single indicator of a key crop or product which is then applied to a base year value.

There are two principal survey initiatives that will provide critical data and informational requirements for analysis. The *Household Surveys*, carried out as a sequence, or some combination of a *Social Dimensions Integrated Survey* (IS) or a *Social Dimensions Priority Survey* (PS) will not only provide an invaluable source of information at the micro level, but will also provide some key data about the functioning of markets and how adjustment has affected the availability and quality of economic and social services to households. Some information on market behavior will be obtained from households concerning their roles as both producers and consumers of products. In addition, the household surveys will provide some information about the operation of labor markets. The IS is designed to provide information on the household and its members across a wide range of topics in order to improve our understanding of what determines the welfare of the household. Thus, for example, the survey should not only tell us that levels of education are low among household members, but it will provide the basis for understanding why they are low (for example, because of high opportunity costs resulting from returns to child labor or low household income). The PS is less ambitious in what it sets out to achieve. Its principle objective is to obtain, as rapidly as possible, information on a critical set of welfare indicators. Because the range of variables obtained is more limited than with the IS, the PS will only trace what is happening to the indicators — it will be limited in its capacity to explain them. In both cases, however, the household surveys will yield relatively little information about prices or wages. Another survey initiative, the *Community Survey*, is designed to generate information on the movement in prices at a community or regional level,



and, just as important, information on how adjustment has affected the supply of social services and economic infrastructure. Although the effect of changes in provision will be felt at the household level, information on health, education, and other public services is sometimes best monitored at a community level where there could be differential impacts of adjustment of the poor and the nonpoor within a community.

### Information requirements at the micro level

We now examine the particular requirements at the micro level and its relationship with the social dimensions of adjustment. Four issues are discussed below. The first concerns the nature of the household as a unit of study. Second, we consider the question of grouping households and identifying target groups. Third, we consider the range of data constructs currently available for indicating levels of welfare. Finally, we briefly discuss the specific data requirements for micro-level analysis.

#### *The household unit*

Individuals are usually members of several overlapping social networks at the same time. The nuclear and extended families are obviously two social units; the *household* is another. A household can be a one-person or multi-person unit. A number of criteria can be used to define the household. Those commonly utilized include: members who have a common source of major income, live under the same roof or within the same compound, and have a common provision for other essentials of living; (Casley and Lury 1987; United Nations DTCD 1989a). While the criteria used to identify households must be chosen to suit the local situation, a basic distinction should be drawn between the household and the family unit. The latter would involve imposing an additional criterion of kinship, where members are related by blood, marriage, or adoption. The size and characteristics of households can show wide variations by locality and country. They could consist of a single family, but households in Africa commonly consist of several families, whether these are of the same kin or persons with no kinship ties. It is possible for families to be spread among households, either temporarily or permanently. For example, a married woman may continue to live in her father's household when she is young, while the hus-

band lives under a separate roof.

The basic United Nations' definition of a household, used in many surveys, is a "group of people who live and eat together." While this is a clear distinction between households and families, there is a problem regarding individuals who board (eat with the household) and lodge (live with the household). The general United Nations guidelines suggest that the boarder who does not lodge should be included, but the lodger who does not board should be excluded; thus those who board and lodge, such as domestic servants, are regarded as household members. In many cases this could establish a household unit that is too heterogeneous in its composition. The degree of intra-household inequality could be too great and could cloud many of the important social dimensions. So a second criteria can be added: that all persons living and eating together should acknowledge the authority of a single head of household, regardless of whether the latter is living with the other household members or living away. Hence the decision as to whether servants and lodgers are considered to be household members or are a separate household depends on whether or not they accept the authority of a household head. In the African context the situation of polygamous households can present problems, depending on whether each wife is treated as a separate household or as a part of one large household. In the former case it is necessary to apply an arbitrary rule, such as linking the household head to the senior wife to avoid double counts.

The household is an important social and economic unit because within it many of the decisions concerning individual members' activities and their consumption (and hence their welfare) are made, and its physical properties — that it is a collection of individuals with an identifiable location — make it a useful sample unit in survey work. Nevertheless, the household may not always coincide with a single economic unit. In this regard we can distinguish two kinds of economic units: consuming and producing. As a consuming unit, living and eating together might not imply the pooling of all incomes and sharing all expenditures. Even if it does, and the household constitutes a family unit, two possible concepts of household decisionmaking based on the "glued-together" or "despotic" family unit can lead to widely different results on the intra-household allocation of resources and, hence, of individual well-being. The problems stemming

from the household's role as a producing unit can be even more problematic. Small-scale agricultural holdings of nonfarm enterprises may not match the household unit. The agricultural holding is usually defined as the land and livestock that is managed as a single unit by a holder, who may not be the head of the household. For example, in many countries the wife of the household head is allotted a certain area of land on which she grows a limited number of crops traditionally cultivated by women. Also, nonfarm enterprises may be operated by more than one household, which creates a problem both in identifying and attributing the incomes generated. In view of this nonalignment between the household and economic units, in some surveys in Africa alternative institutional units have been used, such as individuals living in a hut in the village or cattle post (Botswana) and a homestead (Swaziland). Also, special arrangements may have to be made to define appropriate units for nomadic societies (United Nations 1989a). Notwithstanding these complications and exceptions, the household unit is to be regarded as the basic preferred institutional and sampling unit, although its precise definition has to remain a country-specific choice in the light of local circumstances.

A further decision about household composition has to be made — whether to adopt the *de facto* or *de jure* approach. The *de facto* definition pertains to those household members present at the time of the survey and is most commonly used for enumerations over short periods. The *de jure* definition relies on a concept of normal residence and is usually preferred in surveys conducted over a longer period of time.

In spite of the many good and convincing reasons for choosing the household rather than the individual or any other social grouping as the appropriate unit, there are still many problems in deriving inferences about the individual's well-being from household-level responses. Preferences of household members could differ widely, as could the basis for allocating resources among them. For example, in certain situations we may observe an increase in household income (perhaps under adjustment) that does not generate an improvement in the nutrition of all household members. An assessment of the social dimensions of adjustment that is primarily carried out at the household level could therefore mask a number of consequences at the individual level. For this reason it is important to monitor particu-

lar dimensions — such as the role of women during an era of adjustment — that otherwise might not emerge in a household-level analysis.

#### *Classifying households and identifying target groups*

The classification of households by socioeconomic group constitutes an essential element in data analysis at the micro level. Such classifications are important if policymakers want to know how shifts in macroeconomic and sector policies actually change the income composition of various social groups, and thus determine how their well-being is affected. In theory, any number of criteria might be used to establish the classification of socioeconomic groups, but the basic requirements of a useful criterion is that it should be unambiguous and have a clear policy focus. Apart from the obvious importance of policy targeting, household classifications ought to be chosen so that they are relatively homogeneous. Hence, variations (for example, of incomes or expenditures) within groups are smaller than variations between groups. In this way we have greater scope for analyzing behavioral responses to policy changes. Finally, since households are most often multi-individual units, a classification should ideally be chosen that is applicable to all individuals in a given household or, alternatively, to the household as a whole; otherwise, the fundamental notion of the household being a "unit" is lost.

#### *Criteria*

A broad set of criteria has been used for classifying households, including economic (wealth, income or expenditure); sociological, location, and characteristics of household head.<sup>62</sup>

**WEALTH, INCOME, OR EXPENDITURES.** Although these are included in a combined category of "economic" criteria, each one has a different merit. Wealth is important at several levels. In rural areas access to land is a critical consideration. The landless or near-landless households can be affected quite differently from the smallholder by development policy. The rich, measured in terms of accumulated wealth in the form of physical or financial assets, are clearly a distinct group; but even among the relatively poor, those with modest assets might be distinguished from those who have none. Wealth, as with income or expenditure, has the advantage of being a household-level criterion. Nevertheless, the use of income, expen-

diture, or, to some extent, wealth as a classification criterion suffers from a major drawback — according to any of these criteria, a household's relative position, and hence its classification, might change over time or as a result of policy intervention. For instance, the mobility of households between income deciles makes total income a poor classification criterion for targeting policy toward particular households. The wealth criterion is much more effective because households are relatively less mobile between wealth groups in the short or medium run.

**SOCIOLOGICAL.** These criteria include a range of factors such as race, religion, or language and assume a particular importance in African societies where market fragmentations or even ethnic discrimination might be a common characteristic of the majority of the poor.

**LOCATIONAL.** Location is usually justified on the grounds that policy often has a locational element. Rural households need to be distinguished from urban households but, beyond this, our focus on the meso economy has indicated a strong spatial dimension in the way policy is transmitted through markets and infrastructure. Thus, it might be important to use an even finer locational division for classifying household groups and to capture the regional effects directly.

**CHARACTERISTICS OF THE HOUSEHOLD HEAD.** The socioeconomic characteristics of the household head (for example, occupation or employment status) are often used as criteria for classifying households. In doing so one is implicitly assuming that the behavior and level of well-being of all individuals in the household can be determined or adequately represented by the status of the head. Nevertheless, the economic status of the household might be determined by the characteristics of a main earner who could be a different individual from the household head. So this criterion has to be used with much care in its practical application.

In the case of Sub-Saharan Africa, an indication of some broad categories of socioeconomic groups that might figure in a number of taxonomies is as follows:

*Rural sector*

- export-oriented medium- and large-scale farmers
- export-oriented smallholders
- food/subsistence farmers

- pastoralists
- landless (or near landless) agricultural workers
- non-agricultural workers.

*Urban sector*

- government employees (skilled)
- government employees (unskilled)
- private formal sector employees
- private informal sector employees, self-employed
- inactive or unemployed.

The purpose of defining such classifications is to facilitate the design of policy interventions, which frequently affect the socioeconomic groups in different ways. Policymakers may define *target groups* of special concern, and the selection of socioeconomic categories obviously has to reflect these target groups. It is important to distinguish, however, between the concepts of socioeconomic group and target group. In the first place, socioeconomic groups are defined to cover the whole population; moreover they are mutually exclusive. In other words, each person (or household) in the population belongs to only one socioeconomic group. On the other hand, people may belong to more than one target group, and of course many will not belong to a target group at all. Target groups are neither exhaustive nor mutually exclusive. A target group may be a subset of a broader socioeconomic group — for example, maize smallholders may be considered a target group and part of the broader "smallholders" socioeconomic group. Alternatively, a target group may cut across socioeconomic groups, as in the case of female-headed households as a target group.

While it is important to maintain this distinction between socioeconomic and target groups, the choice of socioeconomic categories must reflect the groups that are targeted for policy and program purposes. Hence, socioeconomic groups, representing the basic taxonomy for data classification, should be carefully selected to allow the identification of target groups for policy and program intervention, as well as representing groupings of households that are relatively homogeneous in levels and sources of income, expenditure patterns, and economic behavior more generally. If the classifications are too finely divided, however, then the analyst could run into empty-cell or small sample problems. At the same time, some nontargeted household groups might be aggregated into fairly broad categories. Nevertheless, it is not always obvious prior to

formal modeling or analysis just how important the behavior of nontargeted groups may be through their indirect effects. This suggests that great care must be exercised in selecting the appropriate household classifications. The question of target groups is a major issue in its own right and requires further consideration.

Concern for the social dimensions requires a clear picture of particular socioeconomic groups' vulnerability to adjustment programs and the impact of adjustment on the existing patterns of poverty found in a given country. In turn, there is a direct consequence of this implication in the information requirements and analysis at the micro level.

#### *Data sources*

Household- and community-level surveys provide the main data and information for household-level analysis, especially analysis to help identify the incidence and intensity of poverty and the socioeconomic characteristics of the poor. The SDA is a multi subject survey covering income and expenditure, education, health, employment, migration, housing, agriculture, nonfarm enterprises, transfers and savings, and anthropometry. The preliminary sections of the questionnaire also generate some basic information about household membership, including number of individuals, gender, age, relationship to household head, and the like. This information provides the key source data, but the estimates and the indicators required for analysis must then have to be constructed. For example, household income estimates, which constitute some of the key statistics for poverty analysis, have to be built up and derived from the source data provided. The same is true regarding expenditures, although they are generally less problematic in concept and usually more reliably reported than incomes. The IS provides a wide range of additional information to facilitate a number of alternative classifications based on the characteristics of the household as a whole, the household head, or of other individual household members.

#### *Indicators of welfare*

At the micro level of analysis there are many analytical and empirical issues to be tackled, and therefore the data and information derived from the multisubject household surveys are crucial.

We have seen that some evidence can be gleaned at the micro level to derive core macro indicators, but very little of real substance can be established about the social dimensions of adjustment unless reference can be made to the effects of adjustment on particular groups in society. Analysis of micro-level data and information will therefore constitute a major part of the empirical effort. The present section will consist of a brief overview, relating especially to empirical indicators of welfare, the measurement of poverty (including the derivation of poverty profiles), and an indication of how the effects of adjustment might be accounted for at the micro level. This section will be confined to the question of measurement and the information requirements that it implies, rather than analysis per se.

A first objective in performing empirical analysis at the micro level is to be able to identify the poor and their main economic activities. This should lead us directly to the identification of the target group for policy purposes. Having already established the household as the unit of analysis, a measure of welfare is required to identify the poor. Many of the theoretical arguments relating to the determinants of welfare at the individual household level have already been discussed in Chapter 4 and need not be repeated here. But there are a number of implications concerning the empirical measures of the standard of living that have been proposed that require further consideration in the light of survey and other data requirements. It is manifestly clear that no single "scalar" measure will suffice as a unifying measure of household welfare. Each measure has its relative merits and drawbacks. The wide scope of the multisubject household survey will therefore permit the computation of many alternative measures, including those based on income, expenditure, and nutritional status.

**INCOME.** Income-based measures appear, at first sight, an attractive way of assessing relative household living standards. The level of household income represents the limit to which household members can acquire goods and services without running down their assets or increasing indebtedness. We have noted in the earlier discussions in this volume that households could receive income from a variety of sources and that we may distinguish two broad classes: primary income and secondary income. "Primary" income is the term usually referred to as factor income, whereas "secondary" income consists of

transfers from government or from other households and institutions. Let us distinguish the income categories more precisely:

*Primary income*

- income from employment (wages, salaries, and the like)
- net income from agricultural holdings
- net income from nonfarm enterprises
- rent from dwellings
- consumption of home production.

*Secondary income*

- transfers from other households
- transfers from other enterprises and from abroad
- transfers from government.

Income is not received by all households from each and every source. Indeed, it is precisely because households receive different combinations of incomes that our understanding about the effects of adjustment on different social groups is complicated. Income from employment (employee compensation) is payable to individuals in the household, and there may be more than one employee, each of whom could have different skills and belong to different labor markets. Net income from household-based activities (farm and nonfarm) generates returns to both self-employed and domestic productive assets. Rent from dwellings is included, and this covers both actual and imputed income from owner-occupied dwellings. The latter is important, especially in the case of cross-sectional analysis, otherwise rental income (and expenditure) could distort the patterns across households. The final element of primary income is also an important item — the estimated (equivalent market) value of home-produced goods and services, which augments both the incomes and expenditures of certain households. This principally affects farm households.

Secondary incomes consist of transfer incomes, which are shown above as three separate components, depending on their source. It is usually difficult to distinguish such income in the responses from a household survey. From the analyst's point of view, it would be useful to be able to estimate government transfers in cash and in kind because there could be a direct effect on their magnitude as a result of structural adjustment. There is a further conceptual issue concerning the extent to which one should make imputations of certain government transfers to households. Free or subsidized health care ought, in principle at least, to be imputed as both an

income and an expenditure at a value in excess of its apparent price (Meerman 1979) if income is to be considered as an appropriate measure of the standard of living. This is difficult to achieve in practice, in part not least because of the multitude of factors underlying the effect of quantity restrictions as well as price distortions, which would affect the imputation procedure.

A well-known practical deficiency of income-based measures of household welfare is the problem of underrecording income in household surveys. There are a number of points here. Underrecording of incomes can be of two kinds: either incomes are deliberately underreported by the respondents or, the survey may fail to pick up certain components. A special effort has been made in the prototype IS questionnaire under the SDA program to minimize the latter by seeking a response even when the household and the production unit do not coincide. But no matter how complex the question paths, it is difficult to overcome the former problem. Second, the underrecording problem appears to affect certain income components more than others. For instance, net income from household enterprises (and, hence, the informal sector) appears to be particularly unreliable, as does the reporting of secondary incomes of all kinds (Grootaert 1986).

**EXPENDITURE.** Expenditure-based measures of the standard of living are considered both more reliable and more satisfactory than income-based measures from several standpoints. First, it can be argued that expenditures follow movements in permanent incomes, so that households save or dissave out of transitory fluctuations in their actual income. Second, expenditures are much closer to the notion of "consumption" of goods and services (and hence the satisfaction of human wants) than incomes. Third, expenditures tend to suffer less from underrecording problems and people may tend to have a better recollection of their expenditures than of their incomes, especially if they are asked precise questions about particular expenditure categories. Nonetheless, there are difficulties and drawbacks with expenditure measurements. Some expenditures are at the household level, while many others are at the individual level and must be aggregated. Also, there is a problem with expenditures comparable with that in the measurement of income concerning the imputation of certain items.

The main categories of expenditures can be itemized as follows:

#### *Household expenditure*

- expenditure on food items
- expenditure on nonfood items
- consumption of home production
- rent for housing services
- transfers to households, government, and other institutions, domestic or abroad.

The item "rent" is identified separately to account for the possibility that if rent is imputed as an income it should also appear as an expenditure for the household. A similar remark applies to the imputation of the consumption of home production, which particularly applies to subsistence farmers. In some instances, analysts have preferred to base measures of standards of living on one component of expenditures — for example food expenditure — or some other construct such as the proportion of the household budget spent on food.

In the case of both income and expenditure measures there is a problem about how to account for the variable household size. Some normalization is necessary and various possibilities are suggested, but they usually amount to a choice of whether to measure expenditure per capita, per equivalent adult, or per adult. The difference between the latter two normalizations is that the "per equivalent adult" is based upon "equivalence scales," which require econometric estimation and are not guaranteed to give usable results (Deaton and Muellbauer 1980), while the "per adult" is a more arbitrary approach and relies on choosing weights for children (for example, one child equals one-half an adult unit). With these normalizations we can generate several alternative measures based on incomes and expenditure, such as total expenditure per capita, total household income, proportion of the household budget spent on food, and the like.

**HEALTH AND NUTRITIONAL STATUS.** There is substantial literature on the possible effects of adjustment on the health and nutritional status of individuals (Behrman 1988; Cornia, Jolly, and Stewart, 1987). In principle, measures of living standards based on health and nutritional status are attractive because they directly reflect basic human needs. But it is complex and difficult to analyze the effect of adjustment in these dimensions either from a theoretical or from an empirical standpoint (Behrman 1988; Scobie 1989). Concerning measurement issues, there are essentially two approaches: measures of outputs and of inputs. "Output" measures cover various

anthropometric and clinical measurements of individuals in a household, or perhaps of some subset, such as children. "Input" measures primarily relate to food intake.

#### *Data for micro analysis*

To identify the type of information to be collected through household surveys and the related measurement issues, attention must be paid to the category of respondents from whom it may be realistically collected. It is also useful to distinguish between the type of information that can be obtained on a single occasion (either because it pertains to the current situation or because it can be obtained realistically through retrospective questioning relying on the respondent's memory) and the type of information that by its very nature requires repeated visits to the same household or individual. Most suitable reference periods will also vary among different items. Such factors can be helpful in appropriately organizing the information to be obtained in the survey questionnaire(s) and determining the appropriate survey structure.

Several categories may be distinguished in the context of the household surveys concerning the type of units to which the information to be collected pertains and the type of respondents from which it may be collected:

- Simple information that can be easily obtained on a relatively extensive scale by observation or a brief interview with any member; this can include listing of households, enumerating their basic characteristics for stratification and sampling, as well as for identifying target groups of special interest in the survey

- General information on the household such as housing conditions, amenities, possession of durables, and the like — also obtainable from any adult member but usually collected only for the households selected for the sample

- More specialized and complex information pertaining to the household as the unit, such as consumption and expenditures, typically requiring a lengthy interview with specified member(s) of the household judged to be the most well informed on the topic

- Information on production, inputs, income, and the like pertaining to each household enterprise (agricultural and nonagricultural) as the unit, again requiring interviews with individuals identified to be the best informed

- Identification of household members and their

basic demographic and other characteristics, usually obtainable as a part of the general household interview with any adult member

- Detailed personal information on each individual member, such as on employment and income, usually only obtainable directly from the person concerned

- Information pertaining to other types of units outside the household, such as the community, local markets, other organizations, and institutions — usually obtained from specially selected “key” respondents.

### **Toward macro-meso-micro analysis**

The collection and collation of relevant and timely data are critical prerequisites of a policy initiative to enhance the social dimensions of adjustment. But they are really only the beginning. The major challenge such an initiative faces is in understanding what it is that determines the microeconomic (or social) outcomes that are observed. In particular, some understanding has to be gained of how structural adjustment policies, both those that have been applied historically and any alternative sets, have affected households. This is a challenge of significant proportions, since the analysis that is applied to the data must be ultimately capable of performing “counterfactual” experiments by tracing what might have occurred had an alternative set of policies been applied and tracing these effects through to households in sufficient detail to be of some practical use to policymakers.

The first of these capabilities implies some form of structured and quantitative appraisal based on a model (or models) of the economic and social system. Since most models that satisfy the first of these capabilities are limited in the degree of disaggregation that they can meaningfully handle, they need to be supplemented with complementary data analysis that can meet the second requirement. It may be that empirical household models can assist in tracing the household effects in sufficient detail for policy purposes, but these are not the only approaches available. A macro-meso modeling initiative can be complemented by a careful meso-micro analysis of household-level data directly without any formal household modeling. In this way, macro-meso linkages can be examined and at the same time the implications for different households can be worked out in sufficient detail for policy purposes. In other words, a useful research methodology would in-

volve a combination of more formal modeling techniques to investigate macro-meso linkages, through which counterfactual experiments would be feasible, with survey-based meso-micro analysis of household welfare.

This is the underlying philosophy in what follows. Our first preoccupation is with establishing methods of analysis to gain an understanding of macro-meso linkages. This is then complemented with a discussion of the different types of meso-micro analysis that are likely to prove useful for policy purposes.

### **Macroeconomic modeling**

The purpose of this section is to provide a brief review of some of the modeling approaches that could be used to examine the macroeconomic consequences of structural adjustment and, more specifically, to explore the effects on particular socioeconomic groups. For a more detailed discussion and assessment see N’cho-Oguie (1989). As indicated earlier, an ultimate aim is to work toward an integrated macro-meso-micro modeling and analytical framework. At this stage, however, the state of the art is such that it is not possible to propose a definitive model or even a class of models capable of tracing the effects from the macro level right down to the micro level of individual households. Moreover, even at the macro level it is unlikely that one simple model specification would be suitable for all purposes. Usually macro models are designed to focus on particular macroeconomic features and to simplify the rest. It is therefore essential to develop and maintain an information system capable of servicing a range of possible models. Our aim here is simply to note some of the existing modeling options and their applicability to social dimensions issues.

Before embarking on this review a more immediate question needs to be considered: “Why construct a macroeconomic model at all when the ultimate concern is the micro level?” The answer to this is a standard one: the nature of the instruments of an adjustment package (for example, manipulating the interest and exchange rates) are manifestly macroeconomic, even if our concern is to examine the effects on particular household groups. Furthermore, besides the countries themselves, international organizations including the World Bank and its donors are also interested parties in assessing the broad economic and social effects of these policies.



## *Aggregate models*

**ECONOMETRIC.** It is sometimes suggested that each country should maintain a fairly aggregative econometrically based macroeconomic model for short-term forecasting purposes. Without entering into a debate about the efficacy of building such models for policy analysis in Sub-Saharan African countries, it should be noted that models based on time-series estimates of key parameters are likely to be unreliable. The policy shifts are so dramatic that many parameters will not remain constant, and even if time-series data span the period of policy switches there are unlikely to be sufficient observations to satisfactorily estimate the structural breaks. The simple conclusion is that aggregate macroeconometric models are probably unsuitable for SDA purposes.

**WORLD BANK RMSM.** This family of World Bank "Revised Minimum Standard Models" are rudimentary country macroeconomic projection tools built around the macroeconomic balances and detailed country debt data. They are designed to project a country's external resource needs based on alternative GDP and export growth scenarios, together with the resulting debt servicing prospects. Their principal virtue is that they are applicable across countries and therefore are "minimum standards" in the modeling sense. Nevertheless, they are not flexible in prices, they have no household sectors, and they are simply not designed to simulate structural adjustment policies. Currently there are attempts within the World Bank to develop a standard macro model beyond RMSM that introduces prices and accommodates features of the open economy and yet retains a medium-term perspective. While this may make the model more suitable for analyzing adjustment, it would still be deficient in capturing the distributional dimension and is therefore likely to remain inappropriate for our purposes.

### *SAM-based fixed price models*

The basic structure of a SAM, whereby one can trace the sequence of flows around the economic system, has led to the evolution of a class of models that rely on fixed price, fixed coefficient assumptions. Thorbecke (1985) has described such models as "first generation" SAM-based models. In essence they are simple extensions of the input-output model whereby Keynesian in-

come-expenditure loops are combined with the standard inter-industry multipliers to generate consistent income and output effects of any posited exogenous changes in final demand. For example, suppose we want to know the distributional consequences (that is, on incomes of different household groups) of a reduction in government expenditure of 10 percent and/or an increase in export demand of 15 percent. These models work by attempting to trace the consequences on incomes by assuming that any change in demands for products is translated into a proportional change in outlays, inputs, and outputs in accordance with the patterns that existed in the base year structure of the SAM.

The principal appeal of fixed-price multiplier models is that they are simple to understand and are similar to widely used input-output models. They are highly intuitive in the way the repercussions are traced around the system. All of this makes them especially appealing to nontechnical policy analysts. Against this, however, there are significant drawbacks, especially to their ability—or inability—to track the effects of adjustment policies. There are three main points here. First, while multiplier models are quite robust under conditions where there are no capacity and skill constraints and where income transfers conform to constant patterns, such assumptions are not necessarily valid for economies undergoing major structural adjustment. Second, they are price insensitive, which means they are not at all capable of addressing the key question of the possible consequences of shifts in the relative prices between, for example, tradables and nontradables. Third, multiplier models rely on our ability to specify changes in real final demands, which is a doubtful exercise in its own right.

### **Macro-meso modeling**

The existence of meso-level activity, particularly the roles played by markets and infrastructure, creates a special set of challenges for our quantitative analysis. The fundamental question to be addressed is how to determine empirically the effects of macroeconomic policy on individual market conditions and economic and social infrastructure. As in the case of our discussion at the macro level, the issue is much broader than just seeking to establish a particular modeling approach. The ultimate aim within the empirical context should be to set up an information base



that is capable of accommodating a wide range of analytical and modeling options in recognition of the considerable variation in the circumstances of each country and in the type of analysis that needs to be undertaken.

It would be ambitious to expect too much from a formal model of meso-economic variables. We have already noted the sectoral shifts that take place during a period of structural reform and the probable emergence of private sector activities in small-scale agriculture, urban services, and transport. Such dynamics will affect market conditions but are very difficult to capture in an explicit modeling sense. Nevertheless, there are two quite fruitful modeling approaches that can be referred to in this context, each of which may play a constituent role in analyzing the impact of adjustment. Models can be useful in performing counterfactual experiments in a comparative static setting, but it should be emphasized that, given the inherent complexity of the meso level, there is much to be gained from just observing outcomes, computing deviations from trends in the intervening variables, and carrying out a direct analysis of the results.

#### *SAM-based computable general equilibrium (CGE) models*

Computable general equilibrium models can best be viewed as a further stage in the evolution of the class of models based on the structure of a SAM, although their initial development predates much of the work on SAMs (Adelman and Robinson 1978). In their most elementary form they may be characterized as single, within-period, comparative static models in which there is an explicit representation of the markets for factors and commodities so that supplies and demands adjust to external shocks through changes in relative prices. Within this broad characterization there is a wide range of variants, including different specifications of behavioral relationships, closure rules for the markets, and degrees of disaggregation of the factor, commodity, and household categories (Robon, 1989). The behavioral equations describe various agent behaviors, such as factor supplies by institutions (especially of labor services by households), consumers' expenditures, factor demands, and commodity supplies. Most important, these relationships are usually price sensitive, so that factor markets, for example, can be cleared by adjustments in factor prices and commodity markets by changes in

commodity prices. But CGE models are sufficiently flexible to allow for rigidities in some markets, as well as for alternative closure rules in the system as a whole.

CGE models are more suited to medium- or long-term analysis and do not purport to parody the actual movement from one equilibrium to another. This is why they are usually viewed as being comparatively static in nature. There have been some attempts, even in the earliest models, to make them more dynamic by embedding the CGE component within a two-stage framework, where the second stage generates the "between equilibrium" shifts. This can make the models more useful for considering short-run distributional consequences, and more applicable to the analysis of adjustment policy issues (Michel and Noël 1984, Dervis, de Melo, and Robinson 1982).

SAM-based CGE models have a number of attractive features for analyzing the effects of adjustment at the macro level, and this appeal extends to their ability to capture some meso- and micro-level features as well. By their very nature CGE models focus directly on the market-clearing behavior of economic agents in the system (households, firms, and the like) and on the outcomes in the product and factor markets in particular. They are therefore directly concerned with the operation of markets, one main ingredient of the meso economy, and they therefore potentially provide an important set of signals about the effects of adjustment at the meso level. Of course it immediately follows that the richness of a CGE model in this regard depends critically upon our ability to define the important markets and quantify the mechanisms — "important" in the sense that the outcomes will tell us what we need to know about the effects on household groups at the micro level. For this, the design of the underlying SAM and our ability to derive the requisite information to quantify it becomes a crucial factor in the process. In principle, any number of different product and factor markets can be specified within a CGE framework. In practice, however, the limiting factors are the availability of data and computing capacity and capability. It is almost essential that models be manageable enough to be solved on a PC since mainframe capacity is severely limited in most African countries. Models do not have to be large to be useful for meso-level analysis. It is much more important to focus on the variables and markets that are most likely to affect the

poorest household groups. This means identifying the commodities which these households produce as well as consume and the labor markets in which household members trade their services. If this is not achieved, the CGE model will not capture the meso level as we have defined it.

It has been noted that CGE models could capture some, though not necessarily all, the required meso-level features to track the movement of the important intervening variables. Let us briefly indicate some deficiencies that will require special attention, and possibly some further research. First, changes in infrastructure can be captured only in an indirect way. Many of these changes are exogenously determined and are independent of the sorts of market forces a CGE model is designed to capture. Second, the whole question of the response of the informal sector to adjustment policies is difficult to address in the context of a stylized model of this kind, and still less the nonmonetized and nonmarket economies that probably respond to entirely different sets of signals. Third, markets may behave very differently at the regional or community levels than they appear to do in aggregate, and our modeling capability does not stretch to cover spatial variables and geographical markets. Nevertheless, and in spite of these limitations, CGE models are a promising approach for linking the macro and meso level of analysis.

The *data requirements* for building a CGE model are almost entirely fulfilled by the information available in a SAM, and this is now seen as the best possible framework to calibrate CGE models. It can be noted that CES (constant elasticity of substitution) functions are widely (though not exclusively) used to specify the behavioral components. They have the virtue of being a flexible functional form that allows patterns of responses to be sensitive to changes in relative prices. Generally the substitution elasticities are obtained on the basis of previous experience rather than direct estimation. Other than this, the main statistical requirement is to obtain the most appropriate classification of accounts and corresponding estimates of transactions in a SAM so that the base year shares can be computed directly. CGEs are often criticized as being too complex for the user to maintain an intuitive grasp, but with modern software capability even the model itself can now be specified within the strongly intuitive framework of a SAM. Hence, in parallel with the

numerical estimates, one can choose functional forms and specify them in the cells of the matrix and let the software solve the model (Drud, Grais, and Pyatt 1986). Moreover, if it is really desirable to generate a fixed price multiplier model, this could be obtained as a special case in which all substitution elasticities are set to zero. Hence the scope for CGE model specification within a SAM framework is now very wide indeed.

A recent and quite promising macroeconomic simulation model, combining some features of computable general equilibrium models, has been designed within the OECD Development Centre with a view toward its general applicability to a relatively wide range of countries (Bourguignon, Branson, and de Melo 1989). This would be achieved by changing the institutional characteristics that describe commodity markets (for example, supply and demand elasticities, price formation and quantity clearing), financial markets (such as, credit rationing, foreign exchange controls), and labor markets (extent of wage flexibility, for example). Most important, it purports to link the short-run impacts of macroeconomic policies that affect the distribution of income through inflation, interest rate, and other asset price changes with the medium-run impacts of structural adjustment policies arising through relative commodity and factor price changes.

As a general class of economywide model, CGEs certainly seem to offer promise, not least because of their ability to incorporate some macro-meso characteristics and their reliance on micro-level optimizing behavior at the household and firm levels. Nevertheless, while some countries may already be at the stage in the development of a statistical base to be able to implement models of this type, others are not, and for them it may have to remain a longer-term objective. CGE models should thus be viewed as just one of a range of modeling options that can be explored on a country-by-country basis to develop an analytical capability for monitoring the social dimensions of adjustment.

#### *Multimarket models*

A number of detailed models have been constructed to analyze the impact of policies in a particular sector or group of sectors. Perhaps the most interesting and useful of these is the agriculture sector — or multimarket — model (Braverman and Hammer 1988). This model is

built around the characterization of market equilibrium for a set of interrelated commodities and is based on a system of behavioral equations for both the demand and supply sides. A critical aspect is the specification of the way markets operate, and in this regard the models are flexible enough to allow for either price or quantity adjustment as required by the analyst. There are also substitution possibilities in both supplies and demands that make these models especially suitable for application to a very detailed set of commodity markets. As already indicated these models are currently restricted to the agricultural sector and have been designed to simulate the effects of agricultural price, tax, and subsidy policy reform on supplies, demands, incomes, and fiscal and external resource gaps. Consequently, effects on the rest of the system are excluded.

Although these are strictly sector models, they do have certain meso-level features because they focus on market responses in key product markets. Their main strengths are that they allow for relative price changes and show some distributional effects of price and trade policies, and that these effects can be traced at a more disaggregated level than would be permitted by a CGE. There has also been a suggestion that they might be extended beyond the agricultural sector to include urban services. But against their obvious analytical and practical appeal, these models do have certain limitations. To begin with, they have a weak macroeconomic link and are not well suited to the three-level "macro-meso-micro" analytical framework. Second, because of its partial equilibrium nature, unlike the CGE model there is no guarantee that the multimarket model will provide a consistent closure of the commodity and factor markets.

### **Meso-micro analysis**

The main strength of formal economywide modeling techniques lies in their capacity to perform counterfactual experiments and to take into account how household behavioral responses can have higher-order effects on markets. These models, however, are usually too aggregative to be of practical use in addressing micro-level policy issues. There are two broad limitations to note: first, the number of socioeconomic groups that an economy-wide model can meaningfully distinguish is limited by the overall level of disaggregation

assumed in the model; second, modeling usually requires the analyst to assume that within-group income and expenditure variance is constant (or that it bears some constant relation to the group mean). For most policy issues concerned with households, therefore, we must go beyond formal economy-wide modeling.

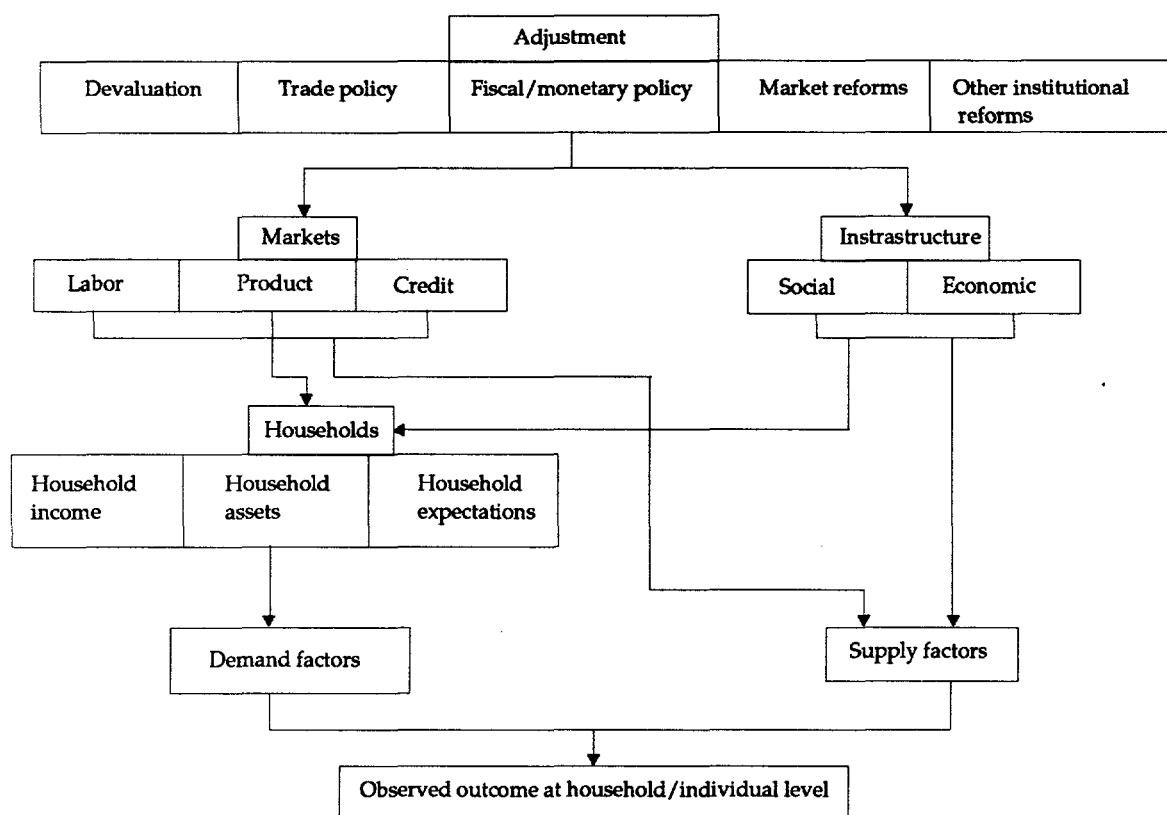
The objective of the exercise is to trace how macro policy and sectoral policy interventions influence household welfare through their effects on markets and infrastructure. Assuming that there exists a reliable household data set, the first priority is to establish which dimensions of household welfare are to be the subjects of meso-micro analysis. We have already highlighted (both earlier in this chapter and in Chapter 4) the complex network of factors that govern household and individual welfare, so that too narrow an approach (concentrating, for example, only on incomes) is not warranted. Meso-micro analysis, therefore, must feature a variety of variables to capture properly some of the complexities.

The basic indicator of welfare emerging from our earlier discussion is income (or total household expenditure) per capita. This should be used in the first instance to identify which households are poor. The preparation of a poverty profile based on household income and expenditure orderings should be the starting point of a country-based analysis program into the social dimensions of adjustment. Similarly, income- and expenditure-based indicators might be computed for other groups of policy concern, such as smallholders or pastoralists.

But analyses based on these indicators must be complemented with more in-depth studies covering other aspects of welfare. Analyses of the human capital implications of adjustment merit priority, with high returns expected from studies of the implications of adjustment for the health and education of household members. Similarly, an analysis of the nutrition effects of adjustment policy should have priority, especially in Africa. Other topics that also deserve explicit attention in the context of the social dimensions of adjustment include employment, earnings, and the role of women. Each of these topics reflects an outcome at household and individual levels that can be said to reflect welfare.

A simple schematic presentation of the main elements of meso-macro-micro linkages is given in Figure 6.1 (overleaf). The purpose of the exercise is to trace how macroeconomic interventions

**Figure 6.1 Schematic presentation of macro-meso-micro analysis**



influence various welfare outcomes at the household level, outcomes such as health and education status, poverty, women's status, and so on. Macro and sectoral adjustment policies are listed in the upper boxes, and these are shown to have effects on both markets and infrastructure — the critical elements of the meso economy. Both market and infrastructural changes affect households in a number of ways, critically changing their asset holdings, incomes, and expectations. In the case of the analysis of poverty or smallholders, this effect on household income is the main part of the story, since it is concerned primarily with assessing how adjustment policies have affected the incomes of the poor (and of smallholders).

For the other elements (health, education, nutrition, women's status, and employment), a further stage in the logic is required, because our concern is not so much with the change in income itself, as with how this will affect other relevant outcome variables (such as nutrition, health or education status of household members, and the like). To

understand these effects, a distinction has to be made between demand and supply factors that affect outcomes at the household and individual level. For example, changes in markets and social infrastructure will influence the effective supply of education services that are available to households (labor market changes may influence the availability of teachers, prices of books will influence the quality of education services, investment in schools and even roads can affect the access of households to education services, and so forth). Similarly, changes in household income and employment opportunities will influence the demand by the household for education services. The combined influence of these demand and supply effects will lead to observed outcomes (for example, of the educational status of household members). While our illustrations of these linkages have referred to education outcomes, the same reasoning can be applied to other dimensions of household welfare, such as health and nutrition.

## Strategic policy issues

Adjustment raises new possibilities, but also new problems, in securing an improvement in the living standards of the poor. For poverty to be reduced, the circumstances of the poor and their interactions with the wider social and economic system must be fully understood. Earlier chapters have shown that the determinants of welfare in Africa are complex and varied. If policymakers do not have sufficient information or analysis to understand the *processes* through which target groups are affected by different types of policy intervention, it will be extremely difficult for them to take effective action. For this reason, the application at the country level of the principles presented here should be seen as part of a wider exercise that aims to develop national capabilities for information collection and policy analysis on the social dimensions of adjustment.

The policy framework offered here will evolve as more is learned from country experiences about the design and implementation of poverty-sensitive adjustment. And since it is only a framework, much of the setting of priorities can only be done at the country level. Nevertheless, this and the next chapter aim to explore the "policy space" of opportunities and constraints within which governments and donors operate. This is done through outlining the major issues surrounding poverty-sensitive macroeconomic and sectoral policy and identifying the room for maneuver available in redesigning adjustment measures to enhance their sensitivity to the social dimension.

### Social interventions and economic distortions

#### *The key policy problem*

The key problem currently confronting African governments is how to assist poor and vulnerable groups without distorting economic mechanisms. If such distortions are severe, not only will economic recovery and growth be undermined, but ultimately the attainment of social objectives as well. In the final analysis the reduction of poverty cannot be secured by trading off the restoration of economic stability. At the same time, prosperity will never be secured if Africa's most important resource — its human capital — is not developed. Allowing such capital to depreciate is not only undesirable in itself, but also makes little economic sense. Malnutrition and sickness reduce productivity, low productivity limits earnings, and poor earnings limit investment and economic diversification. Nowhere is this more apparent than in the loss of national income resulting from the stunted growth and loss of schooling of African children over the last decade (UNICEF 1985a, 1985b, and 1989). The goal is therefore adjustment *with* poverty reduction, not adjustment *or* poverty reduction.

The objectives of adjustment have widened during the 1980s. In addition to the restoration of macro balance, programs have sought to improve efficiency and increase economic growth.<sup>63</sup> To these macro and meso objectives, poverty reduction (and environmental protection) must be

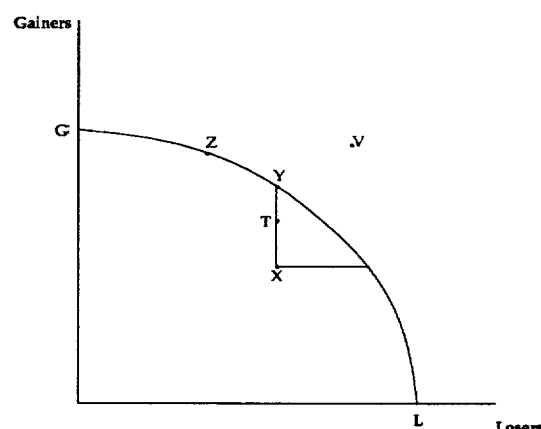
added. In part, this broadening of objectives reflects the persistence of the adjustment process over a longer period than was initially anticipated (World Bank 1988c, p. 1). In the early 1980s many observers considered the macro balance objective as sufficient, implying that some loss of growth would need to be accepted, but only for a short time. Continued turbulence in the world economy, however, including further terms of trade deteriorations, has delayed the attainment of adjustment goals. And the political difficulties of policy reforms have made some governments waver in implementing their adjustment programs. Adjustment has therefore evolved into a much more complicated process. It now entails longer-term financing facilities, an intensive sectoral focus, and therefore a wider range of policy options.

A second reason for the broadening of the objectives of adjustment is the now common view among governments and donors alike that adjustment cannot ignore the needs of the poor. Although it provides many benefits to the poor, some of its adverse effects are by now well known. In the early days of policy reforms, opportunities were missed to protect the poor from their adverse effects and to encourage their longer-term participation in the recovery process. With adjustment programs taking a longer-term focus, there is now more scope to take up these opportunities.

#### *Gainers, losers, and social welfare*

Implementing major policy adjustments inevitably involves making painful choices. Most changes involve both gainers and losers. The policy problem is how to decide whether a change is for the better or the worse if only some groups gain as a result, while others lose. Orthodox welfare economics is based on the view that a change is desirable if it improves the welfare of some without reducing that of others. This is illustrated in Figure 7.1. The welfare levels (measured conceptually as utility, but approximated by, for example, expenditure) of two groups (called gainers and losers) are measured on the two axes. Assume that the maximum levels of welfare (or expenditure) that the economy can sustain is given by the curve *GL*. If the economy is initially at *X*, it is clear that a policy that takes it to *Y* will be unambiguously beneficial because it improves the well-being of the gainers without

Figure 7.1



harming the welfare of other groups. Most policy interventions are not of this type, however, and this applies particularly to policy changes being implemented under structural adjustment. The preadjustment situation may be at a point such as *X*, which is suboptimal (since one individual can gain without others losing). But past experience suggests that adjustment is likely to take the economy to a position such as *Z*, which, although on the efficiency frontier, cannot be said to be necessarily preferred to *X* (since some groups are worse off as a result of the policy change).

One solution to this problem is the Kaldor-Hicks compensation test, according to which a change is recommended if the gainers can *in principle* compensate the losers and still remain better off compared with the situation prior to the policy change. In terms of Figure 7.1, this means that having attained a position such as *Z*, it would be theoretically possible through lump-sum transfers to attain *Y*. This criterion, however, requires only that the compensation should be possible in principle, not that it actually be paid. If the losers from a particular set of policies are already poor, it can hardly be maintained that a movement to *Z* is preferred to *X*, and that social welfare at *Z* is higher than *X*, simply because it is possible in principle to compensate the losers. This is especially true if the decline in welfare of the losers is associated with a serious deterioration in their human condition. This would be inconsistent with any notion of human dignity (Nath 1988). This possibility is a very real one for African countries, where many groups exist at or near subsistence. In the context of structural ad-

justment programs aimed at poverty reduction, therefore, the application of the Kaldor-Hicks criterion would require at the very least that compensation be paid if the losers from the policy are poor.

Many decisions to provide assistance under adjustment, however, rest on more broad-based criteria than those of welfare economics. If the losers are already destitute, so that the prospect of their survival to gain the long-run benefits promised by adjustment is in doubt, assistance can be justified on the grounds of *need*. Using this criterion, there is much less of a case for assisting the losers if they come from the better-off sections of the community (unless they lose so heavily that they become poor). At the same time, if the better-off group owes its relative comfort to the previous policy distortions, there are no grounds for providing them with assistance. Nevertheless, governments often feel compelled to help nonpoor losers because of their political power (which could undermine the whole adjustment effort). Hence, assistance is provided on the grounds of political expediency.

Once the decision has been made to assist a particular group, the issue of the type of assistance to be given becomes crucial, together with the effect of this on the efficiency of the economy and on its growth path. It is this process of how to take the economy from the postadjustment position attained at Z in Figure 7.1 to Y that is the principal concern. One of the issues that will be raised in considering the alternatives governments face is encountered when it is simply impossible to take the economy to Y, because having attained Z, the only methods of compensation involve some distortions in product or factor markets. This means that the move may have to be from Z to a position such as T, which is suboptimal. One of the most important challenges, therefore, is to assess how far African governments can effect the welfare improvements that are considered socially desirable without introducing serious distortions.

Some critical problems are raised when compensation is carried out in practice. First, the direct and indirect losses brought about by a policy change are many, and it is costly even to identify them precisely (Rottenberg 1986). Improving the data base will help, especially at the micro level. Second, full compensation can undermine the changes in the incentive structure that adjustment must signal in improving eco-

nomic efficiency and raising growth rates (World Bank 1987b, p. 111). Returns to nontradables must fall relative to tradables, but if nontradables producers are fully compensated for their losses the resource transfers that adjustment requires will not occur. For this reason, targeted transfers must be carefully packaged with measures that encourage and enhance economic activities that are consistent with the adjustment effort.

The emphasis on sustainable growth in structural adjustment programs changes the complexion of this policy dilemma. The problem is no longer how to take the economy from Z to Y, but rather how to expand the utility frontier (GL), so that the welfare of both groups can be raised without lowering that of others. If a position such as V can be achieved with growth, both groups will gain. Our review of policies (in Chapter 8) suggests that there is scope for achieving not just protection of the poor under adjustment, but also a significant improvement in their situation by encouraging their participation in growth. Hence, the objective is not just to alleviate poverty, but to reduce it by contributing to the process of the expansion of livelihoods of the poor through their becoming more important participants in the economic growth that structural adjustment can generate.

### Implications of the conceptual framework

Our main concern in this section is to assess the room for maneuver in designing adjustment policies to take on board social dimensions. In doing this each adjustment policy instrument is considered in turn. But before we embark on this review, two preliminaries are in order. First, it is important to treat the policy framework as a logical extension of the conceptual framework reviewed earlier, so we must establish the main implications of the conceptual framework for the policy approach outlined here. Second, the characteristics of the target groups must be clarified.

The most important feature of the conceptual framework is its distinction among the three levels of economic activity — the macro, meso, and micro economies. Just as this was regarded as an essential distinction in understanding how any given set of adjustment policies might affect household welfare, so it is equally relevant — if not more so — in considering how policy interventions can be designed to enhance favorable welfare effects. In making an assessment of how

a particular adjustment policy instrument affects households and how policies might be targeted more effectively, the level at which an intervention is to take place has to be clarified.

For example, consider the effects of a devaluation on a particular poverty group. According to the orthodox theory outlined in the earlier chapters, this will favor producers of tradables and consumers of nontradables. Suppose for some reason that the devaluation has made a particular group worse off. What should be done about it? Does this mean that the devaluation should be moderated, or that disadvantaged households should be compensated in some way? The answers to these questions depend on the reasons the group is made worse off. If the households are net producers of tradables, they may not have benefited from the devaluation if the product prices they receive did not rise in line with the devaluation. It may be, for instance, that product markets are essentially monopsonistic, so that the devaluation only raised the trading margins of middlemen, and not the producer prices received by the target households concerned. In this case, policy interventions are required at the meso level — improving the functioning of the product markets. Alternatively, the households may not be able to respond to the more favorable market opportunities because of a deterioration in the physical infrastructure that isolates them from the main market centers. Again, policy interventions at the meso level are called for, aiming to improve roads and communications. If markets and infrastructure are functioning well, and the households produce nontradables, the focus for policy intervention must be at the micro level, encouraging a change in the production patterns of the households concerned to gain the advantages offered by the shift in market incentives.

The most important principle for policy design emerging from the conceptual framework, therefore, is the critical importance of understanding the process of the transmission of the effects of adjustment to households. On the basis of this understanding, policy interventions can be applied at the appropriate level — macro, meso, or micro. Most corrective interventions are likely at the meso level,<sup>64</sup> involving changes in markets, marketing institutions, economic infrastructure, and social infrastructure. The conceptual framework cautions against a neglect of infrastructural

effects, which can easily occur in programs that emphasize reforms in the structure of incentives.

The conceptual framework also underscores the importance of a sound microeconomic data base for policy design. How households are affected by adjustment policies (and their related mesoeconomic changes) will depend on their production and consumption patterns. At the very least, therefore, policymakers should gain some understanding of the sources of income of the target households and their broad consumption patterns. It is also important to know how households will respond to policy changes, since this will determine the longer-run effects of policies. The conceptual framework highlights the distinction among the different time horizons in judging how adjustment affects households. It is perfectly possible that households may lose in the short run, but gain significantly over the longer term. This has obvious implications for policy design. Longer-run effects are often difficult to predict, however, in part because they depend on household behavior and responses. Similarly, the phasing of policy changes can influence the net effect on households. In the above example, the improvement in the operation of domestic product markets (or in the physical infrastructure) should ideally precede a major devaluation. This will both raise the incomes of some (target) groups of producers and enhance the output-switching effects of the policy.

Finally, the conceptual framework emphasizes the advantages of defining policy-relevant socioeconomic groups. Because the effects of adjustment on households depend critically on their socioeconomic profiles, there are advantages for policy analysis in defining groups of households that share certain key characteristics and are therefore affected similarly by adjustment policies. The use of socioeconomic groups also enhances the analysis from a policy perspective: the socioeconomic criteria used in aggregating households makes them readily identifiable for policy purposes. For example, it is much easier to define a set of policies to assist maize-growing smallholders in a particular region than households in a particular percentile of the income distribution. Clearly, policymakers will need to take the concept of the socioeconomic group further by defining target groups. It is to this that we now turn.



## Poverty and vulnerability

African governments are faced with a wide range of competing social needs, and setting social priorities is an inescapable part of the policy process. But because adjustment entails fundamental changes in policy, its effects are spread widely through society. It therefore presents new problems (and new opportunities) to governments in matching scarce resources to social needs. If the objective is to address the social dimensions of structural adjustment, which groups in society should have priority?

In deciding on the broad domains for policy concern, two criteria should be uppermost: *poverty* and *vulnerability*. A household is poor if its income (or total expenditure) falls short of the standard that society sets, such as a poverty line, sometimes defined as the bottom 30 percent of a country's population ranked by per capita household income (Kanbur 1987b). At the same time, a household is vulnerable if it is particularly open to adverse external events or shocks and cannot make the necessary adjustments to protect its standard of living. While it is true that ultrapoor households are certain to be vulnerable because of their poverty, these are two quite distinct dimensions of need. Some households may be poor and not vulnerable, either because they are not affected by external events (for example, in the case of subsistence farmers), or because they can readily cope with the changes (for example, production- and consumption-switching in the light of relative price movements). Others may be vulnerable but not poor, a case illustrated by retrenched public sector workers.

Taking these two key criteria, the focus of policy concern comprises three categories:<sup>65</sup>

- the *chronic poor*, whose malnutrition, illness and illiteracy limit their productivity and employment and prevent them from accumulating sufficient resources to free themselves from poverty. Their poverty is deep-rooted and existed before the recent deterioration in national economies. Among these may be listed the *ultra poor*, or the destitute. They are generally at risk from drought. Moreover, the economic shocks of the 1980s and the resulting policy reforms have further increased the poverty of some members of the group. Others have been relatively unaffected, while still others may have benefited from adjustment measures<sup>66</sup>

- the *new poor*, who were above the poverty line prior to the recent shocks and adjustment measures, but who have now fallen into poverty as a result; some of these may only experience transitory poverty, while others may experience deprivation over a longer period, becoming chronically poor

- *other vulnerable groups*, who remain above the poverty line but who have been severely affected by adjustment and therefore merit policy consideration.

While some of the chronic poor have not been vulnerable to recent policy reforms, they should still be our concern. These people have been largely bypassed by policies in the past and are relatively unaffected by recent policy changes. Thus while they have been unaffected by some adverse consequences of policy, they have missed out on opportunities as well. The process of policy revision now underway provides an opportunity to address their problems anew and to bring them into the process of growth led by adjustment. At the same time, it is important to point out that assistance might also be given to nonpoor groups because of their particular vulnerability to recession and policy adjustment.

## Defining target groups for policy purposes

The chronic poor, the new poor, and other vulnerable groups provide the domain for concern about the social dimensions of adjustment. But for operational purposes, we need a more precise definition of the groups to be helped. To do this we must first recognize that people differ widely in their socioeconomic circumstances. Policies therefore affect them in different ways. From a policy perspective, socioeconomic criteria provide a useful taxonomy for dividing the population into groups of people with common characteristics. As we showed earlier, such socioeconomic groups can be used to guide data collection, collation, and analysis and to provide the basis for focusing on target groups for policy intervention. The relation between socioeconomic groups and target groups will be country-specific, but:

- an entire socioeconomic group may constitute a target group because, for example, it comprises both the chronic and new poor, or a particularly vulnerable group
- target groups may comprise a subset of a

socioeconomic group. For instance, millet- and maize-producing farmers may constitute target groups for the purposes of policy reforms in agriculture, and each is drawn from the socioeconomic group of smallholder farmers; within the socioeconomic group of urban formal sector workers, only some public and private employees may be targeted by virtue of their vulnerability

- a target group may cut across several socioeconomic groups, for example with rural female-headed households.

In summary, the entire population is divided into socioeconomic groups, but only some of the population will belong to target groups.

Throughout the discussion of policies in Chapter 8, various target groups become evident as we assess how the design of adjustment policies can better incorporate the social dimension. Such target groups include smallholders producing mainly food crops, subsistence farmers in remote areas, rural wage-workers, urban informal wage-workers, micro-household enterprises in both urban and rural areas, and low-wage workers displaced from both modern industry and the public service. Target groups that cut across those

categories by gender, age, and disability are also featured.

Nevertheless, the selection of target groups and their precise definition must take place at the country level. They emerge through the detailed assessment of country situations, the establishment of government priorities, and from dialogue between governments and donors. Moreover, this process is a dynamic one for two reasons. First, as adjustment proceeds through its various phases, new target groups inevitably emerge. This is because many policy reforms either take time to make their effects felt or are implemented in the later stages of adjustment. For instance, many liberalization measures only exert their influence over the medium term. Second, the priority given to target groups changes as the poverty-focused measures implemented in adjustment's early years bear fruit. The problems of some target groups are more readily resolved than those of the chronic poor. Having identified the process through which target groups are selected, we now take up the key issues of how help can be given.

# 8

## *Designing poverty-sensitive adjustment programs*

In considering how social dimensions should influence the various adjustment policy instruments, we continue to follow the basic logic of the conceptual framework. We begin with interventions that have an essentially macro profile — the overall fiscal and monetary balance. As we proceed through the instruments, the roles of meso-level interventions (influencing product, credit, and labor markets as well as infrastructure) and micro-level support (such as the provision of transfers or training) increases.

### **Overall fiscal and monetary balance**

#### *Fiscal discipline and the macro balances*

Macroeconomic policy under adjustment seeks to achieve a sustainable external balance and an acceptable rate of price inflation. To achieve these macro balances a government has a number of policy instruments at its disposal, notably monetary instruments such as credit controls or the central bank lending rate, fiscal instruments (government revenues and expenditures), and trade instruments, such as the nominal rate of exchange. In manipulating these instruments to achieve internal and external balance, policy-makers face some basic accounting constraints. All successful adjustment programs — including those that give priority to the social dimensions — must respect these basic macro accounts.<sup>67</sup>

To explore the implications of this further, consider again the resource constraint facing the

economy in the savings identity discussed in Chapter 6. Ignoring net factor income and transfers from abroad, and rearranging equation (3) (from Chapter 6) gives

$$(1) \quad (C_g + I_g - T) = (S_p - I_p) + (M - X)$$

where  $S$ ,  $I$ , and  $C$  refer respectively to savings, investment, and consumption,  $T$  is government tax revenue,  $X$  and  $M$  are exports and imports, and the subscripts  $p$  and  $g$  refer to private and government sectors. Since (1) is an identity, any manipulation of the fiscal deficit (the term on the left-hand side) will either change the private sector deficit or the external balance. As an identity, however, (1) also hides some of the complexity behind the accounts. It is not clear, for example, whether a decrease in the fiscal deficit will cause a compensating change in the private sector (through, for example, a rise in private investment that “crowds out” the cut in the deficit) leaving aggregate demand and the external balance unaffected, or whether the fiscal adjustment will result in a reduction in the current account external deficit. This will depend on two main factors: first, the accompanying changes in the other macro-policy instruments (monetary and exchange rate policies) and second, on the expectations of the private sector.

If the fiscal deficit reduction is accompanied by a restrictive monetary policy, which raises interest rates, and by an exchange rate depreciation, it is likely to lead to a reduction in the trade deficit

(as described earlier). At the same time, an expansionary monetary policy would lead to reduced interest rates and an increase in investment, with possibly little change in the external balance. Expectations will also play a key role in governing how the private sector reacts to any fiscal adjustment. For example, if a tax change is expected to be temporary, the private sector will not adjust its expenditures. But a change that is considered permanent is more likely to lead to private sector reactions. In the context of structural adjustments in Sub-Saharan Africa, the required changes in fiscal deficits are more likely to be regarded as permanent, given the nature of the underlying policy objectives and the reduction in real incomes brought about by the terms of trade decline (which is now perceived as being permanent).

A critical issue for all governments implementing adjustment programs (and especially for those concerned with its social dimensions) is how much room for maneuver they have in maintaining fiscal deficits within the resource constraints that they face. This very much depends on how governments are able to finance their deficits. There are three principal means at their disposal: raising funds through printing money (that is, through "seignorage," a government's right to print money), borrowing from abroad, and borrowing domestically. Each of these methods of financing the deficit creates problems with the macro balances, that must be taken into consideration by policymakers. Printing more money can finance a budget deficit, but only at the expense of higher inflation. Financing the deficit by monetary expansion results in the private sector holding more money than it requires. Unwanted money balances are therefore spent on consumption and investment goods. With only limited domestic supply (assuming full employment), prices rise. Foreign borrowing is constrained by the capacity of the country to bear the increased debt burden and its international credit rating. Finally, borrowing from domestic sources can lead to higher interest rates and reduced private investment, thus contradicting the growth objectives of governments.

In most African countries there are limited opportunities to borrow domestically, given the shallow domestic credit markets and low levels of private sector savings. If financing the public sector deficit through reducing the private sector deficit is not feasible, most African governments

must finance their deficits either through external borrowing or through printing money. Each of these measures is subject to macroeconomic constraints — the former is constrained by external indebtedness and creditworthiness and the latter by its adverse effects on the inflation rate. In general, governments are therefore obliged to reduce the fiscal deficit during periods of adjustment to restore the macro balances. This obviously reduces their room for maneuver to protect various components of expenditure concerned with the social dimensions (such as expenditures on health and education). But under a program of structural adjustment (as opposed to stabilization alone — see Chapter 1 for a discussion of the distinction) there are possibilities for some room for maneuver, relaxing the macroeconomic constraints and permitting smaller reductions in the fiscal deficit than would otherwise be the case.

#### *Macro accounting under structural adjustment*

There are three principal ways that the resource constraints imposed on governments seeking to maintain the macro balances can be relaxed though structural adjustment programs: by increasing economic growth, by encouraging structural changes in the composition of output, and by increasing the availability of external financing. Each of these is discussed in turn.

#### *Economic growth and the fiscal adjustment*

A more rapid rate of economic growth generally increases the budget deficit a government can sustain without violating the basic macro balances. The government can raise resources to finance a budget deficit through monetary expansion without causing inflation. This is because growth increases the demand for money balances by the public, so that some monetary expansion will not be inflationary. If the money balances held by the public are 10 percent of GNP, for each percentage point GNP increases the government can obtain 0.1 percentage points of GNP in revenue through printing money. There is thus a significant difference in the macro-balance constraint on seignorage with and without economic growth.

But economic growth also releases the macro constraints on financing a fiscal deficit through borrowing by relaxing the debt burden constraint. The faster the growth rate of GNP,

the more accumulated debt can be incurred without aggravating the debt-GNP ratio. A government's room for maneuver to raise finance through borrowing will critically depend on whether such borrowing will lead to unstable debt dynamics — that is, an increasing accumulation of debt that will ultimately prevent any further borrowing. If the interest rate payable on the accumulated debt is greater than the rate of economic growth it will not be possible for governments to borrow to finance a fiscal deficit without causing serious debt problems, because each year the debt-GNP ratio will rise. But if the rate of growth exceeds the interest rate, some permanent fiscal deficit can be financed through borrowing, with the debt-GNP ratio falling over time. Thus more rapid growth will permit extra room for maneuver for governments to finance a fiscal deficit through both seignorage and borrowing while maintaining macro balances.

This has some critical implications for the nature of any fiscal adjustments the government may be obliged to make. If expenditure cuts have the effect of reducing the rate of economic growth (as for example, if they result in a deterioration in the infrastructure that supports productive activities), they may cause a tightening of the macro constraints faced by fiscal planners. The government needs to identify the combination of expenditure cuts and revenue increases that reduces the budget deficit with the least adverse effects on the supply side. Insofar as the fiscal mix most favorable to output is found, less aggregate demand contraction is needed (Chhibber and Khalilzadeh-Shirazi 1988).

Similarly, it is possible that monetary constraint may reduce output, again aggravating the resource constraints government faces in restoring macro balances. Whether monetary contraction depresses output is a subject of some debate (see Demery and Addison 1987a for a review). Khan and Knight (1985, pp. 9-11) conclude that an average reduction of 10 percent in the growth of the money supply will tend to cut growth by just under one percentage point over one year. But when the supply enhancing effects of measures such as devaluation are included in the calculation there is no general presumption that stabilization will reduce output in developing countries (Khan and Knight 1985, p. 24). Those of the structuralist school are more pessimistic about the outcome, although less pessimistic about Africa than other regions. Taylor (1988, p. 166)

argues that recent African programs have, through external financial support, permitted an immediate import increase and positive growth. The task of stabilization is therefore a difficult one. Aggregate demand reduction measures must unambiguously aim to achieve the stabilization objective, while minimizing consumption losses by the poor and reflecting the need to maintain crucial supply enhancing components of aggregate demand.

#### *Fiscal adjustment with structural changes*

Our earlier analysis shows clearly that even in the absence of growth, the reduction in aggregate demand required to restore the macro balances is greater if there is no output and expenditure switching in the economy. These structural changes in the composition of output (as opposed to its overall rate of growth) can therefore give governments more flexibility in adjusting the fiscal deficit.

Given market distortions, such as low producer prices and inefficient marketing, output is lower than it would otherwise be. The economy would be within its production possibility set. Removing these distortions would take total output to the frontier, raising the output of tradables most dramatically. If improvements in the level of output can be achieved quickly, less demand restraint will be needed in the short term to achieve the target reduction in macro imbalances. Slow supply responses to policy change may delay improvements in output, however, so the scale of demand reduction may have to be retained in the short run. The point still stands that some early liberalization will give more flexibility over the aggregate demand target. Similarly, through devaluation, the reallocation of resources toward tradables (along the production frontier) is further encouraged. Given a target for the trade deficit, less demand restraint is required when the currency is devalued. In summary, insofar as the relative price changes initiated by structural adjustment lead to changes in the structure of production and consumption, they will at the same time reduce the required reduction in the fiscal deficit that is consistent with the macro balances.

#### *Raising external finance*

Finally, the donor community can increase the government's room for maneuver by committing

external finance to the adjustment program. Key public and private expenditures can thereby be supported, reducing the threat that resources for these items will have to come from a reduction in either consumption by the poor or social provisions for their benefit. If sufficient external finance is available, levels of real public and private investment can be raised. This allows increased attention to be given to the growth and efficiency objectives of adjustment alongside the macro-balance objective. Under a *structural adjustment* strategy supported by adequate levels of foreign finance, changes in the structure of output can take place within a policy framework promoting the growth of total output.

Because growth is largely a secondary objective under stabilization programs, the prospects for poverty reduction are somewhat limited for the reasons discussed above. Much can be done, but the constraints are severe, and the exercise is rather one of damage containment. Room for poverty concerns becomes greater when adjustment design gives greater weight to the growth and efficiency objectives, in addition to the macro-balance objective, and when external finance is available to support the program. Under these circumstances it is more likely that both consumption by the poor and social expenditures for them can be maintained and even expanded.

#### *The composition of aggregate demand reductions*

Given the aggregate constraints that governments face in restoring the macro balances, there remains additional room for maneuver in determining the composition of the reductions in aggregate demand that are applied. We shall explore in some detail what this implies for the types of government expenditures that are cut in the next section, but first we consider at a more aggregative level some of the tradeoffs faced by governments seeking to reduce the level of aggregate demand in the economy. The level of aggregate demand is important because one of its components is consumption by the poor. The poor can sometimes reduce the value of their consumption without adverse nutritional effects by switching from superior foods to inferior foods that are less costly (but as nutritious). While much resilience has been observed among the poor in their coping strategies, this cannot be relied upon for securing the objective of poverty reduction. Their con-

sumption is often severely depressed in the preadjustment period, and further consumption declines will lead directly to lower nutrition and depreciation of human capital, thus damaging the economy's capacity for growth.

At the same time, however, governments need to ensure that some other important components of aggregate demand do not contract. Private investment is one component, and this needs to be maintained and eventually increased, especially in export sectors. Poverty-focused social provisions by governments also need to be systematically protected. Government expenditures on key infrastructure and services need similar priority if the economy's supply side (especially in tradables) is not to be damaged. The task is therefore a difficult one. On the one hand, the following *components* of aggregate demand need to be maintained or raised: consumption by the poor, private expenditures on investment goods, and public expenditures on key economic and social infrastructure. On the other hand, the *level* of aggregate demand must be cut to reduce inflation and the external deficit. Some component of demand must therefore give way to protect priorities. This means that either consumption by the better-off should be cut or the budget deficit should be reduced. The latter can be achieved by cutting inefficient and low-priority public expenditures. Consumption by nonpoverty groups can be cut through raising taxes affecting them and charging for their use of public services. Both of these also reduce the budget deficit through revenue.

#### *Simulating the poverty outcomes of macro-policy strategies*

The preceding discussion highlighted the difference in poverty outcomes between stabilization and growth-oriented structural adjustment programs. The first step in designing poverty-sensitive adjustment is therefore to seek external finance to support strong supply-side measures. Much remains to be learned, however, of the best *combination* of macro instruments from the perspective of poverty outcomes. The principal macro instruments are the level of the public budget deficit, the rate of monetary expansion, and the exchange rate. Do some combinations of these policies generate better poverty outcomes than others, while still achieving the objectives of macro balance, efficiency, and growth? In the

context of stabilization, it is certain that some instruments will result in a more inequitable reduction in aggregate demand than others. For example, an attempt to reduce the fiscal deficit by raising income taxes will cause the better-off groups to bear a major part of the cut in expenditures compared with increases in sales taxes. Similarly, adjusting monetary instruments that raise interest rates will curtail spending in general, but particularly by debtor groups, who may be among the poorer sections of the community. But if money markets are liberalized at the same time, poorer households that previously borrowed in nonformal markets may not have to reduce their spending by as much as others.

Second, we do not know enough about the optimal *sequencing* of macro-policy changes: from a poverty perspective, should devaluation precede reductions of the fiscal deficit or follow it? Third, are poverty outcomes affected by the *timescale* over which a given monetary and fiscal contraction is to be undertaken? Fourth, how should macro instruments be *coordinated* with measures of market liberalization and investments in structural change? These would be unimportant questions in a world characterized by perfect markets and where the private sector had perfect foresight. But in Africa, where the mesoeconomy has been extensively disrupted and expectations of policy play an important role, we can expect different outcomes for poverty depending on these four aspects of macro-policy design. To take one example, for Zimbabwe different combinations of macro policies and liberalization (all set to achieve the same targets) have been found to have significantly different effects on output and inflation because of expectations (Chhibber et al. 1989). Variations in poverty outcomes of these policies are therefore to be expected as well.

Because African economies show considerable variations in market structures, policy approaches, and macro problems, there is a need to employ tools that facilitate the identification of *poverty scenarios* associated with different macro strategies. Each scenario should indicate whether aggregate poverty is expected to rise or fall under the particular policy mix, which poverty groups are liable to gain or lose, and the orders of magnitude involved. This task is essential because much discussion of the poverty effects of macro-policy packages is clouded by insufficient country evidence. The debate on the output effects of demand management has, for example, generated

more heat than light because country evidence in Africa is very thin and open to a wide variety of interpretations.<sup>68</sup>

### The public finance strategy

Our discussion so far has centered on the flexibility that governments have in adjusting the overall fiscal deficit and determining the burden borne by the various broad components of aggregate demand. We now consider in greater detail how a government, in setting the level and composition of real public revenues and expenditures, can pay greater attention to social dimensions. Establishing priorities for public expenditure changes that favor poorer groups requires some knowledge of which groups benefit from the various expenditure categories. For this, a macro-meso-micro information system would play a key role, because it would identify the main poverty groups and provide information on their use of public services. This should provide the basis for protecting expenditures in the short run that benefit poor groups. It should also direct medium-term public expenditure restructuring. To improve the poverty focus of the fiscal strategy, the following interdependent sets of issues need to be addressed: establishing social and economic priorities in public expenditures, phasing public expenditure reform, and assuring adequate financing of core expenditures benefiting the poor. These themes are discussed below.

#### *Social and economic sector priorities*

A key challenge of public expenditure reform is to protect and expand *core expenditures* benefiting the poor and to improve the cost-effectiveness of social service delivery. It is also important to build a "safety-net" for the very poor, who, through multiple deprivations, are less able or unable to gain benefits from adjustment-led growth. Projects and programs need to be designed for the poor in such areas as regional and community development, credit and marketing schemes, technical assistance in agriculture and micro enterprises, and small-scale irrigation. The rehabilitation and maintenance of physical infrastructure (roads, water supplies, drainage, sewerage, and the like) are known to be productive and employment-intensive, to have short lead times, and to have prospects of good economic returns (Anderson 1987a and 1987b).

Core expenditures benefiting the poor must include investment in human capital (health, education, and targeted food-linked transfers) and support to production and trade. In *health* the priority is to achieve higher cost-effectiveness in public services and their reorientation toward the needs of the poor, particularly in primary health care. Resources released through productivity gains can be used in priority programs, with significant benefits for poverty target groups (World Bank 1987a and Mosley and Jolly 1987). The reallocation of resources from expensive urban hospitals to rural and urban clinics, the replacement of expensive treatments by cheaper and more effective alternatives, an emphasis on basic drugs, and the greater use of paramedics are all ways of delivering better health care at a lower unit cost. Resource savings can be used for special programs targeted to vulnerable groups, for example, the screening of children and mothers from low-income households, appropriate follow-up programs for nutrition and health, health education, and immunization against the most prevalent diseases. Since much health care is provided within the household, usually by women, attention must be given to programs that increase women's resources, educational levels, and the time that they have available for such tasks.

With public health provisions in short supply, attention should be given to increasing the provision of private facilities, both by profit-making enterprises and community-based organizations. This would entail removing limitations brought about by the government on their capacity to operate. Encouraging the use of private facilities by better-off households will allow more public resources to be allocated to target groups. Similarly, the introduction of user charges for public services will generate resources for the funding of targeted programs, although user charges should not be allowed to inhibit access to vital services by the poor.

There is a strong relationship between household welfare and educational attainment. Policy actions that affect *education* have profound effects on present and future income.<sup>69</sup> But the education systems of many African countries are currently in a state of fundamental disequilibrium. Fiscal constraints, but also difficulties within the educational system itself, necessitate adjustments in educational policy. Enrollments across the region have stagnated at all levels, but especially

at the primary level. The population of preschool children is projected to grow at 3.3 percent annually until 2000, and the growth rate of 2.9 percent in primary enrollments expected by some analysts will not keep pace (World Bank 1988d, pp. 1-2). The quality of education has fallen with a deterioration in the supply of inputs (especially books and equipment), and this has been reflected on the output side with the available evidence suggesting a fall in cognitive achievement compared with other developing regions (World Bank 1986c and 1988d). Finally, females generally have less access to education than males, especially at postprimary levels.

Targeted staple *food subsidies* are a key element of food security policy aimed at improving the welfare of the poor. To achieve this goal, it must be possible not only to identify these groups, but also to effectively target the assistance that is given. It is not our purpose here to rehash the problems and opportunities encountered in targeting (see, for example, World Bank 1986e and Demery and Addison 1987b), but to note that the identification and appraisal of targeting possibilities is central to any policy analysis. The problem with across-the-board transfers (such as food price subsidies) is that they are generally inconsistent with the objectives of public expenditure reform. Alternatives include restricting subsidies to inferior goods or to product markets in areas where the target group lives (World Bank 1986e, p. 40). Where neither of these approaches is feasible, direct food interventions may be needed, for example through food programs supported by food aid, feeding programs through schools and clinics, or the mobilization of cash transfers (World Bank, 1988e). There are few, if any, successful targeted food subsidy programs in Africa operating through the market. Given that general subsidies are inadmissible from a fiscal point of view, this is a priority area for monitored experimental interventions.

There exists a potentially difficult tradeoff between protecting social programs and funding crucial economic sector expenditures. Clearly, the solution cannot be of an "either-or" type. There is a need to find an appropriate balance between expenditures of both kinds. In striking this balance, economic policies should be designed to maximize the benefits to poorer groups. The need for economic policy reform along these lines is perhaps greatest in agriculture. Much public expenditure in African agriculture is toward state



production as opposed to private farming, commercial farming as opposed to smallholder farming, and capital intensive infrastructure investment rather than the small-scale infrastructure development needed to support peasant production. Agricultural research and extension activities are often underfunded. Public expenditures that can help raise the productivity of smallholders over the medium to long term should be protected along with critical social expenditures.

#### *Phasing public expenditure reform*

There are both short-run and medium- to long-run dimensions to the design of a poverty-sensitive public finance strategy. In the short run, it is essential to preserve (and even increase) core expenditures benefiting the poor by excluding them from budget cuts. While the exact sequence of measures depends on opportunities and constraints at the country level, intensive restructuring that involves raising the efficiency of spending is a longer-run task.

The first step in the short-run task of preserving core expenditures is to identify the services and programs that should be exempted from cuts. These typically include primary education, primary health care, sanitation, and targeted food consumption subsidies. Basic agricultural infrastructure and services should also be protected, given their role in reactivating production and their orientation toward the sector that includes most poor people. Defining which programs within these broad areas are to constitute the "core" requires information on their benefits to the poor. While this information is often lacking, some preliminary assessment might be feasible based on regional variations in the incidence of poverty. The strengthening of household-level data would obviously provide a sounder basis for making such judgments.

The short-run strategy for preserving core social spending should, in the main, be limited to recurrent expenditures, that is, program operation, maintenance, and rehabilitation. Insufficient recurrent expenditure outlays have reduced the productivity of available physical and human capital (schools, teachers, health posts, and health personnel). Public expenditure reviews in Africa recommend raising the level of recurrent funding in key programs to levels compatible with effective use of the existing capital endowment.

The potential for raising the cost-effectiveness of public expenditures benefiting the poor is undoubtedly greater over the long term. Greater flows of external finance and technical assistance can be expected, and the governments' own planning capabilities (through, for example, a better data base) will have been improved. And the benefits of investments involving long gestation lags (as is typical of many infrastructural developments) can be expected to come on stream. By raising the primary incomes of some poor groups, resources can then be made available to assist groups where poverty is more persistent.

#### *Financing core social and economic expenditures*

Raising government revenues is essential to the objective of fiscal stabilization. But it is also important for poverty reduction. Although resources to finance core expenditure programs can be found through savings in other components of the government budget, these may be insufficient. And the contribution to be made by such savings will inevitably decline over time as efficiency gains are made. Finally, while everything should be done to mobilize external finance, this cannot be relied on to sustain core expenditures indefinitely. Consequently, a widening of the government domestic revenue base is needed to secure the expansion of economic and social provisions over the long run.

External funds should preferably be made available to the general budget and earmarking of such funds should be avoided. In this way, they will be subjected to the priorities established under agreed expenditure reform programs. This is particularly true of counterpart funds. Their earmarking for projects not already in the budget has a potentially inflationary impact unless other commensurate expenditures are postponed. The interests of macroeconomic stabilization and adjustment are best served by permitting counterpart funds to be spent soon after they are generated and to be used for any expenditure in a budget reflecting a commitment to public expenditure reform (Roemer 1988, p. 15).

Turning to *domestic resource mobilization*, taxes on international trade account for about 43 percent of the region's tax revenues (Shalizi and Squire 1987). Their importance has encouraged the use of high tariffs, thereby contributing to industrial inefficiency and discrimination against agriculture. Because the import-substitution trade strat-

egy leads to increased capital intensity, employment growth is discouraged. Increasing tariffs to finance core expenditures would therefore be counterproductive in poverty reduction. It has to be acknowledged that reducing tariffs (as part of a liberalization strategy) can have the short-run effect of tightening the macro constraints, both by reducing government revenue and by increasing the external deficit. This is another example of the intimate connection between stabilization and structural adjustment that was discussed earlier.

Commodity taxes, which provide an average of nearly 28 percent of revenues, do not distort the efficiency of production as do trade taxes (Anderson 1987b). They will become an increasingly important revenue source under current tax reforms. The growth of such revenue, however, is constrained by the pace of improvements in tax administration and collection. So in the short term their contribution to the costs of core expenditures may be small. They can be made more progressive in structure, with luxury purchases being subject to higher rates. Income taxes, which are levied on either individuals or businesses, presently account for nearly 30 percent of revenues. Personal income taxes are collected from less than 5 percent of the African population, compared with the 15 percent average for developing countries as a whole (World Bank 1988f, p. 97). They offer some potential, therefore, for growth under current reforms (IMF 1981, p. 26). Most of the poor will still be outside the tax net, even if the 15 percent target is reached. They predominate in smallholder agriculture and the informal sector where income is difficult to measure and taxes are difficult to collect.

It is unlikely that income taxes will perform a major redistributive role in Africa in the near future. Because of its skill-intensive nature, collection costs are high — in the range of 10 percent. Nevertheless, improvements can be made in the structure of taxes to make them more equitable. One of the most important is to eliminate income tax allowances and deductions, which primarily benefit wealthier groups. At present there is little hard evidence on the effects on households, and thus on incentives and disincentives, of alternative tax systems and cost recovery measures. In calculating where to set their tax rates, policymakers have few empirical studies to draw on. This affects their ability to estimate the domestic revenues likely to be avail-

able to finance programs of poverty alleviation. The collection of household data sets of the kind discussed earlier thus has an important role to play in the formulation of policy and in revenue forecasting exercises. This is one of the reasons that it is important to obtain data not just on target groups, because it is nontarget groups who will provide most of the domestic resources to finance programs. It is necessary to establish whether alternative antipoverty strategies have revenue implications with effects on the decisions of nontarget groups that make financing of some projects from domestic resources impossible.

*User charges* are a potentially important form of domestic resource mobilization. They can be expected to benefit the poor if the revenue generated is used to extend the supply of essential services or to raise their quality. If instituted across-the-board and at equal levels for all service users, however, they are likely to be regressive to the extent that the welfare loss of the poor relative to income is larger than for the rich (Gertler, Locay, and Sanderson 1987, p. 67). The effect of user charges on the poor depends on the price elasticity of their demand for services. If social service demand is elastic (as documented, for example, by Gertler and van der Gaag 1988, for Côte d'Ivoire), the introduction of charges can be expected to result in a substantial reduction in service use. Conversely, if the demand for services is inelastic (as argued for the case of health by de Ferranti 1985, p. 38), households will not greatly reduce their service use but may suffer considerable income and welfare loss as a result of the introduction of user fees. User fees should not be allowed to restrict the access of poor groups to vital services. While there is often untapped potential for the collection of user fees or the organization of communities for the purpose of service delivery and partial or full cost recovery, there are likely to be very poor groups in every society that need to be exempted from user fees.

## Monetary and financial policy

### *Credit availability to the poor*

We move now to consider some key mesoeconomic aspects of adjustment policy, beginning with the operation of credit markets. Poor people generally have little access to formal credit markets. It is not clear whether this is because of

relatively low rates of return among poorer borrowers or because of other factors, such as the high administrative costs involved in such lending. Whatever the reason, they must rely instead on more expensive informal credit. Available evidence suggests that in many cases poor farmers derive high returns from increased access to credit. In rural Kenya, for instance, poorer households have higher returns to land and capital than wealthier households, indicating that they could profitably use more land (Collier and Lal 1986, p. 125). But lack of credit prevents them from buying or renting the necessary assets (or inputs). Lack of credit also prevents poor farmers from investing in the most profitable activities such as tree crops and quality livestock. And by constraining consumption close to current income, it raises the risk of diversifying away from food crops. A similar situation exists in the rural areas of many countries.

If the poor can use credit as profitably as better-off groups, policy attention should be focused on why they are excluded from formal credit markets. Government intervention in credit allocations by the banking system might be one factor: large (often public sector) borrowers are favored. This is further encouraged by the repression of borrowing rates below market levels, which leads to credit rationing. When rationing occurs, the largest borrowers are favored because of profitable economies of scale of their loans. But the returns on lending to inefficient public enterprises are often less than those on lending to smallholders. Inefficiency, as well as inequity, is the outcome.

Stabilization has the potential to rectify part of this problem. Even though a ceiling on total credit expansion is imposed, the addition of a credit ceiling on the public sector can release funds for private borrowers. In many programs assisted by the IMF, including those in Africa, the growth of lending to the private sector has actually increased in real terms (Heller et al. 1988, p. 16). In determining credit ceilings there may also be scope for special provisions to favor loans to sectors with high levels of poverty. Some IMF programs have explicitly supported credit expansion to the agricultural sector in general, and the smallholder sector in particular. While selective credit controls can cause major distortions if maintained indefinitely, special (temporary) credit provisions during the stabilization phase are warranted. The extent to which this can be done

depends on how restrictive the ceiling on total credit expansion has to be, and thus on decisions on whether a program oriented toward demand or toward supply is to be implemented.

Likewise, raising interest rates to market levels will reduce the crowding-out of smaller borrowers, and from an equity perspective, early financial liberalization is desirable. Although poorer borrowers will pay the new (higher) interest rate on their formal loans, this will generally be much lower than the costs of informal credit. There is some evidence of these benefits having occurred under programs in Ghana and Kenya (Heller et al. 1988, p. 16).

#### *Credit programs for poverty target groups*

While adjustment in itself may direct more credit to low-income borrowers, the gains to the poorest borrowers are unlikely to be large, mainly because of their lack of collateral. The latter signals creditworthiness and provides lenders with risk insurance in case of default. Measures to raise the productive assets of the poor could improve their collateral. Legal and administrative measures to secure their titles to assets such as land will have a similar result. In particular, allowing women farmers to hold title to land will remove some of their difficulty in gaining access to formal credit. This lack of access has limited their cultivation of the most profitable crops, contributing to efficiency losses for the economy and to female poverty (Horenstein 1989, p. 23).<sup>70</sup>

In designing credit programs that help the poor, it is essential to work through "semi-informal" financial institutions. Africa's informal financial system is diverse, and includes rotating funds ("susu," "tontines"), mobile bankers, and moneylenders. Because lending takes place within small communities and often within kinship networks, lenders have much more knowledge about the borrowers' prospects than any modern bank. Credit is thus more readily obtained, especially in the small amounts usually required, but which are too expensive for banks to administer. Accurate assessments of creditworthiness, along with social pressures, normally ensure high levels of loan repayment. Lending tends to be short term, often seasonal, however, so that not much long-term finance is provided. Therefore, potentially profitable investments are not made by the poor.

Consequently, the promotion of semi-informal financial institutions, which have the advantages

of the informal system but can provide longer-term credit as well, has some appeal. The practice of group lending has been used with some success in Malawi and Zimbabwe (Schaefer-Kehnert 1982), and the ILO has appraised its introduction in The Gambia.<sup>71</sup> Savings and loan associations have also proved effective in Western Cameroon. The success of the Grameen Bank in Bangladesh, especially in reaching rural women, has prompted much interest in these schemes (Hossain 1988). Women in poor communities often form savings and loan clubs, and these are natural candidates for group lending schemes. Their high repayment rates make such groups useful for delivering credit to the poor without jeopardizing the restoration of financial soundness. In this way poorer people will find it easier to adapt their enterprises to policy reforms and will have more chance of entering the high-return activities promoted by adjustment.

Group lending schemes depend on the mobilization of communities themselves. While their pace of development can be promoted by government and external agencies, drawing particularly on nongovernmental organization (NGO) experiences, their expansion can become too rapid under the influence and finance of outsiders. Group accountability and local sanctions on debt default will then be diminished, enhancing the sustainability of the schemes themselves (World Bank 1989a, p. 117). Moreover, the development of literacy skills is an essential prerequisite for such schemes to be administered through local communities. Hence, they depend on the availability of appropriate social infrastructure. Finally, since groups select their own members, the very poorest may be excluded. This can occur if the very poorest people are subject to cultural prejudices. Special lending groups for these people would then need encouragement. Alternatively, the very poor may truly be bad risks, because of chronic malnutrition and disablement, for instance. Other forms of help, rather than encouraging them into debt, would then be appropriate.

#### *Credit programs for retrenched employees*

Workers who have lost their jobs in the public or private sectors as a result of adjustment and who wish to start small businesses can be assisted through credit schemes. This is now being done in The Gambia, Ghana, Guinea, Senegal, and

Mauritania (World Bank 1989b). Many of the principles discussed in relation to credit programs for the poor apply to these schemes as well. Interest rates must not be set too low, otherwise unrealistic proposals will be attracted and the revolving fund will risk decapitalization. To avoid a proliferation of credit institutions, each with high transaction costs, it is desirable to base such schemes in existing institutions where this is financially prudent. For example, a credit scheme in Ghana is being operated by local banks with funds from the central bank. At the same time, a single agency should be established to oversee all credit schemes. This is particularly important because the schemes for retrenched workers will, by the nature of the problem, be only temporary. Moreover, having all credit schemes under one institution, implies that — at the margin — credit should go to the best use, irrespective of whether it is for the rural poor or for retrenched employees.

Assistance and training may also be needed for workers to prepare satisfactory loan applications. For example, the Indigenous Advisory Service (IBAS) in The Gambia gives such help prior to the final round of project submission. If such schemes are to be effective, then the process of considering and granting a loan must be as rapid as is financially prudent. Existing schemes have often been too slow because of stifling bureaucracy. Further technical assistance from specialized agencies would be desirable in this effort. Some existing schemes have already suffered from low repayments. One example is FIRVA in Mauritania, which has a 31 percent repayment rate (World Bank 1989b). The use of severance pay as collateral may improve repayment rates. Since many proposals come from business partnerships, group lending would be an appropriate instrument to reduce loan default. Such schemes are obvious candidates for donor assistance. IBAS in The Gambia is already supported by the United Nations Development Program (UNDP) and the International Labor Organization (ILO). The ILO, together with the U.S. Agency for International Development (USAID), is assisting the creation of a similar scheme in Senegal. The ILO has also appraised and advised on a number of other such ventures. The appraisal and implementation of such schemes takes time, and since their phasing with policy reforms is crucial for their effectiveness, interagency collaboration is important.

### *Mobilizing the savings of the poor*

The low population densities in most rural areas have made it difficult to bring modern banking facilities to most of the African population. The cost to banks of operating in rural areas is often not justified by the business that is generated. While traders in rural areas frequently provide informal deposit facilities, no interest is usually paid (since the deposits are not used as the basis for loans, as in a bank). The poor are thus denied the interest income that provides some compensation for inflation. The potential for mobilizing local communities is again apparent in this area. Rwanda's Banques Populaires, for instance, with villagers as members, have reached remote areas that are not covered by the commercial banks (World Bank 1989d, p. 172). In addition, linking informal savings clubs to formal financial institutions improves the access of the poor to formal deposit-taking facilities (and loans as well). In the Congo, informal savings clubs have been able to make deposits in local savings and credit co-operatives. This has facilitated greater access by villagers to the formal financial system than if they had acted individually. Finally, interest rate liberalization is crucial so that nominal rates match the rate of inflation. This will encourage deposits, the growth of financial intermediation, and contribute to growth. It will also be equitable because the poor, unlike the wealthy, have no access to foreign goods or capital to protect them from domestic inflation.

### *Exchange rate policies*

Devaluation affects the poor as producers, as suppliers of labor, and as consumers. It does this through raising the prices of tradables relative to nontradables and by influencing the real wage. Since urban and rural poverty groups are affected in different ways, the policy implications for each are discussed in turn.

#### *Prospects for the urban poor*

For devaluation to motivate producers to move into tradables production, the wage rate must fall relative to the price of tradables and must rise relative to the price of nontradables. This encourages labor transfer into tradables. The contraction of production in nontradables and its expansion in tradables is further facilitated as

capital is relocated in the longer run. It is well known that when the economy is near full employment the real-wage effect of devaluation is ambiguous, depending in the short run on whether workers consume more tradables than nontradables, and in the long run on relative factor intensities in the sectors (Corden 1985). When unemployment exists in the preadjustment period, devaluation unambiguously reduces the real wage. But employment is certain to rise, provided that the devaluation leads to an increase in output (which implies that any deflationary effects are insignificant). Finally, when labor market imperfections exist, the real-wage effects are more complex, because not all workers are affected in the same way. If it is accepted that the formal labor market is predominantly in the nontradables sector, mainly the public sector, a devaluation will tend to narrow the wage differential between formal and informal sectors, which is generally equitable. This does not preclude falls in the real wage: it may be that formal sector wages simply fall more than informal wages.

Assistance may be needed where tradables form the main consumption items of the urban poor. The need will be particularly acute when tradable food crops constitute the main wage goods. Devaluation, together with increases in official producer prices, raises food prices where these are tradables. The best initial help will include targeted food aid or subsidies, the promotion of periurban farming among the urban poor, and assistance to those remigrating to rural areas. Less assistance will be needed to cope with effects on nutrition when the urban poor are already purchasing large amounts of food in parallel markets. Prices in parallel markets are closer to world parities, so that devaluation will leave these prices unaffected. Similarly, if other importables consumed by the poor have been subject to quota restrictions and economic rents have been earned by traders having access to the licenses, the consumer price effect of devaluation coupled with liberalization may be small. Nevertheless, food policy interventions as part of an overall strategy to tackle urban poverty may still be needed.

#### *Prospects for the rural poor*

In most African countries tradables are mainly agricultural commodities: export crops and most food crops. Some subsistence food crops are

nontradables in remote areas.<sup>72</sup> By raising the prices of tradables, devaluation will tend to benefit the rural poor as producers. This beneficial effect, however, depends on the presence of an efficient product market to communicate the beneficial price changes to the farmers. If this is not the case, farmers may not gain the full potential offered by the new incentive structure. There is some evidence that this problem does exist (see Thomas 1989 and Thomas and Weidemann 1988), with monopsonistic product markets preventing farmgate prices from benefiting from devaluation. Where this problem does arise, devaluations should be combined with selective policy interventions to improve the functioning of rural product markets.

The role of the meso economy in determining how devaluation affects the rural poor is therefore critical. The chronic poor in remote regions who produce nontraded foods will see no improvement in their prices as a result of devaluation, but no decline either. As investments under adjustment improve the meso economy, remote regions will be drawn into national markets. Local prices will increasingly be affected by national (and world) market conditions. In turn, nontradable foods will become more tradable in character, and the chronic poor might benefit as producers if they can market some surplus. Price measures such as devaluation, therefore, will benefit the poor as producers if phased with infrastructural investments in remote areas, together with projects to raise the ability of poor farmers to produce marketable surpluses of tradables. Some of these benefits may occur quickly as the import support associated with adjustment improves rural transportation, but the gains from project interventions will usually be reaped over the medium term. Because the pace of devaluation may be slower under structural adjustment than under stabilization as a result of a higher level of external finance in support of the program, the chronic poor may be helped during this extended period to a position where they gain greater benefits as producers.

If poor households produce nontradables, or if they make intensive use of imported intermediate inputs such as fertilizers, they will be adversely affected by devaluation. The key to raising their incomes lies in creating alternative production patterns, which may require complementary policies such as targeted extension services that encourage farmers to change crop mixes. The

issue of raising the capacity of farmers to respond to the new price structure, however, not only applies to farmers previously producing nontradables. To benefit fully from the devaluation, tradable farmers must also raise output levels. If they are constrained from doing so — for example, if the economic infrastructure is poorly developed — there is an obvious case for policy intervention. Again, it should be noted that a policy directed at involving poor farmers in the process of adjustment — in this case, raising their capacity to respond to price incentives — not only increases their incomes, but also enhances the adjustment program itself. If supply response among the poor is low, this does not lead to the conclusion that devaluation should be abandoned as a policy tool. Rather, it reaffirms the importance of the ancillary measures discussed here. In particular, it points to the importance of reducing food insecurity, thereby reducing the risk constraint that partly holds back the participation of the poor in export crop production. In this sense, the drive to improve food security is complementary to meeting the objectives of devaluation.

As rural wage earners for either estates or smallholders, the poor are likely to gain in the medium to longer term as the demand for their labor (in the cultivation of tradable crops) rises. Rural labor frequently has a low supply elasticity in most African countries because of the relative absence of landless laborers. Most labor is part time by farmers, and the seasonality of agriculture forces the wage up at the busiest times, when everyone has a labor shortage. The real-wage effect of devaluation for rural wage earners would thus tend to be beneficial over the longer term. This is especially true where the adjustment program induces sustained agricultural growth.

In the short term, however, rural wage labor might suffer a real-wage fall. This is particularly the case where the estate wage falls relative to the price of the goods produced by the estates. Whether smallholders would require any such real-wage fall to induce their expansion of tradable production is uncertain, and complicated by their primary provision of wage labor to each other. The short-term effects of devaluation on real wages are therefore somewhat ambiguous. In sum, some food intervention to the rural poor, especially on estates, will be warranted, although the scale of this will be much smaller than that needed in urban areas. Donors such as the World

Food Programme already have extensive experience in food assistance to estate workers. And food interventions to rural populations more generally have improved under programs meeting food insecurity caused by drought. These programs may therefore provide appropriate avenues for food assistance under adjustment.

*Should the speed of devaluation be altered for reasons of poverty?*

Delaying devaluation when labor market imperfections exist is generally a second-best solution to the ensuing poverty problems. Devaluation should in most cases release enough efficiency gains to permit assistance to poor wage earners and still leave a positive net gain from the reform. Rigidities in product markets are a different matter. If supply-side rigidities are found to significantly slow the required switch of resources to tradables so that the main effect of devaluation is to raise the overall price level, a slower pace of devaluation may be warranted. With only limited supply-side responsiveness, domestic recession threatens, because tradables output shows only small improvement, while the production of nontradables falls. If the price rise induced by devaluation touches off inflationary expectations so that all prices ratchet further upward, the recession would be more severe. Urban producers of nontradables would be negatively affected, and a limited responsiveness of rural tradables output would provide insufficient employment for labor shed from urban occupations. Downward pressure on wage rates throughout the economy would result.

In avoiding inflationary expectations, a slower rate of devaluation will therefore attain the given balance of payments objective with less short-run cost in terms of lost output and incomes. In countries where infrastructure is depleted, these points reaffirm the need for an externally financed structural adjustment program focusing on the supply-side of the economy. It is clear that different assumptions about supply-side expansion, business expectations, and policy combinations have an important bearing on what theory predicts.<sup>73</sup>

### Trade policies

In this section we address three basic issues. The first concerns the overall trade strategy in the

face of constraints on export expansion and terms of trade changes. This issue raises the question of how much potential exists to raise output and incomes among export producers in Africa, many of whom are poor. Second, a comparison (from the poverty point of view) is made between devaluation and import restrictions as instruments for correcting an external deficit. Finally, the problems encountered in trade liberalization are reviewed from the poverty perspective.

#### *Export-demand constraints*

One of the motivations underlying the choice of an inward-looking trade strategy is export pessimism rooted in the conviction that the net barter terms of trade are in inexorable decline (the Prebisch/Singer hypothesis) and that the world market absorptive capacity for additional African exports is low (the so-called fallacy of composition). If true, these hypotheses cast shadows on the possibility of restoring growth under adjustment and the scope for poverty reduction through increased production of tradables. Reality is both more complex and, on balance, less discouraging.

It is necessary to distinguish between a secular decline in the net barter terms of trade and price variability over time. There is now widespread consensus among analysts that the claim of a secular decline in terms of trade is not sustainable. Conclusions critically depend on the chosen period of observation. Unresolved measurement problems (for example, accounting for quality change in industrial goods) make the net barter terms of trade a less meaningful statistic than might be assumed at first. The income terms of trade (that is, the total receipts from exports divided by import prices) may be a more relevant measure since it is welfare-related and takes into account productivity gains made by a country (World Bank 1989c). The nonfuel primary commodity income terms of trade for Sub-Saharan Africa, while fluctuating, displayed neither a declining nor a growing trend during the 1965-85 period, the lack of an improvement being ascribed to the region's slow growth in productivity and export production (World Bank 1989c). The policy implication calls for measures to raise productivity and output, including adjustment to correct the effects of import-substituting policies that were put in place on the basis of the Prebisch/Singer hypothesis, which, by discriminating against agriculture, have been largely antipoor.



Whereas during the 1960s African agricultural exports grew in volume at about 2 percent a year, they have since declined. Africa's market shares of major agricultural exports have declined significantly. World Bank calculations show that if Sub-Saharan Africa had maintained its 1970 market shares of non-oil primary exports from developing countries, and prices had remained the same, export earnings of the region would have been US\$9-10 billion a year higher in 1986-87 (World Bank 1989c, p. 20). Prices might, of course, have declined somewhat as a result of increased supplies if other suppliers had not reduced their share in total exports. It has been argued (Koester, Schafer, and Valdes 1989) that whether or not world market prices and exporters' foreign exchange earnings decline as a result of an increase in agricultural exports depends on the rate of this increase relative to the growth in world demand, the price elasticity of world demand, and both the world market share of a particular country or group of countries and the supply response of competing countries to changes in world prices. For example, the maintenance of earlier African agricultural export growth might well have led more advanced developing countries to diversify their production and export patterns, thus diminishing the competition faced by Sub-Saharan Africa.

If world demand for a particular export crop is price inelastic, price and total revenue (foreign exchange earnings) vary directly; that is, a price decline resulting from a given increase in export volume would lead to a reduction in foreign exchange earnings from that crop. This would be serious in the case of countries that have achieved a dominant position in the world market for a single crop. This would appear to be the case with Côte d'Ivoire and its experience with cocoa. It is unlikely, however, to be a serious problem in countries with a more diversified export base. These considerations are of some significance for our present concern. If only a limited potential exists for an expansion in commodity exports in Sub-Saharan Africa, the scope for raising the incomes of poor smallholder exporters would also be restricted. Countries facing less constrained export markets will have more room for maneuver to enhance the incomes of export farmers.

*Are import restrictions better for the poor than devaluation?*

The argument is sometimes made that import

restrictions have more favorable effects on poverty than devaluations. Specifically, because tariffs only increase the price of importables, while devaluation increases the price of exportables as well, the reduction in real income, particularly real wages, will be less under tariffs than under devaluation. Tariffs can be concentrated on "luxury" goods, and the tariff revenue can be used to cut taxes, minimizing the overall change in the cost of living of the poor. Finally, if quotas on luxury goods are sufficient to reduce the trade balance deficit, no major cost-of-living increase need occur for the poor.

This line of reasoning has led to attempts by many African countries to resolve their balance of payments problems without recourse to devaluation. Since import restrictions have been an integral part of most industrialization strategies, the use of such restrictions to cope with recent balance of payments difficulties seemed appealing. Nevertheless, while quotas and tariffs were often intended to cut only luxury imports, the size of the terms of trade decline has forced reductions in basic imports as well. Foreign exchange savings through import substitution have not been rapid enough to prevent the emergence of this pattern. Indeed, in many cases they have not been large enough to maintain the intermediate imports essential for the functioning of the domestic economy.

In practice, therefore, unless balance of payments difficulties are temporary and small, which Africa's are certainly not, import restrictions will inevitably induce large changes in the prices of basic goods. Moreover, attempts to ration basic imports — at subsidized prices to poor consumers alone — have had little success in Africa, judging by the prevalence of parallel marketing. The claim that import restrictions have less unfavorable cost of living effects compared with devaluation is therefore weak in current circumstances. The major problem with such a strategy is the damage it does to export production, since import restrictions motivate investment in the protected sectors where the apparent returns are highest. Real wages in these sectors are thus effectively maintained through taxing exports (Corden 1987, p. 18). Raising import restrictions tends to perpetuate a dualistic pattern of employment — limited employment in the high-wage, protected sector and underemployment elsewhere. In contrast, export activities encouraged by devaluation would tend to be in labor-intensive industries, since Africa's comparative



advantages lie mainly in labor-intensive products.

Small farmers are also worse off under an import restricting strategy compared with a devaluation; the latter raises agricultural prices, since most crops are tradable. Efficient producers of import substitutes are also discouraged since they are least likely to obtain protection, and investment in protected importables gives higher returns. This applies particularly to food crops, many of which are unprotected importables. And market scarcities under quotas encourage the investment of resources in rent-seeking to the detriment of productive activities. Although the higher tariff revenues can finance government programs that offset some of the undesirable effects of protection, it is almost certain that devaluation will generate higher revenues beyond the medium term through its effects on output, and thus on the size of the tax base.

#### *Trade liberalization*

Although protection has encouraged a degree of domestic industrialization through import substitution, it has reduced the pressure for firms to improve efficiency. Inefficiency has been further protected by the increase in import restrictions in response to balance of payments difficulties in the late 1970s and early 1980s. A clear case thus exists for reforming existing structures of protection, given the objectives of securing macro balance, raising growth, and improving equity. Import liberalization removes the disincentives to exports caused by import protection and initiates a flow of resources out of protected importables into exportables. It can be expected to raise incomes since exportables in Africa are predominantly more labor-intensive than protected importables. The latter are mostly import-substituting industries with above-average capital-labor ratios, reflecting past strategies of cheapening capital through currency overvaluation.<sup>74</sup>

Nevertheless, while trade reforms offer the potential for considerable efficiency and equity gains, there remains legitimate concern about the *transition period*. The long-term goals of trade reform require fundamental shifts in the allocation of capital and labor. Entire systems of industrial and manpower planning, constructed over two decades, are at present under review. Much money and effort has been spent in building up industries whose activities are now being restructured, and in some cases closed down. The other side of the coin, the nurturing of new in-

dustries, requires the development of a policy environment conducive to private investment and the coordination of investment with the necessary public infrastructure and support services. None of this will be easy or trouble-free.

In particular, capital and labor released from formerly protected activities cannot be expected to move easily and rapidly into new uses. Protection is often concentrated on a narrow range of industries, many of which are geographically concentrated. Special problems for those with industry-specific skills or capital will thus arise, together with highly localized unemployment. The process through which the longer-term benefits of trade reform are realized may thus generate adverse employment and income consequences in the short to medium term. How can trade liberalization policies be designed to minimize these short-run problems? Should corrective policies change the nature of the liberalization process itself (that is, change the macro-level policy instruments), or should they be applied at the meso or even micro levels? There are three dimensions to such design:

- the speed at which liberalization should be implemented
- the stages that liberalization should go through
- the relationship that trade liberalization should have to other economic policies (Michael 1986, p. 44).

**SPEED OF TRADE LIBERALIZATION.** Theoretical cases can be made for both increasing and decreasing the pace of trade liberalization. On the one hand, there are circumstances in which it is advisable to slow down the speed of liberalization. When labor and capital cannot readily be moved out of the protected industry, neither improved efficiency nor higher output will be gained by reducing the level of protection at a rate faster than necessary to discourage new workers from acquiring skills specific to the protected industry or new capital from being invested (Mussa 1986, p. 95). Similarly, when labor is mobile but capital is not, labor could not take up new employment when protection is removed from its old occupations because of the absence of complementary factors such as specific physical capital and managerial capacity (Edwards 1988a). Too fast a liberalization of the sector would cause undue "frictional unemployment" in these circumstances (Michael 1986, p. 45). The extent to which these problems are likely to arise depends on a country's industrial structure

and the sector-specificity of its factors of production. Fewer problems may be expected when reallocations take place within firms, but greater "frictional unemployment" can be anticipated when movement is necessary across widely different activities and locations.

Some impediments to factor mobility may be caused by government interventions, for instance, minimum wages and regulations on hiring practices. Some may be improved by government interventions, for example, through worker retraining. The first-best policy in such cases is often to tackle the problem directly, and not to modify the speed of trade liberalization, which would be determined by the efficiency objective alone. In other words, the guiding principle would be to retain as much as possible the macroeconomic policy stance, but to apply selective interventions at the meso level to ease the transition process.

Nevertheless, the presence of some market distortions implies that the liberalization process should be speeded up rather than slowed down if frictional unemployment is to be minimized (Choksi and Papageorgiou 1986, p. 7). This may occur when the adjustment of the economy to the existing speed of trade liberalization is too slow. For example, corporate taxation may discourage the movement of capital out of the protected sector. Alternatively, the credit market may operate in favor of protected sectors, so that firms will lose these benefits by adjusting their activities. If these distortions cannot be removed directly, and thus act as a drag on adjustment to trade liberalization, then there is a case for speeding up liberalization to accelerate adjustment by firms and reduce frictional unemployment.

Similarly, high frictional unemployment can arise when the private sector doubts the government's commitment to liberalization and is reluctant to move capital for fear of losses if the policy is reversed. Accordingly, rapid liberalization, rather than a graduated program, may be necessary to ensure policy credibility. Adverse expectations and market rigidities may even warrant a policy of reducing the level of protection to below its long-run optimal level to speed up the movement of resources out of protected sectors (Mussa 1986, p. 84). Protection would then be raised to the optimal level after capital had moved in sufficient amounts.

Although tackling mobility impediments directly may be the first-best policy, this may itself take time, implying that if unemployment is to be

prevented, these reforms should be sequenced together with import liberalization. Thus some alteration in the speed of liberalization may still be implied. The guiding principle that is established is that the macro-policy intervention (import liberalization) should be phased with mesoeconomic policy interventions (first-best removal of market distortions). In most African adjustment programs, however, major trade reforms are sequenced to take place after the stabilization phase. Removal of distortions impeding mobility could thus begin in the former phase, implying in most cases no delay in implementing second-phase liberalization. Finally, it must be emphasized that African policymakers generally are not faced with a distinct choice between moving immediately to free trade as against taking a more graduated approach. Rather they are faced with a range of choices involving different speeds of graduated liberalization. Reforming complicated systems of trade protection takes time, and it may be difficult to speed up the process to the degree required by equity considerations. External assistance can therefore be valuable in reducing the impediments in this area.

**STAGES OF TRADE LIBERALIZATION.** Most African countries use quotas and tariffs to protect imports, and liberalization will entail the reduction of both forms of protection simultaneously. Alternatively, it is now common practice to convert import quotas into equivalent tariffs, thereby making the system of protection more "transparent." Tariff reductions are then applied in a second stage. There are potentially two benefits for social dimensions in this process. First, the rents earned by those holding quotas are converted into tariff revenues for the government, some of which may be used for social expenditures or poverty projects. Second, increased transparency in the protective structure makes it clearer how that structure affects poor people, as either producers or consumers. This makes it easier to design a liberalization program that maximizes gains to the poor. If the structure of market distortions is such that fast liberalization would minimize frictional unemployment, the time involved in converting the protective system will diminish the importance of these advantages.

If it is accepted that quotas have been converted into tariffs, how can reductions of tariffs be applied in such a way that gains to the poor are maximized? We have already discussed how the speed of liberalization may be altered to re-

duce frictional unemployment. When impediments to factor mobility are not the same across all sectors, which is likely to be the case, minimizing frictional unemployment implies that liberalization will not take place at the same speed across all the protected sectors. This has the disadvantage of increasing variability in rates of protection, which may lead to resource reallocations between the protected sectors, but not out of them. Such a tendency would need to be discouraged by appropriate policies. The so-called "concertina" method of tariff reduction would seem to do the least damage to employment, judging from its success in other developing regions.<sup>75</sup>

There may also be scope for giving first priority to the liberalization of imports that are most important to the poor as consumers. Import facilities financed by donors could support this, but modifying the liberalization program in this fashion may not be the best way of assisting the poor. Using import facilities to support the liberalization of imports in general may actually grant more benefits to the poor through raising economic efficiency and thus medium-to-long-term labor demand, while their problems as consumers could be dealt with through other means. Similarly, the liberalization of intermediate imports before finished goods is superficially an attractive idea given that low-income producers have been hit by the inefficiency, and thus high prices, of domestic producers of intermediate goods. This could, however, actually raise the effective protection of the producers of finished goods, when the desired outcome is contraction (World Bank 1987b, p. 110).

**COORDINATION OF LIBERALIZATION WITH OTHER POLICIES.** The phasing of liberalization with other policy reforms and interventions is another critical issue that policymakers must address (Demery and Addison 1987a). Our discussion of the pace of liberalization emphasized that this decision is partly based on the degree to which meso- and micro-policy reforms can be undertaken to assist factor mobility. While such reforms may go far to reduce frictional unemployment problems, they may be insufficient to enhance the occupational mobility of the poor. The constraints limiting the freedom of action of the latter are severe and must be tackled by a range of interventions. Social action programs may need implementation alongside liberalization measures to enhance their mobility.

The frictional unemployment costs of trade liberalization can also be minimized by appropriate macro-policy coordination. Although liberalization encourages the movement of resources into exportables, real devaluation is essential to strengthen this process if employment losses in protected industries are to be swiftly matched by employment gains elsewhere (Corden 1987, p. 20).<sup>76</sup> If an especially strong signal to potential exporters is required, there is an equally strong case for the initial devaluation to be a large one. Note, however, that devaluing prior to liberalization, while it encourages resource flows from nontradables to exportables, also encourages such flows into protected importables. It is essential to discourage the latter by making it clear that any new investments in protected importables will incur a loss when liberalization takes place (Corden 1987, p. 20). A firm public commitment to liberalization is thus essential. Imposing *temporary* restrictions over the direction of private investments and other disincentives (such as credit restrictions on loans to protected importables) may also be needed while liberalization of the product market takes hold.

It must be emphasized that potential employment problems will be reduced if trade reforms take place within a growing economy. In such cases, the output of import-substituting industries may take a lower share of total output but may not fall in absolute terms. Accordingly, employment in formerly protected industries will grow more slowly than before, but it will not suffer any decline. Moreover, the efficiency gains resulting from the reform process will, through higher output and income, increase the demand for nontradables. Insofar as trade reforms succeed in raising foreign earnings, nontradable output does not have to be compressed to the extent otherwise necessary. Employment in private sector nontradables will thus be more buoyant. The employment effects of liberalization will thus be more favorable if such measures take place alongside other policies that promote growth.

## **Policies toward self-employment**

### *Sectoral employment trends*

Agriculture provides an average of about 78 percent of employment in Africa, ranging from over 90 percent in countries such as Rwanda and Niger, to 70 to 75 percent in Cameroon and Zim-

babwe, and to 60 to 65 percent in the Congo and Côte d'Ivoire.<sup>77</sup> Small-scale and micro enterprises account for about 16 percent of the region's employment, while modern wage employment covers just 6 percent (World Bank 1989d, p. 41). The share of agricultural employment has fallen since the 1960s, reflecting a process of structural transformation. But the shift of labor out of agriculture has been less than that in either Asia or Latin America, where agriculture's share is 32 percent and 66 percent respectively (ILO 1989a, p. 52). Although small and micro enterprise employment and modern wage employment are projected to grow annually at 6 percent and 3.4 percent, respectively, as against 2.5 percent for agriculture, their growth is from a much smaller base than in agriculture.<sup>78</sup> Based on current predictions, agriculture's employment share will not fall to the Asian level until early in the next century (World Bank 1989d, p. 41).

These are medium- to long-term trends. In the short term, the adjustments caused in the employment structure by recent shocks and policy responses have raised agricultural employment growth above the underlying trend level. Micro-enterprise employment (and informal service employment) have also risen above the trend. Both of these employment adjustments are responses to the depression of formal sector wage employment. The latter has been particularly affected by foreign exchange shortages in industry, with inputs that are import-intensive. In addition, the withdrawal of subsidies from loss-making public enterprises, combined with a reduction in the protection of industry, contributed to the labor shakeout. Reductions in public employment — the main form of modern wage employment in most countries — have been extensive. Informal employment sources have therefore tended to grow, although much of the labor in this sector in urban areas is underemployed.

It is important that policy reforms maximize employment benefits in agriculture and micro enterprises, particularly for the chronically poor who are overwhelmingly found in these activities. This section focuses on these issues for the self-employed. The next section discusses in further detail how wage employment might be encouraged further, especially in the modern sector.

#### *Agricultural self-employment*

Agricultural performance is disappointing in Africa. In Sub-Saharan Africa as a whole, pro-

duction has grown at negative per capita rates for many years, and foreign food dependency has increased. African agricultural exports grew at an annual rate of 0.9 percent between 1982 and 1987, compared with 7.4 percent in Asia (FAO data), and it is well known that Africa's world market shares for major export commodities have declined in the past 20 years. Agriculture's potential contribution to development and poverty alleviation is far from being realized in many African countries.

While the causes of Africa's agricultural decline are complex, there is wide agreement that they include inadequate price and institutional policies of the kind that structural adjustment programs seek to correct. Agriculture is the main sector producing tradables in most African economies — in the form of export crops and food commodities for import substitution. (The degree to which food crops are tradable depends on transport costs between points of production and the market.) "Urban-biased" economic policies that promote industrial import-substitution through trade restrictions tend to discriminate against agriculture by "closing" the national economy and raising the price of nontradables relative to tradables (an appreciation of the real exchange rate). Indirect agricultural taxation associated with overvalued exchange rates in Africa (as elsewhere) has often been accompanied by high levels of direct taxation in the form of export levies and monopsonistic, state-controlled food procurement. The disincentive effects associated with these price policies have been reinforced by the low priority accorded agriculture in public investment policies, particularly in the areas of transport, appropriately scaled irrigation, and agricultural research and extension.

During the 1980s the effect of trade and macroeconomic policies on agricultural incentives and private agricultural investment behavior has been studied in depth for some 25 countries in Africa, Asia, and Latin America (Krueger, Schiff, and Valdes 1988). It is clear that these policies, which, among others, determine the level of the real exchange rate, play a major role in determining the profitability of farming relative to nonagricultural activities. The negative impact of "closed economy" trade and exchange rate policies on agricultural incentives has in many countries been found to outweigh the effect of selective sector- and crop-specific promotional policies, such as input subsidies.

Adjustment, as described elsewhere in this vol-

ume, aims to depreciate the real exchange rate through reducing import restrictions, nominal devaluation, and reducing inflation. Adjustment is, therefore, a necessary condition for the reversal of the process of agricultural decline referred to above, as long as an adequate share of price gains related to devaluation is passed on to farmers. Given the structural rigidities that characterize African agriculture, however, real exchange rate reform alone will not suffice. It must be accompanied by appropriate public investment in agriculture and the development of institutions capable of serving the needs of rural people through input distribution, product marketing, and social services, which together provide an "enabling environment" (World Bank 1989d). Long-run consistency in macroeconomic management and inflation control is essential to encourage private investment in agriculture and help raise the aggregate supply response.

Price incentives for agriculture appear to have improved in Sub-Saharan Africa during the second half of the 1980s. Countries undergoing macroeconomic reform have devalued their currencies substantially, and these nominal devaluations have proved effective. The real effective exchange rate for Sub-Saharan Africa has declined by about 20 percent in the second half of the 1980s (Jaeger and Humphreys 1988). Agriculture is a slowly growing sector, and it is too early for a full assessment of the production response to improved incentives. In a preliminary analysis of the effect of adjustment on agriculture in Africa, Cleaver (1988, para. 44ff.) found that aggregate agricultural production in adjusting countries "performs significantly better than in countries not in adjustment," but even in adjusting countries agricultural production growth has not (yet) caught up with population growth. Moreover, food production responds more slowly to adjustment than cash crop harvests. While price improvements, as stated above, are far from sufficient to invigorate African agriculture, Balassa's (1988b) findings, which document a strong association between the real exchange rate and agricultural exports for Sub-Saharan Africa, are noteworthy. That in the short run, food production recovery lags behind production of export crops may be explained (in part) by reductions in demand arising from real wage declines associated with devaluation. If this is so, targeted food subsidies on domestically produced staples would not only strengthen demand and improve nutrition, but also help sustain production incentives.

The effect of devaluation and trade liberalization on net sellers of agricultural commodities would generally be expected to be positive, not only because of the attendant price improvements, but also because of the reduction of the tax implicit in the exchange rate regime when farmers are forced to sell at an official, overvalued rate, while buying consumer goods and inputs at prices reflecting dearer parallel market rates. Trade liberalization can be expected to lead to an increase in the availability of consumer or "incentive" goods, and thus a higher supply response (Bevan, Collier, and Gunning 1989 show that rationing of consumer goods severely constrains peasant labor supply). It is true that producers are negatively affected by increases in the cost of imported inputs caused by devaluation. But against this should be set the cost of overvaluation, including long-run resource misallocations and shortages of consumer goods and inputs resulting from chronic foreign exchange shortages. Because of the low import content of their input mix, peasant farmers (who make up the bulk of Africa's rural population) would seem to benefit disproportionately from devaluation relative to larger farmers. At the same time, risk-averse producers may perceive increases in the prices of purchased inputs as increasing the risk of innovations capable of enhancing productivity. This would, however, appear to be the case only where macroeconomic adjustment does not translate into real devaluation.

#### *Enhancing the welfare of the agricultural poor*

While there are strong reasons to believe that most of the rural poor will benefit from the policy reforms under an adjustment program, this is not necessarily and always the case. To design appropriate policy interventions for groups that do not gain from adjustment, it is essential first to understand why they are bypassed in this way. We shall consider three broad cases here: first, when poor groups have insufficient access to productive assets and infrastructure; second, when marketing imperfections distort the price signals of adjustment; and finally, when poor groups fail to switch into high-return activities.

The most serious problem encountered in assisting poor rural groups arises from inadequate holdings of *productive assets*. Securing the claims to ownership that poor people have over their assets is an important first step to ensuring that poorer rural groups benefit from an adjustment

program (Chambers 1988, p. 3). Land rights are often tenuous in customary areas, and the poor frequently have few channels for redressing their grievances. Extending property rights will raise their incentives to maintain and improve those assets. When land tenure interventions are made, care must be taken to protect the traditional rights of women to cultivate land for food. Such measures in the past have often designated men in the household as title holders, thus weakening the claims of women. This also puts child nutrition at risk if the women of the household are the main providers. Côte d'Ivoire, Ethiopia, Kenya, and Zimbabwe have now given women the right to inherit and own property (World Bank 1986d, p. 40).

Raising the access of the poor to quality land is an important second step. Although low population densities suggest that Africa is land-abundant (compared with South Asia, for example), much unused land cannot yield even a subsistence living without major investments. Competition for quality land is increasing in many countries. The FAO estimates that only 30 percent of the labor force lives in countries that have unused land with potential yields equal to those of land already cultivated (Higgins et al. 1982). In these cases it may be feasible to make the land available to rural target groups without the necessity of large investments. The important target groups will be found not only among the rural poor, but also among the urban poor who can be resettled.

Unused land held under communal and traditional titles may provide the first source. Intervening in communal tenure systems to create rights for target groups can be difficult to achieve, however, and politically hazardous for governments (Feder and Noronha 1987). The target group may be outsiders to the local community where the unused land is located, or they may suffer from cultural and gender discrimination within the community. Communities are increasingly placing restrictions on the settlement of outsiders. For example, in some areas of Ghana and Cameroon outsiders are not allowed to plant cash crops (Feder and Noronha 1987, p. 154). Moreover, the rights of the target group have to be secured in some way — through the grant of legal title, for example — and compensation perhaps paid to others. Alternatively it may be possible to transfer unused land held under legal title to the target group (for example, that held by modern estates). In Zimbabwe substantial

amounts of land have been redistributed from large commercial farms to smallholders.

Land reforms have not, in general, been associated with adjustment lending because their time frame has usually been longer than the adjustment program. An exception is their incorporation in SAL agreements with Kenya, with the intention of giving land rights to squatters. Similar measures have been undertaken in Asia in association with adjustment lending (see Demery and Addison 1987b for a review). Agricultural sector loans by multilateral and bilateral donors can provide one vehicle for this purpose.

Improving the access of poor groups to *infrastructure* can be as beneficial in many cases as increasing their productive assets. Infrastructure investments often bypass areas containing high concentrations of poor people. This raises their production costs and acts as a barrier to gains from greater specialization. For example, while adjustment programs in Ghana and Kenya have sent out clear signals for the expansion of tradable activities, many of the poorest farmers have faced difficulties in achieving this because of their location (Heller et al. 1988, p. 20). In making new infrastructural investments, policymakers need to give more weight to actions that assist the poor. In many areas transport infrastructure has broken down, so that some local markets are poorly integrated with the national market, leading to large regional price differences (Ahmed and Rustagi 1987, p. 109). In designing a program of infrastructure rehabilitation, greater priority for areas ill-served by transport infrastructure, but with a high concentration of poor people, may be called for.

A second set of issues is raised when the failure of poor groups to benefit from adjustment arises from the *weakening of price signals*. Many of these have already been discussed under our consideration of the effects of devaluation. In cases when this is the result of weak marketing structures, the terms of trade facing poor farmers may be raised through improving the efficiency of official marketing organizations. In Asia, for example, 75 to 90 percent of the consumer price of food grains is paid to the farmer, while in Africa the proportion is only 35 to 60 percent (Ahmed and Rustagi 1987, p. 115). Nearly 30 percent of the difference in margins is due to the lower efficiency of African marketing organizations. In many countries the growth of marketing costs has been as important as currency overvaluation

in causing low producer prices (see Harvey 1988, p. 221, on Tanzania and Zambia, for example). Marketing reforms are now benefiting poor farmers. In Mali, for instance, a restructuring of the marketing system has shifted output and input prices in favor of farmers (Tuinenburg 1987, p. 503). Improvements in the efficiency of marketing organizations can reduce the conflict of interest that exists between the poor who produce food and poor consumers over food prices. One study found that, for a sample of African countries, reducing the marketing margin by 25 percent would result in a 49 percent increase in farm prices and a 13 percent fall in food prices, given reasonable assumptions about demand and supply elasticities (Ahmed and Rustagi 1987).

Even with marketing and infrastructure improvements, some poverty groups may still have imperfect market access (for instance, from private and public monopsonies in marketing in remote regions). Their terms of trade will thereby benefit less from adjustment than the average. Further deregulation may be warranted, if, for example, regulations block greater competition in marketing structures. But this may not be enough for areas with special difficulties. In this case the needs of the poverty target group may warrant the establishment of a special component of the official marketing system (perhaps with some explicit subsidy). Alternatively, the provision of resources and assistance to members of the target group may allow them to reduce their marketing problems. Women farmers may receive lower prices than their male counterparts because of poor market access, and can thus merit special help (Henn 1983, p. 1050). For example, the ILO is assisting women's cooperatives in the Gambia to market food crops, particularly from remote rural areas.

Finally, it is possible that some poor groups fail to benefit from adjustment simply because they do not switch production toward *high-return activities*. This may arise initially from a perception lag — farmers may take time to observe relative price changes and to expect them to continue. Or the failure to change output patterns may be more deep-seated, arising from either ecological constraints or risk aversion. The participation of poor households in producing the most profitable cash crops is usually below average. Such participation is a strong determinant of income differences across households in most countries. In Tanzania, for example, the income of the

poorest 50 percent of the village studied by Collier et al. (1986, p. 75) were dependent on subsistence crops for 70 percent of their income — this is double the share for the better-off half. In Côte d'Ivoire approximately 44 percent of the rural poor cultivate cocoa or coffee, compared with 65 percent of the rural population as a whole (Glewwe and de Tray 1987, p. 20). In Kenya the probability of a household being poor falls if it grows tea and coffee — the main export crops (Greer and Thorbecke 1986). Although cotton is mainly grown by poor households in Côte d'Ivoire, their participation in other, more profitable crops, is lower (Glewwe and de Tray 1987, p. 14). Overall, female-headed households are less likely to cultivate cash crops because the allocation of the necessary land, credit, and inputs does not favor women. Altering the product mix of female target groups will necessitate interventions in the supply of factors of production to them.

In summary, raising cash-cropping by farmers offers an important way in which their benefits from adjustment and growth can be increased. In some cases the investments in infrastructure and the improvements in marketing that have been discussed may be adequate for target groups to raise their incomes sufficiently. In such instances, policy interventions must clearly be directed at the micro level. In other cases a more comprehensive package of measures involving marketing and infrastructural services may be needed. Higher cash-cropping may be dependent increasing access to productive assets in the ways discussed previously.

A major constraint on expanding the incomes of target groups in this way is the ecology of the country concerned. This plays a large part in determining whether farmers in a given region are able to cultivate the most profitable cash crops. For instance, in many West African countries there is a marked division between ecological regions in food production and export crop production. In Ghana, for example, cocoa is cultivated in the coastal region, while farmers in the northern savanna derive most of their income from domestic food production. In Côte d'Ivoire maize is the dominant crop in the savanna region, and while cotton is an important cash crop, cocoa and coffee are concentrated in other regions. Consequently, it may not be possible to help a poverty target group in a particular region through the expansion of particular cash crops because of



ecological constraints leading to prohibitive project costs. In such cases, assisting the entry of the poor into activities with a higher return could necessitate relocation, and issues of mobility that are discussed later in this section.

Some countries have already shown how participation in the growth process can be raised in a relatively short period of time, provided that comprehensive packages of assistance are employed. To take only one example, in Zimbabwe smallholders supplied only 5 percent of marketed maize in 1980. But the subsequent targeting of marketing and support services, together with favorable price policies, allowed them to raise their share to 30 percent by 1983 (Mellor, Delgado, and Blackie 1987, p. 353). Given the right kind of sectoral interventions and an appropriate policy environment, similar participatory growth will become feasible in other countries.

#### *Micro-enterprise self-employment*

Recent years have seen a reversal in official attitudes to the informal sector, and a number of strategies have been advanced to improve the performance and profitability of the micro enterprises within the sector (ILO 1989b, p. 65). These strategies focus on training, credit, and the provision of supporting infrastructure. In particular, licensing and registration formalities may be unduly restrictive for small business development. In many countries these formalities are extensively evaded and are thus of little merit. But operating illegally makes it more difficult for small entrepreneurs to obtain formal credit and to use public facilities. These points also apply to formalities applied, notably to women (such as requiring a male relative's signature on business licenses). Adjustment offers an opportunity to review these restrictions, especially since a thriving business sector is crucial to tradables expansion.

Urban informal employment growth was rapid during the 1980s, although many in the sector are underemployed since ease of entry into the lowest grade occupations has provided a last resort for those displaced from the modern sector. The effect of inappropriate policies on rural livelihoods has also swelled the numbers of informal workers. As a result, the profits of informal micro enterprises have declined in free-entry occupations, although in activities where substantial capital is required, operating margins have probably been better.

Under adjustment the prospects for earnings from urban micro enterprise may be dim. First, workers displaced by the liberalization of industry and the contraction of public employment seek out urban informal employment. Using their severance payments for capital investments, the returns in the more advanced forms of micro enterprise can be expected to fall. Second, micro enterprises producing nontradables will be unfavorably affected (mainly in services). Third, if adjustment depresses urban incomes, then the demand for informal products will fall. Fourth, as modern industries recover their capacity utilization, some consumers will switch back to them since their products are preferred. Finally, some micro enterprises traded in scarce commodities before adjustment, and policy reforms will reduce incomes from rent-seeking.

While urban informal employment and earnings may contract under adjustment, the prospects for rural micro enterprises are brighter. As policy distortions against agriculture are corrected, the demand for goods and services by farmers will rise as their incomes increase. Much of this will be met by rural-based micro enterprises, since farms generally require local suppliers to maintain farm equipment, for example. Similarly, much construction work requires knowledge of local materials and requirements. In Africa each dollar increase in agricultural income generates about \$0.50 in rural nonfarm earnings (Haggblade and Hazell 1988, p. 10). Agricultural growth in Asia has been sustained for long enough periods to show the kind of intensive nonfarm rural economy that can develop (Mellor 1985). Asian farmers typically spend a large proportion of their additional income on locally produced goods and services, including textiles, transportation, housing, and health services (Hazell and Roell 1983). Similar expansion can be expected in Africa as households who operate micro enterprises as sidelines to farming increasingly specialize as demand grows. In some countries the expansion of such off-farm employment can be expected to reduce rural poverty because poverty groups engage disproportionately in this activity.<sup>79</sup> But in other countries (for instance, Lesotho, Tanzania, and Uganda) nonfarm income is disproportionately concentrated among better-off households. Off-farm employment is also a major income source for women, who dominate "traditional" female activities such as food preparation (Haggblade, Hazell, and Brown 1988).<sup>80</sup>



The opportunities for informal manufacturers in towns to supply the increase in rural demand will be limited in many cases to areas in the immediate vicinity of towns. The improvement of transport networks under adjustment may give greater scope than before, but the nature of many of the goods and services needed by farmers will probably preclude informal urban suppliers. High transport costs to remoter regions also make it difficult for urban suppliers to compete against local producers. Thus, if urban informal producers are to gain the higher returns offered by the rural market, they will need to migrate, and assistance for their mobility can be considered. For many who have lost their access to traditional lands, such nonfarm activity may offer their best means of returning to the rural sector. Second, because demand for informal products will shift toward rural micro enterprises, assistance to the informal sector in general requires review to ensure that strategies are adapted to meet the needs of rural micro enterprises.

### **Policies toward wage employment**

#### *Wage and employment outcomes under adjustment*

Current policy reforms in Africa are aimed at significantly altering the structure of production and consumption, and thereby the use of productive factors. The impact of these processes on wage earners partly depends, therefore, on the size and character of the resource reallocations required. In the African context the shift is most often from nontradables, such as urban services and quota-protected industries, to tradables, such as export and food crops together with competitive manufactures. Over the longer term, the outcome for wage employment and earnings depends on the relative labor intensities of the expanding versus the contracting sectors, and whether the structural shift in production takes place in the context of overall output growth. If structural change causes a fall in the overall labor intensity of production, and GDP is growing only slowly, downward pressure on wages is inevitable (if labor absorption is to be maintained). But with strong GDP growth, even when contracting sectors are more labor-intensive than expanding sectors, the negative (static) effect on labor demand may be outweighed by the dynamic benefits.

In Africa, exportables and unprotected importables are generally more labor-intensive than

nontradables. While the latter category includes labor-intensive activities such as service employment, it also includes industries that are capital-intensive because of previous distorting policies. Since agriculture is the dominant tradable in most countries, and since it is very labor-intensive in Africa, a rise in the average labor intensity of production can therefore be expected to result from adjustment.

These orthodox expectations, however, are derived under the assumption of full employment. In Africa unemployment is high — averaging over 15 percent across the region (ILO 1989b, p. 17) — so real wage improvements may not result, or may be slow in materializing. Unemployment in the African labor market arises from a mix of factors, including the preadjustment situation of industries with foreign exchange constraints, short-term labor market responses to adjustment in some countries, structural employment problems that have long afflicted the region, and high population growth rates. Real wages will improve at a faster rate if adjustment promotes output growth, not just a change in its structure. An emphasis on growth and efficiency in program design is thus crucial to prospects for wage earners.

Design of the macro strategy also affects the short-run outcome for real wages — in particular the relative importance attached to demand restraint (emphasized in stabilization programs) versus supply expansion (emphasized in structural adjustment). Although structural adjustment may cause some frictional unemployment through market liberalization, its emphasis on growth is more conducive to employment than stabilization. Under the latter, domestic demand falls when monetary and fiscal restraints are applied, nontradables production contracts, and tradables production expands. But in the short term, nontradables usually contract faster than tradables expand. Labor demand therefore weakens, putting downward pressure on wages (even if long-term wage prospects are good).

Whether wages are flexible or not can also affect the short-term employment effects of adjustment. With real wage rigidity, some workers may protect their living standards at the cost of unemployment for others, whereas a fall in wages would allow the employment of the latter despite weakened economic activity. In general the current weakness of organized labor in Africa prevents much of the real-wage rigidity experienced in semi-industrialized and industrialized

countries. Real wages have fallen considerably in Africa — both before and during adjustment in many countries (Jamal and Weeks 1988). For unskilled labor, real wages may be close to a rate that provides only a minimum nutritional level. In such situations further wage declines could not be expected, and would not therefore perform their function of equilibrating the labor market (as discussed earlier).

In cases where there is scope for wage flexibility, a government may call for temporary wage restraint both to encourage a rise in tradable production and to maintain employment. Whether such restraint can be successfully negotiated with labor depends on whether labor perceives the situation to be fair. Governments that attempt to spread adjustment costs equitably (through, for example, economizing on inessential public expenditures in order to protect social services) will have more credibility with labor than those that act otherwise. Governments that resort to limiting the rights of workers (such as freedom of association and collective bargaining) are likely to lose public confidence in the integrity of the adjustment program itself. There are a number of examples of successful incomes policies built through dialogue among government, labor, and firms (Kyloh 1989). In such situations workers effectively trade present wage benefits for future employment and wage growth. And specialized agencies such as the ILO have much experience in assisting the promotion of tripartite dialogue (ILO 1987, p. 55).

#### *Improving the functioning of labor markets*

The labor market is a key component of the meso economy. As such, its performance is a critical determinant of how the costs and benefits of adjustment are distributed across society. Yet this performance is often far from satisfactory. Both inappropriate government interventions and the workings of the market itself can cause inefficiencies. Unemployment may exist because of government regulations on hiring practices, for example, or because the qualities of some types of workers are not effectively signaled to employers by the market. Consequently, policy choices at the level of the macro strategy are necessary, but not sufficient, for maximizing the growth of wage employment. Complementary actions at the level of the meso economy, particularly in the labor market, are also needed.

Discrimination by employers on the basis of gender or culture is the most important type of “endogenous” labor market inefficiency. Governments can prohibit such discrimination through legislation, and this can have substantial benefits if properly policed. Regulation is most effective in the public sector, but less so among private enterprises, especially where labor recruitment is informal. Governments can begin by reviewing their own hiring practices for discrimination. Action against discrimination becomes even more important during adjustment, because the disadvantaged are often the first to be dismissed and the last to be hired. While inappropriate regulations can be eliminated, often at the stroke of a pen, cultural prejudices are much more persistent (Serageldin 1989, p. 30). The latter may render well-meaning legislation ineffective, or even counterproductive. Ultimately interventions in the labor market may be less successful than empowering the disadvantaged through other means, such as improved education and asset distributions. Aside from enhancing their self-employment, such assistance may, through improving their human capital, weaken prejudices against them in the labor market.

In general, market inefficiencies caused by governments are easier to rectify than those inherent in the market itself. Obviously government interventions are prime candidates for review at times of adjustment. Regulations on employment practices, working conditions, and minimum wages should be assessed to establish whether they are having their desired benefits. Such regulations may improve worker “quality,” and thereby productivity and employment. They may effectively correct employment practices that the market is too weak to rectify automatically. Or they may unduly encourage capital intensity, and harm employment (Krueger 1988, p. 365). Alternatively, they may have unintended effects, such as limiting the job prospects of young people. Because the links between such regulations and the performance of both workers and firms is complex, they should be reviewed on a case-by-case basis (ILO 1989b, p. 44). While wage levels are rightly seen as the key measure of labor welfare, working conditions, such as health and safety, are also an important component in their own right.

There are strongly differing opinions about minimum wages. One view holds that formal sector employment will be reduced if employers

are required to set wages above market-clearing levels. The displaced labor either becomes unemployed or, more likely, is absorbed into the informal sector (where minimum wages cannot be enforced). Informal wage levels are thus reduced. Wage dispersion, along with inequality, increases, and a dualistic pattern of employment is perpetuated (which in turn encourages rural-to-urban migration). The formal sector wage differential between skilled and unskilled workers is reduced, and with it the incentive to accumulate human capital (Psacharopoulos 1986, p. 54). The alternative view defends minimum wages on two grounds. First, minimum wages can increase employment and output by raising labor productivity. This may be important where worker efficiency is constrained by malnutrition and poor health. Rather than diminishing profitability, minimum wages raise it. The requirement for wage legislation, presumably, is based on imperfect perception on the part of employers. Second, it is well known that when there is only one employer (a monopsonist) in the market, both employment and the wage level are set below their competitive market levels (Brown, Gilroy, and Kohen 1982). Introducing a minimum wage (equal to the competitive market level) will raise employment without affecting output.

The real value of minimum wages has fallen drastically across Africa, because the minimum has not been adjusted in line with inflation. In some countries therefore, market wages may lie above the minimum, thus making the latter irrelevant at present. But in countries where minimum wages do "bind," should they be retained, raised further, or removed? The case for removing them rests on the view that minimum wages exacerbate the adverse wage and employment effects of adjustment. As nontradables contract (either because of deflation or devaluation or both) there is no possibility of retaining some employees by downward money-wage adjustments. They are displaced into the informal sector, which forces informal wages down. Those who remain employed in formal nontradables thus protect their wages at the cost of depressing the living standards of informal workers, many of whom are poor. Removing the minimum wage during adjustment would raise formal employment, and thus reduce poverty.

When the minimum wage has raised productivity among competitive firms, its removal may, under certain circumstances, leave employment

largely unaffected. This occurs when it is not profitable for employers to reduce the wage they pay if the legal minimum is removed. Removing the minimum wage in these circumstances will not affect the number of jobs lost from the formal nontradables sector, or the extent to which the informal wage falls.<sup>61</sup> But if during adjustment the minimum wage is removed from a monopsonist in nontradables, employment will contract further than if it is retained. The monopsonist argument has more validity, but a limited application. Estates in the agricultural sector come nearest to being monopsonists in the African context, especially where smallholder labor markets are thin. A minimum wage for the estate sector may be justified in some cases.

#### *Public sector employment policy*

The main burden of wage restraint tends to fall on public employees, reflecting a need both to curtail public expenditures and to transfer resources out of nontradables. Although public sector wage freezes have been a feature of donor-assisted programs, they have also occurred as the domestic revenue base has contracted during earlier recession. For these reasons, the scope for further reductions in public expenditures through public wage freezes may be limited. Indeed, in many cases remunerations have fallen so low that they neither keep low-paid workers out of poverty nor attract and retain skilled manpower. The problems of absenteeism, demoralization, and corruption affecting many public administrations are familiar and need no reiteration here. These limit the capacities of African governments to carry out key policy and management tasks necessary for successful adjustment programs (Nunberg 1988). Hence there is not only a "social dimension," but an important institutional efficiency problem as well.

Given the need to redirect public expenditures to key investments and services that support the adjustment effort, it is almost impossible to envisage a large improvement in the remunerations of all public employees. The public wage bill is very high in some countries, and will need to be reduced further if priority investments are to take place. In doing this, care is needed not to erode public sector wage differentials in order to preserve incentives and retain highly skilled employees (Klitgaard 1989). Comprehensive restructuring of public employment has been un-

derway throughout Africa since the mid-1980s and earlier. The introduction of performance pay, linked to improvements in government revenue collection and the efficiency of government programs, can be an appropriate solution to the problem of keeping salary levels within bounds while at the same time maintaining incentives. Revenue-raising agencies are prime candidates because their performance is easiest to measure. For example, in Bolivia the pay of revenue officers is now related to the amount of revenue collected, and a large increase in revenues has resulted. In addition there are cases where user charges have been shared with employees (for example, Nigeria). On the expenditure side, railway, highway, and port authorities in Ghana have, with World Food Programme (WFP) assistance, linked subsidized food to measurable results for each worker and for the corporation as a whole (Klitgaard 1989, p. 452).

#### *Public works programs*

At their best, public works programs (PWP) provide significant assistance (in either cash or food) to the underemployed, while creating infrastructure of lasting benefit. They are now being adapted to help poor groups cope with the impact of adverse policy reforms (see, for example, Republic of Ghana 1987, p. 5). Given their micro orientation, they can be tailored to the problems of specific poverty groups whose employment problems are insufficiently resolved by actions at the macro- and meso-policy levels. Well-designed PWPs can impart major improvements in human capital, both through improved nutrition and on-the-job training. The general improvement in labor quality has important spin-offs for the profitability of the household's own activities (which are further enhanced if program participants are the main beneficiaries of the infrastructure created). The time profile of household activities can also be favorably affected: for instance, upgrading a road may reduce travel time, thereby releasing more time for productive employment and childcare. Insofar as PWPs contribute to raising production (especially of tradables) they assist in meeting adjustment objectives.

Unfortunately, PWPs do not provide a lasting solution to groups facing poor long-term employment prospects. PWPs, while they provide a useful income supplement, are no substitute for a comprehensive program of assistance that tack-

les the root of the poverty problem. In such cases, if nothing else is done, PWPs can end up making large demands on public resources indefinitely, with no significant improvements. For instance, in situations where policy reforms are expected to reduce the growth of urban employment over the long term, the best solution is to help the urban poor into rural employment through rural projects and mobility assistance. For such groups, PWPs should be only one component of the strategy.

There are a number of other important issues relating to the design of PWPs. First, in practice better-off groups often benefit the most from the new infrastructure (since it raises the returns on productive assets, most of which are owned by the better-off), and the gains to the poorest are confined to the income earned in their construction phase. While appropriate project selection may overcome this, it may often be unavoidable until complementary programs have improved the asset base of the poor. This also implies, however, that the better-off would bear the brunt of user charges to recoup the PWPs' costs. Such revenues can be used to finance further PWPs and to cover infrastructure maintenance, thus continuing employment benefits to the poor.

A second issue of recurrent concern is that poor project design, makeshift administrative arrangements, and lax project supervision have too often contributed to low cost-effectiveness among PWPs (Guha 1986 and World Bank 1986e). On average, nonlabor costs account for higher shares of total costs in African PWPs than in Asian PWPs (Stewart 1987b, p. 202). In Latin America, PWPs have addressed adjustment-related unemployment, but many of these projects have involved activities with low returns for either the adjustment objective or social goals. In such cases the government is effectively financing a reexpansion of unproductive nontradables. An "unconditional" transfer system would be more cost-effective if projects with reasonable returns cannot be found.

A third important design issue concerns the level at which the PWP wage (cash or kind) should be set. The higher the wage, the greater the benefit to the participants, but setting the wage too close to the market wage may discourage participants from seeking private sector employment. Payments below the market wage effectively target the program to those who need it most (World Bank 1986e, p. 38). This means that

if the wage has fallen under adjustment, the corresponding PWP wage may be low, and the PWP income supplement to participants will not reduce their poverty sufficiently. If it is thought that the nature of the work will deter those outside the target group from participating, then a market-level wage may be appropriate (Thomas 1986, Kinsey 1987). But otherwise the PWP will be limited as an antipoverty measure. Finally, PWPs need to be designed in such a way that the very poorest can participate. Because of their malnutrition, they may be unable to undertake physically demanding work unless the PWP is coordinated with suitable nutrition interventions and skill enhancement. Similarly, PWPs need to be targeted to the needs of women, whose household responsibilities often reduce their participation compared with men. Complementary actions such as the provision of childcare facilities are required.

#### *Training and retraining*

As enterprises adjust their product lines to new policy incentives, they will undertake some retraining of employees. But government sponsorship of vocational training is also needed to meet the demands of employers, especially in export sectors. Such schemes should be protected alongside basic education in the public finance strategy. Training systems at present are often of

low quality, of limited coverage, and have low female participation rates. Their improvement is one of the prerequisites for bettering the limited employment prospects of young people. Programs should move away from the traditional focus of preparing the young for wage employment, and toward promoting their skills for self-employment, for example, through in-service training (ILO 1987). Curricula need to be orientated toward the skills required by the priority sectors under adjustment. For example, employment in labor-intensive clothing businesses has risen in several countries (Madagascar and Mauritius, for instance) in response to policy reforms. To ensure their rapid growth and to encourage the production of high value-added items, improvement in labor skills is essential.

A number of countries now have retraining schemes in operation, or in the pipeline (including Ghana, Guinea-Bissau, Senegal, and Madagascar). These are mainly for retrenched public employees, although they should also include those affected by the liberalization of private industries. Retraining is often linked to providing other support, such as credit. Early implementation is important if such schemes are to mitigate the effects of adjustment. Closer coordination is needed between the designers of policy reforms and training managers if unexpected demand is not to overwhelm the training institutes.

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## *Concluding perspective*

There are at least two major problems in deciding on a conceptual framework for assessing the social dimensions of adjustment. First, the policy research problem is itself a major undertaking. The analytical challenges that are faced in establishing how macro- and sector-level policies affect households and the well-being of individuals are serious and should not be underestimated. One of the major outcomes of the theory is that there are no ready answers — the problem is highly complex and can only be resolved in the last analysis at the empirical level. And, of course, the empirical problems that are raised are just as challenging (Chapter 6).

The second problem arises from the heterogeneity of the Sub-Saharan African region to which this framework must apply. It must at the same time be general enough to apply to all the diverse economic and social circumstances of the region, and specific enough to be of use in guiding the policy and investigative initiatives at the country level. Because of this, we have persistently issued warnings that the analytical framework we have presented is not meant to be strictly applied in each and every case. For some cases, the assumptions we have made are a reasonable approximation, but for others, there may be a need for further refinement. Our purpose, however, is not to sell any specific model with its associated range of assumptions, but rather to establish a structured way of thinking about the problem. At the heart of this structure is the simple device of dividing the research problem into two stages:

first establishing macro-meso interactions and then dealing with meso-micro effects. This approach also applies at the empirical level.

The most important conclusion that the theory offers (apart, that is, from indicating that the subject is inherently difficult, and that the theory is inevitably inconclusive) is that adjustment policies can set in motion changes in the economy which have profound and pervasive effects on markets, infrastructure and households. Attempts to raise household incomes which ignore (or even run counter) to these deep-seated changes, are both foolish and counterproductive. While the theory is of little use in analyzing the myriad changes that adjustment programs inevitably involve, it is at its most useful in uncovering these more fundamental economywide effects. Without it, the policymaker would not be able to see the wood for the trees.

The document has sought to provide an overview of the range of policy measures which require attention in the course of formulating poverty-oriented adjustment programs. As the focus of adjustment policies has shifted during recent years to encompass wider objectives than simply attaining macroeconomic equilibrium, so too has the realization that the impact of macro policies on the well-being of households and individuals is complex, often pervasive, and, above all, not well understood. Economic theory must now give way to empirical application as a result of the wide variety of socioeconomic conditions in the countries of Sub-Saharan Africa. The relationship between structural adjustment and pov-

erty presents even more hurdles for policy design, due in no small measure to the great variations in the kinds of poor households found in most African countries, and to the diversity of their income and expenditure patterns as both consumers and producers. The effects of various macro-policy instruments on such households are thus difficult to determine, much less predict. Yet some understanding of this interaction is necessary for the design of effective policy interventions.

Even as African countries begin to build up their database on household social and economic indicators, it is possible to undertake policy actions which encourage greater participation by the poor in the newly emerging economic environment, and which protect others who have been

transitionally affected by the adjustment process. A number of measures were discussed in the areas of public finance, monetary and financial policy, exchange rate and trade policy, and employment policy which can shift the thrust of adjustment toward supply expansion and away from demand restraint, in order to achieve the dual objectives of sustainable growth and poverty reduction. Through shifts in the mix and sequencing of policy instruments available under adjustment, the poor and vulnerable can be assisted without causing major distortions in economic mechanisms, which might threaten macroeconomic discipline. In fact, policy reform provides an opportunity to address the problems of these groups anew.

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## *Appendix: The social accounting matrix*

A SAM is a square matrix, or table, representing the transactions taking place in an economy during a certain period of time (Pyatt and Round, 1977). Each account of the system is represented by a row and a column of the matrix, which is why it is square, with the convention that outlays are shown down the columns and receipts along the rows. The essence of the matrix accounting approach is that each transaction is represented by a single entry. Thus if a producer pays wages to a household, then the payment is shown at the intersection of the producer's outlay account (column) and the household's income account (row). This is in contrast to the more conventional "T" account system where this payment would be recorded in two places, once in the producer's outlay account and once in the household's income accounts, hence the "double entry" nature of that system. A further property of a SAM is that, because the accounts have to balance, row sums must equal column sums, providing of course that the rows and columns follow the same ordering. These are simple yet basic properties and are fundamental to all SAMs. If a matrix does not obey these properties, then it is not a SAM which is why not all input-output tables are SAMs. They represent only the production part of the whole structure of transactions of the economic system.

In principle, a SAM can be any dimension although the minimum possible order would be four so that accounts can be specified for each of the three basic forms of economic activity (pro-

duction, consumption and accumulation) plus an account for transactions with the rest of the world. Figure A.1 is a schematic version of a very basic SAM and has only five accounts. However, it does serve to illustrate the principal features of the matrix accounting approach and also helps to tie in with our earlier discussion of the main economic aggregates. The more interesting and important features of SAMs are discussed subsequently when these five accounts are further disaggregated to show more of the interdependence between households and the rest of the economic system. For the present it can simply be noted how the five accounts are structured to show the main elements of the circular flow of income between institutions, production activities and the rest of the world. Institutions are, of course, the principal transactors of the system. They are the economic units which are capable of owning assets (real assets or financial claims) and incurring liabilities on their own behalf. The individual institutional units can be grouped to form broad institutional sectors, such as households, corporate enterprises and government. In Figure A.1 we simply show one overall account for the combined institutions but we distinguish between their current account (their incomes and expenditures) and their capital account.

There are two accounts shown for production. One is an account for "products" which records the receipts from the sale of products and the subsequent outlays of value added to factor income recipients, while the second is a separate



**Figure A.1 A basic SAM**

				Outlays					Total
				Institutions		Production		Rest of world	
				1	2	3	4	5	
Receipts	Institutions	Current	1	Current transfers		Factor income (GNP)			Current income
		Capital	2	Savings (S)	Capital transfers				Gross savings
	Production	Factors	3				Domestic product (Y)	Net factor income from abroad (NFP)	Gross national product
		Products	4	Consumption (C)	Investments (I)		Intermediate products	Exports (X)	Use of products
	Rest of world		5	Net current transfers abroad (NTR)	Current account surplus (BOP)		Imports (M)		External account balance
Total				Current outlay	Gross investment	Gross national product (GNP)	Supply of products	External account balance	

account for "factors of production" which serves to receive the factor income generated either domestically or from abroad before paying this to institutions. Thus the combination of the five accounts shows the real essence of the circular flow of income. In particular, the five show the interaction between production and institutions, and between the domestic economy and the rest of the world. They also show something of the interrelationship between the two key markets of the system which are important for empirical analysis, i.e. for commodities and for the factors of production.

Let us briefly examine how the transactions can be read from the matrix and start with the

generation of income from domestic production. The outlay account for products shown as column 4 pays out the aggregate domestic product to the factors account in row 3. The domestic product therefore appears in the matrix as cell (3,4). This is augmented by net factor income from abroad, cell (3,5), to form gross national product and this is recorded as the row total for the factors account. Gross national product is then distributed to form the primary income of institutions, cell (1,3), although if incomes are simply added across institutions, then there would be double counting because the total would exceed GNP by an amount equal to the aggregate current transfers between institutions. In a con-

solidated account for institutions as a whole, current transfers simply net out from both their incomes and their expenditures, but they are included here and appear as a diagonal entry in cell (1,1) of Figure A.1 to help facilitate subsequent discussion. In a similar fashion, the institutions capital accounts and the products accounts also contain diagonal entries. Capital transfers of both real and financial assets take place between institutions and could be added to both gross savings and gross investment without disturbing the overall balance. Similarly, in total, the sales and purchases of products for intermediate use net out from both sides of the product balance. If we did this it would give us the basic expression shown as equation (1) in Chapter 6, but it could just as easily be left as a diagonal element. Again this is useful to do because in a more disaggregated framework these transactions enter the accounts in the form of the intermediate transactions of an input-output table. In all other respects, the cell entries are fairly self-explanatory. One can note a direct comparison between aggregates in the cells in Figure A.1 and those which appear in Chapter 6.

The basic structure of the SAM shown in Figure A.1 can be disaggregated in a variety of ways depending upon the particular analytical and policy focus. The most interesting disaggregation of all is to explicitly identify households within the broad group of institutions and to consider further disaggregation of that account across different household groups. In an ideal world where information is readily available we could perform parallel sets of disaggregation across both the current and capital accounts of households (as well as those of other institutions), but on practical grounds it is usually preferable to limit disaggregation to the current accounts and to leave the capital accounts as a single consolidated account. This is a point which will be taken up in later discussion in connection with incorporating the flow of funds. For the present, if we view the first account in Figure A.1 as a set of household accounts then what we have is a schematic description of the sources of household incomes and the destination of their outlays. It is this potentially quite detailed display of incomes and outlays within a framework of general interdependence which makes the SAM formats so attractive as a data framework.

There are two key parts of the basic schematic SAM which need to be discussed further. The

first is to say more about the nature of transfers occurring in cell (1,1) while the other concerns the interactions between the household and factor accounts in cell (1,3). The remaining cells in the structure of the household accounts are fairly self-evident. For example, household expenditures are represented by cell (4,1) so that in a very obvious sense and with appropriate disaggregation, this cell would actually be a submatrix mapping expenditures from different types of households across different categories of products. Similarly, household savings are shown in cell (2,1).

Cell (1,1) of the SAM, representing current account transfers, assumes a special significance when institutions (and in particular, households) are disaggregated. The kinds of income transfers that are captured are best illustrated by expanding cell (1,1) into a 3 by 3 submatrix to distinguish accounts for the household, corporate sector and government sectors. This submatrix is set out in Figure A.2. For the household account the cells show that, in addition to factor income, households may receive transfer income in the form of distributed profits from the corporate sector, certain cash benefits from government (say in the form of social security payments, together with possible transfer income from other households which arise through various family support systems (Kusnic and Da Vanzo, 1980). Clearly the pattern of income sources will vary considerably across households, which will be central information for any empirical analysis of the social dimensions of adjustment. Although the patterns clearly begin to emerge even with a fairly aggregative SAM structure, an even finer disaggregation of the accounts would provide more information on the nature of the interdependencies (or the lack of them), and how different types of households depend to a greater or lesser degree on a variety of sources of income.

The second component requiring special mention is the submatrix represented by cell (1,3). This records the incomes received by households and other institutions in return for the services they provide in the factor markets. For households this will consist of labor income, income from unincorporated enterprises and rent from dwellings. But each household may include more than one individual who is an income earner. Moreover, these individuals may belong to quite separate labor markets so that the composition of household factor income could depend quite

**Figure A.2 Institution current transfers submatrix of the SAM**

		Institution outlays			Total
		Households	Corporate	Government	
Institution receipts	Households	Interhousehold transfers	Distributed profits	Government transfers, social security benefits	Household: domestic receipts
	Corporate	0	0	Government transfers to companies	Corporate: domestic receipts
	Government	Direct taxes, social security contributions	Direct taxes, trading surplus of public enterprise	0	Government: domestic receipts
Total		Household domestic outlays	Corporate domestic outlays	Government domestic outlays	

critically on any change in circumstances in the various labor markets. Technically, the same would be true of those individuals who have more than one job which is a phenomenon that becomes increasingly prevalent when expenditure cuts in the public sector lead to retrenchment and cuts in wage rates of government employees, at least in real terms. It is clear, therefore, that if the classifications are carefully chosen and adequately reflect the main types of factor markets then this submatrix could represent a rich source of information about the household composition of income (Grootaert, 1982b).

This brief synopsis of the SAM as a basic framework for macroeconomic data is no more than a sketch of its main features. As already emphasized the SAM really becomes a useful data construct when the very broad accounts illustrated in Figures A.1 and A.2 are disaggregated further. In this discussion we have emphasized the institutions, households and factors accounts, and have alluded to their disaggregation because of their significance to the issues underlying social-dimensions concerns. At the same time it is clear that other parts of the matrix could also be disaggregated in a number of ways, at

least in principle if not always in practice. For instance, a judicious choice of products accounts would reveal something of the full and detailed circular flow that connects the distribution of income to the structure of production. Furthermore, it is now fairly standard practice to distinguish in the products accounts between commodities and the activities which produce them. This distinction is made for a number of good conceptual and practical reasons, not least because it means activities can be identified according to criteria other than the kind of commodity they produce (e.g., level of technology, ownership, etc.) and it also helps in handling the treatment of secondary products and the valuation of commodity transactions. Similarly, while the above discussion has primarily focused on disaggregations of the current institution, product and factor accounts, it is important to note that the capital accounts can also be disaggregated further. Thus, they might show the generation of savings by institution, cell (2,1); investment by product, cell (4,2); and capital transfers between institutions, cell (2,2), in a way that is analogous to current transfers in cell (1,1). But it is sometimes useful to distinguish between types of

capital finance, in which case cell (2,2) would record the flow of funds between domestic institutions (Greenfield, 1985).

It should not be inferred from all of this that a fixed SAM design should be developed for every country or even that there should be a single framework to be used for all purposes in any one country. As a data construct, it is clear that a wide variety of different SAMs could be assembled depending, for instance, on the degree and extent of imputations one might choose to carry out, or the purposes to which the SAM might be put. Thus, for example, in some instances we might require quite detailed financial flows while in others a consolidated capital account might be sufficient. It is this inherent flexibility in the structure of a SAM that seems to offer most scope in its role as an organising framework and data construct at the macro, meso, and micro levels.

### Advantages and limitations of SAMs

There is now considerable practical experience gained in constructing SAMs across a wide variety of country situations. Based on this we can identify three quite distinct advantages of pursuing a SAM approach and really very few disadvantages or limitations, compared with alternative systems. It must be emphasized that a SAM is simply a way of representing macroeconomic flows and, therefore, will not provide all the macro-level information we might require for analysis as part of a single, unified framework. For example, information on stocks and assets would have to be compiled and shown separately, and the same would be true of all the relevant social and demographic data.

Consider first the *advantages* of the SAM approach:

(i) *Description* Matrix accounts are generally considered to be a very good schematic way of visualizing the transactions and transfers taking place in an economy. The essential key to this is that the accounts are "articulated", by which it is meant that both the origin and destination of transactions are identifiable.

(ii) *Data assembly* The accounting constraints inherent in a SAM provide an excellent basis for identifying inconsistencies between data derived from different and, sometimes, quite disparate data sources. More controversially perhaps, it can sometimes help in resolving some of these

inconsistencies. But even if there is a genuine conflict between estimates from two key sources then the (statistical) ramifications of adopting one rather than the other can be explored by constructing alternative SAMs.

(iii) *Modeling* A SAM is a data framework and not a model of the economy. Indeed any particular SAM could be consistent with a wide range of models, depending upon the behavioral relationships posited. But it has been demonstrated quite convincingly (de Melo, 1988; Pyatt, 1989) that SAMs are a useful way to formulate as well as to calibrate economywide models. However, it must be said that the matrix representation of accounts is not of itself a sufficient condition for it to be useful and informative about structure.

The main *limitation* of a SAM is clearly its potentially voracious appetite for data, although as we have seen, SAMs can be quite compact data constructs. The main problem is being able to obtain, from available data sources, enough information to articulate the flows and therefore to show both origins and destinations of each set of transactions in accounting terms. Hence, for example, if we want to examine the composition of household income and trace this back through its sources to production structure and commodity demand, then we need quite specific information about the various components of factorial and transfer income. This is not very easily obtained. It should be noted, however, that the same kind of problem was faced in the early days of compiling input-output tables and, as a result, a methodology has now been established in carrying out surveys of production establishments to cater for this. In the limit, if data do not exist then it may not be possible to construct a SAM of any substance. But equally, the lack of data would also severely limit the kinds of analysis one could perform on any issues which require knowledge about the circular flow of income. As such, explanations of social-dimensions issues would be among the first to suffer.

### Data requirements

As already noted, one of the principal features of a SAM is its role as an *organizing framework* for both data and models. It can help us to identify both gaps and weaknesses in the available data sources. In many instances these will already be apparent but so much depends on the degree of detail required and the general taxonomy that has been

chosen before the full extent of data requirements and availability can be properly assessed.

In addressing the effects of macroeconomic policies on the well-being of different socioeconomic groups, it is clear from our discussion so far that considerable information is required to estimate the flows between the households, factors and products accounts in particular. It is also clear that a well-conducted and comprehensive household survey is crucial in this regard. Given that the main needs of data collection are toward households, it follows that the SAM is a convenient way of integrating these data within a consistent macroeconomic framework. Furthermore, it demonstrates how, in a hierarchical data system, we observe data at the micro level being fed into the system to generate the macro-level data constructs, and which brings out so clearly the importance of the meso level at the interface between the two.

A second principal requirement is for some reasonably detailed information in order to fill out the products accounts. As indicated in our earlier review of data already available and the particular difficulties most African countries face, both conceptually and practically, the immediate problems are nontrivial. The data sources will be wide-ranging but will constitute production surveys of one form or another. It should be emphasized again, however, that it may be quite unnecessary to compile a highly disaggregated set of products accounts. Still, it is useful to distinguish commodities from activities because

it then allows a distinction between modern and traditional technologies in production and between those sectors which are predominantly under public rather than private ownership.

Beyond these obvious but fairly crucial data requirements the compilation of SAMs can proceed on the basis of the same range of data sources usually required for standard national accounting purposes. Keuning and de Ruijter (1988) provide a useful and fairly detailed set of guidelines for the construction of a SAM. These were briefly reviewed earlier and would broadly conform to the requirements for any macroeconomic analysis. As so often happens, apart from identifying complete gaps in data availability, one also finds potentially useful data sets which cover only part of the desired universe or which relate to a different year from the one being considered. There is no easy solution to how these data sets should be incorporated, but it usually means that compromises, adjustments and assumptions have to be made and then documented in case they affect subsequent analysis. In the limit it is sometimes suggested that the stylized facts about an economy (or, more fundamentally, "informed guesses") may have to be resorted to in some instances, especially in the short term and before a program of data collection can get underway. If this is so, then assembling such data in the form of a SAM can help narrow down the range of choice and eliminate possible inconsistencies along the way.

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## Endnotes

1 The term "meso" is derived from the Greek, "mesos" or middle. It therefore describes those elements which come between the macro and the micro.

2 Some countries have also suffered from military and civil instability, which have been economically destabilizing.

3 Africa's experience is discussed in detail in World Bank (1981, 1984, 1986a and 1989) and World Bank/UNDP (1989). See also Balassa and McCarthy (1984), Liebenthal (1981), and Zulu and Nsouli (1985).

4 Thus while African countries took some exchange rate action over 1980-82, the real exchange rate nevertheless registered a 31 percent increase between 1969-71 and 1981-83 for a representative group of 14 countries (World Bank, 1986b: 67).

5 Botswana's rapid tightening of monetary policy after the second oil price shock is one rare example (see Harvey 1985).

6 In their survey of adjustment experiences over 1980 to 1983, Zulu and Nsouli (1985: 14) cite a number of examples of fund-supported programs during that period whose success was limited by unforeseen factors — including for example Madagascar (fall in coffee prices), Malawi (failure of the maize crop), Sierra Leone (unfavorable weather), and Zimbabwe (disruption of the transport system).

7 Corden (1986) considers that the flex-price dependent-economy model is appropriate in many developing-country situations.

8 The effects of adjustment on poverty under quantity rationing are discussed briefly below, but see also Demery and Addison (1988).

9 Note, here "size" concerns the relative importance of the country's exports and imports in relation to world markets.

10 For a discussion of the endogeneity of the tradables/nontradables and exportables/importables divisions see Dornbusch (1980: 94-5) and Timmer (1986, Chapter 4).

11 While food is sometimes classified as a nontradable good (see for example Lal (1986) on the Philippines), most analyses of Africa treat it as a tradable commodity — see for instance Lipton (1987), Norton (1987) and Bevan et al (1987a).

12 For example Devarajan and de Melo (1987) in their model of three Francophone countries describe domestic manufactures as semitradables, because of the high rates of protection behind which they operate. For the use of this distinction in applied general equilibrium models, see Dervis et al (1982, Chapter 6) and Shoven and Whalley (1984: 1034), and Michel and Noël (1984: 21) for applications to the Côte d'Ivoire.

13 The model we use here has its origins in Dornbusch (1974, 1980), but follows closely the extension and refinement by Collier (1988).

14 For convenience, money supply is measured in units of foreign exchange in this model, since it means that an  $x$  percent devaluation is equivalent to an  $x$  percent increase in domestic money supply.

15 Comparing point C (in Figure 2.2) with

point A, it is clear that since  $P_x$  is fixed, both  $P_m$  and  $P_n$  must be higher, so that the demand for money will be higher at C than at A.

16 For simplicity, we are assuming that the loci drawn hold even when other markets are in disequilibrium. This means that NN continues to signify market-clearing values of relative prices even when the money market is characterized by nonzero excess demands. In other words, NN and LL are assumed to signify effective as well as notional equilibrium values.

17  $P_x/P_n$  is given by the slope of a ray through the origin.

18 Edwards (1988a) shows that a terms of trade deterioration (improvement) has similar effects in the domestic economy to an increase (decrease) in tariff rates (or their equivalent). The only difference is that the income effect is greater under the former.

19 This assumes, of course, that the exportable sector is more labor intensive than either importables or nontradables.

20 Where the rate of interest on loans is fixed by the government rather than by the market (as in so-called 'repressed' banking systems), this effect will work through the *real* loan interest rate. Thus, while the nominal rate remains fixed, the real cost of credit will fall in proportion to the rate of inflation.

21 It should be emphasized that these results are largely illustrative, and depend on the assumptions that were made. For example, they depend on the assumption that the deflationary effects of the terms of trade decline were more than offset by the fiscal expansion; or that the exportables sector is the most labor intensive, etc. Our concern is to provide a structured basis for our thinking on these issues. What actually occurs in each country situation will of course depend on which of a number of important assumptions applies.

22 Note that if devaluation were carried out without fiscal and monetary contraction, the NN curve would remain at  $N'N'$ , so that excess demand will emerge for nontradables, E being to the left of  $N'N'$ . This will raise  $P_n$ , taking the economy back to D. For devaluation to restore equilibrium at E, therefore, it must be combined with a contraction in aggregate demand shifting NN to the left, and LL upward.

23 On the theory of DUPs, see Bhagwati, Brecher and Srinivasan (1984), Srinivasan (1985), which build on the earlier work of Krueger (1974).

24 These relate to GDP growth, investment performance, savings performance, export growth, real exchange rate, current account balance, budget deficit, inflation, and external debt. These nine indicators measure performance in four areas of policy concern — growth, external balance, internal balance and external debt.

25 Balassa (1988: 17-20) also found evidence for expenditure switching in SSA in the better performance of agricultural output growth and import substitution.

26 Compare, for example, the results reported in Table 2.4a of World Bank (1988a) with those in Tables 19 and 20 of World Bank/UNDP (1989).

27 The reason why a devaluation is a necessary complement to a cut in absorption lies in a downward inflexibility in  $P_n$ . If it were fully flexible, a demand contraction would be a sufficient corrective, since it would induce a real exchange rate depreciation through a fall in  $P_n$ . But with  $P_n$  inflexible, the real exchange rate depreciation must be induced through an exchange rate devaluation — i.e., an increase in  $P_x$ .

28 This assumes that there is no unemployment in the domestic labor market, so that increased employment in tradables has to be drawn from nontradables labor.

29 Long-run movements in the wage can also be illustrated, with the flow of capital into the tradables sector shifting the labor demand curves —  $VMP_t$  upward and  $VMP_n$  downward. The final equilibrium would depend on the relative factor intensities in the two sectors.

30 This formal/informal-tradable/nontradable combination is obviously only one of a number. Addison and Demery (1989b) analyze the full range of possibilities, including the case where tradables and nontradables are both produced in the formal and informal sectors. Again, our purpose here is mainly illustrative — to demonstrate how the framework can address this issue.

31 This Harris and Todaro (1970) construct is now well established in the literature (e.g., Edwards, 1988a), although the underlying assumptions it implies are not always made explicit. In particular, it assumes that all workers have an equal chance of formal-sector jobs and that the turnover rate in the formal sector is unity (see Addison and Demery 1989b for details).

32 This is because the real wage in terms of nontradables has risen, but it has fallen in terms of tradables — recall that the rise in  $W_t/P_n$  is less

than the increase in  $P_t/P_n$ , so that  $W_t/P_t$  falls.

33 This is consistent with one of the stylized facts observed for developed countries, that in recession the formal sector takes the brunt of the employment adjustment and that the informal-formal wage gap widens (see McDonald and Solow 1985).

34 Financial sector policy conditions were not particularly prominent in adjustment lending in SSA according to the World Bank (1988a) study.

35 The real exchange rate appreciates under import controls or tariffs through two processes: first, the nominal exchange rate will appreciate in the face of the induced balance of payment surplus; and second, the prices of nontradables will tend to rise as a result of import restrictions as consumers switch from importables to nontradables.

36 Note, we confine ourselves here to the short-run case. We know that in the longer run, the effect on factor returns will depend on relative factor intensities.

37 An alternative approach in the structuralist tradition would be to assume fix- and flex-price sectors (Taylor 1983).

38 This may have some significance in the context of developing countries. For example, if the exportables sector is subject to some form of excess capacity, and if labor there is underemployed, a devaluation can raise exportables output without requiring a labor transfer process out of nontradables. The additional labor is obtained from the unemployment (or rather, underemployment) pool.

39 Depending on the length of the import-compression phase, there will have been some loss of productive capacity. For example transport and manufacturing equipment may have deteriorated through an inability to obtain imported spare-parts. Similarly, soil-quality and crop-yields may have deteriorated. Thus, some measure of reinvestment will be required, and it may thus take several years for output levels to recover.

40  $N^*T^*$  is therefore to be considered the 'effective' production frontier, since it is subject to the output-reducing effects of the domestic relative price distortions within the tradables sector.

41 The labels applied to the different concepts of the family are presented by Sen (1983a), reprinted in Sen (1984a).

42 For a more extensive discussion of these problems see Schultz (1989).

43 See Guyer (1986,1988) and Fapohunda (1988) for an anthropologist's perspective, and Jones (1986) and Dey (1981) for evidence from North Cameroon and The Gambia respectively.

44 The items produced by household labor-time are termed 'Z' goods in the literature, thus distinguishing them from purchased commodities, usually called 'X' goods (Deaton and Muellbauer 1980: 245). Thus for example, household healthcare (a Z good) is 'produced' using household labor-time, and purchased commodities — such as medicines (X goods). The distinction between Z and X goods is important because it highlights the crucial role of homework in transforming X goods into consumables.

45 See, for example, Yotopoulos and Lau (1974), Barnum and Squire (1979), and Singh et al (1986b). See also Ellis (1988: 128) for a useful summary of these models.

46 It is assumed that the household's endowment of the fixed factor/s of production is constant within the production period. Thus, the curvature of the HPF reflects diminishing marginal returns to labor.

47 The allocation of time between homework and leisure can be shown by defining a separate household production function for homework (see King and Evenson 1983: 55).

48 Incompleteness arises when private markets fail to deliver a good or service, even though the cost of provision is less than what individuals are willing to pay.

49 The analysis of such situations often gives prominence to the demographic structures of the household since variations in the ratio of nonworkers to workers in the household will give rise to differences in the preference of work against leisure, and thus different equilibrium points for households otherwise faced with identical production functions (Thorner et al 1966 and Nakajima 1969).

50 However, there are exceptions — women provide 35 percent of the labor on tobacco in Swaziland and 37-47 percent of the labor on cotton in Malawi, while men provide 45-60 percent of the labor on upland rice in Sierra Leone (Guyer 1986: 296).

51 This assumption is made to simplify the analysis. In practice, it is common for the entire household to work certain fields collectively, and the food produced or the income earned is distributed by the male household head. Individual



members also cultivate separate fields. The produce is controlled by the cultivator concerned, and often stored apart from the crop of the cooperative fields. For example in Burkina Faso, McMillan (1987) in one area under study found that jointly worked fields accounted for 60 percent of the total area planted and 60 percent of recorded labor hours. Individually worked fields accounted for the remainder.

52 For example McSweeney (1979) reports that in Upper Volta (now Burkina Faso) rural women work an average total of 9.78 hours per day as against 7.55 hours for men. Eicher and Doyle (1982) report evidence that women work nearly 30 percent more total hours over the year than men in rural Tanzania.

53 See Kuznets (1976) on using household income as the appropriate welfare unit when income is pooled.

54 Applying this technique to LSMS data on the Côte d'Ivoire, Deaton (1987: 4,18) finds no evidence that males are treated more favorably than females in the intrahousehold allocation of food. However, the allocation of adult goods is heavily biased towards adult males: women, old men, and particularly old women, appear to have much less access. Sen (1984b) cites African examples of bias against both females and children (see also Crawford and Thorbecke 1980, on Kenya). Much of the evidence on the existence of such biases comes from South Asia (again see Sen 1984b).

55 The group's elders often regulate marriage transactions as well. Control over women, and therefore over the reproduction of future workers, is central to the success of labor-intensive agricultural systems (Swindell 1985: 38).

56 Note, those neither buying nor selling in the initial equilibrium (that is consuming and producing at A) will gain, and will become net purchasers of labor services following adjustment.

57 This implies that the marginal utility of leisure is zero over the relevant range. This assumption is simply required to keep the exposition simple — in two dimensional space.

58 Note, in Figure 19,  $W/P_i$  ( $i = t, n$ ) gives the real product wage (and therefore the real purchasing power of the wage) in terms of each commodity.

59 See for example, Jamison and Moock (1984), Jamison and Lau (1982), Lockheed et al (1980) and Moock (1980, 1986).

60 See the Appendix for a brief introduction

to the concepts of the SAMs.

61 Note that NFP and NTR could be positive or negative, but they are entered with these signs to be consistent with the treatment in Helmers and Dornbusch (1988; p. 380)

62 Pyatt and Thorbecke (1976) discuss the merits of wealth, sociological criteria and location as a means of classifying households.

63 On defining the objectives of adjustment policy, see World Bank (1988c), ECA (1989), ILO (1987) and Fischer (1987).

64 This is the main thrust of the alternative approach to adjustment suggested by UNICEF (see Cornia et al 1987).

65 On "categorizing" the poor under adjustment, see World Bank (1988e) and Zuckerman (1988).

66 The number of people in the subsistence economy who are relatively unaffected by adjustment has almost certainly declined since 1980. Their self-reliance has been diminished considerably by the increased frequency of drought across the region. They have thus been forced to rely on outside help precisely at a time when governments have been least able to assist.

67 For a discussion on the role of fiscal policy in achieving macroeconomic balance, see World Bank (1988f). This section draws on a recent paper by Fischer and Easterly (1989).

68 For instance, adjustment programs were repeatedly blown off course in the early 1980s by fresh shocks (Zulu and Nsouli 1985). Do we ascribe output contractions to the shocks or to the policies put in place to respond to the shocks?

69 For example, in Tanzania, one study has shown that education is second only to cattle in determining household income variation within villages (Collier et al 1986). In Côte d'Ivoire the educational attainment of the household head is found to have a strong positive correlation with household consumption expenditures (Glewwe, 1987:18). And in Ghana the risk of food poverty falls as households' education rises (Kyereme and Thorbecke 1987:1196).

70 For instance, in Kenya it is estimated that only 10 percent of all borrowers from formal credit institutions are rural women (World Bank 1989a).

71 The groups themselves select their own members, and the outside lending institution reduces its risk and transaction costs by lending to the group, which then on-lends to its members (Desai 1983).

72 This means that their prices are mainly

determined by local market conditions, since remoteness implies little trade with other markets, and thus little influence on local subsistence food prices of changes in market conditions elsewhere.

73 Chhibber et al (1989), for instance, show in their study of Zimbabwe how relatively small macro-models can be used to simulate these effects. Although wage adjustments enter into their model, larger models involving greater disaggregation may be needed to deal with income distribution effects.

74 Although the initial wage improvement may be small when unemployment characterizes the preliberalization situation. Note that mining may be the exception with regard to the high labor intensity of exportables in general.

75 Under this method all tariffs above a certain ceiling are reduced to that ceiling. In the next stage, a new lower ceiling is set, and all tariffs are reduced to it, and so on (World Bank 1987b: 110 and Michaely 1986).

76 Of course, a devaluation must also accompany trade liberalization to maintain external balance.

77 Total agricultural employment figures are for 1985 (World Bank 1989d: 41), while the country data refer to 1980 (see ILO 1986 and World Bank 1988f: 282).

78 ILO (1986) and World Bank (1989d: 41) estimates for 1985-2020. Out of 168 million employed people in 1985, agriculture employed 131m, small/microenterprises 27m, and the modern wage sector 10m. By 2020 these numbers will be 311m, 206m, and 32m, respectively, on current trends.

79 Such off-farm employment is more important for poorer households than for the wealthy in Botswana, Nigeria and The Gambia. Evidence from northern Nigeria, Sierra Leone, and Malawi shows that off-farm income accounts for 50 percent of total income for the smallest landowners, and under 25 percent for the largest (Haggblade et al 1987: 12).

80 In Ghana and Zambia, for instance, women account for over half those employed in nonfarm enterprises. But in some societies their participation is low because of cultural factors.

81 In effect, the wage rigidity becomes endogenous to the market.

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