

The Evaluation of Public Expenditure in Africa

The Evaluation of Public Expenditure in Africa

Edited by
Henry J. Bruton
Catharine B. Hill

Contributors

Arup Banerji
Kaye G. Husbands
Kenneth M. Kletzer
Tobias O. Konyango
Duncan P. Mann
Earl McFarland
Bradford Mills
Mwene Mwinga
Thomas C. Pinckney
David E. Sahn
Arunkant A. Shah
Monica Tselayakgosi
Edward E. Walden
Stephen D. Younger
David J. Zimmermanbreak

The World Bank
Washington, D. C.

Copyright © 1996
The International Bank for Reconstruction
and Development / THE WORLD BANK
1818 H Street, N.W.
Washington, D.C. 20433, U.S.A.

All rights reserved
Manufactured in the United States of America
First printing December 1996

The Economic Development Institute (EDI) was established by the World Bank in 1955 to train officials concerned with development planning, policymaking, investment analysis, and project implementation in member developing countries. At present the substance of the EDI's work emphasizes macroeconomic and sectoral economic policy analysis. Through a variety of courses, seminars, and workshops, most of which are given overseas in cooperation with local institutions, the EDI seeks to sharpen analytical skills used in policy analysis and to broaden understanding of the experience of individual countries with economic development. Although the EDI's publications are designed to support its training activities, many are of interest to a much broader audience. EDI materials, including any findings, interpretations, and conclusions, are entirely those of the authors and should not be attributed in any manner to the World Bank, to its affiliated organizations, or to members of its Board of Executive Directors or the countries they represent.

The Evaluation of Public Expenditure in Africa

Because of the informality of this series and to make the publication available with the least possible delay, the manuscript has not been edited as fully as would be the case with a more formal document, and the World Bank accepts no responsibility for errors. Some sources cited in this paper may be informal documents that are not readily available.

The material in this publication is copyrighted. Requests for permission to reproduce portions of it should be sent to the Office of the Publisher at the address shown in the copyright notice above. The World Bank encourages dissemination of its work and will normally give permission promptly and, when the reproduction is for noncommercial purposes, without asking a fee. Permission to photocopy portions for classroom use is granted through the Copyright Clearance Center, Inc., Suite 910, 222 Rosewood Drive, Danvers, Massachusetts 01923, U.S.A.

The complete backlist of publications from the World Bank is shown in the annual *Index of Publications*, which contains an alphabetical title list (with full ordering information) and indexes of subjects, authors, and countries and regions. The latest edition is available free of charge from the Distribution Unit, Office of the Publisher, The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A., or from Publications, Banque mondiale, 66, avenue d'Iéna, 75116 Paris, France.

Henry J. Bruton is professor emeritus at the Center for Development Economics and Catharine B. Hill is associate professor in the department of economics at Williams College, Williamstown, Massachusetts.

Library of Congress Cataloging-in-Publication Data

The evaluation of public expenditure in Africa / edited by Henry J. Bruton, Catharine B. Hill; contributors, Arup Banerji . . . [et al.].
p. cm.—(EDI learning resources series, ISSN 1020-3842)
Includes bibliographical references (p.).
ISBN 0-8213-3680-0
1. Expenditures, Public—Africa. 2. Government spending policy—Africa. 3. Africa—Economic conditions—1960- I. Bruton, Henry J. II. Hill, Catharine, 1954- . II. Banerji, Arup. IV. Series.
HJ7923.E93 1996
336.3'9'096—dc20 96-25632
CIPbreak

Contents

Foreword	link
Chapter 1 Public Expenditure and Economic Performance	link
Henry J. Bruton and Catharine B. Hill	
Chapter 2 Parastatals in Zambia: The Conflict between Equity and Efficiency	link
Arup Banerji, David J. Zimmerman, and Mwene Mwinga	
	link

Chapter 3

Health Care in Botswana: The Government's Role in Primary Health Care and Nursing Education

Duncan P. Mann, Earl McFarland, and Monica Tselayakgosi

Chapter 4

Public Finance and Public Employment: An Analysis of Public Sector Retrenchment Programs in Ghana and Guinea

[link](#)

Bradford Mills, David E. Sahn, Edward E. Walden, and Stephen D. Younger

Chapter 5

Education and Agricultural Productivity in Kenya

[link](#)

Kaye G. Husbands, Tobias O. Konyango, and Thomas C. Pinckney

Chapter 6

The Effects of Public Expenditures on Kenya's Macroeconomy

[link](#)

Catharine B. Hill, Kenneth M. Kletzer, and Arunkant A. Shah

Chapter 7

What Have We Learned?

[link](#)

Henry J. Bruton and Catharine B. Hill

Foreword

This book examines the role of public expenditure in contributing to economic growth in Africa. It presents five country case studies that examine how institutions, perceptions, history, and culture have influenced decisions on government spending. The studies illustrate that government spending decisions emerge from a wide range of considerations for which there are no simple rules.

The editors first define the development objective as "putting in place an economy whose routine functioning generates sustained growth of output that in turn helps increase the populations well-being." They conclude that government can contribute to meeting that objective by helping to increase the factors of productivity through taxes, regulation, exchange and interest rate policies, as well as through government expenditure. The case studies, however, point to the importance of admitting that both market and government failures exist, and that the economics profession has a limited understanding of the sources of productivity growth. The difficulty, they conclude, is in being sure of the "right" policies or the "right" role of government in any particular set of circumstances.
break

VINOD THOMAS
DIRECTOR
ECONOMIC DEVELOPMENT INSTITUTE

1—

Public Expenditure and Economic Performance

Henry J. Bruton and Catharine B. Hill

The relationship between public expenditure and economic performance is complex and important. The numerous econometric studies of the relationship have not been conclusive. Some results show a positive relationship between public spending, usually as a proportion of the gross domestic product (GDP), and the rate of growth of GDP, while others indicate a negative relationship. The question of causality is especially difficult to treat in a completely convincing manner.

A study by Ram (1986) found that the overall relationship between government size and growth is positive, and that the positive relationship is probably stronger in lower-income countries than in higher-income countries. The results in this study also indicate that government expenditures seem to have had positive externalities and, more surprisingly, that the relative factor productivity in the government sector is higher than in the private sector, at least this was the case during the 1960s. These conclusions apply to the results obtained from both time series and cross-country data.

Other investigators, however, have found rather clear-cut negative relationships between government outlays and economic performance. Landau, for example, in several papers (1983, 1985, 1986) has concluded that the data he examines support the view that government spending is associated with a reduction in a country's capacity to grow. Similarly, Easterly (1992) finds that the ratio of government consumption expenditures to GDP is negatively associated with the growth of GDP per capita.

Thus, a widely held conventional wisdom on this relationship that rests on statistical evidence does not appear to exist. Equally important is the lack of any sort of clear theoretical underpinning that explains how the aggregate of government spending acts on the growth of total output. Similarly, the empirical evidence on the relationship between the allocation of government spending in different sectors and growth is inconclusive.

In this book, therefore, we study the role of public expenditure in a noneconometric way. We examine a number of specific instances of public expenditures and how, in these instances, economic performance was affected. More specifically, we ask a series of questions of the examples studied that identify and illuminate the impact of these instances of public expenditure on a number of variables that help to measure economic performance. From these examples, we will seek, in the last chapter, generalizations about how public expenditures affect, or can affect, the way an economy performs.

The Question

A reasonable assumption is that at some early stage in history people "decided" to have a government because they concluded that some form of cooperative behavior could resolve certain problems or achieve certain objectives more effectively than could individuals working separately. By contrast, with respect to other problems and objectives, these same people may have decided that independent households and producers were the most suitable means to this end. It would not have taken a lot of ingenuity to envisage the advantages of trading, and even of producing for the purpose of selling or trading. Thus a market would tend to spring up. People would learn that certain activities were best assigned to the public sector, and that others were best accomplished through some kind of market mechanism. The criterion of "best" in these circumstances is the extent to which the achievement of society's objectives with respect to the output of goods and services, their method of production, and their distribution among members of the population is accomplished.

The Evaluation of Public Expenditure in Africa

This reference to origins is to remind us that a role for the public sector evolved, at least to some extent, because people believed that certain activities were best performed by it, rather than by the household or the market. Therefore, the logical point of departure of a study of public expenditures should be this idea that people did actually choose, in some sense, to have a government perform certain activities because they believed that this was the most appropriate way to go about achieving society's objectives.

There is much ambiguity and ignorance about what it is that the government can do better than the household or market. This offers great room for debate and, more important, for learning. Perceptions matter, and perceptions are, of course, greatly influenced by history, especially recent history. For example, the widespread rejection among the developing countries of primary dependence on the market, including the international market, in the 1950s was surely strongly influenced by the failures of that system in the 1930s and the great dislocations created by World War II. Similarly, the evident failure of many of those regimes that had taken on a large share of economic management changed the perception of many people in the 1970s.

To say that a people chose to have a government perform certain economic activities and not others is, of course, open to many doubts. Public choice is not an area of inquiry that has yielded a widely held conventional wisdom. In addition, once in place, a government can take on a life of its own, independent of the population, and actively seek to absorb more and more tasks and responsibilities without reference to the criterion just stated.

The ideas falling under the heading of the New Political Economy emphasize that the government is largely concerned with its own welfare, that is, the welfare of the top members of the government, rather than with the design and implementation of policies meant to serve the community at large. Such a view leads directly to the conclusion that the best government is the least government. Also, some members of the society may believe that virtually all activities should be reserved for the market or the household for reasons unrelated to practical matters, that is, to matters related to the dominating role of individual freedom. To recognize these difficulties, however, does not undermine the notion that a society did (and does) make choices with respect to the role of government on the basis of a criterion of the sort mentioned earlier. In the context of the present undertaking it is especially important to appreciate that some choice about the role that the government continue

should have in the economy almost always exists. We want, then, to study the various factors that do or should affect this choice.

As just noted, to speak of a society choosing is to open a major can of worms. Since Arrow's book (1951) economists have appreciated the difficulty of the notion and of designing a method by which society can make a choice. In the context of the African countries, the notion is even more troublesome. At the same time it does seem reasonable and helpful to think in these terms as long as the vast difficulties are appreciated. Evidently if a country is ruled by a dictator whose power is unlimited, no real public choice process exists. Similarly, if a country operates under an extreme version of the New Political Economy, then the government is simply a group of people seeking nothing but their own gain, the production sector is dominated by rent seeking, and there is little reason to expect conventional economic analysis to be taken seriously. We will note at various points as we go along where these matters seem to be especially important.

In a society at a particular moment—say in African countries at the present time—a division of labor exists between the public and private sectors that has evolved over time. In trying to evaluate this existing division of labor, one must recognize how and why it has evolved. Such a recognition is also necessary when trying to modify that division of labor. We can probably say whether or not a prevailing division of labor is suitable, that is, if it meets the community's objectives more effectively than any other available arrangement.¹ If one concludes that it does not and that change is in order, then how that change is to occur depends in part on how the arrangement evolved in the first place.

The Evaluation of Public Expenditure in Africa

Who does what in a society obviously depends on that society's objectives. We want to concentrate much of our attention on the establishment in each African country of an economy in which per capita GDP grows as a consequence of its routine functioning. The North is rich now because during the past 150 or so years, per capita output has grown decade after decade. Almost all countries of the world have experienced episodes of growth in the past two centuries because of special circumstances, such as a favorable change in the terms of trade, a boom in remittances, a spurt in foreign investment, discovery of oil or another mineral, or a war (somewhere else). This is not the same thing, however, as having an economy whose routine functioning produces growth over a century and more.

The most fundamental characteristics of the economy that has achieved sustained growth are that the productivity of resources (mainly capital and labor) rise regularly, that a strong demand for labor is maintained more or less constantly, and that the achievement of both is accomplished in a way that does not violate prevailing social norms to the extent that unrest and upheaval bring the whole process to a halt.² No clear-cut way is available to determine whether or not an economy has established the conditions necessary for productivity to grow continuously. The best procedure at the moment seems to be to examine what is happening to productivity, and to appraise the extent to which devel-soft

1 We say the community's objectives rather than a more specific criterion (GDP growth, equality of income distribution, etc.) to emphasize the ambiguity and plurality of what a society seeks to achieve. Evidently society is not a monolith, so that part of the problems arises because "society" has no clear-cut preferences.

2 In some instances upheaval is doubtless necessary if a society is to achieve the development objective. Indeed, this may be the case in several African countries, as it was in the earlier centuries in the North. At the same time, the objective of development would seem to be to put a growth mechanism in place without this sort of tragic upheaval.

opment strategies and policies contribute to its growth over a wide range of sectors in the economy.

Thus our point of departure is to study public expenditure according to its contribution to the achievement of this general objective in the African countries.

The Approach

In this chapter we establish a general way of approaching the set of issues outlined earlier. We begin with the following question. If the market were left to itself, in a manner to be defined, would the development objective be achieved? This basic question then leads to the consideration of a series of issues that bear directly on the achievement of the basic objective and how these issues are affected by a market mechanism. Where the basic objective is not well served by our model market economy, then government expenditures may be justified. Government expenditures are therefore to be evaluated on the extent to which they correct and supplement the market in achieving the basic objective.

In some cases the failures of the market mechanism are standard and included in all the textbooks. Other failures are more specific to developing countries, and still others to African countries in particular. These latter failures may change over time as the countries' economies develop.

We thus use the traditional term market failure, but in a much broader sense than usual, and in a way that is specifically relevant to the development objective in Africa. In particular, as we are concerned with the modification of African economies so that they achieve sustained growth, we must recognize the institutional, social, cultural, and historical characteristics in which a market must function. Therefore at this point it is useful to summarize those characteristics of African countries that seem most directly relevant to the kind of analysis

The Evaluation of Public Expenditure in Africa

that we have undertaken. These are as follows:

- The most obvious characteristic is that with an exception or two, African economies have experienced little growth of output per capita in the last century. It is certainly fair to say that no African country has an economy that can produce growth of per capita GDP as a consequence of its routine operation.
- Illiteracy is widespread among the labor force and workers have accumulated little experience in other than traditional activities.
- The governments are new and inexperienced, and the bureaucracies are especially ill-equipped to deal with complex governing tasks, in particular, the design and implementation of economic policy. Also for most African countries, government consumption, as a percentage of GDP, is higher than that of most other developing countries.
- The institutions of the societies are those of a nongrowing, nonchanging economy. They have largely evolved to cope with poverty rather than to facilitate growth. In particular, they are not the institutions that evolve with an effective market.
- Ethnic diversity is great in almost all countries, and national boundaries are, to a major extent, quite arbitrary with respect to those considerations that usually define a nation. Little of the national ethos that evolves over a long period of time is evident.
- Markets are incomplete, geographically narrow, and small.
- The handful of estimates of productivity growth that are available show little or no evidence of such growth in any sector of the economies.
- No agricultural sector has experienced the green revolution in any significant way.

Other characteristics exist that are relevant and will be noted as we go along, but these eight items indicate the general environment in which we examine the public expenditure question. This environment is a consequence of many factors and, of course, its change over time is a consequence of many factors. Market and government successes and failures must be seen as part of a host of sources of change.

The following pages define the concepts that we use in greater depth. We consider a wide range of market and government failures that both illuminate the nature of the problems that confront African countries and provide examples of the kind of failures that must be recognized in making policy. Following this section, we study a number of issues that we believe to be strategic to African development and that do not fall comfortably within the conventional notion of market failure. Examples of these latter issues are entrepreneurship, information gathering and spreading, and the role of a few specific activities that evidence suggests are relevant to African development, which an unencumbered market may not produce. The next section considers the role of government expenditures in the macroeconomic management of African economies, a topic of great relevance and controversy. Following this is a brief section on topics that are somewhat beyond the government's full control—the role of aid donors, of nongovernmental organizations, and of multinational firms—and how they may affect government outlays. The chapter finishes with a brief conclusion and an introduction to the case studies in the subsequent chapters.

We have chosen the approach just reviewed for one fundamental reason. At the moment, in all parts of Africa (and elsewhere) the emphasis is on an increased role for the market and on privatization. This chapter therefore begins with the basic issue arising from this stress on an increased role for the market. Given that greater use of

the market seems to be very much in order in African countries, what role should the government play for the operation of the market to have the desired effects, that is, contribute to the achievement of the development objective for the African nations?

A Definitional Digression

As the term market economy is widely used in policy discussions and in the professional literature, a brief reminder of its meaning is appropriate to establish a sort of benchmark to which our discussion can refer. In the usual broad textbook terms, the notion refers to an economy in which no firm has any market power; the prices of all goods, services, and factors are determined by the free play of supply and demand; there are no impediments to internal and international trade so that prices of all tradables equal border prices; and imports and exports are determined by comparative advantage. Each firm acts to maximize profits and each household acts to maximize utility, with its own consumption the main argument of the utility function. In addition, all firms have access to all information relevant to their production decisions, all households have clear and unambiguous preferences, and the economy has a great deal of flexibility, thus resources can move readily from one sector to another, as market signals indicate, without loss of productivity.

All economists (and textbooks) recognize that a perfect market economy does not exist. Market failures do occur. These arise from externalities that prevent the prices of products continue

or services from reflecting the full consequences of their use or of economies of scale (which can be such that market power is necessary to exploit them), and also affect the prices of public goods in such a way that everyone is tempted not to pay her or his full share of the cost. They also arise from an economy's possible failure to achieve full utilization of all available resources with price level and balance of payments stability. Thus in the customary formulation, it is the government's role to take the actions necessary to correct these market failures by means of taxes; subsidies; government expenditures; regulations; and fiscal, monetary, and exchange rate policies more generally.

Specific goods and services that are generally recognized as appropriate for the government to supply include insuring property rights and contracts; maintaining law and order and national defense; and, almost always, providing general infrastructure and primary and secondary education. These are public goods that are also thought to have significant externalities, and often scale economies. So a market that works as perfectly as possible still has an important role for the government.

We will use the term benchmark to refer to an economy that can be described more or less as above, and in which the government has corrected the traditional market failures in a fairly acceptable way. When privatization and a market-friendly approach are urged as a development strategy, something like the above is what is intended. Of course, real economies do not look exactly like this benchmark economy, and all the conditions do not hold at any moment in time. Belief that this system of ideas is practical, however, is the basis of a development strategy that relies primarily on the private market.

The benchmark economy will produce a level of output that is optimal at a given time and that reflects the preferences of the members of the community as these preferences are indicated through relative prices.³ Optimal usually means Pareto optimal, which is essentially an efficiency notion, not a welfare or ethical notion.⁴ The fundamental question is this. Given that African economies and governments do not fulfill these benchmark conditions, what is the appropriate division of labor between the government and the private sector in the task of creating an economy that meets the community's objectives increasingly well over extended periods of time, and that is more or less consistent with the society's social norms? As noted in the previous paragraph, the most effective division of labor between the public and private sector will and should change over time as the economy's basic variables change. The question to ask of the role of government, therefore, is the extent to which

The Evaluation of Public Expenditure in Africa

its activities, reflected in its expenditures, contribute to the realization of this objective. (Stern 1989, p. 616, provides a list of reasons for market failure and some of the problems of state intervention.)

We, therefore, distinguish between the government's role to correct market failures that are recognized to exist in the best of market economies, and its role to act in an economy that has been stagnant for a long time so that sustained growth gets under way. Thus the government's role is strategic, and the question of the division of labor between the public and private sectors and how it evolves over time to achieve the objective becomes much more complex and historically determined than the textbook arguments usually recognize.

3 Taxes will, almost inevitably, create some distortion, but it seems reasonable not to fret too much over this fact as long as growth is not penalized.

4 A great variety of important modifications of this basic benchmark system exist: workable competition, contestable markets, information flows, etc. These are important matters, but our objective here is simply to identify the broadest notions of a market economy. Note, however, that one of the most strategic assumptions underlying the benchmark economy is the widespread existence of a thoroughgoing individualism. Numerous students of other economies have argued that individualism is much less rampant in most developing economies than in the West.

public and private sectors and how it evolves over time to achieve the objective becomes much more complex and historically determined than the textbook arguments usually recognize.

The issue is further complicated because the governments of the African countries are new and inexperienced. In addition, the arguments of the New Political Economy, including rent seeking, must be recognized. Thus government failure is as common as market failure, and the mere presence of the latter does not necessarily mean that the government can correct or supplement the market in an appropriate way. The division of labor, therefore, between the public and private sectors is sure to be a choice between instruments that are extremely unsatisfactory.

No established theory is available that tells a policymaker how to proceed to modify an economy from one in which growth has been generally nonexistent or, at best, sporadic (and caused mainly by external circumstances), into one in which the routine operation of the economy results in continuing growth. Numerous theories of growth of GDP exist, but no single one dominates modern thinking.⁵ Also, the development objective, as we have defined it, calls for something different from a theory of growth. It requires an insight into the way an economy that has never experienced sustained growth can be changed into one in which growth becomes a routine matter. Obviously we need to know a great deal about how growth occurs, but we also need to know many other things. In particular, we need to understand the general environment—the institutional, legal, cultural, and moral underpinnings of a society—within which growth on a sustained basis can occur. These considerations act on the market in diverse ways, and therefore have significant implications for government expenditures.⁶

Thus we are struggling with an issue in which ignorance is rampant, and will therefore have to feel our way carefully.

The Beginning

African policymakers (along with many economists in the 1950s and 1960s) believed that a market economy of the kind described above did not exist in their countries, and therefore relying on the market was not an adequate way to meet the development objective. They believed that the private sector could not respond in such a way that the development objective would be achieved. Therefore the government had to act over a wide range of economic activities.

5 In the 1950s the formal growth model, the Harrod–Domar model, dominated the thinking of most economists. This was largely because it was the only one available at the time, not because it was a particularly illuminating way to think about initiating growth in previously nongrowing economies. The most famous and influential of all models, the dual economy model of Lewis and others, implies a Harrod–Domar model of growth. The capital–output ratio, which emerged from this model, was thus a key parameter in many development plans.

6 The notion of environment is similar, but broader, than that of institutions. North (1990) provides a helpful review of institutions and their role in economic performance.

of areas if sustained growth was to get under way and be maintained.⁷ Formal planning, government ownership and management of enterprises, and a great variety of direct and specific controls were deemed necessary and were put in place in many countries. Such an approach had significant effects on the level and allocation of government expenditures.

In general, views changed significantly during the 1970s and 1980s, and the current widespread view is that much more can be left to the market, and that if this were done, growth would begin forthwith. The benchmark economy described earlier is often said to be as applicable to the South as it is to the North.⁸ Evidence that supports this latter view, however, is also easily questioned, and a great deal of analytical and empirical work remains necessary. We then ask the question, what would happen in the African economies if the government's role were limited to trying to correct the standard market failures? This, we believe, creates the right point of departure, namely, where should the government take action and how should it do so in pursuit of the sustained growth objective? We therefore begin with the presumption that the public sector should not be involved unless it is the better instrument to effect the objective.

Market and Government Failure

The market failures of the benchmark case have to do largely with the allocation of given resources in a given environment to achieve a maximum output at a particular point in time. We refer briefly to these kinds of failures, but concentrate on distinguishing these from situations where either the benchmark market does not exist, or the market cannot function as needed to contribute to the achievement of the development objective. Therefore additional supplementation is necessary. These areas of failure are often quite different from those included in most textbook discussions, even though they are market failures. We have also classified the failures that are of interest to development into various subgroups, even though any such classification is necessarily arbitrary with some overlap among the groups. These distinctions enable us to identify more precisely the nature of the sources of failure that bear directly on the achievement of development.

We also explore government failure, taking into account that market failure may not mean that the government must act. The problem is determining which agency can best do the job in a situation where both are subject to numerous kinds of failure.^{break}

⁷ This argument is different from the usual arguments that explain a large part of the government's role in terms of politicians succumbing to opportunities made possible by expansion of the government's role, which in turn set off rent seeking of an extended sort. While this is a relevant part of the argument, it is essential to recognize that at the beginning of the 1950s and on into the 1960s, prevailing wisdom called for a substantial role for the government because of the belief that the private sector, left to its own devices, could not establish any sort of indigenous growth. The widespread failure of this approach was a major reason for the emergence of the market–friendly, minimal government notions.

⁸ This argument is one of the reasons why a number of economists dispute the very idea of development economics as distinct from other economics. The market will function effectively in Africa (and elsewhere) if the

government will allow it to do so. The argument is often carried further to assert that government failure is more damaging than market failure, and so the government should not even concern itself with many of the market failures that are recognized in the benchmark economy. Government failure is a major consideration and enters our analysis at many points. We also believe that the evidence is overwhelming that the government must learn to play important roles if development is to occur.

Market Failures in Developing Countries

The major sources of market failures in the benchmark case were noted earlier: externalities, economies of scale, and public goods. Externalities and public goods seem to be most directly relevant to the creation of a sustained growth mechanism in African countries in that they affect the general environment, which is especially strategic in determining whether and how an economy grows. Most economists accept that the government may intervene to change the distribution of income that is generated by the market. Several examples will help to clarify this point.

First, virtually all observers recognize, and indeed, emphasize, that formal schooling can add to the productivity of labor in a more or less direct way. It is presumed to do so by equipping individuals to read and write, understand instructions, use their cognitive skills effectively, appreciate logical reasoning and argument, and do many other things that act directly on productivity.

More fundamentally, however, education may contribute to the emergence of an environment in which searching and learning are endemic and part of the ethos of the society. It is searching and learning that creates the new knowledge that is the continuing source of increased productivity and new products. The evidence (chiefly in the form of data on productivity growth) is convincing that an economy where this searching and learning environment is not firmly established cannot maintain growth over extremely long periods of time.⁹ If education does have this effect on the environment and the demand for education by individuals is based only on its direct effects on the lifetime earnings of those attending the schools, then the community will necessarily invest too little in education. A market economy has no means of reflecting these externalities in a way that elicits greater investment in education. Note, in particular, that this externality of education is quite different from what would prevail in countries where the searching and learning environment is already in place. The recognition of this externality may have specific effects on the form that schooling takes, on curricula, on qualities and style of teaching, and so on.

Second, consider another example of an environmental externality. Hayek (1988), one of the most articulate and powerful defenders of the advantages of the market system, emphasizes that an effective price system requires institutions, values, and legal arrangements of a particular kind. An economy built on individual utility and producer profit maximization demands a rule of law, the mutual respect and reciprocal obligations of its members, a deep sense of history, and common ideas of morality. If such are not present, then the market cannot work effectively, and where it does work, can have unduly harsh consequences. Hayek argues further that the institutions that evolve more or less automatically in a free society are those that help the market to work well and help prevent the harsher aspects of the market from dominating. He emphasizes that these institutions would evolve on their own, but such evolution may take a long time. Hayek does not explain the exact mechanism by which such institutions evolve.^{break}

⁹ This argument is important. It may be contrasted with the more frequently encountered argument that knowledge can be accumulated anywhere and transported everywhere and used there effectively. This argument is difficult to defend with empirical evidence. The basic idea is to create an environment in which searching and learning are constantly under way throughout the economy. This argument also explains why the proposal to compensate developing countries for the loss of skilled and professional workers with foreign exchange contributions from the countries to which they migrate misses the point.

That African markets working unimpeded will result in the appearance of institutions that will create an environment in which the market can work effectively is not at all evident. What is clear is that such institutions do not generally exist in African countries.¹⁰ The consequence will be that people will tend to reject the market and be guided largely by those institutions that are already in place. Therefore the market may fail in the sense of not producing those institutions and organizations that enable it to produce acceptable results.¹¹ This may mean the government should take action to try to create appropriate institutions or that it may allow obviously nonmarket (institutional) mechanisms to prevail. Evidently the complexity is great, but the argument drives home how difficult it is to trace how well a market can work in an economic system that has no history of its use or has a history that the population views unfavorably.

Institutions, incomplete markets, and so on are difficult terms to deal with. When economists speak of policies to make markets function better, they usually mean eliminating policies that are presumed to distort prices away from what they would be in a long-run competitive equilibrium. Simply eliminating such policies, however, is rarely a sufficient condition to produce productivity growth when markets are incomplete and institutions are those of a nongrowing, poor society.

A third kind of externality refers to the capital goods sector, and illustrates yet another environmental issue that is directly related to the growth of productivity. In an open market economy, countries will produce those tradables for which they have a comparative advantage. To do so, as conventional arguments show, results in the society reaching its highest possible total supply of goods and services. For most developing countries this arrangement will rarely include items usually identified as capital goods. Yet evidence is accumulating that suggests that the capital goods sector plays a strategic role in the growth of productivity. As an economy tries to begin to grow, a capital goods sector is important in several ways.

The capital goods sector is, in many instances, the most effective conduit for importing technical knowledge and for understanding what is necessary for such knowledge to be made directly usable in the developing country. A capital goods producer who is aware of the constraints that firms face, the supply and demand situation, the market structure, and so on is likely to turn out a more suitable kind of capital good than a producer several thousand miles away. Similarly, the users of new technology need to have continuing and easy access to the producers of the new physical capital and the sources of new technical continue

¹⁰ Such institutions did, however, exist in the Republic of Korea in the 1960s, when that country began its great surge of growth. For example, the literacy rate in Korea had long been quite high; the labor force was disciplined and experienced (experience in manufacturing activities had been accumulated during the Japanese occupation in the first decades of the twentieth century); a national language, family mores, and a sense of nation were all present; and traditions were widely accepted and adhered to. Such characteristics contribute notably to an effective market, and are notably absent in Africa.

¹¹ This kind of an argument is found in many places among writers of various ideological persuasion. See, for example, Arrow (1974); Braudel (1984); Hayek (1988); Kuznets (1971); North (1990); Parker (1986); Polanyi (1944). Note that the market was not "invented" with one great master stroke and accepted and imposed in the North. It evolved along with many other aspects of society. Hayek is especially interesting because he was such a determined proponent of the market that his recognition of the central role of institutions is often missed. To a significant degree, the efforts now being made around the world to impose quickly and without any sort of historical preparation an institution (the market) that is incompatible with that history violates this fundamental matter.

knowledge. This is partly so that repair and maintenance can be readily achieved, and partly so that the available physical and human capital can be adjusted directly and continuously to the users' needs. More generally, it now seems clear that a constant flow of technical information from the producers of physical capital to the users and

back again must occur if continuing productivity growth is to be achieved.

Another well-established fact is that complete details of new capital goods cannot be communicated adequately either verbally or in writing, but can be appreciated only after extended use. Close observation over time of new instruments and devices by their creators reveals information that can lead to changes and adaptations that make them more productive in a given environment. This is almost impossible if the producer of the device is not near at hand to watch and learn. In a similar way, specific capital goods production offers opportunities for searching and learning and for engaging in explicit problem solving activity, and these activities are surely the heart of productivity growth. The capital goods sector can therefore provide an opportunity to explore and learn much more effectively than other sectors. These activities also do something else: they contribute to the creation of a group of people who not only have certain specific capacities, but, more important, have a certain attitude. This attitude may be characterized as confidence in the profitability of search and the belief that technical, administrative, and economic problems can be overcome. This attitude, in turn, creates confidence among potential clients that bringing specific problems to this sector to be resolved makes sense.

A capital goods activity can take place on a small scale, and indeed, in most developing countries should be on a small scale. Examples abound of small-scale producers who turn out machine tools of many kinds and thrive in a small market without exporting. Engineering shops can be small, and because of that smallness can respond more readily to new opportunities than large producers heavily committed to a certain category of products or methods.

Perhaps the best example of a public investment policy built on these arguments is that of Taiwan (China). The Taiwanese government invested in a number of capital goods industries that clearly violated the dictates of comparative advantage as usually formulated. These activities—petrochemicals, power, heavy metals—were more capital intensive and riskier, and the technology was less known than Taiwan's factor endowment would indicate was appropriate for domestic production. The evidence that their presence in Taiwan contributed to the growth of productivity in many other sectors of the economy, however, is clear. Similarly, the government of the Republic of Korea also invested in activities it deemed to be strategic to facilitate this process of constant interplay between the users of technical knowledge and the creators of a range of key capital items. The Korean government had the capacity to back away from certain activities when it realized that it had made mistakes. (See Amsden 1985, 1989; Ranis 1990; Ranis in Galenson 1985. For more general discussions of the role of the capital goods sector in facilitating productivity growth, see Bruton 1985; Rosenberg 1982, 1990).

Examples of government failure in this respect are plentiful. The task, as always, is to find the appropriate way to proceed in a given economic and political environment.

A capital goods sector can therefore contribute directly to the growth of productivity and its creation may be a correct allocation of investable resources, even though it violates the usual formulations of comparative advantage. In this case an economy that ignored this externality would not yield the investment allocation that makes the best contribution to the sustained growth objective. To induce such activities in African countries will continue

require government expenditures and other efforts. The obvious complication that arises is that if comparative advantage is violated to too great an extent, the economy may be penalized more than it is helped. Also, simply having a capital goods sector does not guarantee productivity growth, and thus the violation might be in vain. This is simply one example of the complications surrounding the sources of productivity growth and of our ignorance of the "right" role of public expenditure in achieving development.

An external effect of a market process of a slightly different nature, and one to which much attention has been devoted, is the distribution of income that the benchmark economy generates. The usual argument is that a market's functioning will result in a particular distribution of income, one that may or may not be that which the

The Evaluation of Public Expenditure in Africa

society deems appropriate. Unlike production economics, there is no distribution of income that can be defended on the basis of any objective criteria. Then the community must ask itself if the distribution that the market yields is that which it deems to be "right." If the answer is no, then the market has failed, in the sense that it has not produced an income distribution that meets the community's wishes, and hence is not resulting in maximum welfare. Income distribution is a particularly clear example of the difficulties of public choice. Many people are in favor of a more equal distribution of income than the one currently prevailing, but few are in favor of their own incomes becoming lower.

The usual textbook answer to the role of government in this case is to tax and transfer until the after tax income distribution is what the society wants. This approach to achieving the desired income distribution has never worked very well in any country. If the government's intent were really to seek greater equality, then it has also failed, at least as far as this particular approach is concerned. The government may intervene in some other way to modify the production process itself or the endowments of the factors of production so as to affect directly the distribution of income. The most common such approach is projects designed to absorb labor irrespective of its productivity. Naturally, the government may fail here too. In a given context, determining whether the market or the government has failed or whether society or some powerful group in society wants the inequality existing requires great insight and much information. In general, African governments have not placed as much emphasis on achieving greater equality as have some other developing countries and a number of economists.

The distribution of income in African countries may affect the development objective beyond its effect on society's welfare at a point in time. The distribution of income has some effects on the composition of demand. A distribution that is relatively equal, for example, may facilitate the achievement of fuller utilization of domestic resources; the resolution (or prevention) of regional problems; the prevention of severe tribal or ethnic antagonisms; the provision of finance for small, family-owned businesses; and the promotion of the idea that growth of output can contribute to the lives of all members of the population. Many of these are ends in themselves, and all can contribute to making the growth process function in a smoother, more effective manner. They are especially pertinent in the African countries at the present time, and illustrate the difficulty of defending generalizations among countries with diverse environments.

The role of government in seeking equality may be considered even more important when equal distribution refers to something other than income. Health care is a good example, as are education, transportation, and recreation facilities. These are the kinds of services that often cannot be made reasonably equal even where income inequality is minor.

Another role for the government related to the distribution of income is to alleviate poverty. Many observers now think that concentrating on poverty alleviation rather than on the distribution of income is more appropriate for a variety of ethical and economic reasons. The most effective way to relieve poverty is through a strong demand for labor combined with growing productivity. A more cautious statement is that relieving poverty in the presence of a weak demand for labor is impossible. In many cases achieving a strong demand for labor (without inflation) requires that the government play an explicit role in increasing the demand for labor. Again we emphasize the importance of knowing how the economy responds to various stimuli and incentives.

The role of the government in poverty relief is likely to be increased if it tries to maintain some equity between rural and urban areas. If this is not the case, then a strong demand for labor and antipoverty policies concentrated in urban centers will exacerbate the problems of urbanization. Ensuring a strong demand for labor in rural areas—in both agricultural and nonagricultural activities—must be part of any effort to relieve poverty in an effective way.

The three characteristics that matter the most concerning the demand for labor are technology, the working of the labor market, and aggregate demand (which is discussed later). The labor market in many African countries has a

number of aspects that dampen the growth of demand for labor. Such characteristics refer not only to unions and government failure (such as minimum wages, inappropriate dismissal laws, hiring policies, and artificial standards for a job), but also to more deep-seated factors, such as caste systems, tribal differences, ethnicity, traditions, education, or mobility, that can have direct or indirect effects on the demand for labor.

Thus a task of government is to recognize these characteristics and still find a way to maintain a strong demand for labor. Effective action depends on the government's knowledge and understanding of the economy and society. Broad generalizations, statistical or otherwise, are inadequate for designing specific policy.

The flow of new technical knowledge may make achieving a high level of demand for labor easy or hard, which again demonstrates our ignorance. Two things may, however, be said with some confidence. First, relying primarily on imported technical knowledge and machinery will usually exacerbate the employment problem unless the rate of capital formation is extremely high and the capacity of the importing country to modify and adapt is also highly developed. Most African countries cannot achieve a high enough rate of capital formation to depend completely on imported technology and machines and also attain essentially full employment and rising productivity. Even if the rate of capital formation were high enough, the countries can rarely use imported technology effectively. Thus the role of domestic firms in creating new, indigenous technologies is crucial to the achievement of the development objective.

Second, market signals are important not only in the choice of technology to use now, but in indicating the direction of the search for new, more productive technologies. If, for example, certain skills are expected to be in shorter supply in the future, this information should affect the search for new technologies. Indeed, what correct prices mean in the context of changing factor supplies and changing technologies is unclear, because so much depends on the future, and the current market does not always tell us much about what to expect in the next several years. In addition, government failure in providing much information about future factor supplies and technology is virtually inevitable.
break

One further kind of market failure seems to have been important in a number of countries in Africa and elsewhere. The members of a society may prefer a particular composition of output, source of output, and form of organization that the market would not produce. For example, a nation may dislike large-scale enterprises because of their externalities, such as creating economic power, causing congestion and pollution, or providing jobs that are not interesting or challenging.

Conventional formulations of market failures rarely recognize all these issues clearly. Thus the benchmark market, even if in place, would not produce the kind of organization and output that the community prefers. The people of a particular country may prefer to raise their own rice independent of notions of efficiency in the usual sense. This argument thus expands the notion of market failure to include types of organizations, sources of production, and kinds of products.¹² Similar arguments may refer to multinational corporations, to tourists, to foreign television shows, and many other things. To have such preferences is completely legitimate as long as the people recognize that their costs may be high and the public choice issue is resolved in a reasonable way.

An enormous public choice question is involved here. Thus intervention by the government in the market offers substantial opportunities for rent seeking, rent collecting, and abuse of power. In the African countries the issue is especially complex because of the characteristics previously noted. At the same time, the great urgency to increase output in Africa is in danger of hiding the equally great urgency of installing a growth process that does not so violate social preferences as to make large segments of the population less satisfied, despite rising per capita incomes.

All these examples are meant to illustrate different issues that the benchmark model does not recognize adequately. These matters are especially important in the African countries at this stage of their efforts to modify

their economies. The examples also illustrate that market failures in this large, growth-oriented context may vary widely from country to country. Policymakers need to know a great deal about the economy and society in which they work. If African governments were staffed by highly trained, well-informed, disinterested, completely honest civil servants and politicians, the tasks would be simpler, but they would not be absent.

Government Failure

All the issues noted earlier lead to a role for the government that may involve public expenditures. Thus an evaluation of public expenditures in a given African country should consider the extent to which the expenditures were intended to try to correct these continue

12 One might argue that if people preferred small firms and were willing to pay a price to have them, then they would buy from a small firm at higher prices even though a large firm was offering the same product at a lower price. The large firm could not survive and the market would yield the result that the community wanted. Similarly, if, for example, the Japanese really prefer domestically grown rice at five or six times the world price, then they would buy it in the market at that price even if imported rice were available at the much lower price. This argument should be recognized, but it may in some cases miss the point. These things can be in the nature of public goods, and even though a society wants them, enough individuals may choose to free ride and thereby defeat society's wishes. A major question of social choice is involved here: what does society really want and who is society, an issue that, as already noted, is an essential and technically unsolvable problem in policymaking.

failures. The government spends to try to correct the market or to do what the market cannot do. If such expenditures corrected all market failures, then we would get an economy that performed as if the market really did work perfectly in pursuit of the development objective. If such were the case, public expenditures might well be quite large in some countries and relatively small in others, based on our previous arguments. The market would be the basic instrument, but the role of the government would be crucial to it producing the desired results.

Two further questions arise, however. The first is: How should the government go about the correction process? The second is: Can the government do what is necessary to correct the market failure? Both questions imply that the government may be as subject to failure as the market. While the two questions are related, it is useful to treat them separately.¹³

It may be that the government has a genuine intention to act in exactly the right way, but is unable to do so because of ill-qualified personnel, faulty analysis, lack of data, or ignorance of how the economy and society function. As noted earlier, in the 1950s most economists believed that a high rate of capital formation was the basic condition for growth, and governments responded to this by seeking to subsidize capital formation in ways that, on balance, hindered the development effort. Examples abound of complicated arrangements that the government seeks to carry out that would accomplish an important objective, but which it cannot do because of a lack of talent or data. In these sorts of situations, learning, research, and training can surely help over the long run. In the meantime, however, the government may be severely limited and most of its efforts to correct market failure may be unsuccessful, even harmful.

Another possibility is that the government simply cannot act objectively and autonomously, and therefore succumbs to special interests, to rent seekers, and to other sources of influence that prevent it from correcting the market failures even if it has the technical capacity to do so. Rent seeking has attracted a great deal of attention, and is often used as the ultimate rationale for allowing the market to function in an unencumbered way. The presumption is that if the government did not intervene at all in the market, and it was widely recognized that it would not intervene, then rent seeking would not occur. Part of the rent seeking notion applies to government employees themselves, who are assumed to act simply to maximize their own gain rather than with any sort of social objectives in mind. This latter notion is often referred to as the new political economy.

All observers agree that rent seeking is a major issue in African (and other) countries. However, not all government employees are corrupt in this way and some people in the government really care. There are honorable and competent people in governments who are subject to a great variety of forces and incentives. The policymaking process is therefore extremely complex, and its effectiveness and the autonomy of government officials depend heavily on a society's institutions, mores, social organizations, and history. It is continue

13 We speak of the government as if it were something of a monolith, but of course it is not. In almost all governments there are diverse views and contradictory activities and policies among the various ministries and departments. There are also bureaucracies so entrenched that they are almost independent of the policymaker. These issues matter to varying degrees in the African countries. While we do not discuss them in detail, we do recognize that they matter greatly in determining what it makes sense to ask a government to do, and our use of the term government is not meant to imply that there is a simple cohesive group that sits together and decides in rational debate what is to be done and how.

these we need to study to see how they influence policymaking. Simply saying that the government can do nothing, and therefore its role must be reduced to the bare minimum, is inadequate. An abundant literature on rent seeking and the new political economy is available. See, for example, Grindle and Thomas 1991; Kreuger 1990; Mosely, Harrigan, and Toye 1991; Samuels and Mercurio 1984.

Thus one important way that government expenditures may be used is to improve the government's quality, capacity, and autonomy. Economists have not examined such expenditures in much detail, and little literature on the subject is available. There is little doubt, however, that African countries will be confronted with choosing between market failure and government failure for decades to come, and that the choice does not lend itself to simple solutions, or even to simple principles that have specific policy content.

Other Reasons for Public Expenditure

A range of additional circumstances fall even further from the standard rubric of market failure and have a direct effect on achieving the development objective. In such cases the government may have a role that has direct effects on government expenditures. We now turn to an examination of a number of these issues.

The Entrepreneur Question

In the 1950s a frequently encountered argument identified the lack of private sector entrepreneurs as a major bottleneck in efforts to get growth under way in the developing countries. Economists devoted considerable attention to trying to identify entrepreneurs and to learn about their backgrounds. They also gave attention to possible ways of "making" entrepreneurs out of ordinary people. Thus one of the major justifications of a direct role for government was the view that the private sector did not have enough entrepreneurs. If, however, the private sector lacked entrepreneurs, why should people who became government officials be able to serve as entrepreneurs? The usual answer was in terms of access to funds, to information, and to technology that were not available to the private sector. The evidence is open to a wide range of interpretations, and the extent to which entrepreneurship constitutes a bottleneck that can be broken by government expenditures varies from one country to another in Africa.

Perhaps a more important reason why most economists became convinced that no entrepreneur bottleneck existed was that economic theory (of the firm in particular) developed in a way that left no room for such an actor. If there is perfect knowledge about everything and the firm maximized every minute of the day and night, then an entrepreneur had no role.

The Evaluation of Public Expenditure in Africa

The government as an entrepreneur has, with important exceptions, not worked well as demonstrated by the higher costs incurred by government-owned and government-operated enterprises compared with similar private firms. This is not necessarily convincing, because public firms may well have other objectives, but it does add to the difficulties that face a ministry of finance. In Korea and Taiwan, by contrast, publicly owned and managed firms do reasonably well in comparison with private ones. This latter piece of evidence suggests that public firms are not necessarily inefficient, but that in most countries government ownership has not contributed to the development objective. Little continue

information is available on relative rates of growth of productivity in public compared to private firms.

The general view now is that the public ownership of firms is ineffective as a means of meeting the entrepreneurial function, and where government expenditures are made for this purpose, they represent a misallocation of funds. Such a position could suggest that no entrepreneur bottleneck exists in the private sector, and that any lack of growth in an economy is not because of entrepreneurial problems. The evidence for Africa indicates that with small-scale, truly indigenous (that is, not built directly around imported capital and technology) firms, entrepreneurship is indeed plentiful (see, for example, Dia 1991; Marris and Somerset 1972; Marsden 1990). We repeat, however, that the situation differs from country to country.

In some cases private sector entrepreneurship may be ample, and respond to incentives very well indeed. Then if the signals are not right (the term, recall is ambiguous), the action of private entrepreneurs may create considerable problems and distortions for the economy. Thus in the absence of an effective market, that is, a market that provides the signals appropriate to inducing the private sector to act in the manner necessary to achieve the development objective, a strong private entrepreneurial effort can create more problems than it solves. Therefore when the idea of depending on the private sector is pushed, the (often tacit) assumption is that the economy is one where market signals lead private entrepreneurs to perform in the right way. This is not always the case. To repeat a fundamental notion, the absence of government intervention does not guarantee that the functioning of the private market will achieve the development objective.

Still another variation on the entrepreneurial issue that directly involves an explicit violation of the benchmark paradigm is due to Hirschman. Hirschman (1958) argued that in many countries governments have to act in a way that makes specific investment opportunities crystal clear. He argued for unbalanced growth because it would create obvious opportunities for investment. The usual public investment in infrastructure, by contrast, would not be effective in that role. The notion of linkages between sectors played a key role in his argument and has become part of the language of development economics. In this case, government expenditures are made not so much to create an output as to create an economy with ample investment opportunities evident to all. As the questions about entrepreneurship have died down, the Hirschman argument has also attracted less and less attention. The linkages argument does, however, point to the importance of an economy's capacity to respond quickly to growing demand for intermediate goods. If it cannot do this, then bottlenecks and balance of payment problems are likely to appear.

The Information Question

Information about investment opportunities, sources of new technical knowledge, and new markets is not readily and freely available in any country, and the perfect knowledge that solves so many problems in the textbooks does not exist. In a developing country this kind of information is even more difficult for small indigenous firms to acquire. The development and spread of information is a crucial source of productivity growth, and is important in any economy where searching and learning constitute an essential ingredient of economic activity. Neither the market nor the government has been effective in meeting this objective in Africa. While numerous government-financed and government-managed research and development institutes of one kind or another are available, and continue

some have been successful now and then, there are many more failures than successes. Yet the accumulation and dissemination of technical, administrative, and organizational knowledge is an obvious activity for the public sector, given the public goods nature of these activities, and of knowledge in general.

Considerable evidence suggests that technical research in developing countries is more productive when it answers producers' direct questions rather than when it is done more or less independently of producers' immediate concerns. This was a major argument developed earlier for the existence of a capital goods sector in developing countries. Thus in a situation where firms have a great inducement to increase output in search of obvious profits, and additional inputs are expensive, a strong demand for knowledge is to be expected. It is in this context that research and development of many kinds appear most productive.

By the conventional arguments of investment in knowledge accumulation, the private sector will not invest adequately or at all, both because of the public goods nature of the output and because of the severe uncertainty that is inherent in research. Thus the government must play a major role. Data on public expenditure on research and development are not generally available, but for most developing economies they would be quite small. Similarly, expenditures on knowledge dissemination are probably small. This is an area of vast potential for public expenditure, both productive and wasteful. Information economics is becoming a major field and possibly has major implications for future notions of a market economy. Stiglitz (1991) is a good source to begin to study these issues.

The Role of Specific Activities

While our understanding of the way the development objective is achieved is limited, empirical evidence suggests that certain activities are helpful, maybe essential. Earlier we argued that a domestic capital goods sector is useful for continually increasing productivity. Other activities may exist that play a similar role, but which may not be possible without some appropriate government intervention.

The role of agriculture is perhaps the most obvious. Except for very small city states, no country that has not had an agricultural sector that grew well has achieved sustained growth. Thus even if a country's comparative advantage is in something other than agriculture, agriculture should not be discouraged.

The main role that agriculture must play in Africa's industrialization at the present time is to provide a growing market for new manufacturing that needs learning time before exports can start. Because agriculture is generally the largest sector of the economy, it must grow if the economy is to grow, and a growing economy is needed to provide the market during the time that people are learning new activities so as to produce at competitive prices. This is an especially relevant point for African countries, whose agricultural sectors have not had much success in recent decades. Whether specific efforts by the government are necessary to encourage the agricultural sector beyond that provided by right prices is unclear. What is clear is that a depressed agricultural sector will prevent growth except in very small economies.

A favorable agricultural environment will also help to create demand for rural, nonagricultural activities with their corresponding demand for labor. Demand for labor in rural areas is an important part of the efforts to keep urbanization and its attendant problems under control.

Exports also play an important, but not completely understood, role. The success stories of East Asia are all characterized by rates of growth of exports higher than the countries would have achieved without specific government actions of several kinds. A tempting argument, therefore, is that the high rate of growth of exports is a significant explanatory variable of the high growth rates of GDP and employment in these countries. At the same time, neither the theoretical arguments defending such a view nor the empirical evidence supporting it are completely convincing. (For a good survey of the literature see Fisher 1991; Levine and Renelt 1991a, b.) The

The Evaluation of Public Expenditure in Africa

African countries have fared poorly in their export performance, especially of nontraditional goods, compared to many other countries, and an explicit policy to encourage exports could be a valid strategy.¹⁴

An export promotion policy, in this sense, is an important notion that any African country must consider carefully, despite the lack of firm evidence. For very small countries, however, the issue is much clearer: An explicit export promotion policy may be unnecessary.

Other possible activities that a smooth functioning market may not bring into being might also affect productivity growth. We have already mentioned small-scale enterprises. In some circumstances foreign direct investment will prevent the appearance of small-scale enterprises. Domestic firms with significant economies of scale can also drive out small firms. The latter may, however, be an important means for indigenous learning on many fronts. In addition, small enterprises may fit the factor market, including entrepreneurship, particularly well, and may help resolve regional problems and discourage rural-urban migration. Most of these advantages would not be adequately reflected by market signals, so specific government efforts on their behalf may be called for.

Let us consider one last role for public expenditures: to make the market work better. If markets are incomplete; if they do not exist in some areas and for some activities, then the government may be able to improve the workings of the market. What action it would have to take depends on the situation in the given country. For example, new roads can open new markets, a subsidy based on employment can offset institutional barriers to wages reflecting labor scarcity, incentives may be designed to encourage efforts to raise yields or productivity, and so on.

The point here is that a market is not a given thing that exists if the government just leaves things alone. Rather, effective markets evolve like other aspects of a society, and the government can induce that evolution by taking certain actions. This is particularly important in Africa, where markets are incomplete, and before they can be effective instruments they need to be more complete and more widely understood. However, government action can also prevent markets from working as well as they might otherwise, for example, through ill-conceived labor laws, regulations (as opposed to incentives) to continue

¹⁴ The World Bank defines an export promotion policy as one where the incentives to export and to produce for the domestic market are equal (see World Bank 1991). Some people doubt, however, whether the development objective can be achieved with just this inducement to export. Greater inducements may be necessary. It does seem clear that a policy of discouraging exports harms the development effort. Observers frequently note that Korea and Taiwan, in particular, have done much more to induce exporting than simply maintain neutral incentives between producing for export and for the domestic market.

induce firms to use local intermediate goods, poor enforcement of property rights, poorly designed poverty relief programs, or inappropriate marketing arrangements. Government failure can thus occur in this area, and as with other types of market failure, an analysis of a specific country at a specific time may lead to the conclusion that the government should not intervene at all.

Other options are possible, but the general point is that certain activities seem to be especially strategic in the search for the growing economy. These activities would not be adequately forthcoming without government support, which will almost always result in some form of public expenditure.

Some External Considerations

External factors can also play a role in determining the amount and allocation of government expenditures. Three such factors are especially relevant in Africa at the present time: the role of aid donors, the role of nongovernmental organizations, and to a lesser extent the effect of direct investment by foreign firms.

Aid donors and international organizations finance a substantial portion of investment spending in almost all African countries. Donors affect the allocation of investment in a variety of ways, and thereby affect the amount and allocation of other government outlays that are linked to these investments. The availability of donor support may lead an African country to commit itself to an expenditure program quite different from what it would have been without the aid, depending on the government's capacity to shift its resources and adjust other areas of expenditure. The aid may also complicate the macroeconomic management of the economy. Abundant evidence indicates that donors and aid recipients do not always give the same ranking to projects or face the same political pressures.

A particularly interesting, and in some countries increasingly important, instrument by which donors—especially unilateral donors—affect African public expenditures is through counterpart funds (see Bruton and Hill 1991 for a study of the various issues involved). Counterpart funds consist of local currency generated from the sale of aid products in domestic markets or from the conversion of foreign exchange grants by the central bank. The aid donor and the recipient government must agree on how such counterpart funds are to be used. While the arrangements need have no effect on the recipient's budget, in many cases the effect is significant, and may be both allocative and macroeconomic. We expect that counterpart funds will play an increasingly important role in the budgets of a number of African countries during the next decade.

Considerations justifying government expenditures from counterpart funds are the same as those justifying expenditures from general government revenues. In particular, governments should not view them as cheaper, thereby justifying expenditures on low-return ventures. What may differ is that using counterpart funds for useful expenditures for which conventional revenues could not be used may be politically or institutionally feasible (for an elaboration of this point see Bruton and Hill 1991).

Foreign investment can have similar consequences. Governments eager to attract foreign firms may commit themselves to spend funds and to forgo revenue. While government can always refuse to provide such incentives, the pressure to do so is often quite compelling. This situation is another reason why African governments should be extra careful in encouraging direct foreign investment and should try to have a well-defined continue

general policy toward foreign investors rather than depending on ad hoc decisions on each case.¹⁵

Nongovernmental organizations may also be relevant. They consist of private philanthropic foundations; religious groups; private groups concerned with specific issues, for example, the environment or the role of women; and so on. In most instances such activity has little effect on the government budgets, but it may be relevant in some cases.

The Macroeconomics of Public Expenditure

This section examines the macroeconomic effects of public expenditure and asks how a government's macroeconomic policies affect the achievement of the development objective. By macroeconomic policies, we mean fiscal policy, monetary policy, and exchange rate management, all of which will be affected by the government's decisions on public expenditure decisions. We consider the macroeconomic implications of public expenditure policy because the intended effects of particular spending programs can be undone by these macroeconomic effects of the government's policies. Desired public expenditure programs can also be affected by macroeconomic constraints facing the government. These considerations have been important in Africa in the last two decades. Economists have blamed African countries' macroeconomic policies for Africa's poor growth performance during the last twenty years, and more recently have blamed the adoption of stabilization and structural adjustment policies, whereby public expenditure decisions are increasingly constrained by overall macroeconomic objectives.

Let us now return to our benchmark model, where we argue that macroeconomic policies do not play an important role.

The Benchmark Economy

In our benchmark economy, all resources would be fully employed at each moment in time—the economy would be on the production possibility frontier. Growth, the rate at which the production possibility frontier moved out over time, would be determined by savings and investment in the economy, the outcome of people rationally deciding how much consumption to forgo today for consumption in the future. The balance of payments would be determined by similar considerations. The current account deficit, for example, would be consistent with just the right amount of investment and consumption over time, taking into account the debt and future repayment obligations generated by the deficit. Relative prices would allocate resources optimally at each moment and across time.

In this fully employed economy, the aggregate level of public expenditure that maximizes welfare would be determined by microeconomic considerations, including the quantity of public goods, economies of scale, and externalities in the economy. These continue

15 The idea of a case by case appraisal of foreign private direct investment proposals is appealing, and has apparently worked in some places, e.g., Taiwan and Korea. Such an approach, however, offers great opportunities for abuse in countries where the government is less well directed. Also government officials cannot possibly know nearly as much as prospective investors about a particular proposal and how the firm will perform. Large international firms will always have a distinct bargaining advantage with respect to the developing country. General policies are a much safer approach.

expenditures would be financed in the least distortionary way. Because all taxes create some distortions, these costs must be weighed against the benefits of the government spending. On the margin, an additional unit of GDP would go to the government if such government expenditure added as much to marginal utility or welfare as if it were allocated to and spent by the private sector. The government's macroeconomic policies in the benchmark economy would all be determined by this welfare-maximizing exercise. In practice, of course, this level of public expenditure and the way to tax to pay for it is impossible to identify.

We have already discussed a variety of reasons why our benchmark economy is illusory. Another important reason is that a government's macroeconomic policies may not look much like those in the benchmark economy. Whatever the level and allocation of public expenditures, the government may have difficulties paying for them. It may adopt taxes that are more distortionary than necessary or it may resort to borrowing or printing money, which in turn has important effects on the economy. Relative prices and incentives that affect the allocation of resources in the economy may be affected in ways that offset many of the objectives of other government policies, in particular, public expenditure programs.

The neoclassical school of macroeconomists argue that some of these macroeconomic decisions on the part of government will not affect the economy. For example, whether deficits are financed by taxes or by borrowing will not matter, according to Ricardian equivalence. Other economists from the neoclassical school argue that monetary policy is ineffective and has no real effects on the economy. These theories, and the assumptions on which they are based, are controversial. These models assume that all markets work well and that the government has little or no role to play in stabilizing output. Whatever their relevance for industrial countries, they do not seem to reflect the way in which the economy and macroeconomic policies work in developing countries.

The government's spending policies, how it pays for them, and how it manages the exchange rate will therefore affect the economy. Could these functions, in some sense, be left to the private market? If the government

undertakes any public expenditures, and clearly it will and should, even in the benchmark economy, it must make decisions about its macroeconomic policies. Ways to minimize government failure in this area may be available, but handing over these functions to the private sector is not an option. Some economists argue in favor of limiting government discretion through rules to minimize government failure.

In the following sections, the terms full employment, price stability, on the production possibility frontier, and external balance are used as if they have clear and unambiguous meanings. This is even less the case in developing economies than in industrial economies. Despite these ambiguities (see Bruton 1985), they are still useful terms when discussing the macroeconomic effects of public expenditure.

An Economy with Keynesian Unemployment

If the economy can deviate from full employment for long periods of time, public expenditure may have a role to play as one component of a macroeconomic policy to affect the level of employment and output in the economy. Let us assume that unemployment can exist as a result of stickiness in wages and prices that keep the labor and goods markets from clearing. When this is the case, the government can increase aggregate demand and continue

increase the level of output above what it would otherwise be. Because the economy is below full employment, increasing aggregate demand can lead to increased output, without running into supply constraints, and only raising prices.

In industrial economies, full employment output is often interchangeably defined as that level of output where capital and labor are fully employed, and as that level of output where there is no tendency for price instability (nonaccelerating inflation rate of unemployment, or NAIRU). The notion is that if labor markets are clearing with demand equal to supply, the rate of increase in wages and prices will be stable.

In African countries, markets, including the labor market, in general work much less well. The level of employment consistent with price stability may be much too low. When this is the case, the unemployment problem is no longer one that can be addressed only with traditional aggregate demand policies. The solution to the unemployment problem must be sought through increased demand for labor throughout the economy, and in Africa this requires consideration of rural–urban migration issues, of the size and responsiveness of the informal sector, and of matters that determine the flexibility of the economy. Government policy, public expenditure in particular, has a role to play, but it will no longer be simply, or even primarily, to affect the level of aggregate demand in the economy. It must include considerations that bear on the economy's capacity to respond to demand pressures.

Macroeconomics and the Development Objective

We ask whether macroeconomic policies, and public expenditures in particular, have contributed to the development objective, not whether they can or have been used as effective stabilization tools, minimizing business cycles or increasing output to full employment output at a point in time, the issue on which much of the debate in industrial countries has focused. Macroeconomic policies will affect price stability, external balances, and the real exchange rate, which in turn affect the demand for labor and the rate of growth in the economy. High and accelerating inflation, external imbalances, and an overvalued exchange rate all contribute to macroeconomic instability.

Macroeconomic instability is important because it may affect the achievement of the development objective. To consider public expenditure policies in isolation of the government's macroeconomic policies would be misleading, because these macroeconomic policies can support or frustrate the objectives of government expenditure policies. For example, suppose the government determines the appropriate level of public expenditure

based on considerations discussed in previous sections, but is unable to raise the taxes necessary to prevent the deficit from increasing. If debt financing is not an option, which is often the case in developing countries, then the government may pay for its expenditures by printing money, which can result in inflation. The inflation can lead to real appreciation of the exchange rate, which contributes to a deterioration of the current account.

Should government expenditure be cut or the inflation tolerated and the current account dealt with in some other way, or should the government adopt some intermediate policy? Some economists argue that macroeconomic stability—low inflation and external balance—is not necessary for growth. They state that stabilization policies conflict with growth, and that developing countries should concentrate on growth regardless of the effects on prices and external balance. They argue that the costs of inflation are not onerous and that external balance can be handled with other policies. One could think of this continue

as a second best situation, where the benefits of government expenditures on growth in the above example outweigh any costs of price instability or of the other policies, such as quantitative restrictions, adopted to address external balance.

In contrast to this view, other economists believe that macroeconomic stability is a necessary, if insufficient, condition for sustained growth, and therefore must come first. They argue that a growth policy that ignores stability cannot succeed in the long run, and that no second best option is available that balances instability and growth.

Why might macroeconomic stability be necessary for sustained growth? Macroeconomic instability could be costly to growth for several reasons. First, the situation may not be sustainable. For example, the instability may be reflected in excessive current account deficits. If a current account deficit needs to be reduced rapidly, governments often adopt expenditure-reducing policies. This type of adjustment can be costly in terms of lost output, and usually penalizes productivity growth. Eliminating excessive aggregate demand and leaving the economy at full employment has proved difficult. The economy will experience stop-go cycles and frequent relative price shifts, reducing the efficiency, and perhaps the aggregate level, of investment.

Price instability can also reduce the level of investment from what it would otherwise be by increasing uncertainty. Investment may take place in inappropriate sectors as well. As an example, excessive aggregate demand often leads to real appreciation of the exchange rate, which will make the nontradable sector profitable relative to the tradable sector. We discussed earlier the importance of both exports and agriculture to growth. A real appreciation of the exchange rate can penalize both these sectors, and may offset the effects of other government policies intended to encourage them.

Given these different views on the role of macroeconomic policies in developing countries, how can macroeconomic policies best contribute to sustained growth? A useful way to think about this is as follows. A government spending strategy aimed only at ensuring that microeconomic signals and incentives are conducive to putting in place an economy in which sustained growth occurred as a consequence of its routine functioning will have macroeconomic effects depending on how it is financed. This in turn will affect the microeconomic incentives strategy, and must be taken into account. The overall macroeconomic effects of the government sector must be coordinated with the government's expenditure strategy, if policies are to have any chance of achieving the desired effects. The effects of aggregate government spending on inflation and external balance are important, not because these are objectives in themselves, but because they affect the things the government should be concerned about in its pursuit of sustained growth. Those not concerned with stabilization must not believe that inflation and external balances necessarily interfere with the government's goal of promoting growth. Those emphasizing the need for stabilization must believe that the costs generated by the macroeconomic instability outweigh any benefits of the policies contributing to the instability.

The Evaluation of Public Expenditure in Africa

The International Monetary Fund's and the World Bank's economic stabilization and structural adjustment policies recognize these interactions. The World Bank's shift to structural adjustment lending partly reflected the recognition that sectoral programs were in some cases being thwarted by governments' macroeconomic policies and their effects on incentives in the economy. Similarly, the Fund has shifted its policies. Increasingly, development practitioners are recognizing that governments adopting macroeconomic stabilization programs can try to minimize the costs for growth by cutting the least productive components of expenditure and raising the least distortionary taxes (Tanzi 1990).break

Much evidence in Africa during the last two decades indicates that macroeconomic policies have not contributed to growth and may have frustrated the achievement of many of the objectives of other government policies, including particular public expenditure programs. In many countries in Africa, the government's macroeconomic policies have contributed to price instability, external imbalances, and overvalued exchange rates. From 1965 to 1985, per capita GDP grew by less than 1 percent annually in Sub-Saharan Africa, which compares unfavorably with other regions. Growth in the second half of this period deteriorated, and by the early 1980s many countries were in a crisis situation. Many economists believe that much of this poor economic performance can be attributed to the governments' macroeconomic policies (World Bank 1994). In response, most of the Sub-Saharan African countries adopted adjustment programs in the 1980s. Objectives relating to the macroeconomic policies of the governments constitute a major part of these adjustment programs.

Income Instability Considerations

Income in developing countries, including Africa, can be unstable relative to income in industrial countries because the sources of GNP tend to be less diversified. In addition, developing countries rely to a greater extent on primary commodity exports, the world prices of which are highly variable. The government's response to external shocks will have a major effect on the economy's performance. It can help stabilize the economy or it can worsen the income instability. This is an important topic for developing countries, where external shocks have been a major source of income instability during the last fifteen years. Response to these shocks has been far from adequate in many developing countries.

This topic is not entirely distinct from the issues of macroeconomic instability already discussed. It differs, however, in that it focuses on the cause of the instability, on external shocks and variability in output itself, and on spending responses to this. An appropriate response to income variability can help avoid macroeconomic instability, which as discussed earlier may be a major bottleneck to sustained growth. Alternatively, instability in income may make the government's job much more difficult, and make it more likely that the government will contribute to instability rather than to stability. If keeping spending in check when revenues are rising is difficult for developing country governments, for example, because of a boom, for government spending to contribute to stability will be difficult. This can be an important form of government failure in developing countries, and in Africa in particular. The case studies will examine to what extent instability in income and government revenue have contributed to government failure in macroeconomic areas.

The Empirical Evidence

We noted at the outset of this chapter that econometric studies had failed to establish an empirically supported conventional wisdom about the relationship between government spending and the achievement of development objectives. Our discussion has explained this failure in terms of the great diversity that exists among countries with respect to the way the market functions and the government's capacity to intervene effectively to improve economic performance. Knowledge of the institutions, the history, the ideas of continue

the good life, the capacity of private agents to respond to market signals, and many other things matter and must be taken into account in reaching decisions about government expenditures. Thus, one would expect to find great diversity among nations in the relationship between government spending and reaching growth objectives. The inconclusive empirical findings thus illustrate our major point: the division of labor between the government and the private sector is to be determined in a pragmatic manner in the way that best serves the country's development objectives. This is the only general statement that is appropriate.

Conclusion

We began by defining the development objective as that of creating an economy whose routine functioning produces rising productivity of resources with a strong demand for labor, and without violating prevailing norms to the extent that social and political unrest bring the whole process to a halt. We then defined a benchmark economic system, essentially the textbook competitive model with a shortlist of widely accepted market failures corrected by an efficient and thoroughly knowledgeable government. We then argued that African countries do not resemble this benchmark economic system. If governments act as if they do, and just intervene for the standard market failures, they are unlikely to meet the development objective. Our analysis revealed a wide range of ways in addition to those usually listed in which African economies deviate from the benchmark. There is, then, a great deal of market failure that calls for government expenditures.

At the same time we emphasized that African governments were relatively new and inexperienced and their civil servants often ill-prepared for their duties. Hence government failure was also to be expected, and one could not expect such a government to act in the precise way that would correct and supplement the market so that it would achieve the development objective. Thus the choice is between relying on a market with many imperfections and trying to find ways for the government, also with many imperfections, to correct and supplement the market in a great variety of ways.

We also emphasized that the institutions, perceptions, history, and culture of African countries were important considerations that will have a legitimate effect on government spending decisions. Political issues are also included in this category.

Recognition of all these factors means that government spending decisions emerge from a wide range of considerations, and their explanation does not lend itself to simple rules. Rather, it means that good policymakers examine the economy and society and try to determine where expenditures will be the most effective, given the objective, and where carrying them out is feasible, or even possible.

The Case Studies

Four of the case studies that follow examine one particular category of government expenditure in the framework that has been developed in this chapter. One focuses on the macroeconomic effects of public expenditures and the interdependence of public spending objectives and the government's macroeconomic policies. More specifically, the case studies will consider the following: continue

- What seemed to be the motivation for the government undertaking the project or policy that is being studied? Was it an effort to correct or supplement the market? Were externalities, public goods, income distribution objectives, and market failure in general involved?
- Did the government's actions and the reasons for those actions seem appropriate? Can government failures be identified?

The Evaluation of Public Expenditure in Africa

- What might the outcome have been had the government left the entire project to the market? Could the government have done other things (say with less expenditure) that would have induced the private sector to perform the task as well or better than the government did?
- Did the expenditure seem to have the expected results? If it did not, are the reasons fairly clear?
- What appeared to be the major administrative and political issues that affected the project?
- How did the expenditure fit in with the overall budget and the sectoral budget expenditures? For example, did any aggregate budget constraint seem to affect the project?
- Was any role, for better or worse, played by a foreign donor or international organization?
- To what extent did the expenditure directly affect the development objective as it has been defined in this chapter?

References

- Amsden, Alice. 1977. "The Division of Labor Is Limited by the Type of the Market: The Case of the Taiwanese Machine Tool Industry." *World Development* 5(May):217–34.
- . 1985. "The State and Taiwanese Economic Development." In D. Rueschmeyer and T. Skocpol, eds., *Bringing the State Back In*. Cambridge, U.K.: Cambridge University Press.
- . 1989. *Asia's Next Giant: South Korea and Late Industrialization*. New York: Oxford University Press.
- Arrow, K. J. 1951. *Social Choice and Individual Values*. New York: John Wiley.
- . 1974. *The Limits of Organization*. New York: Norton.
- Braudel, Fernand. 1984. *The Perspective of the World*, vol. III, *Civilization and Capitalism 15th–18th Century*. New York: Harper and Row.
- Bruton, H. J. 1985. "On the Production of a National Technology." In Jeffery James and Susumu Watanabe, eds., *Technology, Institutions, and Government*. London: MacMillan.
- Bruton, H. J., and C. B. Hill. 1991. "The Development Impact of Counterpart Funds." Discussion Paper No. 6. Cambridge, Massachusetts: Harvard Institute of International Development.
- Dia, Mamadou. 1991. "Development and Cultural Values in Sub-Saharan Africa." *Finance and Development* 28(4):10–13.
- Easterly, William. 1992. *Projection of Growth Rates*. Outreach 5. Washington, D.C.: World Bank, Policy Research Department.
- Fisher, Stanley. 1991. *Growth, Macroeconomics, and Development*. Working Paper No. 3702. Cambridge, Massachusetts: National Bureau of Economic Research.
- Galenson, Walter, ed. 1985. *Foreign Investments and Economic Development in the Newly Industrializing Asian Countries*. Madison, Wisconsin: University of Wisconsin Press.

The Evaluation of Public Expenditure in Africa

- Grindle, M. S., and J. W. Thomas. 1991. *Public Choices and Policy Changes*. Baltimore, Maryland: The Johns Hopkins University Press.
- Hayek, F. A. 1988. *The Fatal Conceit*. vol. I, W. W. Bartley III, ed., *The Collected Works of F. A. Hayek*. Chicago, Illinois: University of Chicago Press.
- Hirschman, A. O. 1958. *The Strategy of Economic Development*. New Haven, Connecticut: Yale University Press.
- Kormendi, Roger C. 1983. "Government Debt, Government Spending, and Private Sector Behavior." *The American Economic Review* 5(December):994–1010.
- Krueger, A. O. 1990. "Government Failures in Development." *The Journal of Economic Perspectives* 4(summer):9–24.
- Kuznets, Simon. 1971. *Economic Growth of Nations: Total Output and Production Structure*. Cambridge, Massachusetts: Harvard University Press.
- Landau, Daniel. 1983. "Government Expenditures and Economic Growth: A Cross Country Study." *The Southern Economic Journal* 49(January):783–92.
- . 1985. "Government Expenditure and Economic Growth in the Developed Countries." *Public Choice* 41(3):459–77.
- . 1986. "Government and Economic Growth in Less Developed Countries." *Economic Development and Cultural Change* 35(October):35–75.
- Levine, Ross, and David Renelt. 1991a. *Cross–Country Studies of Growth and Policy*. Working Paper No. 608. Washington, D. C.: World Bank.
- . 1991b. *A Sensitivity Analysis of Cross–Country Growth Regressions*. Working Paper No. 609. Washington, D. C.: World Bank.
- Marris, Peter, and Anthony Somerset. 1972. *The African Entrepreneur*. New York: Africana Publishing Corporation.
- Marsden, Keith. 1990. *African Entrepreneurs*. Washington, D. C.: World Bank.
- Mosely, Paul, Jane Harrigan, and John Toye. 1991. *Aid and Power: the World Bank and Policy–Based Lending*. London: Routledge.
- North, Douglas. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge, U.K.: Cambridge University Press.
- Parker, W. N., ed. 1986. *Economic History and the Modern Economist*. London: Basil Blackwell.
- Polanyi, Karl. 1944. *The Great Transformation*. New York: Farrar and Rinehart.
- Ram, Rati. 1986. "Government Size and Economic Growth." *The American Economic Review* 76(March):191–203.

Ranis, Gustav. 1990. "Science and Technology Policy: Lessons from Japan and the East Asian NICs." In Robert E. Evensoon and Gustav Ranis, eds., *Science and Technology*. Boulder, Colorado: Westview Press.

Rosenberg, Nathan. 1982. *Inside the Black Box: Technology and Economics*. Cambridge, U.K.: Cambridge University Press.

———. 1990. "Science and Technology Policy for the Asian NICs: Lessons from Economic History." In Robert E. Evensoon and Gustav Ranis, eds., *Science and Technology*. Boulder, Colorado: Westview Press.

Samuels, W. J., and Nicholas Mercurio. 1984. "A Critique of Rent-Seeking." In David Colander, ed., *Neo-Classical Political Economy*. Cambridge, Massachusetts: Ballinger.

Stern, Nicholas. 1989. "The Economics of Development." *The Economic Journal* 99(September):597–685.

Stiglitz, Joseph E. 1991. *Government, Financial Markets, and Economic Development*. Working Paper No. 3669. Cambridge, Massachusetts: National Bureau of Economic Research.break

Tanzi, Vito, ed. 1990. *Fiscal Policy in Open Developing Economies*. Washington, D.C.: International Monetary Fund.

World Bank. 1991. *World Development Report 1991*. Washington, D.C.

———. 1994. *Adjustment in Africa: Reforms, Results, and the Road Ahead*. Oxford, U.K.: Oxford University Press.break

2—

Parastatals in Zambia: The Conflict between Equity and Efficiency

Arup Banerji, David J. Zimmerman, and Mwene Mwinga

Governments can spend their resources in many different ways. One form of government expenditure involves the acquisition or creation of business enterprises. Parastatals, sometimes called state-owned business enterprises (SOEs), have been an important feature of the Sub-Saharan African countries since their independence from colonial rule.¹ Formed by nationalizing foreign-owned industries or initiated in the import-substituting climate of the late 1950s and 1960s, they were expected to bring about self-reliance in industry, to provide leadership in activities that the private sector was considered too timid to enter or too selfish and venal to operate for the greater good, and to provide both greater resources for the economy and greater equity for the populace. As a result, government-owned firms came to dominate these economies, providing them with everything from power to polyester, capital goods to copybooks, and transportation to transistor radios. This has been especially true for Zambia, which has one of the largest parastatal sectors, when measured as a share of the gross domestic product (GDP), in Sub-Saharan Africa.

By the late 1970s, however, concern was growing that parastatals in Africa were, on balance, draining countries' economies. A movement began to privatize them, or at least to increase their exposure to competition and reduce governments' role in their administration. By 1985 Nigeria announced that it was privatizing several government enterprises, Togo sold a nationalized steel plant to a private firm, and the Sudanese government divested itself of its national airline. In the 1990s the trend continues unabated, and World Bank sector and structural adjustment

operations in Benin, Burundi, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Gabon, The Gambia, Ghana, Senegal, Togo, and Zaire contain public enterprise reform components (Galal 1991). Incontinue

1 A firm is typically classified as a parastatal if the government is the principal, though not necessarily the majority, owner (Johns 1980, p. 104; Nafziger 1990, pp. 442–43; World Bank 1983, p. 75). Often the government is most potent authority is to appoint or remove the chief executive officer. A parastatal is, however, quasi-autonomous, in the sense that it has a separate identity from that of the government and civil service and, selection of the Chief Executive Officer aside, has broad scope to make its own administrative decisions. Its function is to produce and sell goods and services, and some sort of profit objective is commonly followed.

Zambia today, there is an increasing call for privatization. However, the process is slow, and significant progress seems some years away.

In most cases, drives for reform in the parastatal sector stem from allegations that parastatal enterprises are performing poorly. This suggests that the return on government expenditure on these enterprises is unacceptably low. Assessing this claim requires a careful understanding of the multiple objectives that governments pursue when creating or taking over a business enterprise. Typically, government intervention in the economy is justified on either equity or efficiency grounds. Arguments based on efficiency maintain that an unregulated economy can fail to allocate resources efficiently. Thus government intervention may improve resource allocation and increase output. Governments also intervene to alter the distribution of income and wealth in the economy. Such redistribution may be seen as advancing a society's notion of economic justice.

Governments may justify parastatals by claiming that they can fulfill both these objectives.² Thus poor financial performance by a parastatal is not enough to demonstrate a suboptimal allocation of the government's resources. We must also consider whether the poor financial returns are compensated for by the provision of certain social goods that promote the government's equity objectives. At the same time, successful financial performance may not demonstrate optimal allocation of government expenditure.

This chapter will examine the importance and role of state-owned enterprises in Zambia. It will address such questions as: Why did the government initiate parastatals? Could the government have achieved its goals in other ways? What problems have the SOEs faced in fulfilling the objectives of their founders, and why did the problems arise? Are parastatals necessarily evils in themselves, or are they representative of good ideas that have been poorly implemented? The next section gives an idea of the importance of the parastatal sector in Zambia and provides some background about its formation. This is followed by a more detailed rationale for the creation of the parastatal sector and an analysis of how these objectives may have conflicted with each other. Next is a case study of two Zambian parastatals, Kafue Textiles and Chilanga Cement, to illustrate some of the points raised, followed by a conclusion.

The Emergence and Importance of Parastatals in Zambia

Approximately a tenth of global GDP can be attributed to parastatal activity. This is roughly the same for both industrial and developing countries taken as a whole (Nellis 1986, p. 5). In Sub-Saharan Africa, Zambia has more parastatals than most other countries. Figure 2–1 shows the number of parastatals for a variety of Sub-Saharan countries, and shows that Zambia, with more than 140 such enterprises, ranks second only to Tanzania.

Because SOEs can differ greatly in size, considering the share of GDP contributed by parastatals is more informative than comparing their sizes. These data are presented in figure 2–2. In 1985 35 percent of Zambian GDP derived from parastatal activity, secondcontinue

2 For example, the corporate mission of the Industrial Development Corporation of Zambia (INDEC), Zambia's industrial parastatal, promises in part to "establish, develop, promote, manage, conduct, guide and assist . . . financially viable industries . . . in Zambia with the object of *spearheading and/or advancing the economic development of the country and Zambian society* (INDECO 1992, emphasis is the authors).

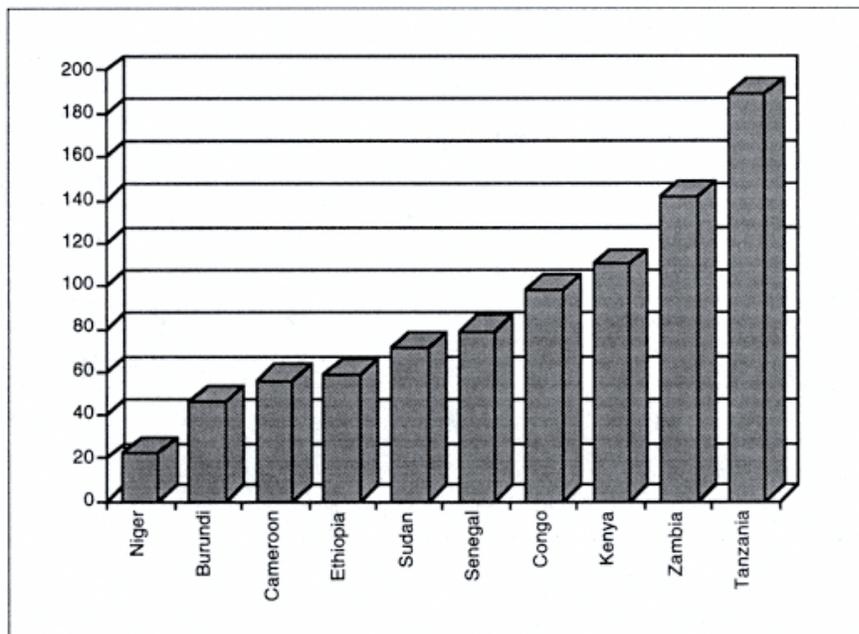


Figure 2–1.
Number of Public Enterprises
(average number from 1986–most recent data available)
Note : Countries were selected based on data availability.
Source : UNDP and World Bank (1992).

only to Sudan, compared to the global average of 10 percent and the less than 5 percent in Burundi, Cameroon, Ethiopia, and Niger.

Finally, a telling statistic about the importance of parastatals in Zambia's economy can be seen from figure 2–3, which shows the growth in wage employment in the public and private sectors for a variety of developing countries. During 1966–80, Zambia's public sector grew at the third fastest rate (7.2 percent) of the countries shown in the figure. However, employment in Zambia's private sector shrank by 6.2 percent. The parastatal sector is Zambia's largest sector, providing employment for about 40 percent of the labor force. In contrast, the private sector is small, about 20 percent of the labor force, is small–scale, and is concentrated mainly in trade.

These numbers underscore the central role that parastatals play in Zambia's economy. We now turn to the historical context surrounding the development of Zambia's parastatal sector.

Zambia was effectively colonized by a British commercial company, the South African Company, at the end of the nineteenth century. Under a royal charter, the South Africa Company administered the territories of modern day Malawi, Zambia, and Zimbabwe, taking charge of exploiting the area's mineral resources. In 1924, administration passed to the British Crown, a situation that continued until 1964, when Zambia became independent.

The Evaluation of Public Expenditure in Africa

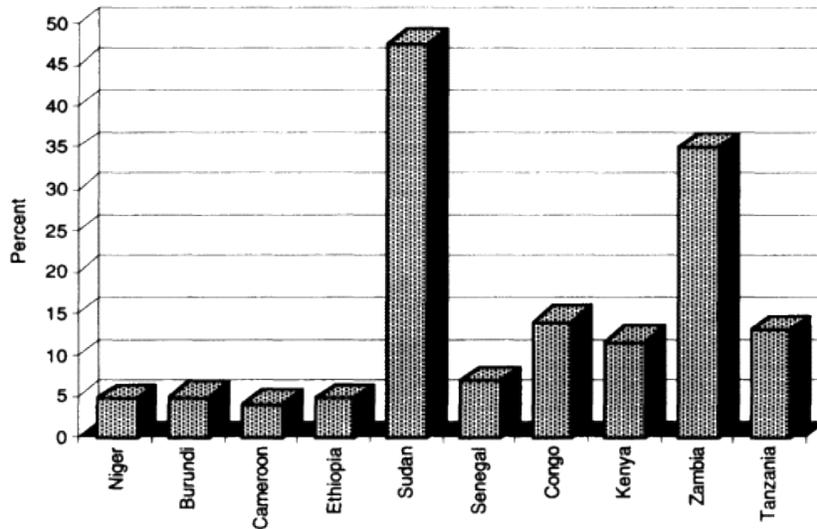


Figure 2-2.

The Contribution of Public Enterprises to Gross Domestic Product, 1985-86

Source : UNDP and World Bank (1992).

dent. During the colonial era Zambia's main industrial focus was its mines, especially the copper industry.

At independence Zambia had a burgeoning economy, spurred by its substantial mineral exports. As one Zambian official put it, "We were born with a copper spoon in our mouths." The economy had the highest per capita income and tax revenues of any Sub-Saharan African economy except South Africa, and this allowed the government to introduce populist programs to provide social services to the population, which was also one of the most urbanized on the continent. The civil service was rapidly expanded. It grew by about 130 percent from independence to 1967 as efforts to provide social services to the nation increased. In industry, the Industrial Development Corporation's initial efforts were to complement the private sector, and parastatals were set up only in those sectors where private enterprise was unwilling to venture.

There was a flip side to the rosy picture of the copper-driven, prosperous independent Zambia. The nation was one of the most open in Africa, in that the vast revenues from copper exports also financed a wide array of imports, especially of manufactures. Domestic production at independence supplied less than one-third of local demand for manufactures, and total manufacturing was a little more than 6 percent of GDP, about half the average of countries with similar per capita incomes (Turok 1979). During the 1960s, consumer demand for imports increased rapidly, fueled by the high incomes generated by the continue

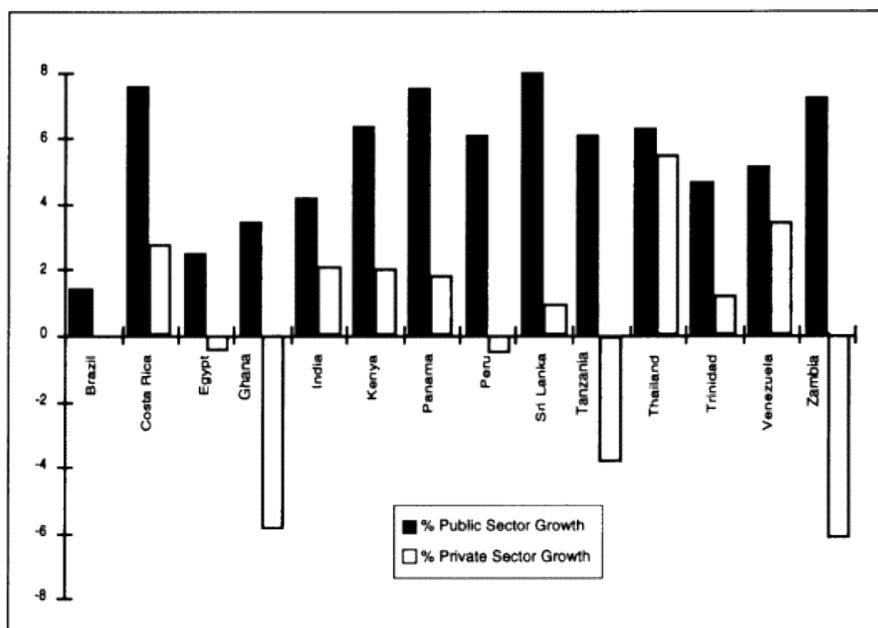


Figure 2–3.
 Growth of Wage Employment in the Public and Private Sectors
 (averages: various years)
 Source : Knight and Sabot (1988).

boom in copper exports. Imports doubled from 1965 to 1970. This was not a problem as long as the strong international market for copper kept on supplying Zambia's coffers with foreign exchange, but became a matter for grave concern once the market deteriorated.

In the early 1960s, private firms, almost all of which were foreign-owned, still dominated Zambia's economy. Zambia had only fourteen parastatals at independence, mainly utilities (four electricity companies, the railways, and the airline) and marketing boards. The movement toward creating a network of parastatals began under the First National Development Plan, which spanned the years 1966 to 1971. The first significant step in this direction was a 1968 speech by President Kenneth Kaunda at Mulungushi Rock, where he asked twenty-six foreign firms—in brewing, construction, distribution, timber, and transport—to sell 51 percent of their shares to the government. Note that this was not nationalization by force. The government provided the firms who complied with this request with generous compensation for the shares (from the plentiful resources it had available from its copper revenues), and usually asked the former owners to continue managing the newly formed parastatals. The government shares were given to a small development bank, the Industrial Development Corporation of Zambia (INDECO), which became one of the chief holding companies for Zambian parastatals involved in domestic trade and manufacturing.

In 1969, Kaunda made another speech at Matero, this time asking the same of the major copper mining companies. Some 51 percent of the shares of the two largest foreign mining companies were transferred to two joint venture mining companies. More takeovers of firms occurred in November 1970 and January 1971. The nationalizations were justified by the accusation that foreign entrepreneurs were exploiting Zambians by not reinvesting their capital in Zambia and by charging high prices for their products. This fit in neatly with the socialistic ideals of Kaunda's "Humanism" philosophy, which stressed group ownership of national assets.

All Zambian parastatals were not, however, the result of takeovers of foreign firms. In 1969 the government announced its intention to build an oil refinery and factories to manufacture iron and steel, agricultural

implements, nitrogen products, and glass. All parastatals were reorganized under the omnibus Zambia Industrial and Mining Corporation (ZIMCO), whose assets were K 713.0 million by 1971, with the industrial parastatals' assets totaling K 167.9 million by early 1972 (Young 1973, p. 59). Total state assets had grown fourfold from the time of Zambian independence to more than K 1,000,000 million (Seidman 1974).

Although the state had initiated some domestic manufacturing through parastatals, domestic demand was still met largely through imports. Copper revenues were still comparatively high in 1973–74, and the mines were supplying 53 percent of the government's total revenues. The government, therefore, thought it a propitious time to take over the full management of the mines. The timing, unfortunately, could not have been worse. International fluctuations of copper prices and negative Zambian terms of trade meant that revenues from copper fell drastically to only 13 percent of revenues in 1975 (Burdette 1988, p. 101). The fall in copper prices was accompanied by devaluation and controls on imports and foreign exchange use, as a result of which imports contracted. This fall in imports had also been exacerbated by the closure of the border with Rhodesia in 1973. As we shall see, the manufacturing parastatal sector was extremely import dependent, and suffered greatly from this contraction. Because of the inability to use foreign exchange receipts to purchase raw materials and spare parts, factory production in 1980 virtually stagnated at the 1973 level. This situation persisted through the 1980s, with the net profits of ZIMCO, the parastatal holding company, being either negative or negligible for the entire 1982 to 1987 period.

The government responded to the resulting calls for reform of the economy in general, and the parastatal sector in particular, with occasional declarations of its intentions to undertake such reforms. Progress on reforms gathered momentum in 1991 with the election of a new government. Under a new program almost all price controls and subsidies were formally eliminated by 1992, the reorganization of ZIMCO was initiated in 1993 (eliminating INDECO as a holding company), and the process of privatizing a small number of parastatals started under the aegis of the Zambia Privatization Agency. The managers of the remaining nonprivatized parastatals were given increased autonomy to manage their enterprises.

The basic organizational framework of the parastatal sector remained much the same until the recent reforms. Parastatal activity in Zambia fell mostly under the control of ZIMCO, with the holdings largely concentrated in the industrial and mining sectors, with smaller numbers in real estate, hotels, trading, transport, finance, energy, and agriculture. The key mining company is Zambia Consolidated Copper Mines, Limited, which is 60.3 percent government owned (see World Bank 1986 for details of ZIMCO's holdings). The continue

key industrial holding company, INDECO Limited, operates a variety of enterprises that produce everything from beer to Fiat cars. Figures 2–4 and 2–5 show the importance of these two companies in the parastatal sector. Figure 2–4 shows the distribution of parastatals (for the ZIMCO group) across sectors. As is evident, INDECO and Zambia Consolidated Copper Mines companies (the last two categories) number nearly twice as many as all the others combined. More significant, figure 2–5, which gives the distribution by sales revenue among sectors in the ZIMCO group, illustrates the dominance of the mining sector.

Reasons for the Formation of Parastatals in Zambia

Given the background described, we will now examine in detail the reasons for the formation of Zambian parastatals. The parastatals that exist in Zambia today can be broadly divided into three groups according to their origin: the fourteen companies that existed in Northern Rhodesia before it became independent Zambia; the parastatals created by the government of Zambia, primarily in the 1960s and 1970s; and the parastatals created through nationalizations of existing private firms during the Mulungushi reforms.

Economic Theory and Parastatals

There are a multitude of rationales for the formation of parastatals, and each parastatal usually has more than one such reason behind its creation. The reasons can be grouped under four categories: market failures in general, the promotion of social objectives (which can be thought of as a correction for a specific type of market failure), revenue generation, and nationalistic objectives. The first most often relates to efficiency, while the others are often associated with equity considerations as well.

Of the three groups of parastatals described above, we shall see that a combination of the last three reasons played the major role in creating the last group of nationalized parastatals, while all the factors may have played a role in the decision to create new parastatal companies in Zambia.

Market Failures.

As Bruton and Hill (chapter 1) point out, market failures are a fundamental reason for the government to intervene in the economy. The Zambian case is no exception, because the government opted to supply private goods when, in its opinion, market forces would not have been able to provide goods and services efficiently, or would have produced more or less than would be socially optimal. In Zambia, two cases are important: that of natural monopolies, which are common to most countries, and of externalities. The latter were extremely important in Zambia because of the economy's low informational and infrastructural capabilities.

Natural monopolies arise for products that can be produced at least cost (that is, efficiently) by a single producer than by any combination of firms. They are often run by governments, because a single producer will exercise market power, charging consumers more than cost and reducing demand below optimal levels. The oldest of enterprises thought to be natural monopolies all over the world are postal services, and the commonest now are public utilities, like the Zambia Electric Supply Corporation. Four electricity companies—the Central Electricity Corporation, the Central African Power Corporation, the Northern Electricity Supply Corporation, and the Victoria Falls Electricity Board—were some of the first Zambian parastatals, and date back to before independence. National and transnational transport also lends itself to natural monopolies. Zambian Railways and Zambiancontinue

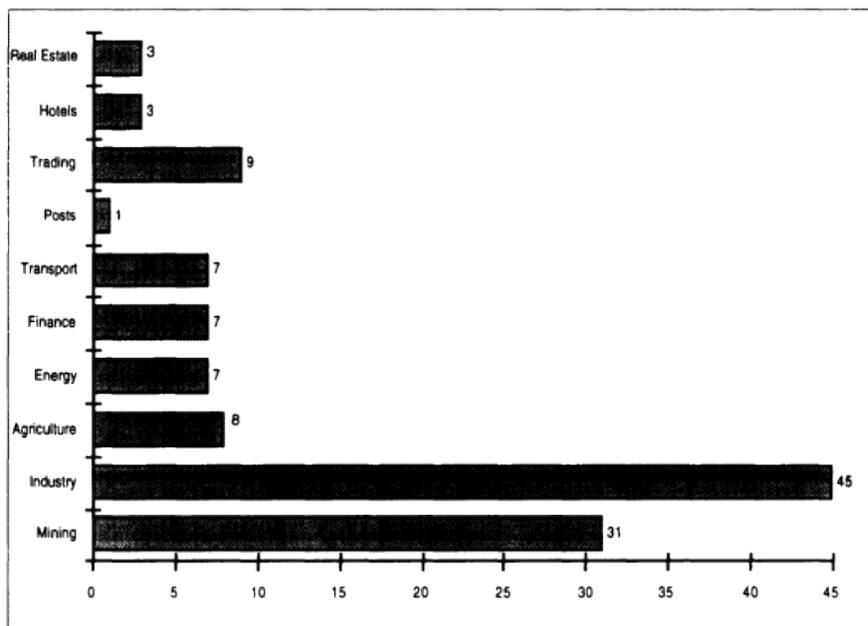


Figure 2-4.
 Number of Parastatals in Zambia by Sector, ZIMCO Group, 1986
 Source : World Bank (1986).

Airways were also parastatals set up for these reasons long before independence. The logic is, however, often stretched too far. The United Bus Company of Zambia was formed after independence as a parastatal to provide road transport both within and between Zambian cities. However, several successful private bus lines also ply some of the same routes. The concept of natural monopolies was also used to set up industrial monopolies, like Nitrogen Chemicals of Zambia, which makes fertilizers and explosives. Kaunda wrote in 1968: "In our industrial development we have no choice but to make use of monopolies . . . In relation to some products it simply cannot sustain more than one factory" (quoted in Ramanadham 1991, p. 31).

Of course, the government does not have to participate as actively in the production or supply of services as it does in Zambia. An alternative is to regulate the private monopoly, as is done for private power and phone companies in various parts of the world.

Other types of market failures include a combination of inadequate information, externalities, and private risk avoidance. These reasons also played a role in the Zambian government's decision to create parastatals. In Zambia, sectors exist where the market fails in the sense that the private sector would not or could not provide certain goods. The Agricultural Finance Company, Limited, which provides farming credit, is a classic case in point. The market's failure to provide credit (at least at a low enough rate) to rural farmers may be because of a lack of information or high degrees of uncertainty about the returns from farming. Another explanation is the unwillingness of the private investor to take into account

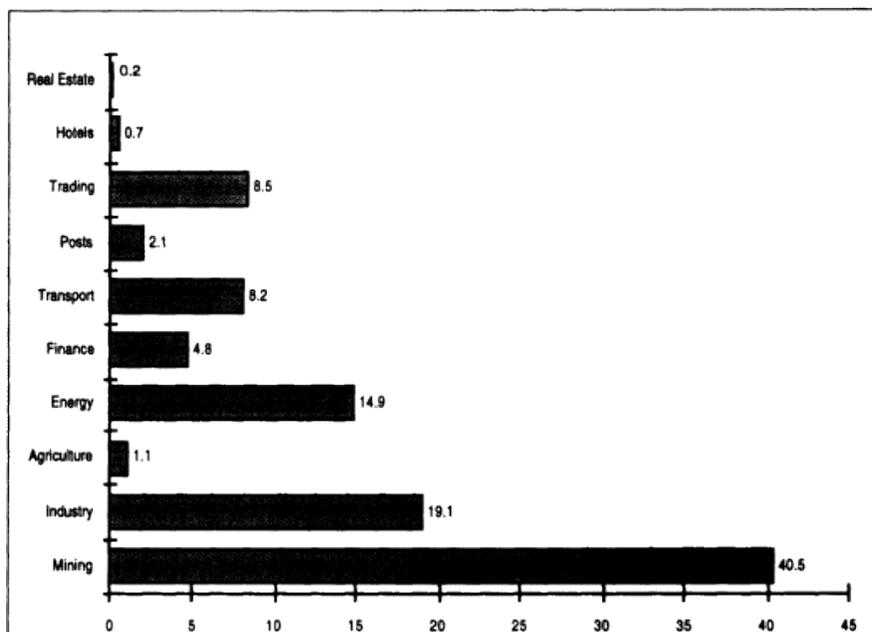


Figure 2-5.
 ZIMCO Group Sales by Sector, 1986
 Source : World Bank (1986).

account the social benefits or positive externality (as opposed to the private returns) when computing the profitability of setting up an enterprise. Thus, private corporations, which looked strictly at the bottom line, did not set up enterprises that could provide a great deal of social benefit. Parastatals eventually filled some of the

gaps by expanding into areas where the private sector was loath to venture. These areas were often considered crucial to economic development by the Zambian government, especially when they provided intermediate goods, like Zambia Steel and Building Supplies, which makes inputs for the construction industry.

In Zambia, private investment may also be dampened by the extreme risk aversion of the domestic entrepreneurial class, who require a fairly low risk to return ratio to be persuaded to set up a company. This problem was compounded by the fact that at independence in 1964, the small class of Zambian business people did not have much capital to set up businesses that could compete with existing foreign companies. Once again, parastatals could have had a big role to play by sharing the risks in joint ventures. In practice, although about a quarter of Zambian parastatals are joint ventures, the partners are usually foreign companies and corporations. In 1986, for example, Covilink and Cobar of the United Kingdom held 46 percent of Kafironda, Limited; Labatt's of Canada had 20 percent of Zambia Breweries; and Energo Projects of Yugoslavia held 35 percent of Zambia Engineering and Contracting Company. There are some exceptions, such as the Zambian National Commercial Bank, 0.2 per-soft

cent of whose shares are held by various Zambians (World Bank 1986, Statistical Appendix table 3).

Promoting Social Objectives.

If the government or society believes that the welfare of society is not being served well by the operation of private profit-maximizing firms—a particular type of market failure as Bruton and Hill (chapter 1) have noted—the government may step in to fill the breach. In Zambia, four explicit ways in which parastatals were supposed to perform better than private firms in promoting social goals were in providing subsidized pricing and provision of public goods to the poor, training and technology transfers, rural development, and employment creation.

As Zambia is a poor country—even in 1987, the per capita gross national product (GNP) of the lowest 40 percent of its households was only US\$ 70 (UNDP and World Bank 1992, p. 161)—the government believed that one way of contributing to the well-being of the poor was for parastatals to supply them with subsidized social goods. This, the reasoning went, would allow the poor to obtain essentials at prices below those charged by profit-maximizing private firms. Moreover, some low-cost inputs were also deemed necessary for Zambia's industrial and infrastructural development. Why not, instead, regulate the prices of private manufacturers? The government thought that this would be unfeasible, because the low profit margins resulting from the regulated prices would drive them out of the market.

As a consequence of this decision, the government declared that twenty-three items were essential and controlled their prices. The nationalized milling parastatals (such as INDECO Milling, the National Milling Company, and Ghirardi Milling) provided mealie meal, the staple food in Zambia, at rock-bottom prices to consumers. Price controls also lowered the supply price for sugar from the Zambia Sugar Company and cooking oil from Refined Oil Products. Subsidies were also given for cloth from Kafue Textiles. Other subsidies were in effect for cement from Chilanga Cement, Limited, and electricity from the Zambia Electric Supply Corporation.

In 1993, under pressure from reformers, electricity prices rose, though not in real terms. Mealie meal subsidies, however, are more difficult to remove. Prices went up significantly during 1991–92 (in December 1991, the price rose from K 215 for a 25 –kilogram bag to K 600, and by September 1992 it had risen to K 1,773), but the increase was met with great opposition from the populace and some officials. The largest increase has been in the price of salt, which increased more than 1,000 percent in nominal terms between 1990 and 1991, and more than 5,400 percent between 1988 and 1991, while inflation in this period was averaging around 100 percent a year (CSO 1992a). In 1992, while the process of instituting more realistic prices was in full swing, the director general of ZIMCO was quoted as ordering INDECO to lower product prices "to cushion the suffering of people in

Zambia" (quoted in World Bank 1992, pp. 105–106, from an article in the *Zambia Sunday Times*).

Training and skill transfers were crucial for Zambia, which at independence in 1964 had only 960 Africans with school certificates and fewer than 100 college graduates (Ndulo 1978, p. 50). By the end of the 1960s, the number of Zambians being trained in higher–skill jobs in the foreign–owned private sector was low. Instead, these companies were employing expatriate workers for jobs requiring technical expertise and using the indigenous labor force only for lower–skill operations. The lack was especially evident at the managerial level, because the administration of the foreign firms was almost exclusively expatriate. It seemed obvious that the only way to "Zambianize" the higher echelons of manufacturing companies was by transferring ownership to Zambians.

Because continue

neither Zambian individuals nor groups had sufficient capital to purchase the larger foreign–owned firms, the government decided that nationalization would also achieve this objective. The mines, for example, were nationalized with the explicit hope that a core group of experienced local managers would be allowed to develop over time. The process of Zambianization between 1967 and 1974 achieved a sixfold increase in the number of Zambians in top civil service and parastatal jobs in the country (Ndulo 1978).

Parastatals were also intended to promote the dissemination and transfer of technology. The foreign–owned firms that dominated Zambian industry in the 1960s were accused of transferring very little technology and, perhaps more important, were confined to a narrow range of activities. In accordance with the need for more advanced technology, the government set up parastatals, often as joint ventures with foreign collaborators, in a wide range of activities. For example, even though Zambia is one of the world's leading producers of copper, most of the metal was exported. Metal Fabricators of Zambia was formed with the specific aim of transferring metal fabricating technology to Zambia, with the technical collaboration of Granges Metallverken International Corporation of the United States. Similarly, British Oxygen owned a large share in Zambia Oxygen, Limited, as did Fiat in Livingstone Motor Assemblers, Limited.

Zambia has become one of the most urbanized nations in Africa. The population living in urban areas increased from 17 percent in 1960 to 50 percent in 1990, and the percentage of the labor force in agriculture declined sharply from 79.0 percent in 1965 to 37.9 percent in 1986–89 (UNDP and World Bank 1992). One reason for this is the extremely high rural–urban gap in terms of services, such as water and sanitation, which are often more easily provided by large industrial employers. As the lack of infrastructure meant that most firms preferred to set up plants either in Lusaka or in the copper belt, one way to achieve rural development was for the government to set up manufacturing plants in areas away from population centers. As figure 2–6 shows, INDECO manufacturing units are dispersed to some extent outside the major railway line connecting Livingstone in the south to Lusaka and the copper belt in the northwest. A major effort in this direction was the setting up of Luangwa Industries, which manufactures bicycles, at Chipata in the northeast. In addition, units of INDECO Milling, which manufactures the staple, mealie meal, and National Breweries, which manufactures the opaque beer most consumed by Zambians, are scattered all over the country.

Another way the government is targeting rural development is through the parastatal Lima Bank, mandated to finance agricultural and rural economic activity. The riskiness of agricultural loans in Zambia is so high that private commercial banks do not venture into this area. Unfortunately, the Lima Bank has not been able to overcome this problem, and has a mostly nonperforming loan portfolio and channels budgetary allocations directly to its borrowers.

Obviously more direct ways are available for the government to provide services to the rural areas than by setting up parastatals. Agricultural activity could be funded with direct subsidies instead of with grants disguised as loans and channeled through a parastatal. The government could also have chosen to attract private industry by improving the infrastructure and providing tax incentives, and improved the living conditions of the rural poor

directly by encouraging agriculture and providing access to social services. Efforts in this last area are still sadly deficient. In 1987–90, 43 percent of the rural population had access to water and 34 percent to sanitation, as compared to 76 percent and 77 percent, respectively, for urban Zambians (UNDP and World Bank 1992).break

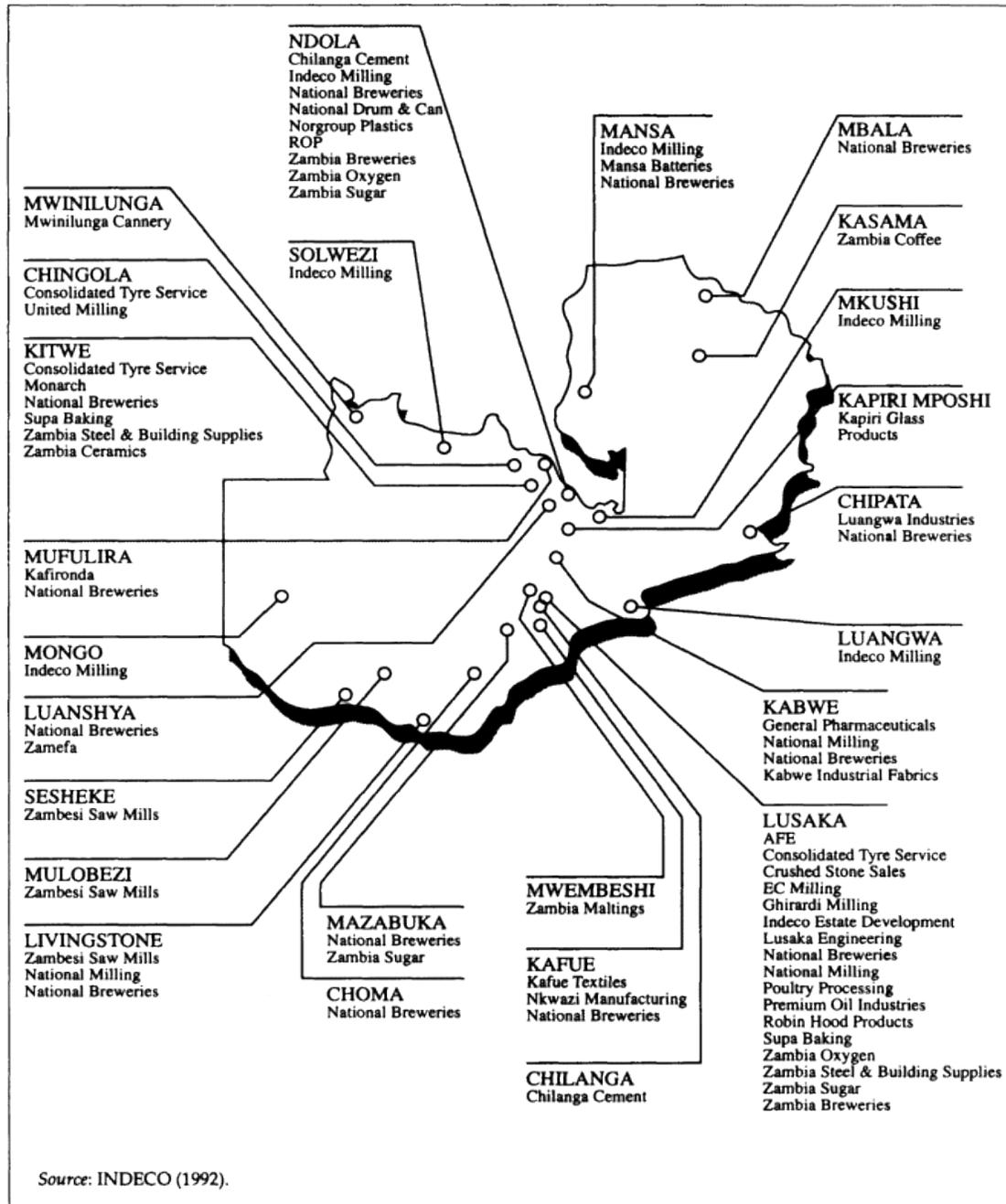


Figure 2–6.
Production Facilities Around Zambia

Finally, a dominant factor behind the formation of many parastatals in Zambia has been the need to provide and promote employment. The question that must be asked again, of course, is why the *government* needs to generate employment and does not leave it to the market. In Zambia, one answer in the 1960s seemed to be the slow rate of

The Evaluation of Public Expenditure in Africa

generation of well-paying jobs by the foreign-owned private sector, especially for Zambian nationals. Even then, the high rate of migration from rural areas was exacerbated by the better employment opportunities offered by the parastatals in the 1970s, and this led in turn to the need to increase employment. During the economic crises of the 1970s and 1980s, parastatals reacted by increasing employment beyond the levels required for efficient production, and thus did provide employment beyond what the private sector would have been able to. This objective was especially transparent when parastatals were formed by taking over ailing private firms in nonessential sectors to preserve jobs.

Mobilizing Revenue and Investible Capital.

One of ZIMCO's stated objectives was to provide the Zambian state with revenue (Turok 1979, p. 77). This is a significant rationale for the formation of parastatals in Zambia, where the need to generate revenue and to channel it toward socially identified goals is severe. The nationalized copper mines have traditionally provided Zambia with a large part of its revenues. For instance, from independence to 1969, copper provided more than 60 percent of government revenues. Although this share fell to around 19 percent of revenues in 1972, the copper mines recovered to provide 52 percent of government revenues in 1974 (Aron 1992). This allowed the government to expand social programs without imposing additional income or sales taxes. Unfortunately, mining revenue fell sharply thereafter, falling to 2.5 percent of revenues in 1976 and remaining low until the early 1980s. Revenues have yet to recover to previous levels.

The government believed that the foreign owners of corporations in Zambia, especially the mining companies, were not reinvesting enough capital into the Zambian economy. Zambia's open economy allowed free repatriation of profits, and the weak public administration meant that evading payment of the full amount of taxes was easy. This last factor was paramount in the government's decision that more revenues could be raised if the state administered the companies directly, as this would abolish their incentives to hide their profits and thus lower their tax burden. However, even had the after tax profits been retained in Zambia, the government thought that it could use them in a more socially advantageous manner, assuming that private profits were likely to be used for some form of consumption rather than for socially productive investment.

Nationalistic Objectives.

Although all of the above factors motivated the formation of the Zambian parastatal sector, the most proximate element was the socialistic atmosphere that prevailed in Zambia in the 1960s, which emphasized the oppressive nature of Western-style capitalism and called for group ownership of productive assets. Kaunda's principle of Humanism, which inveighed against the exploitation of people by other people, was the cornerstone of Zambia's nationalization exercise.

A rallying force was the accusation that foreign owners were repatriating their profits in huge amounts rather than reinvesting them in Zambia. The bottom line, however, seems to have been the state's desire to control key decisions, such as employment, pricing, and investment, instead of letting these be determined by those who, it argued, had little stake in Zambia's future.

This feeling was heightened after Zambia's confrontation with white-ruled Rhodesia in the mid-1960s, which may have driven home a feeling that if Zambia relied too much on the outside world it faced a long-term danger of economic vulnerability.

Efficiency Versus Equity in Zambian Parastatals

Once created, the state-owned enterprise sector inevitably brought with it the ability to use the enterprises to provide social goods directly, in addition to the indirect provision of these goods through the government budget.

The Evaluation of Public Expenditure in Africa

For example, ZIMCO chairman's statement for 1970–71 stated that Zambian SOEs should show a greater consideration for social benefit than would normally apply to privately owned companies. Yet, it went on to say that "they . . . must operate in a business–like manner" (quoted in Harvey 1985, p. 126).

The direct provision of social goods—greater employment, wages, and benefits and the development of backward areas—had its benefits, but it also brought with it significant costs. These costs related to efficiency, both narrowly, in that the firms could not be run as profitably as when unencumbered by multiple objectives, and broadly, because some of the policies that sustained this parastatal–based provision of social goods hurt the economy as a whole.

The question is whether the loss in efficiency was compensated for by the increased provision of social goods. This is, in some ways, the standard economic conflict between equity and efficiency. In Zambia, it is a difficult question to answer with any degree of certainty, because most of the parastatals continued to be profitable, unlike, say, the situation in neighboring Tanzania, where the efficiency loss clearly outweighed any equity gains. As we shall see, however, Zambia too suffered significant efficiency losses, especially to the economy as a whole. Over time, the impact of these losses on the economy may have worsened social welfare more than any gains that the SOEs may have achieved. Moreover, some of the directly provided social goods ended up being either provided at a suboptimal level or to a narrow group rather than to society in general.

Revenue Generation.

We begin by looking at the contribution of the Zambian parastatals to government revenues, which enable the government to provide social goods. Overall, unlike the SOEs in other developing countries, most Zambian SOEs (with the notable exception of the state–run airline and the chemicals factory) have succeeded in contributing large sums to the Zambian treasury during most of the last two decades. Table 2–1 shows the contribution of various sectors to the government exchequer in recent years in the form of customs duties and excise, sales, and income taxes (the last making up about 50 percent of all revenues).

The largest contributor by far was the mining parastatal, Zambia Consolidated Copper Mines, which had significant cash flows, tax payments, and profits after the mid–1980s (see figure 2–7). Note, however, that the parastatal is in the unique situation of being a monopoly commodity producer, and has its direct social goods provision virtually limited to providing excellent pay and benefits to its workers.

Looking at INDECO is perhaps more instructive, as INDECO is the holding company for industrial parastatals, most of which have significant noneconomic objectives. INDECO's profits have risen steadily, from K 403 million in 1988 to K 3,472 million in 1992 (INDECO 1992). The *net* revenue flows to the government of Zambia from INDECO, how–soft

Table 2–1 . ZIMCO Revenue Flows to the Zambian Government, 1990–91 and 1991–92

Sector	Forecast , 1990–91		Budget, 1991–92	
	Millions of <i>kwacha</i>	Percent	Millions of <i>kwacha</i>	Percent
Mining (Zambia Consolidated Copper Mines)	10,209	53	16,232	47
Industry (INDECO)	4,015	21	9,515	27

The Evaluation of Public Expenditure in Africa

Energy	3,085	16	5,576	16
Others	1,988	10	3,334	10
Total	19,297	100	34,657	100

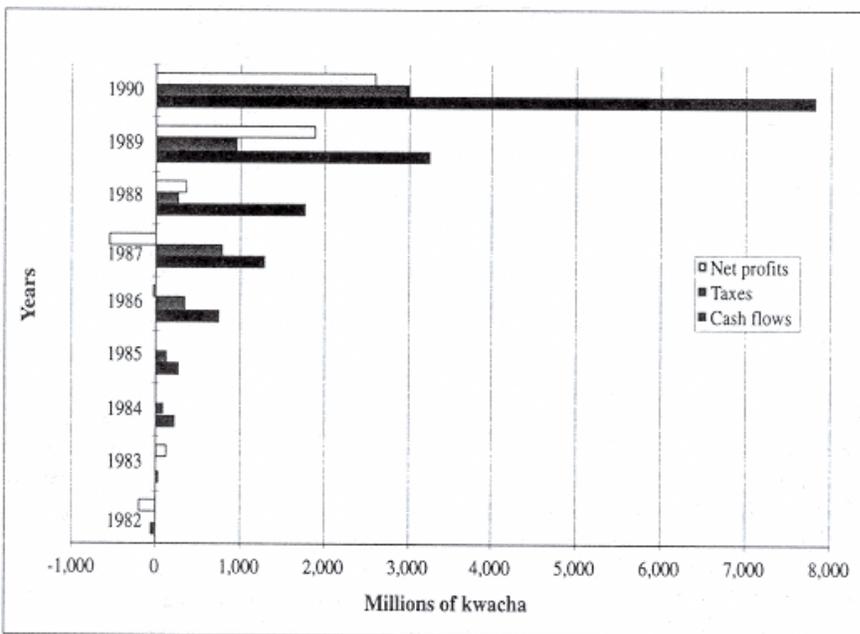
Source : ZIMCO corporate budget 1991–92.

ever, were lower than they seem. Although taxes and duties accounted for K 9,515 million in the 1991–92 budget, offsetting flows reduced INDECO's net contribution to just K 3,214 million. A major reason for this was the large subsidy the government gave to the SOEs to compensate them for price controls on mealie meal and fertilizers, which was budgeted as K 4,300 million for 1991–92. Other subsidies included interest-free loans (an implicit subsidy, at prevailing rates, of K 613 million) and below target dividends paid to the government (as the principal shareholder of the SOEs), which amounted to a further K 1,330 million (Hansen 1991). Companies such as Nitrogen Chemicals have survived only with the help of substantial subsidies in the form of interest-free loans from foreign donors (US\$ 10.0 million from the U.S. Agency for International Development in 1983, and a further ECU 15.5 million from the European Economic Community in 1989). NCZ also had a loan of DM 68 million from a German bank that was written off in the late 1980s.

Within INDECO, a few firms contributed to most of the profits. Zambia Breweries was the single largest contributor, accounting for more than K 1,700 million, about 43 percent of all INDECO contributions in 1990–91. This was offset by substantial losses by individual firms. Egregious examples of this were Nitrogen Chemicals, Mpongwe Development Company (an agricultural parastatal), and Zecco, Limited (in real estate), which between 1986 and 1990 accumulated before tax losses of K 27.6 million, K 60.9 million, and K 30.1 million, respectively. For the state-owned enterprise sector as a whole, the largest loss makers were the national railways and airline, whose respective losses during the same period were K 436.4 million and K 341.9 million (Price Waterhouse data).

However, if revenue generation is considered to be the sole objective, Zambia's parastatal sector could have been considered a moderate success, especially when compared to SOEs in other developing countries. This is especially true if we accept the premise that traditional taxation of private enterprises would have yielded less revenues because of large-scale evasion. This is borne out by the widely acknowledged fact that many private companies in Zambia routinely keep two sets of accounts, one for themselves and the other for the tax authorities.

The revenues contributed to the government coffers, however, were undeniably lower than they could have been had the SOEs been run efficiently. In some cases, revenues were continue



Source: Aron (1992).

Figure 2-7.
ZIMCO's Performance, 1982-90
Source : Aron (1992).

assured not because of efficient operation, but because nationalization and consolidation of private firms had created effective monopolies. In cement, beer, sugar, fertilizers, grain milling, cooking oil, soap and detergents, and petroleum refining single parastatals are in charge of both production and marketing. The resulting profits (especially for the beer and sugar companies) are thus unsurprising, but the significant losses by Nitrogen Chemicals, the fertilizer producer, points to the innate loss of efficiency that pursuing multiple objectives has conferred on it.

Even in markets that have some competition, especially from imports, SOEs have been aided by preferential allocations of foreign exchange. While imported raw materials for government firms could be at official "first window" exchange rates, importers of competing final goods have to use the higher market exchange rate, which was about twice the official one—K 90 versus K 45—in early 1991. Nevertheless, even on such unfavorable terms, imports of items like beer, fertilizers, and some food products do occur.

Social Objectives.

Revenue flows from state-owned enterprises to the government, as mentioned earlier, allowed the provision of generous social services. However, these parastatals were also used to provide social goods directly to Zambians, and such provision of goods was among the underlying factors in the decision to create a state-owned enterprise sector. State-owned enterprises were supposed to provide higher employment and more training of labor, Zambianize formal sector jobs, provide higher wages and more continue

benefits to workers, develop rural areas, provide consumers with inexpensive necessities, and promote indigenous technology and import substitution. We look at each of these areas in the following sections.

While parastatals have achieved partial successes in most of these areas, the benefits and the beneficiaries have been limited, and a plethora of ill-defined objectives often served to conceal and obscure how poorly some

parastatals were being run. To make things worse, in some cases policy guidelines simply do not exist, in others policies are contradictory, and in still others guidelines exist only on paper and issues are dealt with quite differently in practice (World Bank 1977, p. 41). As a result, the general belief seems to be that "the non-financial performance of Zambia's state-owned enterprises had always been even worse than their financial performance" (quoted in Ramanadhan 1991, p. 437).

Employment.

As table 2-2 demonstrates, employment in the parastatal sector jumped tenfold between the late 1960s (before the Mulungushi reforms) and the mid-1970s, and the private sector shrank concomitantly; however, no significant growth in total formal sector employment took place during this time. By 1992, after significant reforms in the Zambian economy, formal sector employment increased substantially, with the private sector being the chief employment generator. However, the sheer importance of the SOEs in wage employment until the 1990s can be seen in figure 2-8, which shows the share of employment in certain markets accounted for by ZIMCO companies in 1986. In both mining and transportation and communications, most workers are employed by parastatal firms. Most workers in manufacturing are also employed by INDECO firms, which are part of ZIMCO.

Table 2-2 . Employment in the Parastatal and Private Formal Sectors, Selected Years

(number of people)

<i>Year</i>	<i>Parastatals</i>	<i>Private sector</i>
1966	14,075	229,720
1967	15,754	230,960
1968	14,799	234,380
1975	120,150	123,490
1976	112,880	101,950
1978	137,050	94,120
1979	144,520	92,490
1980	144,190	93,830
1992	138,165	184,542

Source : CSO (1992b).

The generation and preservation of employment has traditionally been an objective of paramount importance to parastatals. For example, between 1975 and 1977, during the beginnings of the economic crisis, the number of employees in private industry plummeted by almost 15 percent, while the number of employees in the Zambian parastatals, who were continue

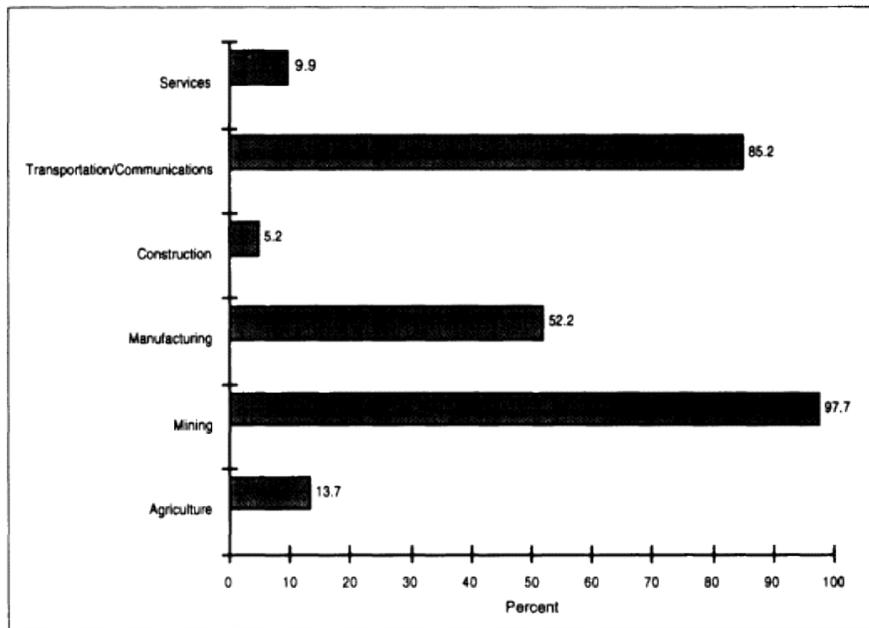


Figure 2–8.
ZIMCO Group Employment Shares by Sector, 1986
Source : World Bank (1986).

protected from the consequences of economic Darwinism, remained constant (Ayub and Hegstad 1987). Productivity fell drastically, with earnings per employee in Zambian manufacturing (which consisted almost entirely of parastatal companies) decreasing at the rate of 3.2 percent per year during the 1970s (World Bank 1991). The inability to lay off workers during a recession essentially meant that the state was running a jobs program through the SOEs, which were losing revenue because of the higher wage bill.

The parastatal sector, especially the manufacturing industries, was moreover, not generating demand for a significant number of jobs because of its high capital costs per laborer. In 1972, not a single sector met the government's own target capital–labor ratio of K 1,500 per worker. Most industries used between three to eleven times that amount per worker, encouraged by an overvalued exchange rate, which made imports of capital equipment relatively inexpensive and made domestic capital unduly cheap by investment tax credits, liberal depreciation allowances, and tariff exemption on capital goods. Examples of capital misallocation abound. One of the most obvious instances was the building of two automated brick factories in an economy where brick making at low technological levels employed substantial amounts of unskilled labor. Again, while textile manufacturing is generally a labor–intensive industry, the state–owned Kafue Textiles used three times the capital–labor ratio as the Friendship Textile mill in neighboring Tanzania (ILO 1975, p. 115).break

One area in which parastatals have been important to the economy is in providing training to their employees. Most parastatals have funds earmarked for training. This training is usually done domestically or in the parastatal itself. Occasionally workers are sent abroad for training, especially, as in the case of Chilanga Cement, to the companies that manufactured the imported technology. Training is widely recognized to be a crucial benefit of parastatals given that private companies in Zambia spend little or nothing on training their workers. Instead, they choose to free ride on the parastatals by luring better–trained state enterprise workers away by offering them higher wages.

Zambianization.

The promotion of indigenous technology and a domestic managerial class was a key objective of creating the state-owned enterprise sector. As table 2-3 shows, this Zambianization of industry, especially of administration, has been successful, perhaps much more so than if the industry had remained in private hands.

Table 2-3 . African or Zambian versus Expatriate Employment in the Parastatal Sector, 1966-68 and 1978-80

(number of employees)

<i>Year</i>	<i>Parastatals</i>	<i>Private sector</i>
1966	11,830	2,245
1967	13,920	1,834
1968	12,830	1,969
1978	127,710	9,340
1979	136,220	8,300
1980	136,420	7,700

Note : The data refer to Africans in 1966-68 and Zambians in 1978-80.

Source : CSO (1992b).

The shedding of expatriates in the mining sector (the ratio of Zambian to expatriate workers in Zambian Consolidated Copper Mines increased from 22:1 in 1980-81 to 37:1 by 1986-87) was aided by the fact that their higher remuneration meant greater cost-cutting per layoff. Some analysts, however, have pointed out the shortcomings of this process. For example, according to Aron (1992, p. 28): "An apparently universal opinion on the Copperbelt is that the process of Zambianization . . . occurred too rapidly and without adequate training programs," and led to a decline in the quality of the labor force. Once again, we see that the pursuit of social objectives may have lowered efficiency in some of these companies.

Wages and Benefits.

SOEs provide high wages and benefits to their workers. As table 2-4 demonstrates, parastatal workers have consistently earned more than workers in the private sector. This was true even in the 1960s, when a large proportion of industry, including the mines, was private, and is true today, even with the new resurgence of private industry. The premium has actually widened considerably, from a low of 12 percent more than the private wage in 1968 to 170 percent in 1992.

**Table 2–4 . Average Earnings of African and
Zambian Employees in the Parastatal and Private
Formal Sectors
(current kwacha)**

<i>Year</i>	<i>Parastatals</i>	<i>Private sector</i>
1966	900	482
1967	864	676
1968	937	838
1975	1,381	899
1978	2,106	1,681
1979	2,568	1,875
1980	2,774	2,082
1983 a	3,264	2,832
1985 a	3,900	2,376
1991	12,246	5,071
1992	13,956	5,172

Note : The data refer to Africans in 1966–68 and
Zambians from 1975.

a. Lusaka only. In 1985 the private sector includes
informal sector.

Source : CSO (1992b); Urban Labor Force Survey
1985; Manpower Survey 1983.

The increase in wages has been achieved primarily by driving state–owned enterprise wages above those dictated by the market, which has contributed to a very large wage bill, and further affected the profitability of SOEs (see Banerji and Sabot 1994). The wage bill was also inflated by the extremely generous fringe benefits and allowances that parastatal workers in Zambia enjoy. The most important benefit is housing, which, given the shortage of housing in Zambia, and thus the high shadow rent, can sometimes amount to half of an employee's gross earnings. Most state–owned enterprise employees (about three–quarters in 1986) receive housing benefits, while most of those employed in smaller private companies do not. Other benefits, such as the provision of paid leave and funeral costs on the deaths of family members, contribute to giving parastatal workers, especially those at the lower end of the salary scale, a definite advantage over their private sector compatriots.

One facet of the parastatal wage structure is the presence of considerable wage compression. Figure 2–9 sets out these earnings differentials. Professionals, administrators, and clerical workers have higher earnings in the private sector, while earnings for less skilled workers are noticeably greater in the state–owned enterprise sector. This is consistent with the notion that SOEs are helping to reduce income inequality among their employees; however, this effect is limited to formal sector parastatal employees and comes at great cost. As a result of this wage compression, the SOEs have been steadily losing their best management, supervisory, and professional staff to the private sector, leading once again to large efficiency losses.

Thus, although the SOEs have been effective in raising their employees' wages and earnings, they have achieved this at the cost of efficiency and profitability. The benefits continue

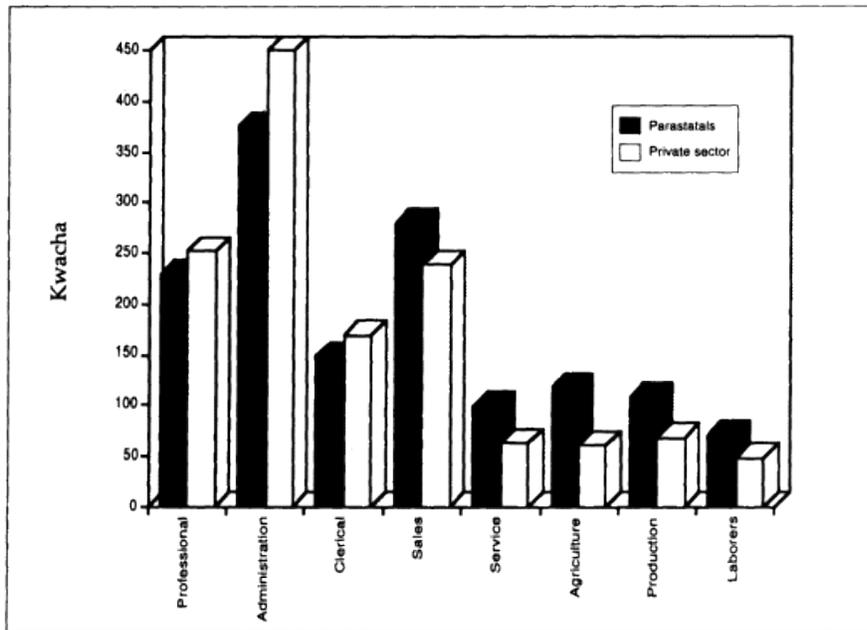


Figure 2-9.
Average Earnings by Occupation and Employer Group, 1983
Source : World Bank (1986).

have been confined to those insiders who are fortunate enough to have parastatal jobs. Because of the lack of employment growth in the state-owned enterprise sector, this benefit has been a transfer to these insiders from the nonparastatal "outsider" workers in the economy, who have to bear the burden of the SOEs' lost efficiency.

Rural Development.

Despite efforts to generate employment in outlying provinces, fewer than 5 percent of formal sector jobs are in the five provinces not on the "line-of-rail." The only plants that have been successful in benefiting the locality have been those that directly use local agricultural inputs, such as the maize mills and Kafue Textiles. By contrast, factories such as the Mwinilunga pineapple cannery and the Tika iron and steel plant have been unprofitable, both financially and in a broader social sense, being unable to benefit more than a narrow section of the local populace. Again, the Rural Development Corporation pursued projects that were not commercially viable to implement the government's agricultural expansion policy, but without any notable improvement in agriculture (RUDECO 1976, p. 27).

Provision of Subsidized Consumer Necessities.

Although some parastatals, especially the ones based on agriculture, have considered the provision of subsidized consumer necessities as a principal objective, many SOEs are involved instead in the production of consumer goods, whose demand is determined mostly by the tiny Zambian elite, about 10 percent of the population (Seidman 1974). The exceptions are the beer and continue

cigarette industries, which cater to the poorer sections of the population, and which are very profitable and large contributors to the government treasury. At independence they were privately owned and produced about a third of total manufacturing value added. These industries were eventually absorbed into the parastatal sector, and manufacturing increased substantially. However, one cannot easily argue that government production of these goods is substantially increasing the welfare of the poorest of the poor in any socially relevant sense. The overall

bias of the production system is generally toward the elite, and the most visible illustration of this is the 70 percent government-owned car assembly plant at Livingstone, which produces Fiats costing several times the average Zambian's annual income.

Often policies intended to achieve social objectives have had unanticipated results, benefiting very different groups from the working poor, toward which many of the policies have ostensibly been aimed. On the one hand, low food prices, intended to enable the urban poor to survive, may have kept wages in the private sector low, thus benefiting business people instead of workers. On the other hand, price controls in the agriculture-based industries resulted in large losses and low morale, thereby significantly affecting the productivity of the state-owned enterprise. The low prices eventually ended up benefiting large industrial users, wholesalers, and the urban middle class. Note that even to the extent that price controls have helped the poor, they can be thought to have hindered revenue generation, reinvestment in the economy, and growth through their hugely deleterious effect on Zambian agriculture.

Promoting Indigenous Technology and Self-Reliance.

The SOEs were supposed to increase Zambia's ability to use indigenous technology more productively and to make Zambia less dependent on imports by producing more products in the country. The government never seriously attempted to meet the former objective as cheap capital and the overvalued exchange rate allowed wholesale import of foreign capital-intensive technology. SOEs like the brick making firm are instrumental in supplanting goods made with local technology with inappropriate goods suitable for economies with less labor. When setting up Metal Fabricators of Zambia, a successful firm that uses Swedish technology, the authorities conceded that the national objective of developing local technological capabilities could not be followed (Mphaisha 1988).

Self-sufficiency was another objective that the creation of the parastatals was supposed to have achieved in Zambia, that is, freedom from foreign dependence. Two sets of policies have effectively undermined this objective. First, an open import policy combined with the overvalued exchange rate made imports artificially cheaper and freely available, so that less viable domestic industries had to struggle to cope with the pressures of foreign competition. Through the 1970s, foreign automobiles flooded the Zambian roads while the domestically produced Fiats lacked customers, and "foreign mail order catalogues are standard reading matter in Zambian offices" (ILO 1975, p. 115). Moreover, because technology was almost all imported, its very nature resulted in heavy foreign exchange dependence for imported inputs (partly because the declining Zambian agricultural sector was often unable to provide some necessary raw materials).

Some scattered efforts to attempt to limit imports took place, such as the use of Zambian coal in the mining sector instead of Wankie coal from then Rhodesia, which was both cheaper and of better quality. The poor quality of the local coal, unfortunately, ended up adversely affecting the performance of the mines (Ndulo 1978). Cases like that of Refinedcontinue

Oil Products, the state-owned enterprise that produces basic consumer products such as cooking oil, bath soap, and toiletries, are more common. The parastatals' general manager estimated that 70 percent of the company's raw materials were imported (Burdette 1988, p. 114). Of course, many of these problems might have existed any way given the government's overall policies even if these firms had been in the private sector rather than being parastatals.

The shortage of foreign exchange in the 1980s created crises in the SOEs, whose production plummeted because of the lack of imported raw materials, machinery, and spare parts. The ripple effect was felt throughout the economy because of the slowdown of intermediate industries, such as Zambia Steel and Building Supplies, whose inputs were essential for construction. The state-owned enterprise sector is still extremely dependent on foreign

exchange, and a large and consistent foreign exchange gap persists.

Until now, we have dealt with the state-owned enterprise sector as virtually monolithic, helped by the fact that most of the parastatals were, until recently, conveniently grouped together under the major holding companies like INDECO and Zambia Consolidated Copper Mines, which were in turn part of ZIMCO. However, within the broad groupings some SOEs have been more successful at pursuing specific objectives than others. The Zambian utility companies, for example, can be thought of as logical solutions to market failure problems, while the mining sector has been successful both at generating revenues and in improving (or preserving) the welfare of its workers.

A Case Study of Two Zambian Parastatal Enterprises

Given the situation described in the previous section, added to the evaluation of the success of the state-owned enterprise sector as a whole should be a look at how individual parastatals have succeeded in meeting the goals set for them. Thus we now turn to consider two particular parastatal firms: Kafue Textiles of Zambia, Limited, and Chilanga Cement, Limited. These companies, both within the INDECO group, provide a useful illustration of some of the positive and negative aspects of government-operated businesses. The discussion draws on information derived from company financial data and personal interviews with management in both the private and parastatal sectors.

Kafue Textiles of Zambia, Limited

Kafue Textiles (KTZ) is located in Kafue, about fifty miles south of the capital city of Lusaka. The company was established in 1967 and is described in a company publication as being "a vertically integrated textile mill incorporating spinning, weaving, dyeing, printing and finishing of cotton and polyester fabrics." INDECO holds more than 55 percent of the ordinary shares. The site of KTZ was chosen largely for its proximity to the Zambesi River with its abundant supply of water. In addition to textile production, the company also operates several retail outlets located throughout the country. The operation is large, employing 1,660 workers and K 559 million of capital in 1992.

Unlike Chilanga Cement, which we will look at next, Kafue Textiles was not established by nationalizing an existing private firm, but rather was created by the government. The main objective of creating a government-owned textile firm was to substitute foreign imports with Zambian produced textiles. In the 1960s Zambia was importing most

of its textiles from abroad, and viewed import substitution as an attractive development strategy.

KTZ is widely regarded as an unsuccessful parastatal. This perspective results not from any evaluation of its social contributions, but because in recent years the company has had serious financial problems, losing K 165 million in 1990–91. Its difficulties stem from several sources, as described in the following paragraphs.

- *Competition* . The company's market share has been falling steadily mainly because of increased competition. KTZ's main competitor is Mulungushi Textiles, which now has 30 percent of the domestic market. KTZ also faces strong competition from cheap imports from Chinese, Dutch, and Indian producers, because the cloth produced by KTZ is regarded as being more expensive and of poorer quality than the competing imports. In addition, low incomes among consumers and high prices have resulted in an escalation in the trade of second-hand clothing, thereby reducing the market for new clothing.
- *Shortage of hard currency* . KTZ has faced difficulties in securing foreign exchange. The company exports about 25 percent of its weaving production to Europe, but still faces a severe shortage of working capital. This

makes securing needed imported inputs, including machine parts, dyes, and chemicals, difficult and is reflected in KTZ's relatively low capacity utilization rate of 50 to 60 percent, which is partly a result of inadequate maintenance of the machines caused by the unavailability of imported parts.

- *Inadequate supply of skilled technicians and supervisors* . As we have seen earlier, wage and benefit packages are viewed as being more attractive in the private sector in the higher skill levels, so that recruiting such workers is difficult for KTZ. Private sector firms also actively recruit parastatal managers, who have often received the benefit of state-financed training and education. KTZ has suffered from this drain.
- *Overstaffing* . The employment objective of the parastatal sector led to perceived overstaffing of KTZ. Recently, the company restructured its labor force to combat this, with the number of workers dropping from the 1989–90 figure of 2,356 to the current work force of 1,600. Ascertaining how much of the fall in employment can be attributed to previous overstaffing and how much to crisis-induced downsizing of the firm is, however, difficult. In any case, the overstaffing may have been seen as a necessary fulfillment of KTZ's social obligation as a parastatal.

Despite its poor revenue performance, KTZ does purport to offer some important benefits to the economy and society that might not be captured in the firm's financial statements. Besides the provision of employment, some of these are as follows:

- *Regional development* . Kafue Textiles has certainly aided in the development of the Kafue region. Following the lead of the parastatal, several other firms are now located in the region. This concentration of firms has allowed for a local community and infrastructure to develop. This, in turn, may have encouraged the more recent relocation of several private sector firms, including Bata Shoes, to the area. KTZ also gets most of its raw materials locally, thereby helping the agricultural sector to grow.
- *Training* . KTZ offers extensive training to its employees. A key argument often offered in support of parastatal enterprises in Zambia is the extensive training provided to workers. This helps raise the skill level of the country and might be continued.

regarded as a positive externality. KTZ operates its own training center within the plant, and trains workers in spinning, weaving, processing, quality control, and maintenance. It also provides training seminars for managers. Collectively, the training amounts to about 2 percent of the wage bill.

- *Benefits* . KTZ provides its workers with a variety of benefits, including about 900 housing units, subsidized meals, and a medical clinic within the plant. The benefits received are typical of parastatal firms and are regarded as being more generous than those private sector provides.

However, whether or not Kafue Textiles has aided the fulfillment of social goals, its financial viability is in serious jeopardy. The losses it has been sustaining have led to a large accumulation of long-term debt. The firm certainly needs restructuring and an injection of capital, but it is quite possible that Kafue Textiles would not be a viable enterprise if it were privatized.

From a strictly economic viewpoint that focuses on KTZ's bottom line, justifying Kafue Textile's existence as a state-owned enterprise is hard. The firm is not easily characterized as a strategic or essential operation, and it does not seem to be economically viable. Its social importance, while not to be overlooked, seems to be dwarfed by its economic problems. However, KTZ's difficulties may not be related primarily to its parastatal status, but may simply be a result of the competitive environment within which it operates.

Chilanga Cement, Limited

Chilanga Cement (CCL) is located in Chilanga, just south of Lusaka, and also has a plant in Ndola in the copper belt, with both sites near large deposits of limestone. It had been in operation under private ownership since 1949, and was nationalized by the Zambian government in 1972. It currently has a monopoly on cement production in Zambia. It is not wholly government-owned, although INDECO holds 56 percent of the ordinary shares. Like Kafue Textiles, Chilanga Cement is a large operation, employing about 895 workers and K 829 million of capital in 1991. Employment has been relatively stable in recent years.

The primary objective that lay behind the nationalization of Chilanga Cement is representative of the motivation behind nationalization in Zambia in general: to spearhead development and to give Zambians control of their economy. In addition, when CCL was privately operated, the authorities believed that the parent company was repatriating its profits, and that nationalization would enable the surplus to be reinvested domestically.

In Zambia Chilanga Cement is widely regarded as a successful parastatal company. This is because it has been profitable for several years and has not incurred extensive debt, and thus, like many other Zambian parastatals, has not been a drain on government finances. It currently exports about 15 percent of its output, and the limestone mines from which it draws its limestone will not be exhausted for many years.

Output per worker is far below international standards. Table 2–5 shows the output per worker for cement production facilities in four countries, and demonstrates that Zambian production of cement per worker is only about 20 percent that of Germany or Ireland.

Table 2–5 highlights the fact that while CCL's capacity utilization is high, its output per worker is low. This does not appear to be caused by overstaffing, but rather to the nature of the physical capital used. The kilns CCL uses date back to the 1950s and 1960s and have continue

Table 2–5 . Cross–Country Comparison of Cement Production, Selected Years and Countries

<i>Category</i>	<i>Estonia (1993)</i>	<i>Germany (1991)</i>	<i>Ireland (1993)</i>	<i>Zambia (1993)</i>
Number of employees	1,500	—	450	844
Production (millions tons per year)	0.7	28.0	1.2	0.4
Capacity utilization (%)	0.78	0.66	0.63	0.73
Tons produced per employee year	466	2,700	2,600	474

Source : International Cement Review (October 1992); Cement Kalk Gips (1993, vol. 4).

much lower production capacities than modern kilns. CCL also uses an older wet line production technology rather than the current dry technologies used in industrial countries. Given Zambia's wage rates, this may be an example of appropriate technology. Management would like to see the use of more advanced technologies, however, as is often the case.

The Evaluation of Public Expenditure in Africa

The company has faced several difficulties, some of which are worth noting:

- *Government price controls* . One of the reasons for CCL's outdated equipment is government interference in the pricing of cement. Cement production is viewed as being strategically important for Zambia's development. Indeed, Chilanga Cement was a major supplier of cement in the construction of the Kariba Dam. In light of the perceived importance of this sector, the government has attempted to keep cement prices artificially low. This, in turn, has reduced the company's profits and restricted the surplus available for reinvestment. One visible reflection of the effect of low investment in new capital is the company's inability to replace one of its kilns that has been out of commission for several years.
- *Shortage of hard currency* . Like Kafue Textiles, a shortage of foreign capital has made it difficult for CCL to maintain its plant and equipment. The heavy equipment used in cement production is imported, and CCL relies on foreign exchange earnings to purchase replacement parts. The shortage of hard currency also compounds its inability to reinvest in new equipment.

Like Kafue Textiles, Chilanga Cement notes that the company generates certain benefits to the economy and society that are not captured in the financial statements, namely:

- *Regional development* . The existence of Chilanga Cement has advanced the development of the Chilanga suburb of Lusaka. The company has developed a subdivision that houses many of its employees. The housing is well constructed and the area is clean and safe. Unlike many subdivisions in Lusaka, the housing in Chilanga does not require costly walls to be constructed around the houses to ensure security. The continue

subdivision also provides a public school that many local children attend. In addition, the company owns and operates a golf and country club.³

- *Training* . Like Kafue Textiles, CCL engages in extensive training for both its management and less skilled workers. The training expenditures amount to about 3.5 percent of the wage bill. Before nationalization, fourteen of the top company officials were expatriates. Today there is only one expatriate in upper management. The company argues that the training program has facilitated this successful Zambianization of the management.
- *Benefits* . In addition to the housing and recreation facilities mentioned previously, CCL provides other benefits to its employees, including health care and, for upper management, company cars. Again, although individual employees value these benefits, they may not benefit society in general.

Some Comments

The experiences of Kafue Textiles and Chilanga Cement—one regarded as unsuccessful and the other as successful—have important differences, but also show some similarities: Both firms invest in training, both purport to be a boon to the region, and both argue that foreign exchange shortages and the accompanying disruptions to production were important factors affecting production.

Several contrasts, however, are evident. While KTZ's ownership by the government might be justified on the grounds that the private sector would not choose to start the enterprise because of the easy availability of cheap imports or for other reasons, the same cannot be argued for Chilanga Cement, which had been in existence for two decades before nationalization. On the contrary, while CCL's parastatal status might be rationalized on the grounds of cement's strategic importance to Zambia's development, Kafue would be hard pressed to make the same claim for textiles.

Perhaps most important, the two firms have very different bottom lines. Chilanga Cement serves to show that parastatal firms need not be a drain on the government's coffers, while Kafue Textiles demonstrates that sometimes they are.

Some key differences between the two enterprises are worth noting:

- *Competitive environment* . Chilanga Cement operates as a monopoly, whereas Kafue Textiles operates in an increasingly competitive environment. Clearly, other things being equal, this makes it easier for Chilanga Cement to make a profit. It also produces a product that is relatively homogenous. This may make strategic planning easier for Chilanga than for Kafue Textiles, whose product line must respond to changing consumer tastes. However, Chilanga Cement, and to a lesser extent, Kafue Textiles, have been regulated by way of price controls on their products.
- *Created versus nationalized* . Chilanga Cement represents a company whose existence has been tested by the private sector. It operated successfully as a private enterprise long before being nationalized. This suggests that its creation and retention in Zambia were justified on economic grounds. Kafue Textiles, by contrast, was not subjected to the same standards. Its creation may not have been supported based strictly on potential profitability.

3 The benefits provided by these to the community at large area, of course, questionable.

- *Managerial expertise* . A recurring theme in discussions with representatives from business and government was that the quality of management is of critical importance to a company's success. It was argued that managerial talent is in short supply in Zambia, and that top parastatal managers are often lured away to the private sector. Since 1978, Chilanga Cement has received technical assistance from Irish Cement, with the government of Ireland helping to finance the management contract. This assistance, in combination with a respected group of Zambian managers, may have contributed to CCL's relative success compared to Kafue Textiles.
- *Location* . Chilanga Cement's location was chosen to be close to its limestone quarries. This location is consistent with a profit maximizing objective. Kafue Textile's location is not obviously optimal from an economic viewpoint. It is located a considerable distance from its main market of Lusaka, so that transport costs are likely higher than necessary.

These differences may have contributed in part to the widely differing economic performance of the two firms.

Conclusions

Overall, Zambian parastatals have performed better than their counterparts in other African nations in enabling the government to indirectly provide social goods, as well as in contributing to the government's ability to provide these goods directly through tax revenues. However, the sheer multiplicity of their objectives greatly hampered their efficiency, so that their revenue contributions were much lower than could have been expected given their monopoly status and other advantages.

One question remains, and it is one that is difficult to answer objectively. Did the net equity gains from the successful provision of public goods through parastatals in Zambia—higher employment, greater earnings, and the Zambianization of the labor force—outweigh the public goods that could have been provided with even higher revenues? Such an evaluation requires a knowledge of the society's welfare function: how highly these social goods are weighed as opposed to those thought to be foregone. The relative weights of the welfare function may change over time, given changing economic conditions and different regimes. Perhaps this is why, in today's Zambia, more attention is being paid to privatization and increasing parastatal efficiency than was the case a

decade ago.

References

- Aron, Janine. 1992. "Political Mismanagement of a Mining Parastatal: The Case of Zambia Consolidated Copper Mines Limited." Durham, North Carolina: Duke University, Center for International Development Research. Processed.
- Ayub, Mahmood A., and Sven O. Hegstad. 1987. "Management of Public Industrial Enterprises." *World Bank Research Observer* 2(1):79–101.
- Banerji, Arup, and Richard H. Sabot. 1994. "Wage Distortions, Overmanning and Reform in Developing Country Public Enterprises." Washington, D.C.: World Bank, Policy Research Department, Financial Policy Division. Processed.
- Burdette, Marcia M. 1988. *Zambia: Between Two Worlds* . Boulder, Colorado: Westview Press.
- CSO (Central Statistical Office). 1992a. *Country Profile 1992* , Republic of Zambia. Lusaka, Zambia.break
- . 1992b. *Quarterly Employment and Earnings Statistics* . Lusaka, Zambia.
- Galal, Ahmed. 1991. *Public Enterprise Reform: Lessons from the Past and Issues for the Future* . Discussion Papers No. 119. Washington, D.C.: World Bank.
- Hansen, Jorn Astrup. 1991. "Industrial Public Expenditure Review: Zambia." Washington, D.C.: World Bank. Processed.
- Harvey, Charles. 1985. *Macroeconomics in Africa* , revised Pan–African ed. London: Macmillan.
- ILO (International Labour Office). 1975. *Narrowing the Gaps: Planning for Basic Needs and Productive Employment in Zambia* . Geneva.
- INDECO (Industrial Development Corporation of Zambia). 1992. *Annual Report and Accounts: 1992* . Lusaka, Zambia.
- Johns, Sheridan. 1980. "The Parastatal Sector." In William Tordoff, ed., *Administrative in Zambia* . Manchester, U.K.: Manchester University Press.
- Mphaisha, Chisepo. 1988. "Public Enterprise and Development: A Study of Metal Fabricators of Zambia." *Journal of Black Studies* 19:79–96.
- Nafziger, E. Wayne. 1990. *The Economics of Developing Countries* , 2nd ed. Englewood Cliffs, New Jersey: Prentice Hall.
- Ndulo, Muna. 1978. "Domestic Participation in Mining in Zambia." *African Social Research* 25. Reprinted in Turok, Ben. 1979. *Development in Zambia: A Reader* . London: Zed Press.
- Nellis, John R. 1986. "Public Enterprises in Sub–Saharan Africa." Discussion Papers No. 1. Washington, D.C.: World Bank.

The Evaluation of Public Expenditure in Africa

Ramanadham, V.V. 1991. *The Economics of Public Enterprise*. London: Routledge.

RUDECO (Rural Development Corporation of Zambia). 1976. *Annual Report 1976*. Lusaka, Zambia.

Seidman, Ann. 1974. "The Distorted Growth of Import Substitution: The Zambian Case." *Journal of Modern African Studies* 12(4). Reprinted in Turok, Ben. 1979. *Development in Zambia: A Reader*. London: Zed Press.

Turok, Ben. 1979. "The Penalties of Zambia's Mixed Economy." In Ben Turok, ed., *Development in Zambia: A Reader*. London: Zed Press.

UNDP (United Nations Development Programme) and World Bank, 1992. *African Development Indicators*. Washington, D.C.: World Bank.

World Bank. 1977. "Zambia, the Basic Economic Report," annex 2, "The Parastatal Sector." Report no. 15866-ZA:1977. Washington, D.C. Processed.

———. 1983. *World Development Report 1983*. New York: Oxford University Press.

———. 1986. *Improving Parastatal Performance in Zambia*. Washington, D.C.: World Bank, Projects Policy Department, Public Sector Management Unit.

———. 1991. *World Development Report 1991*. New York: Oxford University Press.

———. 1992. "Republic of Zambia Public Expenditure Review," vol. II, *Main Report*. Washington, D.C.: World Bank, Southern Africa Department, Country Operations Division.

Young, Alistair. 1973. *Industrial Diversification in Zambia*. New York: Praeger Publishers.

3—

Health Care in Botswana: The Government's Role in Primary Health Care and Nursing Education

Duncan P. Mann, Earl McFarland, and Monica Tselayakgosi

In the past two to three decades Botswana has made dramatic strides in improving access to and availability of basic health care services. Today almost all Botswana live within fifteen kilometers of a government health clinic or post staffed by a trained health professional. More sophisticated services are available through a network of district and referral hospitals around the country. Social and health indicators, such as life expectancy and infant mortality rates, have improved significantly. Despite these achievements, the Ministry of Health faces vexing problems, particularly in attracting, training, and retaining professional health personnel.

Botswana is located in central southern Africa, and has a predominantly rural population of roughly 1.4 million people. It gained independence from the United Kingdom in 1966. The population of Botswana was around 400,000 at Independence, and per capita income was approximately US\$100 in current dollars. Since that time a democratically elected government has helped the economy to achieve one of the highest rates of economic growth in the world. In 1992 per capita income was almost US\$3,000 in current dollars.

Four main development objectives have guided Botswana's development process. These objectives, as identified in planning documents, are rapid economic growth, social justice, economic independence, and sustained

development. The provision of adequate health care for all Batswana has been an integral goal of recent development plans. The authorities view health care as helping to ensure a productive work force, and thus as an important input into a successful development program. In addition, there is broad consensus that health care is a right that ought to be available to every Batswana. To achieve the goal of adequate health care for all, Botswana has adopted a primary health care strategy. Primary health care can be defined as "essential health care made universally accessible to individuals and families in the community by means acceptable to them through their full participation and at a cost that the community and country can afford" (WHO and UNICEF 1978, p.2).

Prior to independence, the health care system focused predominately on curative medicine and was available only to a small minority of the population. The primary health care strategy that the government, through the Ministry of Health, has embraced empha-soft

sizes preventive health care, such as encouraging healthy lifestyles and preventing disease (Poindexter and Shaw-Nickerson 1990, appendix G, p. 2). The importance of curative and rehabilitative medicine has diminished in relative terms. Local and regional community input into emphasizing health needs and implementing programs has been and continues to be an important component of the government's health and medical programs.

The primary health care approach, along with a rapidly growing population and expanding health infrastructure, has required Botswana to increase the number of nurses substantially, as nurses provide most of the direct health care to much of the population. This in turn has required a dramatic increase in the capacity of nurse training facilities in Botswana. Botswana is now in the process of attempting to expand and restructure its nursing education program to increase the supply of nurses, improve the quality of services nurses provide, and reduce the cost of nurse training. This effort at improving the personnel development system in Botswana is intended to provide critical resources for meeting the population's primary health care needs effectively.

The government dominates Botswana's health care sector. The public sector employs the vast majority of all doctors and nurses. Wage levels set by the government are crucial in attracting and retaining skilled individuals for the health sector. All the nursing education programs are run entirely by the government.

This chapter will analyze, from an economic perspective, the logic and mechanics of Botswana's primary health care strategy, the shortage of nurses, and the accompanying expansion of the nursing education program in Botswana. It will pay particular attention to the appropriateness and effectiveness of the government's involvement in these areas. The next section provides some background on health care in Botswana. This is followed by an examination of the structure of Botswana's health care system and the economic role played by the public sector. The next section reviews the nursing education system and the government's role in the supply of nurses. The concluding section provides suggestions for dealing with some of the problems Botswana faces in improving primary health care and creating an adequate supply of trained health professionals.

Background

The United States has more than 2 physicians for every 1,000 individuals in the population. Botswana has fewer than 2 physicians for every 10,000 individuals in the population (Central Statistics Office 1990; Ministry of Health 1992). Furthermore, the vast majority of doctors in Botswana practice in urban areas, leaving the three-quarters of the population that live in rural areas unlikely to have access to a physician. Table 3-1 shows the dramatic disparities in population to physician ratios across Botswana. A comparison of the data from 1985 and 1990 suggests that the concentration of physicians in some urban areas has increased in recent years while some rural areas are served by fewer physicians than earlier.

The Evaluation of Public Expenditure in Africa

Strategy

Given the cost and time involved in increasing the supply of physicians through training Batswana doctors and the difficulty and cost associated with recruiting foreign doctors, a focus on providing primary medical care through nurses is an attractive alternative. Figure continue

Table 3-1 . Number of Doctors and Nurses by Region, 1985 and 1990

Medical region	Administrative region	1985				1990			
		Estimated population	Number of doctors	Number of nurses	Population/doctor	Population/nurse	Estimated population	Number of doctors	Number of nurses
Maun	Ngamiland	74,685	8	82	9,336	911	—	—	—
N.E.D.	North East	40,799	1	38	40,799	1,074	47,000	1	60
Serowe	Cent S	101,751	10	140	10,175	727	116,000	8	168
S. Pikwe	S.P.T.C.	38,829	8	102	4,854	381	—	—	—
	Cent Bobonong	50,476	1	38	50,476	1,328	—	—	—
Kweneng	Kweneng	134,457	7	154	19,208	873	159,000	9	206
Lobatse	L.T.C.	22,848	10	117	2,285	195	—	—	—
	J.T.C.	9,235	5	48	1,847	192	—	—	—
	Southern	132,495	5	107	26,499	1,238	197,000	22	392
Gantsi	Gantsi	21,739	2	36	10,870	604	26,000	3	50
Mahalapye	Cent M.	92,988	7	101	13,284	921	106,000	8	144
Kgatlene	Kgatlene	48,349	6	66	8,058	733	100,000	17	216
South East	South East	36,811	5	60	7,362	614	—	—	—
Kasane	Chobe	9,212	2	17	4,606	542	11,000	1	20
Kgalagadi	Kgalagadi	27,528	2	40	13,764	688	33,000	2	63
Tutume	Cent Tutume	80,766	1	36	80,766	2,244	87,000	2	87
Boteti	Cent. Boteti	6,922	6	46	1,154	150	43,000	7	104
	G.C.C.	29,499	1	36	29,499	1,135	—	—	—
Gaborone	F.T.C.	87,427	71	275	1,231	318	129,000	83	360
	F/Town	41,077	17	144	2,416	285	56,000	56	251
Botswana		1,087,893	175	1,673	6,217	663	1,110,000	219	2,121

— Not available.

Source : Ministry of Finance and Development Planning (1991); Ministry of Health 1990.

3-1 depicts the growth in the number of nurses and physicians per 100,000 population. In keeping with the primary health care strategy, the number of nurses per capita has grown steadily and significantly since Independence. In contrast, the number of physicians per capita has grown slowly. At least some of the reason for this slow growth, however, is attributable to disappointing results in recruiting foreign doctors.

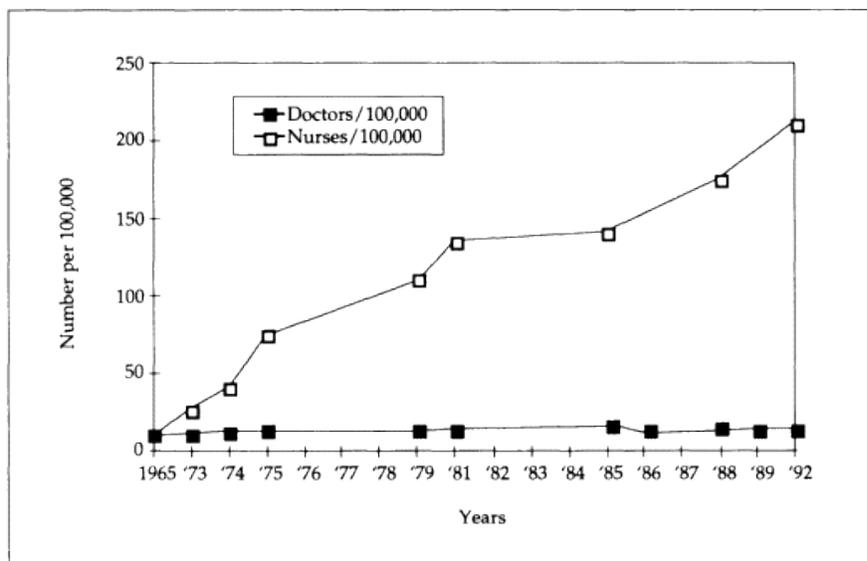


Figure 3-1.
Number of Nurses and Physicians per 100,000 Population, Selected Years
Source : Author's information.

By necessity, nurses in Botswana are responsible for providing much of the direct patient care to many individuals. For example, physicians were in attendance at only 7 percent of births in Botswana in 1988 (Central Statistics Office 1991). A trained nurse or midwife was in attendance at 70 percent of the births that same year. However, even the distribution of trained nurses tends to be biased toward urban settings. In rural areas, such as the vast Kgalagadi District in southeastern Botswana, 60 percent of births occurred without the presence of any trained health personnel. Table 3-1 indicates the marked concentration of nurses in more urban parts of Botswana. For example, the urban areas of Gaborone, Francistown, and Lobatse have the greatest concentration of nurses as well as of physicians. Some of this variation is likely attributable to the presence of referral hospitals to which individuals travel to receive secondary or tertiary medical care.

Progress

Compared to other countries in Sub-Saharan Africa, Botswana has made dramatic strides in important economic and social indicators. Table 3-2 provides a vivid picture of these continue

changes and contrasts. Undoubtedly the much higher per capita income in Botswana, especially since 1980 because of the diamond boom, has enabled the government to allocate more resources to the health sector. However, as table 3-3 reveals, the flow of public resources to the health sector has remained at about 5 percent of sharply rising total public spending. As a consequence, total spending in the health sector rose rapidly during 1970-90. Thus in contrast to most other African countries, Botswana has had adequate resources to allocate to the health sector. Tanzania, the poorest country in the sample, has made virtually no progress since 1970 according to the indicators shown in table 3-2. Both per capita income and progress in the health sector in Tanzania have been relatively stagnant.

Disadvantages

Nevertheless, despite its success in such endeavors as reducing infant mortality and increasing life expectancy, Botswana has also had some serious problems. The first was the almost total absence of trained health care practitioners at Independence in 1966. Expatriate workers were costly and often less than eager to locate in the remote areas where services were needed the most. There was also a desire to use national resources if at all possible. A substantial amount of education, and therefore time, was required to develop the professional cadres that were needed. One cannot decrease the years needed for primary and secondary education by simply spending more money on primary and secondary education. The same is true for postsecondary nursing education. Nor can a people's health practices and customs be changed in a short period.

Second, although the population is small (1.4 million), it is very spread out geographically, and the road system was essentially nonexistent at independence. Health services (and education) could not be delivered to many rural areas until roads had been constructed and other essential physical infrastructure provided, and then only with substantial transportation costs. This again took time as well as money, and it means that providing such services to rural people is probably more expensive in Botswana than in any other country in the sample. Thus Botswana has had money on its side, but time and distance against it. These factors offset many of the positive influences of higher government revenues.

Public versus Private Provision

Why is the government centrally involved in the health sector in Botswana? In the absence of significant public sector involvement, what would the market outcome look like in terms of level and distribution of health-related services? These questions cannot be answered definitively, but some points are relevant in this context. Table 3-1 shows that the current distribution of medical resources is still biased toward higher-income urban areas; however, without a strong government role, private health resources would be unlikely to serve lower-income rural areas. As in industrial countries, physicians and other health care workers typically prefer urban settings, where income is easier to generate and comfortable lifestyles are more readily available. Providing accessible health care to the rural population was a goal of development planning that Botswana has, by and large, achieved. Without public sector involvement, a large fraction of Botswana would probably still find basic medical services unavailable.

Table 3-2 . Social Indicators, Selected African Countries, Selected Years

Country	Year	Infant	Life	Total	Income
		mortality			expectancy
		rate	at birth	rate	a
		(per 1,000 births)			(US\$/year)
Botswana	1970	101.0	49.7	6.9	130
	1975	87.2	51.7	6.8	350
	1980	62.8	59.8	6.7	780
	1985	45.0	65.9	5.9	960
	1990	37.7	67.4	4.7	1,610
Kenya	1970	102.0	50.0	8.0	130

The Evaluation of Public Expenditure in Africa

	1975	90.0	53.0	8.1	230
	1980	83.2	54.9	8.0	420
	1985	75.1	57.4	7.2	310
	1990	67.2	58.9	6.5	370
Nigeria	1970	139.4	43.7	6.9	140
	1975	128.4	45.7	6.9	400
	1980	118.0	47.7	6.9	930
	1985	108.5	49.7	6.4	850
	1990	98.5	51.5	6.0	270
Tanzania	1970	132.0	45.1	6.4	100
	1975	127.0	46.4	6.4	170
	1980	121.5	47.2	6.8	290
	1985	116.9	48.0	6.7	320
	1990	115.3	47.5	6.0	140
Zambia	1970	106.0	46.5	6.7	440
	1975	96.4	48.5	6.7	550
	1980	90.4	50.1	6.8	600
	1985	83.1	51.8	6.8	370
	1990	82.1	49.7	6.7	400
Zimbabwe	1970	96.2	50.5	7.7	310
	1975	88.8	52.9	7.2	550
	1980	82.4	55.0	6.8	710
	1985	68.6	58.4	6.1	630
	1990	48.6	60.8	4.9	670

a. Estimated for 1990.

Source : World Bank (1992).

Table 3-3 . Health Expenditures as a Percentage of Total Government Expenditure, 1971-90

Category	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Health expenditure (millions of current pula)	1.42	1.77	2.01	2.46	4.92	6.26	7.65	9.35	9.42	14.1
Total expenditure (millions of current pula)	23.14	29.74	42.38	62.11	77.61	98.24	112.71	156.34	200.43	261.91

The Evaluation of Public Expenditure in Africa

Health expenditure as a percentage of total expenditure	6.14	5.95	4.74	3.96	6.34	6.37	6.79	5.98	4.70	5.38
<i>Category</i>	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Health expenditure (millions of current pula)	17.85	18.31	22.6	25.14	31.95	53.56	87	80.05	88.6	119.7
Total expenditure (millions of current pula)	300.13	372.61	401.16	526.23	642.83	909.17	1,169.4	1,462.9	1,848.2	2,368.3
Health expenditure as a percentage of total expenditure	5.95	4.91	5.63	4.78	4.97	5.89	7.44	5.47	4.79	5.05

Source : IMF (1981, 1989, 1992).

The overall level of resources devoted to health would likely be significantly lower in the absence of the leading role the government has played in expanding the supply of nurses (see figure 3–1). Even the modest number of physicians practicing in Botswana would be considerably lower without government funding for training local doctors and recruiting expatriate doctors. Botswana's private health care system has experienced rapid growth in the last few years, which is likely to continue, but this is only possible because of the relatively high incomes that a small proportion of the urban population is now earning.

The Period before Independence

Before Independence the only hospitals in Botswana were mission hospitals connected with the London Missionary Society. The population was largely rural, and the few urban centers that existed were too small to enable private hospitals to function without substantial losses. The mission hospitals supplied medical care free or at minimal cost, and relied almost entirely on charitable donations from their patrons in the United Kingdom.

Botswana had three choices regarding medical care (other than home remedies): they could go to traditional doctors, they could go to mission hospitals, or they could go to hospitals in Rhodesia or South Africa. Only the most wealthy could seek care outside the country.

Bechuanaland Protectorate, as Botswana was known before Independence. At that time most Botswana went to traditional doctors for their medical care, because modern Western medicine was too expensive, too inaccessible, and too untested for most rural people. Traditional medicine was well known and believed in, more accessible, and affordable.

Health Care in the Diamond Era

With the discovery and development of diamond mines in Botswana, per capita income increased to almost US\$3,000 by 1992. This growth allowed Botswana to allocate more resources to health care than in most developing countries. As a result, both the availability and the quality of health care are superior to that found in most other countries at a similar stage of development. This care is provided by a network of health posts, clinics, and hospitals, in ascending order of medical sophistication. At the top of the pyramid are two public referral hospitals, Princess Marina Hospital in Gaborone and the new Nyangabgwe Hospital in Francistown, and the new private hospital. Patients with serious illnesses are referred up the chain to Princess Marina in the south or Nyangabgwe in the north. Some of the most difficult cases are referred to the private hospital.

Two areas where citizens of the newly independent nation expected their government to make services widely available were health and education. The government then, as now, had a pronounced aversion to a system like the colonial one, where services were available only for a wealthy elite, generally white and foreign. The broad goals for medical services and for education were to make these services available to everyone, and moreover, to avoid a two-tiered system whereby the poor would get one kind of service and the wealthy would get another.

The leaders of Botswana also believed that modern medicine was more effective in many instances than traditional medicine, and they encouraged people to switch from traditional medicine to modern medicine. If modern medicine was to be affordable to even the poorest Botswana, both for equity reasons and to induce rural people to use traditional medicine less and modern medicine more, it had to be free or almost free to the poorest Botswana. Then, as now, it would have been possible to have user fees based on patients' incomes, but the idea of charging different people different fees for the same service, especially when this would require the government to determine how much each patient could afford to pay, was unacceptable to policymakers.

This created a dilemma common to most developing countries. If medical care was to be essentially free to everyone, the quality of care that could be provided would be lower because of overall budgetary constraints than if users paid at least a portion of the cost. However, the lower the quality, the greater the dissatisfaction users would experience, and the greater the calls for a quality of medical care that the nation could not afford unless cost recovery through higher user fees was instituted. People could have the quality of health care they wanted or they could have the price that they wanted, but Botswana could not afford to provide both at the same time. Making health care accessible to all was yet a third dimension of the problem.

The government decided that making essentially free health care accessible to all should be given top priority in the health sector, and that questions of instituting user fees to raise the quality of health care would have to wait their turn. The quality of health services provided to the entire population free or almost free would be superior to the healthcontinue

care that most Botswana had received in the past, so the question of higher quality still was an issue that could be deferred until the country had developed further.

The development of a private health care system, characterized initially by private doctors and culminating recently in the setting up of a private hospital, indicates that Botswana has now developed to the point where at least some Botswana are willing to pay higher prices for higher quality health care. However, most citizens would still be unwilling or unable to pay the fees charged by the private sector. The quality of health care is often not up to the standard that perhaps the top 10 percent of the income distribution expect, and occasionally it is unsatisfactory even to citizens farther down in the income distribution.

This system does not solve the problem of affordability to the nation. Given the low level of cost recovery, the amount of money that the nation can put into health care delivery is insufficient to provide the quality of health

care that the more affluent minority demand. The anomaly was that until recently, citizens who could afford to pay for high quality health care were denied that health care in Botswana because the government was unwilling to let them pay for it. This group had to resort to seeking medical attention abroad.

In the late 1980s the government finally faced this problem. After years of private lobbying in favor of a private hospital in Gaborone, the government finally gave permission for this project to go forward. In the last few years the number of affluent Batswana, together with affluent expatriates, has become large enough to make such a venture feasible. Thus Botswana now has a two-tiered health care system, just what the government had opposed for so many years. Low cost health care is available for those who cannot afford or do not want to pay any more, and expensive private health care is available for those willing and able to pay for a higher quality of health care.

In one sense, Botswana had always had a two-tiered medical care system. The wealthy had always had the option of going abroad, but because no alternative to the public health system was available within Botswana, the government could legitimately claim that it did not have a two-tiered system. That claim is still legitimate today. The government does not have a two-tiered system. The health care that a rich person gets in a government hospital is the same that a poor person gets.

The issue of equity in both access to health care and in the quality of health care services people receive is one that every country confronts. The millions of uninsured individuals in the United States and the small private health care system in the United Kingdom attest to the problems related to access and quality in two countries with very different health systems. The approach that Botswana has taken to equity and quality is to make basic health care services that the government can afford available to everyone, and to allow individuals or families with sufficient resources to seek out medical services that they may perceive of as higher quality. This is a fair and reasonable approach to the problem.

Supply, Demand, and Market Considerations

The last decade of development in Botswana resulted in a significant expansion of the physical infrastructure of the country's health system. A brand new referral hospital was built in the northeastern city of Francistown to service the Okavanga Delta region and the northern half of the country. The only other public referral hospital in the country, located in the capital, Gaborone, is currently undergoing extensive renovation and expansion. Incontinue

addition, the private hospital recently opened in Gaborone. Several district hospitals and many clinics and health posts have also been renovated or added in the past decade. This explosive growth in the physical capacity of the health system has placed significant demands on the human resources available to staff these facilities. For example, according to the Ministry of Health, the new 372-bed Nyangabgwe Hospital in Francistown was recently staffed with a total of only 143 nurses, while district hospitals operated with an average of only 50 percent of the nursing staff required to meet minimum standards (Ministry of Health 1989, p. 1).

The midterm reviews of the fifth and sixth national development plans (Ministry of Finance and Development Planning 1983, 1988) provide further evidence of a chronic problem in filling Ministry of Health vacancies. The vacancy rate for skilled personnel in February 1983 was 24.2 percent. Vacancy rates during 1987 ranged from a low of 15.2 percent in March to 23.0 percent in May. These were the highest rates for any of the ministries employing more than 1,500 people. In draft documents for the midterm review of the seventh National Development Plan, the Ministry of Health noted that more than 100 positions for nurses were not filled in 1992. Discussions with individuals in the Ministry of Health suggested that many of the vacancies were hardship postings in isolated rural clinics and health posts or other less desirable locations. Although no hard data were available to confirm this, several different sources cited this explanation.

Botswana's population is growing rapidly, between 3 and 4 percent per year for the past decade and more. This population growth places a further strain on the ability of the existing training system to supply enough health professionals to meet the country's growing health care needs.

A branch of the Ministry of Health, the Institute of Health Sciences (formerly the National Health Institute), has the prime responsibility for training nurses and allied health professionals in Botswana. Training currently takes place at five campuses associated with referral or district hospitals, at two small mission hospitals, and at the University of Botswana. The nursing programs consist of a mix of classroom learning and hands-on clinical experience. The institute trains enrolled nurses and registered nurses, while the University of Botswana runs a bachelor of education in nursing program.¹ A small number of nurses receive a masters-level education abroad.

A report prepared for the Ministry of Health by consultants from the University of York in England suggested that Botswana should roughly double the number of registered nurses and enrolled nurses in the country by the year 2002 to meet the expected demand for these health professionals (Ministry of Health 1988). The stock of registered nurses in late 1987 was estimated to be 1,054 and the stock of enrolled nurses 1,278. Projected demand for registered nurses for the year 2002 ranged from 1,810 to 2,358 with a median projection of 2,115. The projected demand for enrolled nurses ranged from 2,213 to 2,883, with a median estimate of 2,587.

These projected demand figures were not based on any estimates of consumer or patient demand or on any study or determination of the population's medical needs. Rather, the numbers were calculated by assuming that the government's capacity to support health personnel would grow at the same rate as the economy. The range of estimates continue

¹ Enrolled nurses receive somewhat less training than registered nurses and are assigned to less responsible positions. The training and status of enrolled nurses is similar to that of licensed practical nurses in the United States.

derives from alternative assumptions about the growth rate of the Botswana economy. The middle estimates of demand for the year 2002 for both registered nurses and enrolled nurses would require more than a doubling of the stock of these health personnel. Given the training capacity for nurses in Botswana in 1988, these projections suggested that the already tight market for nurses would become even tighter. Shortages of nurses and other health professionals were expected to develop in the future. Furthermore, these estimates essentially hold constant the ratio of population to nurses, but many in the health sector feel the current level is inadequate.

Adjustment of Supply to Meet Demand

Based on this report, discussions and proposals to expand the training facilities for registered and enrolled nurses are called for. In late 1989 the Ministry of Health released the final report of a study of the requirements of the National Health Institute (Ministry of Health 1989). This study recommended increasing the number of training places in the institute from 914 to 1,824.

Progress in increasing the capacity for nurse training has been slow. A major bottleneck to this expansion has turned out to be the availability of instructors to staff additional teaching positions. In attempting to increase the number of nurse instructors, promising graduates of the Institute of Health Sciences are designated as staff development fellows and are sent abroad for further academic training. On returning to Botswana these individuals are immediately thrust into teaching positions. The upshot is that new instructors often have little clinical experience. In addition, clinical facilities are so crowded and nurses have so little time to spend with trainees that trainees often receive inadequate clinical supervision and training. Recently the Ministry of Health has become more concerned about the quality of the training that nurse trainees and instructors are receiving.

The Evaluation of Public Expenditure in Africa

A bachelor of science in nursing is under discussion and development at the University of Botswana. This program is primarily intended to provide in-service training to experienced nurses to improve the quality of nursing practice.

Recently the Ministry of Health (1992) drafted a revised health manpower plan for Botswana. This report notes that as of early 1992 Botswana had 1,542 registered nurses and 1,433 enrolled nurses. This corresponds to a 46 percent increase in the number of registered nurses since December 1987, the date of the first health manpower plan, and a 13 percent increase in enrolled nurses. This amounts to a 28 percent increase in the total number of nurses over a period of a little more than four years. Despite these substantial increases, the indications are that more nurses are still needed.

From an economic perspective some difficulties are inherent in measuring the demand for or any shortage of nursing personnel in Botswana, understanding the causes of any shortage, and adopting a policy to improve the situation. The Ministry of Health employs the vast majority—roughly 80 percent—of nurses in Botswana. The existing staffing levels in the public sector are a combination of historical accident, budgetary constraints, and medical need. Thus the demand for nurses is far from a purely market-driven force. Answers to questions like those that follow would provide important information for policymakers: What would happen to the number of vacancies if the wage the government pays to nurses were increased by 5 or 10 percent? What would happen if the unattractive, difficult-to-fill postings were paid differential compensation? How would making govern-

ment housing or other amenities available at less attractive postings affect these vacancies?

The short-run supply of nurses or the supply of nurses at a point in time is determined by the stock of trained personnel and their willingness to work. Over time the supply can increase as the Institute of Health Sciences trains more nurses. In addition, over time the capacity of the nurse training system can be expanded. However, even at a given point in time the supply of nurses is not fixed. In economic terms, the supply of nurses is likely to be somewhat elastic with respect to the wage nurses are paid. Individuals with nurse training who are in other occupations, out of the labor market, or even in other countries, might respond to an offer of higher wages, better working conditions, or improved career prospects. (Some officials in the Ministry of Health voiced the view that stressful or poor working conditions and the lack of opportunities for advancement were central factors in understanding the shortage of nurses.) In addition, the Ministry of Health and the Directorate of Personnel has limited the ability of individuals to work part-time as nurses. Perhaps relaxing this constraint would yield some increase in the supply of nurses. For example, there may be individuals with nurse training who could work part-time but not full-time.

The government faces significant problems recruiting nurses for posting to rural areas. Officially, the government's policy is to rotate nurses out of a rural assignment after two years. However, given the difficulty in recruiting nurses for these postings, the government may take much longer than this to find a replacement. A nurse may end up resigning rather than remaining in the rural assignment.

Market Structure

With 80 percent of nurses working for the Ministry of Health, the government is in the position of having significant monopsony power in the purchase of trained nursing services. This suggests that establishing a market clearing wage may be difficult if the government is actually behaving as a monopsonist. In a market characterized by the exercise of monopsony, the sole buyer offers less than the competitive equilibrium wage and employs fewer people than the competitive equilibrium quantity of workers. The monopsonist would like to hire more nurses at the established wage; however, additional workers are not willing to work unless a higher wage is offered. From the perspective of the buyer, a shortage of workers exists because the buyer would like to hire more nurses than are willing to work at the going wage.

Recent work based on U.S. nurse markets has not resolved the longstanding issue concerning the extent of monopsonistic or oligopsonistic power in U.S. nurse markets (see, for example, Hansen 1991; Sullivan 1989). Although the structure of the market for nurses in Botswana is more clearly monopsonistic, the actual motivation and the behavior of the government in setting wages is less obvious than with hospitals in the United States. In Botswana the government sets the wages for nurses along with the wages for a huge array of other occupations, some of which, like teaching, compete directly with nursing for qualified secondary school graduates. More nurses may become available by paying higher wages to nurses, but this may also translate into fewer teachers, which could compromise other development goals. These factors suggest that wage setting for nurses in Botswana may not be best understood in terms of neoclassical cost minimization on the part of a monopsonist. Government wage setting for nurses can also be approached from

the perspective of public sector employment policy in the context of a dual labor market economy (see, for example, Calvo 1978; Fields 1987; Squire 1981).

Further problems arise when the nurse shortage issue is approached from a demand perspective. As the government provides most of the health services in Botswana at little out of pocket cost to consumers, how should the demand or need for nurses be measured? The health manpower studies performed for and by the Ministry of Health essentially collapse demand and supply into one number, the existing stock of health personnel. The expected future demands for nurses and other health personnel are calculated by simply assuming that the stock of nurses should expand at the same rate of growth as the economy overall.

To complicate matters further, Botswana has a small but rapidly growing private health sector. The opening of a modern, Western style, investor-owned hospital in Gaborone in 1992 is the most obvious example of this expansion. Some individuals claim that the private sector has drained personnel from government service. However, the new private hospital in Gaborone uses expatriates to staff the vast majority of its nurse and physician positions. This expatriate personnel policy was part of the negotiations that convinced the government to allow the hospital to be built (conversation with George Howard, chief executive officer of the hospital, 1992). Data on the impact of other parts of the growing private sector on the market for nurses are difficult to find. As private insurance coverage for medical expenses becomes more common, however, the private medical sector is likely to expand in similar fashion. In just the past year or two, private insurance coverage has been made available to a range of personnel in public sector employment. This will certainly exacerbate the problems associated with a two-tiered health care system. As private insurance coverage becomes available to public sector workers it is likely to boost the private medical sector, while simultaneously highlighting the quality differences between public and private health care services.

The growing private health sector has the potential to alter fundamentally the traditional position the government has held in setting wage levels for nurses. On the one hand, the government's ability to determine wage levels for nursing may erode, leading to higher and more uncertain public expenditures. Alternatively, to the extent that wage levels for nurses are constrained by the government's overall wage and incomes policy, the wage paid to nurses may increasingly be too low to attract people into nursing and the shortage of government nurses could worsen. A possible offsetting factor is that an expanding private health sector could also reduce the need for government nurses and lead to lower public expenditures, particularly in urban areas where private insurance is certain to be more prevalent. As this growth of the private health insurance market and the private health care services market continues, it may be useful for the government to reexamine its role in the health sector.

The Government's Role in Health Care Provision

Governments play a central role in primary, secondary, and tertiary education and in health care delivery in most industrial as well as in developing countries. A range of economic justifications supports this public involvement in the health sector, including market failures, externalities, and public goods. Private lending markets for

investment in postsecondary education, or human capital in general, in many cases do not function efficiently or exist at all. Governments often directly or indirectly subsidize students to help continue

overcome this market failure. In addition, positive externalities can result from an educated, productive work force that may not be reflected in wage rates for individual workers. For example, a growing, educated middle class may contribute to improved economic mobility for the population of a country, resulting in a better match between skills and jobs. A viable middle class can also be of central importance in improving the distribution of income in a country. Each of these arguments can be directly applied to help explain the important role that Botswana's government plays in nursing education.

In addition, the primary health care delivered to much of Botswana's population by nurses includes significant public good components and positive externalities. For example, nurses provide inoculations against and information about contagious diseases. A related productivity gain can be attributed to increased life expectancy. In just the past twenty-five years life expectancy in Botswana has increased from roughly fifty years to more than sixty-five years. Until recently, the age at which individuals could retire from public service was forty-five. With longer life expectancy, skilled and knowledgeable individuals can contribute to society for longer. Thus a longer life expectancy increases the private and social returns to education and training.

Beyond these more formal economic arguments for public provision of health and medical services, there is a widely accepted notion that health care services are a merit good, that is, that human beings are entitled to them. Public provision of these services can help ensure an equitable distribution of these limited medical resources. The justification for public financing and provision of nursing education can then be understood as providing a necessary input into the provision of a merit good. In Botswana this motivation for the government's involvement in nurse training flows directly from two of the four main development planning objectives mentioned at the outset: social justice and economic independence. Equitable access to health care can be effectively achieved through a primary health care strategy that relies heavily on provision of direct care by nurses. Training a sufficient number of nurses through the Institute of Health Services would help to eliminate reliance on expatriate health care personnel.

An additional efficiency argument indicates that the government's role in training nurses makes economic sense. With the government employing well over 80 percent of the professional health care workers in the country, public provision of nursing education can be viewed as a form of vertical integration of the production process. Vertical integration is often an efficient organizational structure in a situation that involves considerable uncertainty and requires adaptation to changing circumstances (see Williamson 1975 for a discussion of this issue). Public provision or vertical integration of nursing education in this context can help to ensure that the desired quantity and quality of professional nurses are available for the government's present and future needs. A substantial amount of coordination, cooperation, and contracting is required to accomplish a significant expansion of the country's nursing education capacity. These costs may be minimized by integrating the manpower planning, training, and development process.

Government Provision of Health Care

If the private sector provided nursing education, severe problems would be likely to arise. The size of the market for nursing education, only a few hundred places per year, could at best support a handful of private educational institutions across the whole country. The extent of the resulting competition would probably leave much to be desired. Changes in

training emphasis and types or numbers of nurses trained could all result in complicated, costly, and time-consuming contract renegotiations. The nurses being trained, as well as the government, would be

vulnerable to opportunistic behavior on the part of private sector providers of nursing education services, particularly if the government continued to play a significant role in financing individuals' training, as would likely be necessary. For example, with only a few private outfits educating nurses and with the government paying for much of the cost of education and providing an assured buyer for nurses' services, the likely result would be an increase in the price that providers of nursing education would charge for their product.

If the private sector were involved in nursing education, the financing of individuals' nurse training would be a difficult issue. Few individuals in Botswana have the resources or savings necessary to pay for two or more years of postsecondary education. Even in industrial countries the private credit system is supplemented through the use of government loan guarantees for postsecondary education. In Botswana the public sector would probably have to continue its practice of directly subsidizing much of the cost of individuals' nursing education. In this situation, serious problems could be associated with monitoring costs and deciding how the government should pay private providers of nursing education. Cost reimbursement schemes have obvious negative incentive effects. However, price setting or incentive regulation approaches are likely to encounter difficulties in gathering sufficient information and in administration.

In addition, with the government as a nearly monopsonistic buyer of the output of nursing education in Botswana, a potential investor in private nursing education would face significant risk regarding the quantity of output that is produced. The government, by and large, determines the number of nurses that are appropriate for the economy. If the government decided in five years time that it had overestimated the number of nurses required to meet its health goals, or if the retirement and labor force participation patterns of existing nurses changed, private providers of nursing education could be severely affected. This is particularly relevant if the physical or human capital investments made in nursing education have limited alternative uses.

The National Health Institute

These various factors suggest that a steady and adequate supply of trained nurses would not be forthcoming from a purely private market. The contracting problems discussed above also suggest that public subsidies for, or regulation of, a private sector would not result in a smoothly functioning or efficient nurse training system. The adaptation and flexibility of a mixed public/private system to changing notions of health care needs would likely be poor. In light of these concerns, the extensive public sector role in nursing education is appropriate.

Prior to Independence most nurses in Botswana were British, had been trained in the United Kingdom, and worked for missions. To the extent that local nurses' aides existed, they were trained in mission hospitals by British nurses. The National Health Institute was established in Gaborone soon after Independence to train registered nurses. As noted earlier, the Institute of Health Services set up other training centers and a program was established at the University of Botswana to train registered nurses to the bachelor of education level.

The increase in the number of nurses in Botswana—which has reached an annual rate of growth of more than 20 percent since Independence—has been remarkable. The growth in the number of physicians has been relatively modest. This is in keeping with a primary health care strategy. However, it is partially accidental, because the Ministry of Health has been unable to recruit the number of foreign doctors it would like and the training of local doctors has been well below expectations.

A realistic evaluation of the successes and failures of the institute's training program is important. The rapid expansion of health services created a rapidly growing demand for registered nurses. From the start, the institute was short on resources for training, such as instructors, clinical facilities, laboratory space, and libraries, given the volume of nurse trainees it was expected to produce. This created a number of problems that persist today. First, staffing the teaching cadre is a problem. Substantial education and training is required, while many view the remuneration, working conditions, and opportunities as needing improvement. Given the limited number of

The Evaluation of Public Expenditure in Africa

nurses qualified to teach in the program and the difficulty of filling the remaining posts with expatriates, the program has been understaffed since the beginning. Problems of staff morale have increased and led to staff leaving to accept other positions, some outside the health sector.

A number of teachers at the institute are unhappy with the training that trainee nurses are receiving, but they feel that they cannot do any better given the circumstances. Low staff morale is echoed by low trainee morale. As table 3–4 indicates, failure and dropout rates have been high (although they have improved recently). The focus on training a large number of nurses has eroded the quality of the nurses that graduate.

Nursing competes with a range of other career opportunities available to Botswana. At the time of independence, nursing was one of the relatively few professions open to women and had a good career image. Today, a secondary school graduate with good grades has many more options to choose from. In some respects nursing has become a career of last resort for many capable young people. These changes have undoubtedly hurt the efforts of the Ministry of Health to recruit high quality trainees.

Table 3–4 . Number of Nursing Students Admitted and Graduating by Course, 1983–85

Training course	1983			1984			1985		
	Number admitted	Number completed	Percentage completed	Number admitted	Number completed	Percentage completed	Number admitted	Number completed	Percentage completed
Nurse	80	68	85	194	88	45.36	234	85	36.3
Nurse–mid–wife	68	68	100	65	68	104.62	68	45	66.2
Enrolled nurse	130	120	92.31	80	120	150.00	73	51	69.7
EN midwife	20	n/a		20	20	100.00	24	21	87.5

Source : Ministry of Health (1990).

The curriculum at the Institute of Health Sciences is also problematic. Many different courses are required and the number of teachers is inadequate. This often results in a schedule, for both teachers and students, that is more reminiscent of primary school. Each day is filled up with many courses, leaving little time for students to study outside of class.

and much class preparation outside of normal working hours for teachers. Both teachers and students feel overwhelmed, and learning is severely handicapped. It is difficult to see how a continued adequate flow of well-trained registered nurses can be secured until the situation changes substantially.

Government Failure?

Aside from the problems noted, government failure in the planning and ongoing implementation of the expansion of nursing education in Botswana is not apparent. At independence the number of physicians was limited and the cost associated with increasing the supply of physicians was high. Therefore, Botswana's focus on primary health care using nurses to deliver health services makes sense from both an economic and a health perspective. As figure 3–1 and the country's health indicators show, this strategy has been successful.

Although the methodology for forecasting future demand for health personnel does not directly reflect individuals' preferences, demand, or medical status, the approach does generate an apparently feasible goal for the expansion of nursing education. Given the existing low stock of health personnel and the likely continued population

growth, the planned expansion of nurse training is unlikely to overshoot either the country's needs or the government's spending capacity.

The bottleneck that has developed in recruiting instructors to train nurses could be interpreted as a form of government failure. However, the development of a masters-level nursing program at the University of Botswana could help ameliorate this problem. Along with the development of a bachelor of science in nursing, this would go a long way toward providing a more attractive career path for individuals considering nursing as a profession, and would also improve the quality of nursing services.

Plans for Further Expansion

The government received professional advice on nursing education and health manpower in general through the Poindexter and Shaw-Nickerson (1990) report and the health manpower plan (Ministry of Health 1988). In the case of the latter report, the Ministry of Health has acquired the expertise to update and refine the data and methodology of the report. Ongoing planning and development work at the ministry concerns the implementation of many of the recommendations in these documents.

By contrast, the more recent discussions centering around a possible medical school at the University of Botswana are cause for caution. With a population of less than 1.5 million and with the costs of such an undertaking, whether the long-term need for physicians justifies establishing a medical school in Gaborone is not clear. Although this move would certainly help achieve the objective of economic independence, the financial and recurrent costs would be significant. Proposals to establish partnership arrangements with European or U.S. medical schools are more manageable alternatives. If Botswana does move forward with establishing either its own medical school or entering into partnership arrangements with medical schools in industrial countries, the economies of scale of such an endeavor would suggest that Botswana look toward viewing medical education as an export good. Demand for such an export could come from a number of other countries in Africa.

A number of arguments support the shift away from enrolled nurses and toward registered nurses. Given nurses' responsibilities in hospitals, clinics, and health posts, particularly in rural areas, the additional training makes sense. The progression from enrolled nurse to registered nurse is duplicative and costly. Training individuals as registered nurses directly would be much more efficient.

The Expansion Plan and Costs

The requirements study (Ministry of Health internal paper 1989) proposed doubling the number of training places at the Institute of Health Sciences over a number of years at a total cost of P 71.6 million. The recurrent costs of training nurses were expected to rise from P 5.9 million to between P 11.3 million and P 12.7 million (constant 1989 pula) by the mid-1990s. This increase in the institute's recurrent costs would absorb roughly a quarter of the total increment in the Ministry of Health's recurrent budget over the period of expansion (Ministry of Health 1989, p. iv). In light of the importance the government and Ministry of Health place on increasing the supply of nurses, this commitment of resources is seen as both affordable and appropriate.

The range of recurrent costs mentioned are a function of alternative staffing ratios that could be implemented within the nursing education program. Some individuals in health policy and manpower development felt that staff-to-student ratios should be increased to improve the quality of instruction. The requirements study suggested that at least two other factors might affect the estimates of recurrent costs. These estimates were extrapolated from the existing staffing levels.² On the one hand, with expansion of capacity economies of scale could result because not all instructor and administrative positions would need to be increased in proportion to the rise in the number of nursing students. If these economies of scale were to emerge, actual recurrent costs could be lower than the estimated levels. On the other hand, the estimates of recurrent cost did not take into account the

possibility that expatriate instructors might constitute a larger proportion of the added staff than of the existing staff. Because expatriates are paid more, the recurrent cost estimates might be understated.

Subsequent to the requirements study a series of reports has set out proposals to expand and rationalize the nursing education system. Two of these reports are by outside consultants and a third is by a government task force. The 1989 Cobin and Strickland report (Poindexter and Shaw–Nickerson 1990, appendix) outlined a proposal to introduce a bachelor of science in nursing and to improve coordination across the enrolled nurse and registered nurse training programs. As a follow-up to these ideas the government asked the Kellogg Foundation to fund more detailed planning. The resulting report (Poindexter and Shaw–Nickerson 1990) provided detailed recommendations for the entire nursing education program. Finally, a task force, composed primarily of government personnel, but also including representatives of the Nurses Association of Botswana and the Botswana Nursing Council, was charged with reviewing the report's recommendations (Ministry of Health 1992).break

2 After careful study, the Ministry of Health now believes that the requirements study underestimated the recurrent costs of its recommendations. Many of the recommendations are being implemented, but the costs will be higher than originally estimated.

The objectives of the Kellogg consultants were to "design an alternative system of nursing education for Botswana which: (1) is more efficient and cost effective, (2) strengthens the knowledge and skills of primary health care services, (3) increases the attractiveness of nursing as a career to potential entrants, and (4) supports career development for practicing nurses" (Poindexter and Shaw–Nickerson 1990, p. 1). The central recommendations that emerged from the two reports as concerned nursing education included (a) eliminating the enrolled nurse program and upgrading enrolled nurses to registered nurses over a short period, (b) developing a streamlined two-year registered nurse program plus a one-year internship, and (c) creating a four-year bachelor of science in nursing at the University of Botswana and diversifying the existing bachelor of education in nursing to service other nursing specialties. Significant cost savings are anticipated from implementing the proposals for training nurses, attributable in large part to eliminating duplicative training. Under the current system, an individual requires eight years to progress through the entire training program, but under the proposed system this could be achieved in five years: a two-year registered nurse program, one year of internship, and an additional two years to earn a degree.

The estimated cost to the government of the current eight-year program is P 245,200 per student. Under the proposed system, these costs would fall to P 118,000. The P 127,200 saving can be broken down into three components: less spent on direct educational costs attributable to eliminating the overlap in training and education, the elimination of payments during the internship portion of training (under the current system nurses are paid while they pursue postbasic registered nurse training), and less spent on replacements while nurses pursue education and training beyond the basic registered nurse program because the training time has been shortened by two years.

How the savings from coordinating and streamlining the nurse training programs as described in the 1989 Cobin and Strickland report in Poindexter and Shaw–Nickerson (1990) and the task force report dovetail with the overall cost estimates described in the earlier requirements study is not clear. The numbers outlined in the requirements study probably provide an upper bound on the costs of expanding, upgrading, and rationalizing the nurse training system. The requirements study did not address the costs involved in expanding the college-level nurse training program, but it did calculate the number of additional instructors that have to be trained and factored in the cost of sending these individuals abroad on fellowships. Comparing the costs of training the instructors abroad with the costs of training them at the University of Botswana would be interesting.

Conclusion

At Independence in 1966 Botswana's health care system provided curative care for a small fraction of the population. Today the vast majority of Botswana have access to primary health care services in their communities. Social and health indicators for Botswana have improved significantly during the past two or three decades. The government has played the central role in developing the health manpower and physical infrastructure that support this health delivery system. The Institute of Health Sciences, a branch of the Ministry of Health, has been instrumental in expanding the supply of nurses from a mere handful to several thousand. Historically, the government has devoted roughly 5 percent of public expenditures to the health sector.

Despite these important successes, some troublesome problems are in evidence. The supply of nurses is insufficient to meet existing needs and future goals. The ability to increase the capacity of nurse training facilities in Botswana depends on improving a number of related areas, including the working conditions of nurse instructors and their career prospects and the attractiveness of nursing as a profession.

The government should consider paying differential wages in areas or for specific jobs that have been hard to fill. This added compensation could go a long way toward alleviating some of the chronic problems the Ministry of Health has had in recruiting individuals for less attractive positions.

The creation of a bachelor of science and/or a masters-level program in nursing at the University of Botswana could help the nursing education system as well as the overall health care system. The development of a local program of this sort would go a long way toward enhancing the long-term career prospects of individuals considering nursing as a profession, and would also help expand the nurse training capacity.

The difficulty the Ministry of Health and development planners face is that these initiatives require additional resources. The tradeoffs involved in shifting additional resources toward nurse training or health care must be considered both within the health sector, as well as across the entire development process.

References

- Calvo, Guillermo A. 1978. "Urban Unemployment and Wage Determination in LDC's: Trade Unions in the Harris-Todaro Model." *International Economic Review* 19 (1):65-81.
- Central Statistics Office. 1990. *Statistical Bulletin*. Botswana: March.
- . 1991. *Women and Men in Botswana: Facts and Figures*. Gaborone, Botswana.
- Fields, Gary. 1987. "Public Policy and the Labor Market in Developing Countries." David Newbery and Nicholas Stern, eds., New York: Oxford University Press. In *The Theory of Taxation for Developing Countries*.
- Hansen, Korinna. 1991. "Testing for Monopsony Power in the U.S. Nursing Market." Working paper. Rochester, New York: University of Rochester.
- IMF (International Monetary Fund). 1981-92. *Government Finance Statistics Yearbook*. Washington, D.C.
- Ministry of Finance and Development Planning. 1983. "Midterm Review of National Development Plan 5." Gaborone, Botswana.
- . 1988. "Midterm Review of National Development Plan 6." Gaborone, Botswana.

———. 1991. "National Development Plan 7: 1991–97." Gaborone, Botswana. July 1991.

Ministry of Health. 1988. "Health Manpower Plan for Botswana: 1988–2002." Gaborone, Botswana.

Ministry of Health, Health Statistics Unit. 1990. *Health Statistics Report: 1985*. Gaborone, Botswana.

Ministry of Health, Department of Health Manpower. 1992. "Health Manpower Plan for Botswana: 1992–2005." Gaborone, Botswana. Draft.

Ministry of Health. 1989. "National Health Institute Requirements Study, Final Report." Gaborone, Botswana.

Ministry of Health (internal document). 1992. "Report of the Task Force on Kellogg Consultancy Report on Nursing Education System in Botswana." Gaborone, Botswana.

Poindexter, Jeannette, and Ethelrine Shaw–Nickerson. 1990. "Report of Consultation Visit to Botswana, Africa." (The Kellogg Report.) Battle Creek, Michigan: Kellogg Foundation.break

Squire, Lyn. 1981. *Employment Policy in Developing Countries: A Survey of Issues and Evidence*. New York: Oxford University Press.

Sullivan, Daniel. 1989. "Monopsony Power in the Market for Nurses." *Journal of Law and Economics*. XXXII(2, part 2):S135–S178.

WHO (World Health Organization) and UNICEF (United Nations Children's Fund). 1978. *Primary Health Care*. New York.

Williamson, Oliver. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: The Free Press.

World Bank. 1992. *World Tables, 1992*. Baltimore, Maryland, and London: Johns Hopkins University Press.break

4—

Public Finance and Public Employment: An Analysis of Public Sector Retrenchment Programs in Ghana and Guinea

Bradford Mills, David E. Sahn, Edward E. Walden, and Stephen D. Younger

Civil Service reform is an issue whose time has come in Africa. Overstaffing is pervasive in most African governments and severe enough to cause important macroeconomic and structural problems. Under the best of conditions, bloated payrolls contribute to fiscal deficits and a host of consequent macroeconomic problems. However, the problems often run deeper. Governments can raise only so much in tax revenues (including the inflation tax), and public sector employment has grown so much in Africa that the limit often impinges on the government's ability to manage its finances in a reasonable manner. Civil service overstaffing also affects the productivity of the public sector. In particular, as the civil service wage bill grows, governments are forced to cut back on other expenditures, such as development spending and operations and maintenance. In more extreme cases, even those cuts do not suffice, and civil service wage *rates* begin to fall, especially for more skilled civil servants, even if the total wage *bill* does not. As the salary structure is compressed, skilled employees leave for

The Evaluation of Public Expenditure in Africa

other jobs, often abroad, further impairing the civil service's ability to function. Other employees resort to moonlighting, "daylighting," or accepting bribes to augment their meager wages.

As an example, table 4–1 shows this pattern for Ghana. While poor recordkeeping makes establishing the total number of civil servants on a regular basis difficult—a problem that is endemic in Africa—employment clearly grew rapidly from independence in 1961 to the civil service census in 1984. Concurrently, the government established a variety of public enterprises and nationalized many others, especially in the mid–1970s. The fiscal deficit expanded rapidly during this period, peaking at 15 percent of gross domestic product (GDP) in 1975. From then on, a series of shocks and chronic economic mismanagement prompted a sharp economic decline that reduced tax revenues and, with them, civil servants' pay. Senior civil servants saw an especially sharp decline, and many qualified people left the civil service (and Ghana) in the early 1980s.

The lack of data makes demonstrating the same pattern in other African countries difficult (although Gregory 1993 establishes similar results for Somalia). Nevertheless, table continue

Table 4–1 . Civil Service Employment, Wages, and GDP in Ghana, Selected Years

Year	<i>Employment</i> (thousands)			<i>Wage index</i> (1977 = 100)		<i>Compression ratio</i> a		<i>Real GDP</i> <i>per capita</i> (1977 = 100)
	Total	Ghana <i>Education</i> <i>Service</i>	Civil <i>Service</i>	Unskilled	Senior	Pretax	Post-tax	
1961	105	—	—	—	—	—	—	110
1977	—	—	—	100	100	—	—	100
1980	—	—	—	32	30	—	—	102
1983	—	—	—	32	10	2.3	1.5	84
1984	311	—	—	27	7	—	—	83
1985	—	—	—	55	13	—	—	85
1986	317b	—	—	56	36	5.7	4.1	87
1987	—	—	—	44	31	—	—	89
1988	281	156	125	55	33	5.4	—	90
1989	—	—	122	54	41	7.8	—	92
1990	—	—	114	48	42	9.5	6.7	92
1991	—	—	—	—	—	—	—	—
1992	260	160	100	—	—	—	—	—

GDP Gross domestic product.

— Not available.

a. The compression ratio is the ratio of the highest civil service salary scale to the lowest.

b. Includes roughly 10,000 ghost workers who are not counted in the percentage reduction information presented in the text.

Source : Alderman, Canagarajah, and Younger (1994).

4–2 shows data on civil servants' salaries and the overall wage bill for the public sector in several African countries. As the table indicates, wages for individual civil servants fell dramatically from 1975 to 1985, while the pattern of the wage bill is much less pronounced. This combination—sharply declining wage *rates* with more stable wage *bills*—implies a general increase in the number of government employees in each country. At the same time, governments have been unable to raise revenues to pay these additional employees, so their salaries must come from squeezing other parts of the budget, including their colleagues' salaries.

Overstaffing problems appear to have three distinct sources. First, many African governments were establishing themselves in the 1960s, when the state was seen as an important engine of growth. At that time, the usual approach was to suppose that a variety of social and economic problems could and should be addressed with new ministries, agencies, or state-owned enterprises. Second, many governments guaranteed employment to all university graduates as a means of promoting education. Third, public sector jobs were regularly used as a form of political patronage. These problems are often exacerbated by labor laws or collective bargaining agreements that make dismissing staff difficult. The result is an abundance of staff who have little to do, but cannot be laid off.
break

Table 4–2 . Changes in Civil Service Wage Rates and Public Sector Wage Bills, 1975–85, Selected African Countries (percent)

Country	Change in wage bill	Change in wage rates	
		Lowest grade	Highest grade
Ethiopia	91	–37	–69
The Gambia	21	–60	–64
Ghana	–39	–45	–87
Kenya	–6	–42	–58
Morocco	14	–34	–47
Nigeria	–47	–58	–78
Sierra Leone	–31	–77	–84
Togo	–46	–42	–42
Tunisia	6	–26	–47
Zimbabwe	–15	51	–42

Source : IMF (various years); Robinson (1990).

Overlaying these fundamental causes is a general loss of control over hiring. Even though all governments have some central agency (an auditor general, a public service commission, and so on) that is charged with monitoring payrolls, these institutions are often unable to control the hiring decisions of more powerful ministries. In the worst cases, the government cannot even account for all of its employees, let alone control further hiring.

Whatever the cause of overstaffing, note that in the context of this set of case studies it cannot be justified in terms of public finance theory. Attitudes about the public sector's role in economic development have changed dramatically since the 1960s. Most professional economists now believe that many public institutions in Africa,

whether ministries or enterprises, have no *raison d'être*, either because they have proved ineffective or because their mission is more appropriately carried out by a nonpublic entity. Furthermore, economic theory cannot justify patronage jobs or the use of the public sector as an employer of last resort for the educated.

If no good economic arguments exist to defend overstaffing then, conversely, there are strong macroeconomic and microeconomic arguments to eliminate it. Yet attempts to reduce the size of the public sector's payroll are few and far between. The first argument that any potential reformer is likely to face is a socioeconomic one. Because the public sector has come to dominate formal sector employment in many African economies, whether laid off civil servants could find employment in other sectors of the economy is not clear. If not, throwing civil servants out on the street would be irresponsible, and even cruel. Public sector employment becomes a kind of welfare for those whom policymakers believe cannot find work elsewhere.

While this is a common argument, the political costs of retrenchment programs are an even greater obstacle to reform. Civil servants have significant political power. They are generally better educated than the population at large, and they are concentrated in urban areas,

especially the capital. What is more, to the extent that patronage is a source of overstaffing, one must recognize that civil servants who hold patronage jobs obtained their employment because the government found it politically expedient to hire them. Laying them off is therefore politically risky. Nevertheless, a few African governments have begun to address the issue of overstaffing. This chapter describes the reforms in Ghana and Guinea, two countries that have gone further than most in reducing the size of the civil service.¹

The development experiences of the two countries are similar in many ways. Both embarked upon state-led development strategies soon after independence. While figures on the size of public sector employment are imprecise before the last few years—neither government kept careful records of its payrolls—the civil service and other public institutions clearly grew rapidly. At the same time, both countries endured prolonged periods of declining per capita incomes, with the pace of the deterioration accelerating in the late 1970s and early 1980s. At the nadir, each country suffered acutely from the problems discussed earlier, with declining salaries, flight of skilled employees, widespread moonlighting, and crippling shortages of materials and equipment. In sum, the civil service and most state enterprises became dysfunctional.

The severity of these problems in Ghana and Guinea probably caused them to pursue civil service reforms more aggressively than other African countries, but the decision was not entirely voluntary. Both Ghana and Guinea were early converts to the wave of economic recovery programs that is sweeping Africa, largely because their economic problems were so severe that they had no option but to turn to donors for assistance and accept the conditions that accompanied that aid. One such condition in both Ghana and Guinea was civil service reform. Thus, to some extent, the reform programs were driven by the donors. It is not that the respective governments did not recognize overstaffing as a problem—it was and is obvious to everyone, including civil servants themselves—but they had serious political reservations about the feasibility of retrenchments. The authorities believed that given the state of the labor markets and their understanding of how they functioned, retrenched civil servants would not be able to find acceptable employment. Nevertheless, each government did take the risk of laying off civil servants in earnest, and each did so without significant political turmoil. The remainder of this chapter describes the design, implementation, and outcomes of civil service reform in Ghana and Guinea. Our primary objective is to explain the political, economic, and social consequences of these reforms for the economy as a whole and for the individual civil servants who were laid off.

Civil Service Reform in Ghana

By the time that Ghanaian policymakers began to consider civil service reform policies, the civil service was in extremely bad shape. From 1977 to 1983, the average civil service wage for an unskilled worker fell by 66

percent in real terms, and for senior staff fell by continue

1 This choice of countries is not accidental. The Cornell Food and Nutrition Policy Program has carried out household-level surveys in each country as part of its larger effort to evaluate the impact of structural adjustment policies on the poor. These surveys enable us to discuss not only the general characteristics of the retrenchment programs in these two countries, but also the experiences of the former civil servants themselves.

90 percent. In 1983 the compression ratio of the highest civil service salary to the lowest was only 2.2. Most skilled civil servants had long since left, and those that remained had few materials with which to work. With the advent of the Economic Recovery Program in 1983, the situation began to improve, largely because the government began to collect significantly larger amounts of tax revenue. By 1986 real salaries had risen by 75 percent for unskilled civil servants and by 320 percent for senior workers. The compression ratio rose to 4.1 during the same period (see table 4-1). These improvements did not occur because of civil service reform, however, but rather because of higher spending financed by greater tax revenues. The government had political reservations about civil service reform and stalled donors until 1987. At the signing of the First Structural Adjustment Credit with the World Bank, however, the government did accept and implement a reform program.

Objectives of the Civil Service Reform Program

The Redeployment Management Committee states that the objectives of the civil service redeployment exercise are as follows (Government of Ghana 1990):

- 1) to remove all surplus or under-employed labor from the civil service and to keep its size at an economically viable level;
- 2) to use the savings from staff reductions to enable government to pay improved remuneration to workers who remain in the civil service, thereby improving morale;
- 3) to relocate redeployed labor rationally within the private informal sectors of the economy; and
- 4) to afford redeployed workers the opportunity to rediscover their potentials and develop them through retraining.

The first objective, the retrenchment of significant numbers of civil servants, was clearly the most contentious, but it was also the most important in terms of rationalizing the civil service. The remaining objectives were generally helpful in making the layoffs palatable to civil servants. The government arrived at the second goal, in particular, after considerable debate about whether the primary objective of reform should be fiscal stabilization through a reduction of the wage bill or recovery of the capacity of the civil service through improved remuneration and recruitment of more highly skilled people. Given that the overall wage bill was reasonable, usually less than 6 percent of GDP, and that fiscal stabilization was already a well-established component of the Economic Recovery Program, the latter goal prevailed. In the end, it was good that the government did not count on significant fiscal savings from the program. Because targeted redeployees were predominantly low-paid staff, the anticipated savings from retrenchment were modest.

Design of the Civil Service Reform Program

To achieve the goals of redeployment obviously required the retrenchment of civil servants: The civil service simply had too many employees to pay competitive salaries and at the same time maintain the fiscal discipline that has been the hallmark of the Economic Recovery Programs. However, the Civil Service Reform Program (CSRP) also included other important policy changes, the most important of which was to strengthen the

super-soft

visory capabilities of the Office of the Head of the Civil Service. Ghana had never had effective, centralized control over civil service hiring decisions or payroll practices. Thus the first step of the CSRP was to design and install a centralized, computerized payroll system that the authorities could use to control staffing levels and salaries. This was a critical step. Other attempts at civil service retrenchment in Africa have foundered because the government could not make the staff reductions stick: Decentralized ministries and agencies hired new workers (or re-hired retrenched civil servants) as quickly as the reform program laid them off, yielding no net reduction.² Thus, a centralized payroll was a necessary prerequisite to the retrenchment program. An additional benefit of the payroll audit was that it identified many ghost workers, that is, names on the payroll of people who do not exist.³

Retrenchment and payroll control were the first aspects of the CSRP to be implemented. Others have followed more slowly. While salaries were unified in 1991, that is, all special allowances for housing, transport, meals, and so on were incorporated into the basic salary, other aspects of the program intended to rationalize the incentive structure for civil servants have not yet taken effect. In particular, while the government has worked out a comprehensive redesign of the pay and grading system, it has not adopted the reforms.

Job audits were to be another integral part of the CSRP, but they only began in earnest in 1991 and have progressed slowly. (Job audits review the present staffing of an office and compare it to the staffing that appears to be necessary for the performance of the office's duties.) Any discrepancies are then corrected through retrenchment or additional hiring. Nevertheless, in 1992 the job audits replaced the wholesale retrenchments of 1987–91. This slowed the rate of redeployment significantly, largely because the auditors could not cover enough offices during the year.

The Redeployment Program

While other aspects of the CSRP are important from a policy perspective, retrenchment is the one that causes the most concern and generates the greatest interest. The design and implementation of this aspect of the reforms has been quite effective in Ghana. First, the Redeployment Management Committee and the Labor Ministry (now the Ministry for Mobilization and Social Welfare) managed the public relations for the program deftly. They never referred to retrenchment, but rather to redeployment, emphasizing that redeployment meant transfer to another job, perhaps inside the civil service if an appropriate post were available, or else to the private sector. An early publicity campaign used radio, television, and the newspapers to explain that the government intended to provide employment counseling, financing for retraining, and, of course, financial assistance in the form of a severance package.^{break}

² Even in Ghana, staffing levels in the Education Service have not undergone a net reduction even though nonteaching staff were subject to redeployment, probably because the centralized payroll does not extend to the Education Service.

³ Usually, the ghost worker's salary was collected by someone else, often another, higher ranking, civil servant. For some ranking civil servants, this additional income helped to overcome their otherwise low salaries.

In identifying civil servants for redeployment, the Redeployment Management Committee adopted a set of transparent and reasonably objective criteria, namely (Government of Ghana 1990):

- Staff whose output and work habits had persistently been poor

The Evaluation of Public Expenditure in Africa

- Staff who exceeded the mandatory retirement age of sixty
- Staff whose output was adversely affected by physical infirmity
- Staff hired after approved levels for an office, agency, or other entity had been exceeded
- Staff who volunteered for redeployment
- Staff whose entry qualifications were proven to be falsified
- Staff on secondment outside the civil service who were dispensable (as a last resort)
- Staff most recently hired (last in, first out).

With the exception of teachers in the Ghana Education Service and medical employees of the Ministry of Health, no civil servant was or is exempt from redeployment, at least in theory. In practice, the authorities have concentrated on redeploying lower echelon employees, which is quite reasonable given the bottom-heavy structure of the civil service. In particular, skilled staff whose work is vital to their agency's performance are retained even if they volunteer for redeployment.

While the Redeployment Management Committee established these criteria, implementation was decentralized. In each ministry or department, a committee comprised of the department head, a representative of middle management, a workers' representative, and the workplace representative of the Committees for the Defense of the Revolution (quasi-political, mostly local, institutions that the government established as a means of promoting grassroots democracy) actually made the redeployment decisions. Decentralization has meant that redeployment has been somewhat uneven across the civil service, with some ministries and departments redeploying many more staff than others. However, this structure seems to have helped avoid the use of redeployment for vindictive ends. While other retrenchment schemes in Africa have suffered from the perception that they were applied only to certain political or ethnic groups, Ghana's program has generally been seen as fair.

In addition to equitable application of the criteria for redeployment, the program's credibility has also benefited from the payment of reasonably generous severance packages. Each redeployee is entitled to severance pay equal to four months base salary plus an end-of-service benefit of two months pay for each year worked in the civil service (we will refer to these two items together as severance pay). This package is sufficiently attractive to encourage a considerable number of civil servants for redeployment. Even among those redeployees who did not leave voluntarily, we have found little bitterness except for those who were redeployed in the first year or so of the program. At that time, base salaries (and thus severance benefits) were lower, and considerable delays occurred in the payment of benefits, which served to reduce their real value further. Nevertheless, once the government began to make severance payments promptly, the whole process seems to have functioned with little acrimony.
break

Global Results of the Redeployment Program

Table 4-3 shows the number of redeployed civil servants and their severance pay for 1987-92. While the program was somewhat slow to get going in 1987, it did meet or exceed the target of 12,000 redeployments per year that the government had agreed upon with donors in each of the following three years. The pace slowed considerably in 1991, when the redeployment strategy shifted from the broad criteria outlined earlier to department- and ministry-specific job audits that identify unnecessary staff in the context of a more careful evaluation of the unit's function and staffing needs. Such evaluations are time consuming, and this seems to account for the reduced number of redeployments. Nevertheless, the pace appears to have picked up again in

1992.

Table 4–3 . Summary of Civil Service Redeployments in Ghana, 1987–92

<i>Year</i>	<i>No. of people redeployed</i>	<i>Redeployed from Ghana Education Service</i>	<i>Redeployees older than 60</i>	<i>Total severance (¢ millions)</i>	<i>Severance as a percentage of government expenditures</i>	<i>Severance per worker (US\$)</i>
1987	8,881	4,307	881	851	0.8	383
1988	12,372	1,062	337	2,141	1.5	553
1989	13,937	1,810	43	3,686	1.9	661
1990	12,249	6,358	65	3,169	1.2	750
1991	4,597	687	—	1,820	0.5	1,003
1992 (Jan.–Jun.)	7,774	246	—	3,800	—	1,102
Total	59,810	14,470	—	15,466	—	n.a.

— Not available.

n.a. Not applicable.

Note : U.S. dollar figures are calculated using the end-of-period exchange rate.

Source : Ministry of Mobilization and Social Welfare data; authors' calculations.

The last column of table 4–3 shows a marked increase in the severance pay per redeployee throughout the past six years. This is explained by the general rise in civil service pay during the period (see table 4–1), and also by the salary unification of 1991, which brought several allowances worth about 20 percent of total compensation into civil servants' base pay.⁴ The very low payout in 1987 was also due to the fact that many of the redeployees in that year had worked for the district assemblies. Because these local institutions paid half of their employees' salaries, they were also held responsible for half of their severance pay, thereby reducing the central government's liability considerably. As it turned out, many of the district assemblies did not pay their share, which contributed to the low severance payments and the general bitterness of these redeployees.^{break}

⁴ Recall that severance payments are a proportion of base pay rather than of total compensation. The marked increase in severance cost per redeployee to the government may have contributed to the reduced pace of redeployments in 1991. The government maintains targets for the fiscal deficit with the International Monetary Fund that it had difficult meeting in that year.

Table 4–3 reports the gross reductions in civil service staff resulting from redeployment. Figures on net reductions are more difficult to obtain, but table 4–1 shows the best data we could obtain for different points in time in Ghana. For the most part, the gross reductions of the redeployment program seem to have translated into similar net reductions: The government redeployed almost 60,000 civil servants between 1987 and June 1992, and total civil service employment fell by 47,000 during the same period. While this net change includes normal attrition as well as redeployments, rehiring has not negated most of the impact of the redeployment programs.⁵ This is particularly true because the government has been purposefully hiring to fill vacant skilled positions.

At the same time, at least since 1988, all the progress has come in the civil service rather than the Ghana Education Service. In part, this is because of a planned expansion of the teaching staff for the junior secondary schools, but it is also true that the Ghana Education Service has never implemented a computerized, central system of recruitment control such as that put in place by the Office of the Head of the Civil Service. This has made maintaining the staffing reductions brought about by redeployments in the service difficult. The surge of redeployments from the Education Service in 1990 probably reflects the layoff of a large number of unplanned new hires: Average severance pay for employees was low relative to that of civil servants that year, which is consistent with the service redeployees having few years of experience.

The fiscal impact of the redeployments was minor in the first several years of the program, although it has started to become significant. Table 4–4 shows that the net cash flow from the program turned positive in 1990, and the cumulative savings did so in 1991. By 1992, a nontrivial proportion of government expenditures had been saved. Nevertheless these data should serve as a warning to governments hoping to reap fiscal benefits through retrenchment: such programs are investments whose payback period is drawn out over several years. One should not expect to see significant reductions in total spending until a large number of employees have been retrenched and their severance paid.

Impact of Redeployment on the Redeployees

The most pressing concern about laid off civil servants is their ability to find other work and the incomes they receive from that work (this section draws on Alderman, Canagarajah, and Younger 1994). Table 4–5 compares Ghanaian redeployees' labor force participation with that of respondents to the 1987 Ghana Living Standards Survey (GLSS) who are seventeen or older.⁶ The pattern of employment for redeployees in our sample, whom we interviewed anywhere from one month to four years after they were laid off, is virtually identical to that of the population at large, and the unemployment rate is quite low in both cases. (This is not atypical for a developing economy, where people simply cannot afford to continue

⁵ These data do not agree with de Merode (1992), who claims that rehiring equal to about 25 percent of redeployments occurred in Ghana, often for the same lower echelon jobs that the redeployment program was trying to eliminate. We are unsure of the source of this contradiction, although it may be that the situation has improved greatly since 1989, when de Merode carried out his investigation.

⁶ The GLSS is a large, multipurpose household survey based on a nationwide, random sample of the population at large. Because our own survey sampled only from three regions, Greater Accra, Central, and Ashanti, all comparisons in this paper are between our survey and the GLSS respondents residing in these three regions.

to be unemployed.) What is more, most redeployees had only short spells without work after they were laid off. Fully 63 percent had no spell without work, mostly because they simply continued to work at a second job that they already held while they were in the civil service. For the remaining 37 percent, including those who have probably withdrawn from the labor force, the median spell without work was only thirteen weeks. Thus, fears that redeployees would not find work appear to have been exaggerated.

Table 4–4 . Cash Flow of Severance Pay and Salary Savings for Ghana's Redeployment Program, 1987–92
(millions of cedis)

<i>Item</i>	1987	1988	1989	1990	1991	1992
Severance pay	851	2,141	3,686	2,968	3,624	3,983

The Evaluation of Public Expenditure in Africa

Compensation savings	281	1,321	3,301	5,845	8,868	11,431
Net savings	(570)	(820)	(385)	2,877	5,244	7,448
Discounted savings	(1,621)	(1,756)	(651)	3,464	5,269	6,703
Sum of discounted savings	(1,621)	(3,377)	(4,027)	(564)	4,705	11,408
Net savings/expenditure	-0.006	-0.006	-0.002	0.012	0.015	0.019

Notes : For 1992, the Consumer Price Index is for June. For all other years, it is the monthly average. For 1992 government expenditures are based on the budget. All other years are actual expenditures. Discounting is at a real rate of 10 percent per year. Figures in parentheses are negative.

Source : de Merode (1994); Government of Ghana (1992).

Table 4-5 . Labor Force Participation Status of Redeployees and 1987 Ghana Living Standards Survey Respondents in Three Regions of Ghana

<i>Category</i>	Working	Unemployed	Other <i>inactive</i>	Students	Total
General population (number)	2,387	91	249	153	2,880
Percentage of general population	83	3	9	5	n.a.
Redeployees (number)	423	17	41	29	510
Percentage of redeployees	83	3	8	6	n.a.

n.a. Not applicable.

Source : Alderman, Canagarajah, and Younger (1994).

Nevertheless, most redeployees are not working in formal wage employment. As table 4-6 shows, redeployees are more likely to be self-employed than the population at large, with correspondingly lower proportions in wage employment and farming. The low level of wage employment reflects the state of the labor market in Ghana during the Economic Recovery Program, when many traditional sources of formal sector employment, including state-owned enterprises and the civil service itself, were not hiring. Redeployees are somewhat less likely to be farming, probably because the vast majority of civil servants are urban based.

Table 4-6. Type of Work for Redeployees and 1987 GLSS Respondents in Three Regions of Ghana

	<i>Farming</i>	Self-employment	Wage work	Unknown <i>work</i>	Total
General population (number)	1,084	660	635	8	2,387

The Evaluation of Public Expenditure in Africa

Percentage of respondents	45	28	27	0	83
Redeployees (number)	167	167	89	—	423
Percentage of respondents	39	39	21	—	83

— Not available.

Source : Alderman, Canagarajah, and Younger (1994).

The large proportion of self-employed redeployees may lead to concerns that they are underemployed, but tables 4-7 and 4-8 should allay those fears. Table 4-7 compares median household incomes for the GLSS and redeployees.⁷ Median household incomes for redeployees are very close to those of the population at large, and the median self-employed income is also comparable. The more alarming data are those for farming incomes, which are very low among redeployees. This concern is amplified by table 4-8, which reports the proportion of redeployee households that fall in each GLSS income quintile by the main type of work for the redeployee in the household. In general, redeployees' households are slightly overrepresented in the second and third quintiles, largely because households with redeployees who are not working or who are farming have very low incomes. (The self-employed, by contrast, are less likely to be in the lowest income quintile.) It appears that farming could be an important type of underemployment for redeployees in Ghana. By social tradition, most Ghanaians may return home to their village and receive land to work even if they have been away for some time. Thus, farming may be a fall-back option for Ghanaians who cannot find other work. Nevertheless, many redeployees do not appear to be doing well at farming. On average, they have smaller plots, work fewer hours, and obtain much lower yields than the population at large (see Alderman, Canagarajah and Younger 1994 for a more detailed discussion). As a result, farming incomes are quite low when compared to other Ghanaian farmers.

Redeployees must surely include a significant number of poor people, particularly among those who have not found work and those who are farming (Boateng and others 1989 find that about 35 percent of the Ghanaian population is poor, based on estimates of minimal caloric intake from the GLSS data). Nevertheless, whether this calls for any special consideration for redeployees is not clear. Their household incomes appear to be only slightly worse than those of the population in general, so no compelling reason exists to continue

⁷ Originally, we made these comparisons on a *per capita* basis (see Alderman, Canagarajah, and Younger 1994). But household sizes in the GLSS are suspiciously small, 4.3 people per household versus 5.4 in our survey, which inflates any *per capita* incomes for that survey. As a result, we report only total household incomes here. At the same time, household incomes from the GLSS are small relative to expenditures, especially in Greater Accra, and several researchers have concluded that incomes are seriously underreported in that survey (see Alderman 1992). Our survey did not collect expenditure data, so we have no way of making a similar judgement about the veracity of income responses for our households.

Table 4-7. Median Household Incomes of Redeployees and 1987 GLSS Respondents in Three Regions of Ghana, 1991

Component of income	GLSS		Redeployees	
	Median (cedis/month)	Number of households	Median (cedis/month)	Number of households
Total household income	19,524	1,346	20,000	510

The Evaluation of Public Expenditure in Africa

Of which

Wages	6,951	429	16,433	207
Agriculture	14,474	672	5,333	227
Self-employment	12,616	733	12,000	363
Other	1,185	771	7,340	82
Remittances	2,370	472	4,000	127

Note : The medians are the middle value of only the households that have some of the particular type of income reported. Remittances are not included in household income.

Source : Alderman, Canagarajah, and Younger (1994).

Table 4-8 . Proportion of Redeployee Households Falling in 1987 GLSS Income Quintiles by Redeployees' Main Type of Work (percent)

<i>GLSS income quintile</i>	<i>All redeployees</i>	<i>Not working</i>	<i>Farming</i>	<i>Self-employed</i>	<i>Wage employment</i>
Lowest	18	30	26	13	5
Second	28	22	32	22	35
Third	23	23	18	22	35
Fourth	18	10	16	22	19
Highest	13	15	8	21	6

Source : Alderman, Canagarajah, and Younger (1994).

create a special antipoverty program for them. At the same time, one must recognize that redeployees have lost a considerable amount of income because their salaries were above average when they worked in the civil service, even though they were overwhelmingly from the lower echelons of the civil service. On average, current earnings for redeployees are 28 percent lower than when they were in the civil service. If we exclude all redeployees who are not currently working from the sample, the difference is 20 percent. To some extent, these losses are offset by the receipt of a severance package, but only partially. If we suppose that the redeployees could earn a 10 percent real return on their severance package, that income flow would be about 12 percent of their earnings while they were in the civil service.

Programs to Compensate Redeployees

When the government launched the redeployment program it emphasized that the intent was to redeploy, not to retrench. In addition to severance pay, redeployees were to receive employment counseling, retraining, credit and managerial assistance to help with small businesses, and such items as tools and seeds to begin farms. In practice, only the severance program has been effective. The other compensation schemes encountered considerable implementation delays, partly because the donors who agreed to support them in principle were slow to allocate funds in practice. Thus, de Merode (1994) reports that by the end of 1989 only 100 redeployees out of 3,000 applicants had received retraining. In our sample, 26 percent had received employment counseling, but only 1 percent had received tools or agricultural inputs and 8 percent had received food-for-work. Thus, while the emphasis on these redeployment programs may have had an important public relations effect, the programs themselves have had little impact.

The one compensation for redeployees that has been effective is reasonably attractive severance pay. Of our sample 33 percent volunteered for redeployment, and our informal conversations suggest that the end-of-service benefit was an important, indeed dominant, consideration in this decision. Note that redeployees saved or invested a large portion of the severance pay. Table 4-9 shows that redeployees used 21 percent of their total severance pay to accumulate financial assets, and another 34 percent to make expenditures that are traditionally considered to be investments. Redeployees who are currently self-employed or farming are even more likely to invest a significant proportion of their severance, presumably in the businesses they are pursuing. Thus, severance pay alone seems to have assisted the development of a significant amount of small-scale enterprise among redeployees.

In the end, lack of attention to other forms of compensation may have been fortuitous. Experience with such schemes in other countries has generally been unfavorable (see Kingsbury 1992a, b), and the evidence that we cited earlier suggests that redeployees are not an especially disadvantaged group. In addition, severance pay is costless to administer (once the payroll has been established) and reasonably effective at helping redeployees establish new forms of employment.

Public Sector Reform in Guinea

Like Ghana, the fiscal conditions and efficiency of the public sector in Guinea deteriorated dramatically throughout the early 1980s. By the end of the First Republic in 1984, estimates indicated that the public sector wage bill accounted for 37.3 percent of public expenditures. The relatively high share of total spending for wages, coupled with the extremely low public sector wage rates, was a consequence of a policy to expand the State's role in the economy. This occurred even though stagnant economic performance was limiting the resource base available to the state.

Public sector growth was a logical component of the state's creation of a command economy with central control over almost all economic activity. However, the government continue

8 At the time we were surveying (late 1991), the retraining and counseling efforts were picking up steam, but too late for the impact to show up in our results.

Table 4-9. Allocation of Severance Pay by Expenditure and Savings Type

<i>Use of severance pay</i>	Mean (<i>nominal cedis</i>)	<i>Percentage of total</i>
Liquid assets	28,030	13
Repayment of debts	18,065	8
Real estate	25,820	12
Business equipment	41,570	19
Education	7,490	3
Subtotal: financial and real savings	120,975	56
Consumer durables	17,321	8

The Evaluation of Public Expenditure in Africa

Consumer nondurables	77,332	36
Total: severance pay	215,628	100

Source : Alderman, Canagarajah, and Younger (1994).

also used a well-functioning and expansive system of patronage, most obviously manifested in the state provision of jobs, to legitimize the state and maintain its political support. Ironically, it was the growing demands of the expanding public sector work force that contributed to declining conditions of service for public sector workers. As policies that accompanied the burgeoning bureaucratic infrastructure and state employment stifled private sector growth, the revenue base from which to pay a growing number of public sector workers shrank. The government responded by freezing nominal wages in a highly inflationary environment. The real average base salary for a state worker declined to a low of US\$16 per month at the parallel exchange rate in 1984.

In addition to real wage decline and salary compression, few performance incentives were available in the form of advancement or opportunities for training and skill development. Coupled with the lack of a mechanism for accountability in the public sector, this contributed to a system where rent seeking and other abuses of power were common ways of extracting additional benefits from working for the state. Thus in Guinea, the institutional mandate for public sector reform was far more compelling than accompanying budgetary pressures.

Under the Second Republic, the government moved quickly both to reduce the scope and improve the efficiency of the public sector by implementing liberal economic policies favorable to private enterprise and foreign investment. Economic reform measures were first proposed in the *Programme Intérimaire de Redressement Nationale* in 1985, which was subsequently elaborated into a structural adjustment program for 1986 to 1988, the *Programme de Redressement Economique et Financier*, supported by loans from the World Bank and the International Monetary Fund (IMF). The program committed the government to undertake a number of concrete actions to reduce the state's role in the economy and to liberalize markets, including reducing the number of public sector employees and privatizing or liquidating most parastatals.

Objectives of the Public Sector Reform Program in Guinea

As part of the initial economic recovery program outlined in 1985, the government set three targets to reduce the number of public sector employees and increase the sector's efficiency: a redeployment program was to reduce total public sector employment by 25,000 people, a new pay and benefits framework was to be introduced to provide performance incentive, and the skill levels of remaining public sector employees were to be increased. The second phase of the program, commencing in late 1988, focused on increasing the efficiency of the remaining public sector employees through institutional reform.

Like in Ghana, the fiscal and institutional crises that confronted Guinea made reducing the number of workers a necessary first step, but it was also the most politically difficult. At the same time, the overt failure of the state bureaucracy to provide even the most rudimentary services, whether economic or social, made improving the functioning of the remaining state workers an equally important long-term objective of the program.

Design of the Redeployment Program

The first major step to realizing the ambitious objectives of the reform program was a census of public sector employees conducted between December 1985 and April 1986 to determine the number of public sector employees on the payroll. The census results indicated that 70,989 individuals were employed directly by the civil service; 17,111 were employed in parastatals, state banks, or attached to mining companies; 12,700 were enrolled in the military; and 2,000 were employed without a specified sector.

The Evaluation of Public Expenditure in Africa

Following the census, the government instituted a hiring freeze that included ending employment guarantees for university graduates. This reversed a long-standing component of the previous regime's patronage system. The government also took several measures to reduce existing staff levels, namely:

- A large number of public sector enterprises and banks were closed and their employees were removed from the public sector payroll.
- Employees of joint venture mining companies were removed from the public sector payroll (although most were re-employed on a contractual basis).
- Civil servants over the age of fifty-five and those with more than thirty years of service were forced to retire.
- Mandatory skill testing of all civil service employees was instituted, to be followed by the release of those found to lack required skills.

Concurrently, the authorities developed three programs to lessen the social and political impact of the proposed reductions. First, they instituted the Administrative Reserve Status Program (*Disponibilité spéciale*) in December 1985. The program placed individuals redeployed as part of the liquidation or privatization of public sector enterprises on administrative reserve status. This provided them with six months of base salary after the termination of their employment. Under political pressure salary payments were later extended until December 1988. Subsequently, civil servants who failed the skills test were also placed on administrative reserve status. Delays in the confirmation process of test results allowed some of those who did not pass to remain on reserve status and continue to draw civil service salaries for up to two years after the initial December 1988 deadline.

Second, as a complement to the forced departure of people from closed enterprises or of those who failed skills tests, the Voluntary Departure Program was created to encourage

civil servants to leave the employment of the state. Under this program, incentives for departure were provided of between FG 500,000 and FG 1 million paid over thirty months. This was roughly equivalent to US\$1,130 to US\$2,257 at the 1987 parallel exchange rate, or the return to about five years of schooling. The deadline for enrollment in the Voluntary Departure Program was December 1988, and those who opted to take the civil service skills test, regardless of whether the outcome was favorable or not, forfeited their eligibility for the program. Individuals participating in the Voluntary Departure Program were also eligible to receive private enterprise development loans and training from the *Bureau d'aide à la reconversion des agents de la fonction publique* (BARAF). This initiative was intended to facilitate the transition of redeployed workers into the nascent private sector.

Global Results of the Redeployment Program

Between 1985 and 1990, the government privatized or liquidated more than 70 percent of state enterprises and removed their employees from state payrolls. At the same time, employment within the public sector was reportedly cut by 27 percent. To verify the effectiveness of these efforts to reduce the size of the public sector, the authorities undertook a second census of public sector employees at the end of 1989. This census found that 32,639 workers had been taken off the public sectors payrolls since 1985. Table 4-10 shows the number of departees, by sector and reason for departure, for the period. Departures of ministry civil service staff accounted for a little over half of all reductions and redeployments from state banks, parastatals, and mining companies accounted for the remaining departures. During the same period, the size of the military actually increased from 12,700 to 15,000 people. Clearly, in terms of exceeding its target of removing 25,000 people from the public sector the census statistics suggested that the redeployment program was a major success. However, this success was tempered by questions about the reliability of payroll information and the government's commitment to

The Evaluation of Public Expenditure in Africa

pursue more far-reaching institutional reforms in the wake of these initial gains.break

Table 4-10 . Redeployment in Guinea by Sector and Reason for Departure, 1985-89
(number of workers)

<i>Category</i>	Mining <i>companies</i>	State <i>banks</i>	Public <i>enterprises</i>	Ministry <i>staff</i>	Military	Indeterminate	Total
Staff at end of 1985	6,517	4,394	6,200	70,989	12,700	2,000	102,800
REASON FOR DEPARTURE							
Retirement	—	-610	—	4,090	—	—	-4,700
Early retirement	—	-380	—	-6,146	—	—	-6,526
Voluntary departure	—	-2,391	-5,985	-1,744	—	—	-10,120
Removed from administrative reserve status	—	—	—	-4,245	—	—	-4,245
Reemployed on contract	-5,617	—	—	—	—	—	-5,617
Staff to be retrained	—	—	—	-4,061	—	—	-4,061
Recruitment	—	—	—	1,330	2,300	—	3,630
Staff at end of 1989	900	1,013	215	52,033	15,000	2,000	71,161

— Not available.

Source : World Bank (1990).

Compensation programs also appear to have effectively targeted the majority of redeployees. Of the 31,639 departures, 10,120 departed under the voluntary departure program, 4,700 retired, 6,526 retired early, and 4,245 were removed from Administrative reserve status. All these people were entitled to receive financial compensation and/or retirement benefits, and most did receive some form of compensation. Furthermore, many of the 6,517 mining sector civil servants who were removed from the civil service rolls were rehired on a contractual basis.

At the same time, more long-term institutional reform measures quickly eroded the budgetary savings from employment reductions. The most important of these were the rapid wage increases among remaining civil servants. Between 1985 and 1986, the indications are that the base salary more than tripled (although the elimination of some in-kind payments suggests that the increase in the real value of compensation was much less), and between 1986 and 1990 real government wages increased by 150 percent (table 4-11). Wages as a percentage of total public expenditures followed a similar pattern. In the early period of the redeployment program (between 1986 and 1987), wages as a percentage of total public expenditures dropped from 15.6 percent to 11.7 percent. However, this trend was soon reversed as wages as a share of total spending rose to 19.4 percent in 1989, and then a high of 24.2 percent in 1991, as a direct result of continuing real wage increases. Thus, the fiscal savings of the layoffs were overwhelmed by the imperative of improving the conditions of service in the sector over the longer term.

Table 4–11. Civil Service Employment, Wages, and Real GDP in Guinea, 1985–90

Year	Employment (thousands)			Wage index (1986 = 100)	Compression ratio a (pretax)	Real GDP per capita (1985 = 100)
	Total	Other public sector	Ministry			
1985	—	—	—	—	—	100
1986	102,800	31,811	70,989	100	4	104
1987	—	—	—	93	—	105
1988	—	—	—	172	—	108
1989	71,161	19,128	52,033	212	4	109
1990	—	—	—	252	—	111

— Not available.

a. The compression ratio is the ratio of the base pay of top civil servants to that of bottom-level civil servants.

Source : de Merode (1994); IMF (1991); World Bank (1990).

While the reform program was able to exceed targets in terms of the number of workers to depart the civil service, several administrative problems mitigated its success. Few individuals reported actually volunteering for the voluntary departure program. Indeed, most claimed they were chosen by their supervisors. Furthermore, program benefits were poorly understood and most departees believed they would receive much more compensation than they actually did. The mandatory testing program was also unequally implemented across ministries, with the Ministry of Education and Health for the most part continue

being exempted. Problems such as the design of function-specific tests and the frequent reorganization of ministries hampered progress. In addition, while about 23,000 civil servants were tested between 1986 and 1990, some of those who failed the test were never officially notified and continued to work in the civil service. Each of these problems leads us to wonder whether the program was as impartial as it appeared on paper (we have, nonetheless, no evidence to suggest that the deviations were systematic). Finally, only 3.2 percent of those leaving the public sector through the Voluntary Departure Program actually secured loans or training from BARAF. No training or employment assistance was provided to the 96.8 percent of voluntary departees who did not secure loans or the larger population of redeployees.

At the same time that it reduced staffing levels, the government took a number of other actions to improve the public sector's efficiency in the area of accountability and resource use through the newly created Ministry of Reform and Civil Service. Furthermore, the evidence indicates that redeployment efforts had a substantial impact on the average skill levels of public sector employees, because those who remained on the payroll were better educated than departees, as were the new recruits that joined the ranks of the civil service during and subsequent to the redeployment program.

Despite these accomplishments there is a common perception that the second wave of civil service reforms lost momentum, and even eroded, after 1988. Perhaps most important, transparency and accuracy in payroll and personnel information proved difficult to establish and maintain despite two public sector censuses in four years.

A verification exercise in Conakry in 1987 suggested that 5 percent of payroll records were improper, and the second public sector census in 1989–90 showed further erosion in the accuracy of payroll information. Correspondingly, survey results gathered by the Cornell Food and Nutrition Policy Program suggest that official government statistics such as those in table 4–10 significantly understate the number of new recruits since the onset of the redeployment program (Mills and Sahn 1993). These recruits may actually have eroded advertised staff reductions by upward of 50 percent. Under pressure from the World Bank and the IMF, outside technical assistance was provided to overhaul and computerize the civil servant roster and payroll system. Yet progress in establishing a clear system of accounting for public sector workers continues to move slowly.

The adoption and implementation of systems of improved accountability have also met with stiff resistance, because many civil servants benefit from the current status quo. Overall, there is still little empirical basis for arguing whether or not the efficiency of the public sector has increased. Institutional relationships do not change with policy pronouncements, but with the institution of the proper incentive structure. The redeployment program was only a first step in establishing this type of incentive structure. In a country like Guinea, where during the First Republic a number of institutional mechanisms developed that promoted rent-seeking behavior, particularly centralized decisionmaking, poor monitoring and control of resources, and cumbersome bureaucratic rules that inhibited the transparency of actions, a large portion of civil servants who benefit by perpetuating the status quo can be expected to oppose reform efforts. Currently, it is unclear if the government has the political strength to confront these groups.

The Impact of Redeployment on Redeployees

Survey results of individuals living in Conakry, the capital, who left the public sector between 1985 and 1988 indicate that public sector departees were less likely to re-enter the private labor market in Guinea than in Ghana (this section draws on Mills and Sahn 1993). Furthermore, for those who did find another job, the duration of the job search was relatively long. Table 4–12 shows that 81.7 percent of individuals leaving the public sector during 1985–88 experienced a spell without work. As of 1992, four to seven years after leaving the public sector, just over one-third of the redeployees and nearly half of the retirees were still not working. Equally striking is that of those not working, 43.9 percent overall and 58.3 percent of redeployees were still actively seeking work in 1992. Clearly, involuntary unemployment among former public sector workers remains a problem. In 1992 their overall unemployment rate was 21 percent. This rate is higher than the overall unemployment rate for Conakry of 12 percent even though most departees are in age and gender cohorts with the lowest rates of unemployment (Glick, Sahn, and del Ninno 1992).

Table 4–12 . Spells without Work, Participation and Nonparticipation Rates by Reason for Individuals Leaving the Public Sector between 1985 and 1988

<i>Category</i>	<i>All a</i>	Redeployees	Retirees
Percentage with a spell without work	81.7	84.1	88.6
Percentage who were working in 1992	62.4	65.2	51.4
Percentage who were not working in 1992	37.6	34.8	48.6
of which:			
Percentage of participants	43.9	58.3	23.5

The Evaluation of Public Expenditure in Africa

Percentage of nonparticipants	56.1	41.7	76.5
Total (number of redeployees)	109	69	35

a. Five individuals listed that they found other work as the reason for leaving the public sector and are included in the "All" sample.

Source : Mills and Sahn (1993).

Unlike in Ghana, 63.5 percent of public sector departees between 1985 and 1988 who found another position re-entered the wage sector, with the remaining 36.5 percent undertaking self-employment (table 4-13).⁹ This is unexpected because only 49.5 percent of people in Conakry are engaged as wage workers, and most employment created during the past few years has been in the informal, nonwage sector. The long duration of unemployment, coupled with the low share of redeployees entering into the rapidly expanding informal and self-employment sector, suggests that public sector workers are willing to wait for other wage sector opportunities. Possible reasons for this queuing include perceived low returns to, and high risks of, self-employment. In addition, there are indications that the severance pay retarded the rate of labor market re-absorption (Mills and Sahncontinue

⁹ The self-employment figures may be lower partly because of the lack of farming opportunities.

1993). This suggests that policymakers should focus their efforts on identifying opportunities for, and removing barriers to, entering the nonwage sector if they wish to lower the unemployment rate among redeployees. However, the BARAF was an example of such an intervention and its failure suggests that the government's institutional capacity to implement sophisticated loan and retraining programs also needs to be taken into account.

Table 4-13 . Wage Sector and Self-Employment Earnings for Individuals Leaving the Public Sector between 1985 and 1988

<i>Category</i>	Wage	Self-employment
Percentage employed	63.5	36.5
Average monthly earnings (FG)	123,353	133,598
Median monthly earnings (FG)	100,000	80,500
Percentage of individuals whose earnings increased after redeployment	64.1	52.6

Source : Mills and Sahn (1993).

In terms of the impact of the redeployment program on workers and their households, the results are mixed. A comparison between the current earnings of the redeployees who re-entered the labor market with their earnings at the time of departure from the civil services (table 4-13) indicates that nearly two-thirds of departees who found other work in the wage sector had higher earnings in 1992 than at the time of their departure from the public sector, and the same is true for half of those self-employed. Thus, those who have found work since redeployment do not appear to have suffered a loss of income, but the earnings of the approximately one-third who are not working, including those searching and not searching, are zero, and thus are clearly lower since leaving the employ of the state. However, given that more than half of these nonworkers are not searching for a job, we should not assume that they would have still been employed as civil service workers in the absence of the redeployment program.

The Evaluation of Public Expenditure in Africa

Of course, making comparisons of an individual's wage earnings before and after redeployment tells only part of the story of how household welfare has changed. Unfortunately, our survey does not allow us to compute broader indicators of welfare (for example, consumption) before and after redeployment. We can, however, address two other questions: How does the welfare of households with redeployees compare with that of the general population at large? And is there a difference in the welfare of households where the redeployee has found another job and where the redeployee is not working?

The first row of table 4–14 shows that in 1990, 33.1 percent of the individuals who continued to work in the public sector (nonredeployees, nonretirees, and new recruits) were from households that fell in the lowest two consumption quintiles. By contrast, 49.1 percent of individuals who had left public sector positions between 1979 and 1990 were in the lower two quintiles. Individuals leaving the public sector because of retirement were particularly vulnerable, with 54.6 percent falling into the lowest two consumption quintiles.

The employment transition of individuals appears to be far more important than their reason for leaving the public sector in determining the probability of the household falling continue

Table 4–14. Household Consumption Quintiles by Reason for Leaving the Public Sector and Employment Status, 1990

<i>Category</i>	<i>Quintile (percent)</i>						<i>Total</i>	<i>Number of individuals</i>
	<i>Bottom 30%</i>	<i>Lowest</i>	<i>Second</i>	<i>Middle</i>	<i>Fourth</i>	<i>Highest</i>		
Total 1990 public sector	23.5	14.7	18.4	17.9	25.8	25.8	100	694
Total leaving public sector between 1979 and 1990	37.1	25.7	23.4	17.7	16.0	17.1	100	175
<i>Reason</i>								
Redeployment	35.1	25.5	23.4	17.0	16.0	18.1	100	94
Not working	38.3	34.0	21.3	14.9	14.9	14.9	100	47
Working	31.9	17.0	25.5	19.2	17.0	21.3	100	47
Retirement	43.9	28.8	25.8	19.7	13.6	12.1	100	66
Not working	50.0	37.5	22.5	20.0	12.5	7.5	100	40
Working	34.6	15.4	30.8	19.2	15.4	19.2	100	26
Found other work	9.1	9.1	9.1	18.2	27.3	36.4	100	11

Source : Mills and Sahn (1993).

in the lower per capita consumption quintiles. Among redeployees who successfully moved into a private sector position, 42.5 percent lived in households in the lower two consumption quintiles, compared to 55.3 percent for redeployees who did not subsequently find work. Similarly, among retirees who found other positions in the private sector, 46.2 percent were from households in the lower two consumption quintiles, compared to 60.0 percent of retirees who remained unemployed.

However, Mills and Sahn (1993) report the results of a household welfare function (where welfare is measured by

per capita expenditures), which show that having been redeployed does not lower household welfare after controlling for the human capital endowment and demographic makeup of the household. Thus, the results in table 4–14 may simply reflect the fact that low–skill workers were more likely to be redeployed. While the analysis cannot indicate whether the low economic status of households with redeployees is a function of their job loss, it does indicate that the ability to find other employment appears to be the major determinant of the welfare of redeployees' households. The two–thirds of people who searched for and found other employment appear to be, on average, at least as well off as before redeployment as measured in terms of both the individual's earnings and the household's welfare. By contrast, the inability to find other work has translated into costly transitions.

Programs to Compensate Redeployees

Workers leaving the public sector have two primary forms of compensation: pensions and severance pay. Pension schemes have been in place since before the Second Republic, and all public sector workers over fifty–five years of age or with more than thirty years of public service are eligible. As discussed previously, severance pay programs were instituted after 1985 as part of the redeployment program and sought both to induce the voluntary

departure of public sector workers and to provide redeployees with continued salary payments for short periods under the Administrative Reserve Program. The BARAF program was supposed to provide loans and training to voluntary departees, however, only 3.2 percent of voluntary departees ever secured loans and even fewer received training.

Table 4–15 clearly shows the effectiveness of targeting. Retirees appear to be effectively targeted by pensions plans: 88.5 percent received pensions and relatively few, 17.1 percent, received severance benefits. By contrast, redeployees' compensation comes primarily from severance pay, 76.9 percent, with only 7.3 percent receiving pensions and 20.3 percent receiving no compensation.

Table 4–15 . Compensation for Leaving the Public Sector by Reason for Departure, 1985–88

Reason for departure	<i>Percent</i>				Total	Number
	Pension	Severance pay	Pension and severance pay	Nothing		
Retirement	77.1	5.7	11.4	5.7	100.0	35
Redeployment	2.9	72.5	4.4	20.3	100.0	69
Found other work	0.0	20.0	0.0	80.0	100.0	5
All reasons	26.6	48.6	6.4	18.4	100.0	109

Source : Mills and Sahn (1993).

Unlike in Ghana, compensation appears to have had little impact on employment creation or enterprise development. Mills and Sahn (1993) found that severance payments actually had a negative impact on the probability that a redeployee would take other employment. The median compensation payment was FG 700,000 and redeployees primarily used this money for consumption, although averaging across households, they allocated 29.4 percent for investment in income–generating activities. However, a higher percentage of compensation was allocated to investment at higher total compensation levels, suggesting that at high levels of compensation individuals become more willing to invest (table 4–16). As payments were dispersed over a thirty–month period, the results also suggest that a single lump sum payment may have been more effective in stimulating investment in income–generating activities.

Conclusions

The examples of civil service reform examined here provide several lessons for other African countries that confront similar problems in their public sectors. These will be discussed in turn.

Administrative Considerations

The first and probably the most important lesson learned is a simple administrative point: The government must be able to monitor and control its own hiring and employment for a continue

Table 4–16 . Estimated Relationship between Redeployees' Use of Compensation and Compensation Amount, Age, and Sex

Dependent Variable: Percentage of Compensation Invested

<i>Independent variables</i>	Parameter estimate	T–statistic
Compensation (100,000's FG)	0.850	2.57 **
Age (years)	0.001	0.24
Sex (female = 1)	0.051	0.97
Model statistics		
F ratio	2.98 **	
R square	0.13	
Number of observations	65	

** Significant at the 0.05 level.

Source : Mills and Sahn (1993); authors' calculations.

reform program to work. Dismissing public employees at a cost makes no sense if the government then turns around and rehires them or someone in their place. In Ghana, this appears to have happened in the Education Service (where centralized control over hiring and payroll is weak), but not in the civil service proper, which implemented a much stronger control system. In Guinea, the government's inability to maintain a hiring freeze and accurately monitor its payroll cast doubt on whether net reductions in public employment are as large as advertised.

In countries where patronage hiring has been an important part of the public sector, establishing a strong system of recruitment control is not easy. Nevertheless, some "technological fixes" can help reforming governments. Centralized control of the payroll is important to avoid uncontrolled recruiting at the ministry or agency level, and computerized payroll systems can be helpful. In the Ghanaian civil service, for example, the change from a decentralized payroll, in which pay clerks distributed wages in cash, to a computerized payroll that issues workers checks from one small office, was a critical aspect of the civil service reform. Because payroll records are centralized and easily accessed, checking changes in the payroll from month to month to be sure that individual spending units are not hiring beyond their limits is simple. Of course, establishing a computerized payroll is not sufficient by itself for recruitment control. Guinea also adopted such a system, but was unable to use it effectively to monitor the evolution of the payroll, probably for political reasons. Thus, the agency in charge of recruitment

control must be dedicated to enforcing hiring limits and have the support of the highest political authorities.

At the same time that a government establishes effective control of its payroll, it should implement a hiring freeze. Even though the number of redeployees in Ghana and Guinea seems large, only 3 to 5 percent of public sector employees were redeployed in any given year, an amount easily offset by unrestricted hiring. This hiring is particularly expensive, because it entails not only the new employees' salaries, but also the eventual cost of redeploying them (or others in their place) if the reform program is to progress in the future. In addition, evidence on turnover rates for public sector employees in Guinea suggests that an effective hiring freeze with no redeployments would have worked almost as well as the redeployment program combined with the actual hiring that occurred.

In both Guinea and Ghana, the government chose to use layoffs based on a few broad, simple, observable criteria, such as job type, tenure, or parastatal closings. Some critics have argued that beginning the reform programs with job audits would have been more sensible, thereby identifying unnecessary posts and laying off those particular employees rather than relying on a rather blunt wholesale approach. In a public sector where few layoffs are required and the pattern of employment is relatively rational, that is a valid point. However, the degree of excess employment throughout the public sectors of both Ghana and Guinea was (and remains) so severe in the lower echelons that wholesale layoffs were unlikely to err in the sense that the public sector's ability to function was hampered by the loss of a particular employee. (Both programs protected more skilled employees from redeployment.) Likewise, the obvious inefficiency of most parastatal enterprises makes their closure a logical policy. In addition, even if a broadly based layoff occasionally redeployes the wrong people, a redeployment program based on job audits at lower levels of the civil service is easier to subvert. At the same time, the Ghanaian experience has shown that job audits are time consuming exercises that significantly delay the implementation of public sector layoffs. Even an apparently simple exercise, such as the skills tests in Guinea, can lead to significant delays while the authorities decide on appropriate tests for different types of positions within the public sector. In the end, the use of generalized layoffs first, with job audits and other more precise measures following only several years later, is probably appropriate.

- In sum, the experience in Ghana and Guinea suggests that the proper sequence of hiring and firing is
- Establish effective control over the payroll
- Freeze all new hiring
- Implement a broadly based redeployment program based on a few easily verifiable criteria (for public sectors with serious overstaffing problems)
- Continue later with agency-specific job audits to identify remaining excess labor.

Budgetary Savings

For fiscal policy, the impact of redeployment programs is not dramatic in the short run: the costs of severance pay generally outweigh the savings in wages for the first few years of a program, so the net impact on the budget is negative. Nevertheless, the internal rate of return to the government is greater than 60 percent in Ghana, so over several years the government is likely to realize significant savings. Thus, retrenchment makes sense financially as long as severance payments are not exorbitant, but the payoff is small, and perhaps negative, in the early years of a program.

Another point that is clear in Ghana, Guinea, and many other African countries is that the government cannot pay appropriate salaries to public sector employees without incurring untenable fiscal deficits. To the extent that poor

salaries affect the effort and moral rectitude with which public sector employees carry out their duties, increasing salaries is important for the restoration of an efficient public sector. In turn, fiscal responsibility requires that staffing levels decline before salaries increase. Thus, redeployment of public sector workers is a key component of any effort to improve the efficiency of the public sector in Africa.break

Socioeconomic Impact on Redeployees

Our results on the social costs of redeployment are mixed. With the exception of farmers in Ghana, former civil servants who have found work appear to have earnings that are comparable to those of the population at large and not greatly different from their earnings while they were employed in the public sector. Similarly, these redeployees' families have incomes (in Ghana) and expenditures (in Guinea) that are similar to those of the population at large. Of course, both these countries suffer from widespread poverty, so many redeployee households are surely poor, but there does not appear to be any social welfare argument for targeting antipoverty programs at redeployees as an especially hard-pressed class (there may, however, be political considerations that lead a government to establish special programs for redeployees).

At the same time, the large number of unemployed former public sector workers in Guinea and underemployed (in farming) redeployees in Ghana suggests that the transition from public sector employment to productive private sector activity is not necessarily smooth. Because these redeployees suffer from very low earnings and household incomes, there is special cause for concern about poverty among redeployees who do not successfully re-enter the labor market. To date, neither government has developed an effective program to help them find or develop productive work. On the contrary, the history of special programs to compensate redeployees is bleak in these two countries as in others. Administrative capacity is almost by definition poor in countries that need civil service reform. In Ghana, special projects to aid the redeployees were slow to develop. In Guinea, they never developed. What is more, generating a new bureaucracy to administer such projects runs counter to the spirit of redeployment. Special credit schemes, such as BARAF in Guinea, are often poorly administered and have repayment rates that are so low that the loans end up looking much more like additional severance pay than bona fide loans (see Kingsbury 1992a, b for reviews of special compensation programs in other African countries). Furthermore, such transfers are made in a much less objective and equitable fashion than actual severance pay.

In the end, sticking to simple severance programs may be best. They are easy to administer, and in the case of Ghana, evidence indicates that many redeployees used a significant part of their severance pay for investment purposes and self-employment generation. In Guinea, the use of redeployment benefits for consumption was much higher, but the government could have increased the rate at which deployees invested their severance pay by paying it out in a single lump sum rather than in thirty monthly installments.

One factor that greatly increased the probability of a smooth transition from the civil service in Ghana was moonlighting or daylighting before redeployment. Civil servants who had a second job while in the civil service usually had no spell of unemployment, because they simply moved into that job as their main work. To the extent that these jobs involved daylighting—working at the second job during hours in which staff should be working in the civil service—an effective technique for selecting those civil servants for redeployment may be simply to insist that civil servants show up at work for a full eight hours. This, combined with some incentive to leave such as severance pay, may encourage civil servants with second jobs to volunteer for redeployment. As we have seen, these are precisely the public employees who are the least likely to suffer the social costs of redeployment.break

Political Considerations

In many respects, political circumstances in Ghana and Guinea were similar at the time the redeployment programs began. Both countries had military governments that had recently come to power. Both had endured

precipitous economic declines under previous governments. Furthermore, both public sectors suffered from extremely low pay and morale, and did not perform even the basic functions of government well, if at all. These conditions, while unenviable, are propitious for public sector reform. Low pay meant that the cost of a job loss to a public sector employee was lower in Ghana and Guinea than it would be in other countries where civil servants are a relatively well-paid and privileged class. Lower cost, in turn, lessens an employee's interest in mounting or supporting political opposition to the reforms. In any case, that neither government was subject to oversight by a parliament or approval by the electorate, which reduced the effectiveness of any political opposition.

In addition, the general economic collapse left each desperate for foreign assistance, and the donors conditioned that assistance on public sector reform in both countries. It would be wrong, however, to suppose that the donors imposed reform on unwilling governments or populations. Both the government and public employees themselves in Ghana and Guinea recognized the absurdity of the situation in the public sector, even if they feared tackling the problem. Civil servants also recognized, at least in private, that their salaries could not rise to reasonable levels until their numbers fell. In these circumstances, the donors' prodding for reform appears to have encouraged governments to take measures that they recognized as important, but nonetheless feared.

Let us consider two political hurdles that a redeployment program must pass to succeed. The first is the general opposition from civil servants that will accompany the announcement of a program. Even though only a small to moderate proportion of all public sector employees will be retrenched, the possibility of losing their jobs will cause most civil servants to oppose the program. In both Ghana and Guinea, the government cleared this hurdle by offering more benefits than it delivered in the end. The public relations campaign in Ghana was particularly effective, emphasizing the undeniable need for retrenchment on the one hand and retraining and redeployment benefits on the other. These promises were not necessarily disingenuous; many members of the government apparently thought that they should deliver such services, but for either fiscal or administrative reasons they did not. The proposals did, however, help to assuage civil servants' initial fears.

The second political hurdle is to avoid the wrath of the civil servants who actually are retrenched. Note that in Ghana and Guinea each government, even if it did not deliver all that it promised, did deliver. Severance payments were generally prompt and the government allowed employees to stay at their posts until their benefits were paid.¹⁰ Severance pay was also reasonably generous, while still satisfying the demands of tight fiscal policy. Just as relatively low civil service salaries minimize the political fallout from redeployment by reducing the cost of layoffs, high severance pay increases the viability of redeployment. Of course, paying severance that is generous relative to lost earnings is more

¹⁰ The exception to prompt payment includes late payments to redeployees in Ghana in 1987. This was behind most of the bitterness we observed among redeployees in that country.

expensive in countries where civil service salaries are high, so programs in such countries will have to proceed more slowly if fiscal constraints are a problem.

Finally, the vast majority of involuntary redeployees in both countries came from the lower echelons of the civil service, and were therefore the least likely echelons of the civil service, and were therefore the least likely to wield significant political power. This was probably not done for reasons of political expedience—the lower ranks are the ones where overstaffing is most severe—but it did help minimize organized opposition after the retrenchments began.

In the end, neither government faced serious political problems with the redeployments, although we must also recognize that each backed off certain controversial parts of its original program. In both countries, the general rules for redeployment were not enforced equally across the public sector. In Ghana some offices managed to avoid having their employees redeployed and public enterprises remained outside the program. In Guinea many

civil servants avoided the skills tests. Such exceptions may be politically practical in the short-term as a means of avoiding conflicts with powerful entities within the public sector, but they also have a long-run cost because they diminish the credibility of the overall program. Fortunately, the pattern of exceptions was not such as to encourage a mobilization of larger political interests against the program in either country.¹¹

The program in Guinea did not persist past the stage of broadly based layoffs and, in general, appears to have lost momentum. Rehiring also appear to have been more common than in Ghana. After making the easiest layoffs of poorly paid, lower echelon workers, the government has not had the political strength to continue. The Ghanaians, by contrast, have carried on with their program. There seem to be several possible explanations for this difference. First, redeployees in Ghana have had much shorter periods of unemployment following their layoff, which suggests that their cost of redeployment was lower than in Guinea. In addition, the authorities in Ghana played their cards better on salaries. Both governments used the argument that layoffs were necessary to allow increased public sector salaries (because the wage bill could not increase), but the Ghanaians made better use of it. Public sector salaries were increased substantially soon after the redeployment exercise began in Guinea, a move that both reduced the government's leverage for further layoffs and also increased opposition because civil servants would now lose a larger salary (while severance benefits remained tied to salary levels before the increases). In Ghana, the government was much more conservative, arguing that a small layoff (3 percent per year) did not justify a large salary increase in the short run. The public relations effort on this point was so successful that it is quite common for civil servants to understand and agree with the notion that salary increases must be tied to further reductions in public sector payrolls.

References

Alderman, Harold. 1992. *Incomes and Food Security in Ghana*. Working Paper No. 26. Ithaca, New York: Cornell University Food and Nutrition Policy Program.

Alderman, Harold, Sudharshan Canagarajah, and Stephen D. Younger. 1994. "Consequences of Permanent Lay-off from the Civil Service: Results from a Survey of Retrenched Workers in Ghana." continue

¹¹ In other West African countries redeployments directed at specific ethnic groups or political parties quickly failed because of the political opposition they generated (see Kingsbury 1992a).

In David Lindauer and Barbara Nunberg, eds. *Public Sector Wage and Employment Policies in Sub-Saharan Africa*. Washington, D.C.: World Bank.

Boateng, E. Oti, Kodwo Ewusi, Ravi Kanbur, and Andrew McKay. 1989. "A Poverty Profile for Ghana." Social Dimensions of Adjustment Working Paper No. 5. Washington, D.C.: World Bank.

de Merode, Louis. 1994. "Implementing Civil Service Pay and Employment Reform in Africa: The Experiences of Ghana, The Gambia, and Guinea." Draft.

Government of Ghana. 1990. *Labour Redeployment Programme: Achievements, Problems, and Prospects*. Accra: Labour Redeployment Programmes Management Committee.

———. 1992, various years. *Quarterly Digest of Statistics*. Accra.

Glick, Peter, David E. Sahn, and Carlo del Ninno. 1992. *Labor Markets and Time Allocation in Conakry*. Washington, D.C.: Cornell University Food and Nutrition Policy Program.

Gregory, Peter. 1992. "Ghana: Dealing with Redundancies in Government Employment." Draft.

———. 1993. "Diagnosis with Limited Information: Government Pay and Employment Reform in Somalia." In David Lindauer and Barbara Nunberg, eds. *Rehabilitating Government: Pay and Employment Reform in Developing Economies*. Washington, D. C.: World Bank.

International Monetary Fund. 1991. *Staff Report for the 1991 Article IV Consultation and Request for Arrangements under the Enhanced Structural Adjustment Facility: Guinea*. Washington, D.C.

———. 1992. *Staff Report for the 1991 Article IV Consultation and Request for Arrangements under the Enhanced Structural Adjustment Facility: Guinea*. Washington, D.C.

———. Various years. *Government Finance Statistics Yearbook*. Washington, D.C.

Kingsbury, David S. 1992a. *Compensatory Social Programs and Structural Adjustment: A Review of Experience*. Bethesda, Maryland: Development Alternatives, Inc.

———. 1992b. *Programs for Mitigating Adverse Social Impacts During Adjustment: The A.I.D. Experience*. Bethesda, Maryland: Development Alternatives, Inc.

Mills, Bradford, and David Sahn. 1993. "Is There Life After Public Service: The Fate of Retrenched Workers in Conakry, Guinea." Working Paper. Ithaca, New York: Cornell University Food and Nutrition Policy Program.

Robinson, Derek. 1990. "Civil Service Remuneration in Africa." *International Labour Review* 20(3): 371–86.

World Bank. 1985. "Ghana: Towards Structural Adjustment." Report No. 5854–GH. Washington, D.C.

———. 1989. "Ghana: Structural Adjustment for Growth." Report No. 7515–GH. Washington, D.C.

———. 1990. *Republic of Guinea Country Economic Memorandum . vol . I , Main Report: The Guinean Economy*. Washington, D.C.

5—

Education and Agricultural Productivity in Kenya

Kaye G. Husbands, Tobias O. Konyango, and Thomas C. Pinckney

In Sub-Saharan Africa, agriculture constitutes about one-third of the gross domestic product (GDP) and provides employment for about two-thirds of the labor force. Productivity growth in agriculture is therefore the key element in fostering widespread growth in income. Yet, for the continent as a whole, growth in this sector has been sluggish in recent years. According to the World Bank (1993), agricultural growth for the continent from 1980 to 1991 averaged only 1.8 percent per year. Both governments and international organizations are becoming increasingly concerned with improving this growth rate.

Expanding educational opportunities has also been an important goal for African governments, with education seen both as an end in itself and as an investment in human capital. Success here has been greater than in agriculture. In Sub-Saharan Africa the percentage of children of primary school age enrolled in school increased from 42 to 68 percent between 1965 and 1990, and during the same period, enrollment rates of children in secondary school increased even more dramatically, from 4 to 17 percent (World Bank 1993). Adult literacy rates also increased during the same period, from less than 25 percent to more than 50 percent.

The early expansion of education was justified in part by the desire to "Africanize" the civil service in newly independent countries. The need to replace expatriate civil servants in the decade after independence was important in driving both government policy toward investment in education and demand by the public for increased educational opportunities. The private returns to education in these early years were quite substantial, and presumably social returns were also high if one considers the need to govern effectively as an important social goal. Little or nothing was said at the time about the impact of education on agriculture, as the authorities presumed—correctly, for many years—that the formal sector would hire most educated Africans.

Some econometric evidence indicates that education did indeed increase labor productivity in the formal private sector. Knight and Sabot (1990) measure directly the impact of knowledge learned in school on wages after controlling for reasoning ability and number of years in school. They conclude that most of the response of wages to level of education is the result of knowledge acquired rather than ability or the credential of a school certificate. If wages reflect labor productivity, their study helps to substantiate the continued

high returns to public and private investment in quality education for those employed in the formal sector.

Once the civil service—and, to a lesser extent, the formal private sector—was Africanized, the prospects for school leavers in formal employment should have dimmed. Instead, in most African countries the civil service expanded to employ school leavers, thereby meeting the expectations of the newly educated students and their parents. This growth of public sector employment has been one of the factors that have led to bloated budget deficits in many African countries and the reduction in the share of investment in government expenditure (World Bank 1989). These fiscal difficulties now mean that in future years public sector employment may decrease in many of these countries, and will not be able to expand as rapidly as in the past. As a consequence, a much larger share of school leavers will work outside the civil service. Given the small size of the formal private sector, most of the educated population will have to be employed in the informal and agricultural sectors. Thus, if education is to continue to be considered an investment, the rationale for continued educational expansion must be based on the spillover of educated individuals into these other sectors, and the resulting impact on productivity.¹ Consequently, the linkages between increased education and agricultural productivity, and the reasons behind those linkages if they exist, are vital for analyzing whether or not substantial public expenditure on education continues to be justified.² A strong, positive link between education and agricultural productivity would indicate that the government can continue to meet educational goals and, at the same time, increase the likelihood of attaining agricultural goals through strong support of education.

As the data in table 5–1 indicate Kenya provides an especially interesting case study in this regard. Kenya expanded primary and secondary schooling dramatically following independence in 1963 and has had enrollment rates far above the regional average. Specifically, between 1965 and 1989 enrollment rates at the primary level increased from 54 to 94 percent and at the secondary school level increased from 4 to 23 percent. With a rapidly expanding population, the increase in the absolute number of students is staggering: the number of primary school students grew from about 890,000 in 1963 to more than 5 million in 1992. Secondary school enrollment increased from about 30,000 to more than 600,000 students during the same period, and university enrollment increased from about 600 to more than 50,000 students, with about 10,000 studying in other countries (Republic of Kenya 1992). The adult literacy rate for the country as a whole increased from 20 percent in 1965 to 69 percent in 1989. Even in rural areas, as of 1988 adult literacy was estimated to be about 60 percent for men and 40 percent for women. At the same time that education has been expanding rapidly, agricultural output has grown more rapidly than in the region, although in the 1980s output grew more slowly than population.^{break}

¹ Throughout this paper we use the term productivity to mean total factor productivity, where the factors are land, labor, and capital. If education has an impact on agricultural productivity, it will increase output while holding land, labor, and capital inputs constant. Alternately, education could be considered a proxy for a fourth factor of production, human capital, and thus the increase in output arising from having more highly educated workers is a

return to the greater use of human capital. The difference between these views is only semantic.

2 Expenditures on education can also be justified by the impact of education on health and nutrition (see Behrman and Deolalikar 1988 for a survey that addresses this issue among others).

Table 5–1 . Educational and Agricultural Statistics, Selected Years

<i>Category</i>	<i>Kenya</i>	<i>Sub-Saharan Africa</i>	<i>World</i>
Primary school enrollment rate (%)			
1965	54	41	85
1989	94	69	105
Secondary school enrollment rate (%)			
1965	4	4	31
1989	23	18	52
Tertiary education enrollment rate (%)			
1965	0.1	0.2	8.6
1989	1.6	2.1	15.8
Primary school pupil–teacher ratio (%)			
1965	34	43	33
1989	33	40	32
Literacy rate (%)			
1965	20	—	—
1989	69	—	—
Agricultural index of food production per capita, 1988–90 (1979–81 = 100)	106	94	112
Average annual growth rate of agricultural production (%)			
1965–80	5.0	2.0	1.7
1980–90	3.3	2.1	2.7

—Not available.

Source : World Bank (1992).

This remainder of this chapter investigates the degree to which educational policies affect agricultural productivity in Kenya. The next section examines this issue by reviewing changing policies toward education in

Kenya during the past thirty years. The following section uses survey data from one section of rural Kenya to measure the impact of education on agricultural productivity. The chapter closes by presenting conclusions and areas for future research.

Educational Reform in Kenya

Government statements since the early years of independence have highlighted the importance of education for achieving economic growth, effective government, and equity goals. The government has therefore invested a large amount of resources in this sector. In 1990 government expenditure on education as a percentage of GDP was 6.0 percent in Kenya, 4.9 percent in Sub-Saharan Africa, and 5.0 percent worldwide (UNESCO 1992). That same year the education sector constituted 19.8 percent of government expenditure in Kenya (World Bank 1992). Thus, the rapid expansion of educational opportuni-

ties was greatly facilitated by public sector investments, but these public investments have been supplemented by the willingness of families and communities to make large private investments in education.

Kenya's Education Policies and Expenditures

Both colonial and independent governments in Kenya have adjusted educational policies to suit their respective goals. Table 5-2 presents major policy documents and changes. Education in the colonial era was stratified racially. Many argued that basic literacy, simple arithmetic, and the fundamentals of agriculture would constitute sufficient education for most Africans in rural areas. In 1909 the Fraser Commission (Republic of Kenya 1909) recommended technical education for Africans and denied them opportunities for tertiary education. Again in 1952, the Binns report specified that agriculture and manual works should be taught in African schools. Reflecting on pre-independence education policies, Bogonko (1986) states that:

Since the African was relegated to the duty of producing local clerks and junior officials to facilitate and reinforce the functioning of the colonial administration, a mere minimum of skills and knowledge in the 3 Rs, handicrafts and agriculture was regarded as sufficient for him to play his role and restrict him to his rural area. Submissiveness, subservience and inferiority to his new masters were stressed if the African was to be ruled.

Table 5-2 . The History of Educational Policy in Kenya

<i>Year</i>	<i>Policy</i>	<i>Remarks</i>
<i>Colonial period</i>		
1909	Fraser Commission	Recommended technical education for Africans and denied them tertiary education.
1924	Phelps-Stoke Commission	Recommended a uniform system for mission and government schools. Increased grants-in-aid administered by the Department of Education and increased its staff and responsibilities.
1948	Education Memorandum for Citizenship	Stated that in addition to teaching literacy and technical skills the school system must develop a sense of public responsibility and democracy in

		students. Developed a program aimed at providing 50% of the school-age population with six-year primary courses, the expenditure for program to be shared between the central and local governments.
1952	Binns Report	Introduced agricultural and manual skills in schools for Africans only.

Following independence

1963	Independence	The ruling party, Kenyan African National Union, committed itself to universal free primary education and delineated socioeconomic aspirations to be met by education.
------	--------------	--

(table continued on next page) break

(table continued from previous page)

Table 5-2 . The History of Educational Policy in Kenya (continued)

<i>Year</i>	<i>Policy</i>	<i>Remarks</i>
1964-65	Kenya Education Commission Report (Ominde Report)	Advised the formulation and implementation of national policies for education. Recommended that education must prepare and equip young people with knowledge, skills, and expertise to help them play an effective role in the life of the nation. The first commission to make an exhaustive national enquiry into all aspects of education in Kenya.
1965	Sessional Paper No. 10	Education seen as much more of an economic than social service, the principle means of relieving the shortage of domestic skilled manpower and equalizing economic opportunities among all citizens.
1966-70	First Development Plan	Emphasized economic expansion and "Kenyanization" of education to provide manpower skills.
1966	Curriculum Development Research Center	Created to develop a curriculum that served national needs and goals.
1967		

The Evaluation of Public Expenditure in Africa

	Teachers' Service Commission Act	Established a single employer and unified terms of service for all teachers.
1968	Education Act	Put the responsibility for education in the hands of the minister of education and instituted measures to streamline the administration of the Ministry of Education.
1970	University of Nairobi Act	Established the first national university.
1970–74	Second Development Plan	Emphasized vocational skills for self–employment.
1971	Ndegwa Commission	Recommended reviewing salary structure for teachers with the purpose of attracting higher calibre teachers.
1972	Study of curriculum development by an advisory mission	Reviewed and evaluated existing syllabuses and examinations and efforts to develop them. Made recommendations on teacher education, school facilities, and financial implications.
1972	International Labour Organisation report	Recommended abolishing the certificate of primary education, creating vocational institutions, and introducing quotas in the education system.
1972–75	University Grants Committee	Considered the expansion of financing of university education and manpower needs of the country.
1974–78	Third Development Plan	Stressed the constraints imposed on development by the underutilization of human resources and by the lack of appropriate skills at all levels.
1974	Presidential Decree	Abolished fees for the first four classes of primary school (first step toward universal primary education), and fixed fees for standards 5 through 7 at all public schools.
1976	National Commission on Educational Objectives and Policies (Gachathi Report)	Redefined Kenya's educational objectives and recommend policies to achieve these objectives within the financial constraints. Recommended stronger emphasis on applied subjects such as industrial education. Recommended four–year terminal

secondary education.

(table continued on next page) break

(table continued from previous page) break

Table 5–2 . The History of Educational Policy in Kenya (continued)

<i>Year</i>	<i>Policy</i>	<i>Remarks</i>
1978	National Council of Science and Technology	Established to coordinate research and direct research policy.
1979	Free milk program and totally free primary school education	Free milk program initiated in all primary schools. Abolition of fees in standards 5 through 7 and cessation of collecting building and other school funds from pupils.
1979–83	Fourth Development Plan	Emphasized alleviation of poverty through continued growth of the economy; creation of income earning opportunities; improvement of income distribution; and provision of other basic needs, including basic education, nutrition, health care, water, and housing.
1980	Kenya National Examination Council	Established a national body to administer and conduct examinations.
1980	Kenya Literature Bureau Act	Established a publishing body to print, publish, and distribute educational materials.
1981	Report of the Presidential Working Party on the Second University (Mackay Report)	Recommended establishment of a second university. Curriculum in second university to focus on rural development. Four years of university education recommended. Recommended restructuring of the British 7–(4–2)–3 system to the 8–4–4 North American system.
1983	University Grants Committee Report (Mwendwa Report)	Made recommendations regarding the financing of university education: education would continue to be financed by public funds, students would be expected to pay for their accommodations, food, and books through a loan system. Established

The Evaluation of Public Expenditure in Africa

		Kenya Education Staff Institute.
1984–88	Fifth Development Plan	Emphasized equal educational opportunities for all, enrichment of the national heritage, and production of skilled manpower to meet the growing and changing demands of the economy, especially in the rural areas.
1985	Kenyatta University Act	Established Kenyatta University.
1985	New University Act	Established the Commission for Higher Education to promote university education and advise the minister of education, science, and technology on the establishment of public and private universities in Kenya.
1985	8–4–4 system	Implemented.
1985	Kamunge Report	Recommended reducing the rate of growth of education in recurrent budget, increasing cost sharing in tertiary education, expanding access to primary and secondary education, phasing in expansion of tertiary education, and improving quality of education at all levels. Recommendations adopted by parliament through Sessional Paper No. 1 of 1986.
1991	Education Sector Adjustment Credit Policy	Specific regulations on teacher training, evaluation, and compensation.

Source : Authors' research; Eshiwani (1990).

In addition to the curriculum, expenditures also varied widely among racial groups. In 1949 expenditure per European pupil was fifty–six times and expenditure per Asian pupil was eight times the expenditure per African pupil (Mwiria 1985). These distinctions in curriculum and expenditures placed Kenyans at a disadvantage in commerce compared to Europeans and Asians, and left Kenyans with a lingering negative perception of working in the agricultural sector.

After independence in December 1963, "Kenyanization" of the civil service became a priority for the government. Eshiwani (1990, p. 3) writes:

"Appropriate" education was necessary both in quantity and in quality to prepare [Kenyans] for the roles they were to play. Education had now to be a vehicle for rapid socio–economic development and change in a new system that was committed to offer equal opportunity and social justice for all citizens, and the eradication of poverty, ignorance and disease. It was to restore the African personality and recapture his cultural heritage, which

was diminishing as a result of the imposition of an alien culture, while at the same time preparing the Kenyan society for its place in the modern international community.

These goals could be accomplished only through a rapid expansion of the education system. Since 1964 Kenyan education policymakers have developed and implemented specific plans to expand educational opportunities, increase skilled manpower, promote national economic development, institute universal primary education, and promote national unity. At the same time, the government pressured the private sector to undergo Kenyanization on its own. These increased opportunities for educated Africans led to tremendous private returns to early investments in education. By 1965 a Kenyan with some secondary education could advance rapidly through the ranks of the civil service. Seeing this, widespread demand for educational opportunities arose in the country. The government responded by increasing investment in education at all levels, lowering the cost of primary education, and allowing communities to build and maintain their own secondary schools (the *harambee* school movement).

Tables 5–3 and 5–4 show that enrollments in primary schools increased sixfold between 1963 and 1991, while secondary school enrollment increased twentyfold. Figures 5–1 and 5–2 present annual growth rates. As shown, two of the largest growth spurts in primary school enrollment occurred in 1974 when the government abolished fees for standards 1 through 4, and then in 1979, when it abolished fees for standards 5 through 7. During the 1980s, the largest growth in primary school enrollment came with the addition of an eighth year of primary school. This resulted in one year in which no students entered secondary school, leading to the decline in secondary school enrollment in 1985.

Increased enrollments were accompanied by commensurate increases in the number of teachers employed by the school system. Between 1963 and 1991 the number of primary school teachers increased almost eightfold, resulting in a reduction of the pupil–teacher ratio from 39.2 (for African schools) to 31.5. At the secondary school level, the pupil–teacher ratio dropped only slightly as the number of secondary school teachers increased almost twenty–two–fold.

The fall in pupil–teacher ratios as the education system expanded does not necessarily imply an increase in the quality of schooling. By 1991 the percentage of trained teachers employed at the primary level was 74.5 percent, down from 77.8 in 1963. Especially in those years when the growth rate of teachers employed was high (22.4 percent in 1963 and 38.5 percent in 1974), the share of trained teachers decreased significantly compared with continue

Table 5–3 . Number of Primary Schools, Students, and Teachers, 1963–91

<i>Year</i>	Schools	Pupils	Teachers	Trained teachers
1963	6,056	891,553	22,727	17,682
1964	5,150	1,014,719	27,828	19,173
1965	5,078	1,020,889	30,592	20,099
1966	5,699	1,043,416	33,522	23,298
1967	5,959	1,133,179	35,672	25,042
1968	6,135	1,209,680	37,923	27,494
1969	6,111	1,282,297	38,312	29,998

The Evaluation of Public Expenditure in Africa

1970	6,123	1,427,589	41,479	32,934
1971	6,372	1,525,498	49,396	37,640
1972	6,657	1,675,919	53,536	41,497
1973	6,932	1,816,017	56,543	43,990
1974	7,668	2,705,878	78,340	52,096
1975	8,161	2,881,155	86,107	54,850
1976	8,544	2,894,617	89,074	56,117
1977	8,896	2,974,849	89,764	59,603
1978	9,243	2,994,892	92,046	63,880
1979	9,622	3,698,196	97,762	68,336
1980	10,268	3,926,629	102,489	72,050
1981	11,127	3,980,763	110,921	77,645
1982	11,497	4,184,602	115,094	80,681
1983	11,856	4,323,921	119,776	84,083
1984	12,539	4,380,232	122,763	86,180
1985	12,936	4,702,414	138,375	95,894
1986	13,392	4,843,423	142,807	97,537
1987	13,849	5,031,400	149,151	104,406
1988	14,288	5,123,600	155,694	108,363
1989	14,690	5,244,000	166,175	116,323
1990	14,864	5,392,330	172,550	116,989
1991	15,196	5,456,100	173,370	129,161

Source : Ministry of Education, Statistics Unit data.

the previous year. At the secondary school level, the share of trained teachers increased slightly during the almost thirty-year period: 68.5 percent in 1963 up to 69.7 percent in 1991. However, this share has fluctuated widely, reaching a high of 91.9 percent in 1966 and a low of 46.4 percent in the early 1980s. With the rapid expansion of teacher training institutions the quality of trained teachers may have decreased over time. Thus, the push for a greater number of educated people perhaps came at the cost of reduced quality of education.

Table 5-4 . Secondary Education: Schools, Enrollment and Teachers, 1963-1991

<i>Year</i>	Schools	Pupils	Teachers	Trained <i>teachers</i>
1963	151	30,121	1,602	1,097
1964	336	35,921	2,000	1,490
1965	336	47,976	2,494	1,866

The Evaluation of Public Expenditure in Africa

1966	400	63,193	3,004	2,761
1967	542	88,779	4,053	2,468
1968	601	101,361	4,644	2,740
1969	694	115,246	5,267	3,271
1970	783	126,855	5,881	3,682
1971	809	140,722	6,371	3,905
1972	949	162,910	7,106	4,470
1973	964	174,767	7,388	4,750
1974	1,268	195,832	7,569	4,814
1975	1,160	226,835	9,189	5,559
1976	1,268	280,388	11,438	6,462
1977	1,473	320,310	12,696	6,716
1978	1,773	361,622	14,286	7,729
1979	1,721	384,389	14,901	7,912
1980	1,785	399,389	15,916	7,560
1981	1,904	409,850	17,025	7,900
1982	2,131	438,344	16,848	8,272
1983	2,230	493,710	18,960	8,797
1984	2,396	510,943	19,368	10,730
1985	2,413	401,978	21,712	12,984
1986	2,485	458,712	22,296	13,266
1987	2,541	522,261	24,237	14,930
1988	2,598	540,192	25,891	16,596
1989	2,654	609,150	28,056	17,142
1990	2,678	618,461	30,621	19,444
1991	2,647	614,161	35,097	24,463

Source : Ministry of Education, Statistics Unit data.

One thing that is clear is that the expansion of Kenya's education system was costly. As a percentage of GDP, government expenditure on education rose from a low of 1.5 percent in 1966 to 5.8 percent in 1991 (see figure 5-3). Decomposing educational expenditure into recurrent expenditure (mainly salaries in primary and secondary education) and development expenditure (mainly for capital investments) shows that education expanded at about the same rate or faster than overall production in Kenya for most of the period 1966-1991.

The Evaluation of Public Expenditure in Africa

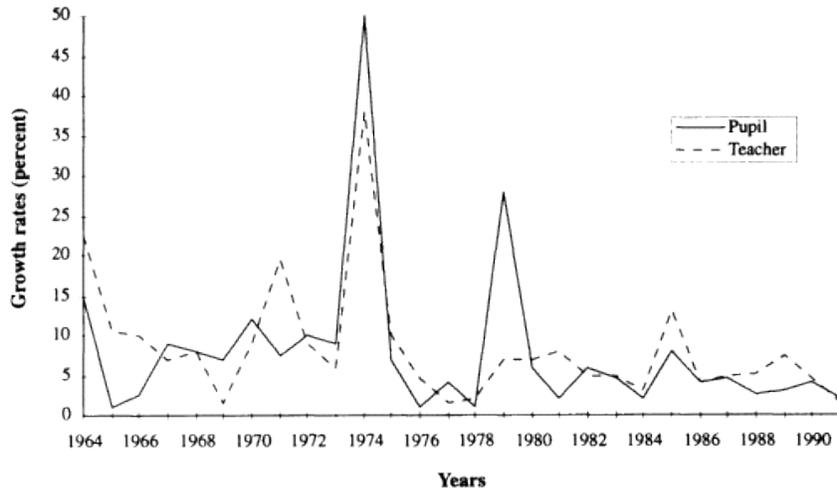


Figure 5-1.
Primary School Pupil and Teacher Growth Rates, 1964-91
Source : Ministry of Education data.

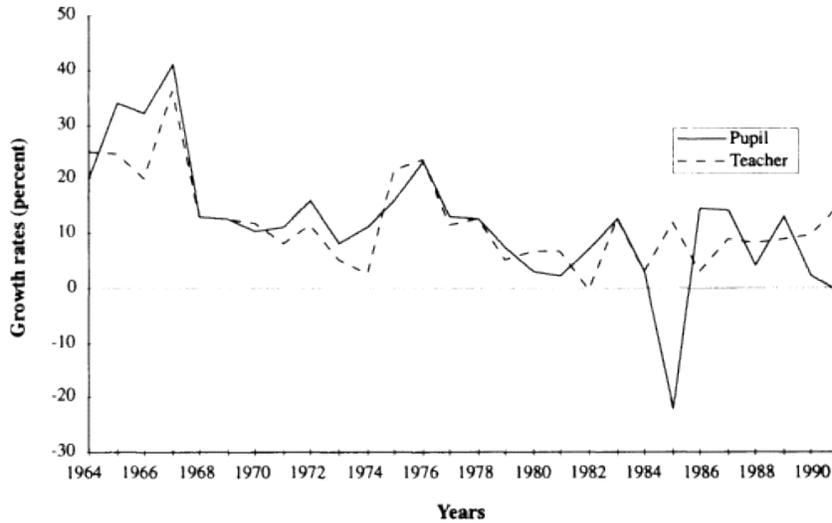


Figure 5-2.
Secondary School Pupil and Teacher Growth Rates, 1964-91
Source : Ministry of Education data.

The Evaluation of Public Expenditure in Africa

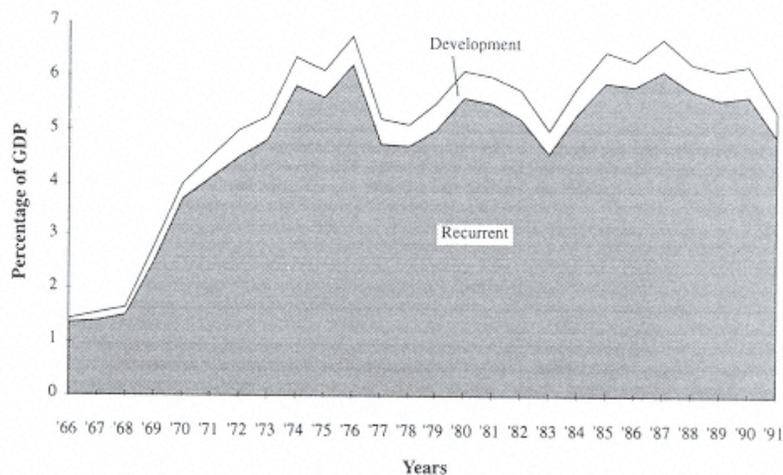


Figure 5–3.

Government Expenditure on Education as a Percentage of GDP, 1969–91

Source : Author's information.

to 1991. The periods when growth of recurrent and development expenditures exceeded the growth of GDP coincided with the establishment of the Curriculum Development Research Center and the first university in 1966 and 1970, respectively; the implementation of free primary education in 1974 and 1979; and the creation of two new universities and the increase to eight years of primary schooling in the mid–1980s.

Although public funding of education expanded at all levels, in percentage terms the largest change was for primary education. At the time of independence the cost of primary schooling was borne primarily by students' families and missions. Beginning in 1969, the central government began to play a much larger role in funding primary schools. Consequently, the share of primary education in recurrent education expenditure increased from about 1 percent in 1966 to 50 percent in 1970. After further growth in the mid–1970s, the share has returned to about 50 percent. The corresponding share for secondary education fell from 47 percent in 1966 to about 21 percent in 1970, and has fallen gradually to 15 percent since then.

In the late 1980s the share of higher education in recurrent expenditure on education moved above 10 percent. Implementation of the recommendations of the Mwendwa Report in 1983, the Kenyatta University Act, and the Kamunge Report of 1985 led to an increased share of tertiary education in recurrent expenditure to a high of 18 percent in 1989. The share of tertiary education in development expenditure is higher than the share in recurrent expenditure throughout the period, averaging slightly more than 20 percent for most of the period. This share increased dramatically in the 1980s, rising to a high of 73 percent in 1988 with rapid expansion of both the number of universities in the country and the number of students at each university. When development and recurrent expenditures are totaled, the share of higher education in educational expenditure reached a maximum

of just over 20 percent between 1966 and 1991. Primary and secondary education together constituted almost two-thirds of total government expenditure on education.

By the mid–1980s the cost burden of the education system had become evident. The Kamunge Report of 1985 recommended reducing the rate of growth of education in the recurrent expenditure budget. As the authorities implemented these recommendations, the growth rate of recurrent expenditure decreased from 0.40 percent in 1985 to –0.05 percent in 1991.

Cost management continues to be the main focus of educational policy in Kenya. Because 70 percent of current expenditure in primary schools goes to pay teachers, the authorities have developed strict guidelines to reduce these costs while improving the quality of education. Specifically, the education sector adjustment credit policies instituted in 1991 included the following guidelines:

- Hiring 2.5 percent more teachers than the number of classes, so that by the end of 1993 the number of teachers on the Teachers' Service Commission payroll would be more than 175,000.
- Stopping the hiring of untrained teachers.
- Limiting intake to primary teacher training colleges to a maximum of 8,000 students per year. At least 3,000 places of these would be reserved for experienced, untrained teachers, and no more than 5,000 places would go to school leavers.

The Kenyan government is also experimenting with various cost sharing schemes to increase the participation of parents and communities in the provision of quality education. The success of such policies has yet to be determined. At least in the short run, one result of these policies has been a decline in enrollment ratios: While the population continues to grow at more than 3 percent per year, primary and secondary school enrollments increased at annual rates of only 0.8 percent and 0.3 percent, respectively, in the early 1990s. For more detailed studies of educational cost structure in developing countries see Mingat and Tan 1988; Psacharopoulos 1986; Tan and Mingat 1992; Tan, Lee, and Mingat 1984; Verspoor 1989; and Wolff 1984.

Private or Public Education?

As in most countries, the government plays a predominant role in the education sector in Kenya. The usual economic analysis is simple: There are significant externalities to education, that is, some benefits of education accrue to society as a whole rather than to the educated individual. Therefore, in the absence of government subsidy the public would spend less on education than the social optimum. Although public funding for education is thus necessary from an efficiency standpoint, it is also desirable for achieving social equity: Economic status is minimized in determining access to education. As a result, public funding for education can, in theory, help the most capable citizens acquire the skills required for economic and social progress.

In Kenya, however, the public has made substantial private investments in education that have not been limited to the better-off members of society. These investments include meeting the supplementary costs of primary education at government schools, estimated to be about one-quarter of total costs. These costs include required contributions for construction, uniforms, shoes, books, and supplies. More dramatically, Wolff (1984) estimates that, on average, private agents bear about three-fourths of the cost of secondary education in Kenya. Indeed, during the 1980s more than half of Kenya's sec-soft

ondary school students were educated in schools not run by the government. These schools include private secular schools, private church schools, unaided *harambee* schools, and aided *harambee* schools, but the vast majority are one of the two types of *harambee* schools (*harambee*, a Kiswahili word for "let's all pull together," was the motto of the Kenyatta administration).

The *harambee* movement was an attempt to increase rural infrastructure through investment by local communities. Once communities made initial investments in a certain type of project, the government would sometimes help to develop or maintain the project. These investments were wide-ranging, and included water projects, roads, cattle dips, clinics, and schools. During the 1970s, approximately 30 percent of capital formation in rural areas was financed by *harambee* contributions (Thomas 1987). Schools proved to be one of the most popular *harambee* projects, constituting more than half of all such activities. More than 60 percent of total

harambee contributions went to schools after the government decided to slow down the growth of government–maintained secondary schools in the early 1970s (Thomas 1981).

The rapid expansion in secondary education outlined earlier occurred primarily in *harambee* schools. Between 1964 and 1979 enrollment in government–maintained secondary schools increased more than fivefold by about 120,000 students, but enrollment in private, church, and *harambee* secondary schools increased by 215,000, more than twenty–five times (Mwiria 1985). This expansion occurred despite the widespread belief that the quality of instruction in *harambee* schools was inferior to that in government schools. Parents wanted their children in school. If no places were available in government schools, the children were sent to any affordable institution that would accept them. Government reaction to this huge private response was mixed. There was considerable concern in government circles that parents were overinvesting in education, that the quality of education in the *harambee* schools was poor, and that the government was losing control of investment in education (Mwiria 1985).

Thus the Kenyan case shows that private agents will invest substantially in education under circumstances in which they perceive private returns to education to be large. Furthermore, Knight and Sabot (1990) argue that the expansion of secondary school opportunities afforded by the *harambee* movement provided greater equity in the end than Tanzania's secondary school structure, under which communities were not allowed to build their own schools and secondary places expanded at a much slower rate.

Conditions exist, therefore, under which the perception of large private returns dwarfs the positive externalities of education. In such circumstances, private agents may be willing to invest more in education than public agents. The Kenyan and Tanzanian examples indicate that when such a situation arises the government would do well to stymie its desire for control and allow private agents to invest in and manage their own schools.

Education and Agriculture

Have public expenditures on education significantly increased income and productivity in the agricultural sector? Educational expansion has certainly increased the number and percentage of educated people in Kenya's rural areas. During the 1960s most educated people migrated to urban areas. Thus, according to the 1969 census, average years of edu–soft

education for those twenty years and older outside Nairobi and Mombasa was only 1.5 years, and only 3.6 percent of this group had even one year of secondary school (table 5–5). By the 1979 census, average years of schooling for the same group was 2.6, and 10.5 percent had some secondary education. Unfortunately, the 1989 census data have not yet been released, so completely comparable numbers are not available for the 1980s. According to the 1988 Rural Literacy Survey (Republic of Kenya 1988), however, the rate of educational expansion in the rural areas increased during the 1980s. The average number of years of schooling in 1988 for those twenty and over was 3.9, and 17.8 percent of this group had some secondary education. With the increasing size of the rural population, these percentages clearly imply even larger gains in the number of educated people in rural areas. In 1969 about 147,000 people outside Nairobi and Mombasa over twenty years of age had some secondary education. By 1988 this number had increased to about 1,230,000.

Table 5–5 . Growth of Education in Rural Kenya, Population Aged Twenty or Older, Selected Years

<i>Year</i>	<i>Average years of schooling</i>	<i>Percentage with some secondary education</i>	<i>Number with some secondary education</i>
1969	1.5	3.6	147,000
1979	2.6	10.5	576,000
1988	3.9	17.8	1,230,000

Note : Data for 1969 and 1979 are for all Kenya excluding Nairobi and Mombasa, while 1988 data exclude all urban areas. The change from 1979 to 1988 therefore understates the increase of education in rural areas during the period.

Source : Census (1969 and 1979); Rural Literacy Survey (1988).

The relevance of the curriculum to rural residents has been a matter of debate in Kenya. Agriculture was an optional subject for many years, but few students chose to take it. One of the changes implemented when the number of years of primary education increased to eight (the eight–four–four reform) was to increase the role of agriculture in the curriculum. Most primary school students now study agriculture. It is too soon to measure the impact of this reform, although we are somewhat skeptical about its impact. Agriculture is one of many subjects taught in primary school, and is taught by people whose primary occupation is not farming. In such circumstances, Foster's (1965, p. 158) critique of vocational training seems particularly germane:

If at present the schools perform . . . basic functions ineffectively, it is patently absurd to expect them to incorporate a range of auxiliary vocational activities—quite apart from the relative absence of staff either competent or willing to undertake such activities. Given more limited objectives the schools can make a significant contribution to development of technical competence by turning out pupils able to absorb and utilize effectively specific forms of vocational training.

Indeed, strong reasons lead us to believe that general education itself will lead to this further absorption of knowledge, thereby increasing productivity for those students who remain in agriculture. Numerous studies have attempted to link education to agricultural productivity, with education usually measured simply as years of schooling. Jamison and Lau (1982) provide a comprehensive survey of the literature up to that date, and analyze continue

the data further themselves. On average, in the studies they surveyed, four years of primary education increased agricultural output by about 7 percent, holding other inputs constant. These increases were larger in agricultural environments that were changing rapidly because of the availability of new seed and fertilizer technology. As Gerhart (1974) found in his study of the adoption of hybrid maize in Kenya, Jamison and Lau find that more educated farmers are likely to adopt new seed varieties more quickly than their less educated counterparts. None of these studies, however, effectively distinguish the value added of education alone from the value added of the higher reasoning skills that allow a person to excel in school and to advance in the education system. They could thus confuse the increased productivity from higher innate reasoning skills with higher productivity from schooling.

Two of the studies Jamison and Lau cite use data from Kenya (Hopcraft 1974; Moock 1973, 1981). Hopcraft finds negative, significant effects of education on output, while Moock finds an almost significant, positive

impact of four or more years of education, but a negative impact of less than four years of education. In other studies, Thias and Carnoy (1972) examine the link between income and education in Kenya's Central Province—a primarily rural area—for the period just after independence. They find that hired farm laborers benefit little or not at all from schooling, while self-employed small landowners gain from schooling. The gross income of the household head was almost four times higher for a landowner with nine or more years of schooling than for a landowner with no schooling. Their estimates show that the greatest income gains to education were attained by those with four to eight years of schooling. However, nonfarm income accounts for the vast majority of returns to education. In contrast to Jamison and Lau, Thias and Carnoy thus conclude that the profitability of education in rural households depends on the availability of work outside the farm.

In a more recent investigation of employment patterns of primary school leavers in Suna in the South Nyanza District, Shiundu (1988) finds that most primary school leavers remain in rural villages instead of migrating to urban areas. Of the 1,376 primary school leavers, 23.6 percent immediately went to work on family farms. Overall, 78 percent stated that they had worked on the family farm for some time between leaving school and becoming self-employed. Ogutu (1986) surveys 248 secondary school (form IV) leavers in Siaya and Kisumu districts. Of the respondents, 6 percent indicated that they were engaged in some form of farming after graduation. However, neither Shiundu nor Ogutu offer any hard evidence that agricultural productivity actually benefited from the skills attained by primary or secondary school leavers engaged in farm work.

Thus, Kenya has managed to increase dramatically the stock and proportion of educated people in rural areas since independence. Evidence from elsewhere suggests that this should have a positive impact on agricultural productivity, although earlier evidence from Kenya is mixed.

Modeling the Impact of Government Expenditure on Agriculture

Government expenditure on education can affect agricultural productivity in several different ways. To help clarify how this might occur, let us distinguish between schooling, cognitive skills, and reasoning ability (following Knight and Sabot 1990). We use schooling for the number of years completed in a classroom, cognitive skills to mean the knowledge of subjects taught in schools (reading comprehension, grammar, arithmetic, algebra, continue

and the other topics that are generally part of a school curriculum), and reasoning ability to refer to a person's aptitude for drawing conclusions from propositions. This ability may or may not be innate, but is assumed here not to be changed by the amount of schooling. This is in accord with Knight and Sabot 1990. See Raven, Raven, and Court 1991 for a discussion of this issue. Individuals' reasoning abilities, however, could have an impact on the amount of cognitive skills that they acquire while in school.

Schooling by itself—that is, schooling that has no impact on cognitive skills—will not have any impact on agricultural productivity, but schooling that increases cognitive skills could have an impact on productivity.³ Cognitive skills could have an impact on productivity in several ways. First, particular subjects in the curriculum may directly increase a student's knowledge of agricultural practices. As noted earlier, Kenya's move to the eight–four–four system was justified partly in this way. Second, general knowledge of language, mathematics, and science could lead to a greater ability and willingness to read about and adopt improved methods of cultivation. Third, this same general knowledge may lead to better recordkeeping, and thus to improvements in the management of scarce inputs to produce outputs, thereby increasing allocative efficiency.

One should be able to measure the impact of educational expansion on productivity through a two–step procedure: first, estimating the impact of increased education on cognitive skills; second, estimating the impact of that increase in cognitive skills on agricultural productivity. Difficulties arise, however, at each stage.

The impact of educational expansion on agriculture-specific cognitive skills is difficult to distinguish from the learning of these same skills from parents, other farmers, or experience. In particular, the increased time allotted to the teaching of agricultural subjects in primary and secondary schools under the eight-four-four system is so recent that only a few of today's farmers have received this training. Consequently, we will have little to say from our empirical evidence about agriculture in the formal curriculum. Adult education through extension staff can also have an impact on agriculture-specific cognitive skills. We will therefore test the extent to which farmers' knowledge of the recommended levels of application of fertilizer and sprays for major crops improves productivity.

Cognitive skills not specific to agriculture are more easily related to schooling because fewer alternative avenues of learning are available. These skills, however, are unlikely to be correlated precisely with years of schooling, because ability to learn, motivation to learn, and school quality can vary. Government expenditure could affect either the number of students in school, the quality of existing schools, or both. We thus assume that the accumulation of cognitive skills is a function of the quality of schools, the individual's reasoning ability, and years of schooling.

A reasonable assumption is that agricultural productivity is influenced separately by cognitive skills and reasoning ability. Reasoning ability could clearly have an independent impact on productivity. Earlier studies such as Jamison and Lau (1982) linking education to increased productivity might have been reflecting primarily returns to reasoning ability.

³ In the wage labor market, considerable evidence from both developing and industrial countries indicates that simply getting a degree has a positive impact on wages, holding cognitive skills constant. This is the credentialist explanation for the impact of education on wages (see Knight and Sabot 1990).

rather than to education itself.⁴ At least three reasons explain why cognitive skills and reasoning ability should be positively correlated. First, as mentioned above, reasoning ability influences how much a person learns in school. If two persons attend the same school for the same number of years, on average, the person with better reasoning ability will learn more. Second, when education has both financial and opportunity costs, individuals will continue to invest in education only if the perceived benefits outweigh the costs. People with lower levels of reasoning ability will do less well in school, and are thus likely to stop attending school sooner than people with higher levels of reasoning ability, because the marginal benefit of an additional year of schooling will be less for such people. Finally, school systems such as the Kenyan system, which limit secondary schooling to those who perform well on a primary-level examination, will tend to stop people of lower reasoning skills from continuing in school.

Empirical Evidence

We use data gathered from a larger project on the dynamics of rural development in two villages, one in Kenya and one in Tanzania. These villages are situated in coffee growing areas with similar agro-ecologies and population densities. In each area approximately 115 households—about 25 percent of all households—were interviewed at least five times during an entire annual agricultural calendar. This paper considers only the Kenyan households. The Kenyan site is in Murang'a District, about 75 kilometers from Nairobi and 20 kilometers from the Aberdare Forest boundary at an elevation of 1,680 to 1,800 meters. Average annual rainfall is about 1,500 millimeters. About 25 percent of the total value of agricultural output for these households comes from coffee. Livestock products, primarily milk, are more valuable, and constitute 41 percent of total agricultural output. Other agricultural outputs include maize, beans, bananas, and various vegetables. Overall, 47 percent of the value of agricultural production is consumed on the farm. Nonagricultural sources of income generate about 20 percent of total income. Ten percent of the households receive more than half their income from nonagricultural sources.

The Evaluation of Public Expenditure in Africa

The rural community sampled in this study has experienced the same rapid growth in the stock of educated people as all Kenya. Residents currently spend more than 40 percent of nonfood expenditure on education. Table 5–6 presents cross–tabulations of years of schooling by age for those twenty or older. The first part of the table includes all family members in our sample who were living at home during at least one of our survey rounds, and the second part includes all of these plus the children and spouses of household heads who live elsewhere.

The change in educational level between age cohorts is striking. Looking at the second part of the table, of the village residents older than seventy, 85 percent had no schooling at all, and none had more than four to seven years, while all the group aged twenty to twenty–nine had at least some schooling. The average number of years of education has increased dramatically, from 0.5 years for the oldest age group to 8.8 for the twenty to twenty–nine age group. The data also reveal the extent to which the increase in education was a postindependence phenomenon.⁴

⁴ Jamison and Moock (1984) used the same test that we use later to attempt to control for reasoning ability and do not get a significant coefficient. They assume the variable has a linear impact on production, which we do not.

Table 5–6 . Years of Education by Age Group, 1991–92

Age (years)	<i>0 years (%)</i>	<i>1 to 3 years (%)</i>	<i>4 to 7 years (%)</i>	<i>Partial secondary (%)</i>	<i>Completed secondary (%)</i>	<i>Post–secondary (%)</i>	<i>Total number of people</i>	<i>Average years of schooling</i>
<i>Residents</i>								
20 to 29	0	3	37	29	27	4	118	8.9
30 to 39	14	9	50	5	23	0	44	6.7
40 to 49	34	17	40	7	2	0	58	3.4
50 to 59	41	21	26	10	3	0	39	3.1
60 to 69	30	40	23	5	3	0	40	2.7
70 or more	84	11	5	0	0	0	19	1.3
Total number	70	43	109	46	45	5	318	5.7
Overall percentage	22	14	34	14	14	2	100	n.a.
<i>Residents plus migrant children and spouses</i>								
20 to 29	0	2	41	26	27	5	239	8.8
30 to 39	6	6	48	14	22	4	125	7.8
40 to 49	26	13	43	13	4	1	98	4.7
50 to 59	38	21	29	8	4	0	48	3.2
60 to 69	31	38	24	5	2	0	42	2.7
70 or more	85	10	5	0	0	0	20	0.5

The Evaluation of Public Expenditure in Africa

Total number	82	53	224	98	98	17	572	6.7
Overall percentage	14	9	39	17	17	3	100	n.a.

n.a. Not applicable.

Source : Authors' research.

The forty to forty–nine year olds ranged in age from twelve to twenty–one at independence. Thus, most of their schooling was completed prior to or shortly after independence. This age group averages only 3.4 years of schooling for residents and 4.7 for all relatives, but the thirty to thirty–nine–year–olds, aged two to eleven at independence, benefited from the rapid expansion in education in the 1960s and 1970s, which raised the average years of education to 6.7 for residents and 7.8 for all, approximately completion of primary school. In each of the forty to forty–nine, fifty to fifty–nine, and sixty to sixty–nine age groups, only one resident in the sample had completed secondary school. In the thirty to thirty–nine age group, ten persons—23 percent of the residents—had completed secondary school. This percentage increases to 32 percent for the twenty to twenty–nine year age group; 60 percent of that group had had at least some secondary schooling. Of those residents who had completed secondary school in our sample, 94 percent were under forty and 74 percent were under thirty.

These large increases in average length of education have a delayed impact on the education of agricultural decisionmakers given the respect for elders in the local culture. Thecontinue

agricultural decisionmaker is under thirty in only 6 percent of the households investigated, and under forty in only 25 percent. The median age of decisionmakers is fifty. Consequently, the agricultural decisionmaker completed secondary school in only a small number—6 percent—of the households.

This lack of education is painfully obvious when examining the results of tests of cognitive skills. These tests are slightly modified versions of those Knight and Sabot 1990 used. The tests were translated into Kikuyu, and respondents had the option of taking the test in either Kikuyu or English. Of the decisionmakers 45 percent were functionally illiterate: either they could not read at all or could mouth the words with virtually no comprehension. More than 60 percent could not calculate simple two–digit sums. Thus the rapid increases in schooling have not yet had much impact on the cognitive skills of most agricultural decisionmakers. In many households with an uneducated head, however, another member of the family is literate and numerate. In such cases, the agricultural decisionmaker may depend on this other family member to assist when literacy and numeracy are important. If the education of family members is important, then increases in education will have a more immediate impact on agricultural productivity, because the younger, more educated cohort will not take over most farms for many years.

A Human Capital Model of Agricultural Productivity

Agricultural production is a function of land, labor, physical capital, and human capital. The variables used for these in our model are described in turn.

For agricultural production we used the total value of output of final goods from both agricultural and livestock operations. This was calculated as the value of cash sales plus the value of produce from the farm consumed as food by the household. Given the extensive links between different farm operations, isolating one homogeneous output, such as milk, would have given a misleading indicator of agricultural productivity. Cows provide an unmeasured amount of manure that is all put back into the farm and consume an unmeasured amount of intermediate farm products, either nappier grass grown specifically for the cows or byproducts, such as maize and banana stalks. The farming system is highly integrated. Examining one piece alone would fail to capture the management skills necessary for balancing the complete system. These management skills are at the heart of the

impact of human capital that we are trying to measure.

We distinguished between coffee and noncoffee land. Coffee land includes trees, which are, in a sense, physical capital, but given the difficulty of valuing coffee trees and the likelihood that returns to this fixed capital vary substantially from returns to other types of capital, we chose to treat land as two different types rather than attempt to value the trees. Given the added investment in trees, we expected coffee land to have a larger coefficient than noncoffee land. With the low world prices for coffee in 1991–92, however, this difference may be neither large nor significant.

The model breaks down labor into four components: adult household labor, child (twelve and under) household labor, hired labor, and donated labor. Our expectation was that given a labor market that did not function perfectly, the value of adult household labor would be somewhat below the prevailing wage rate of K Sh20 to K Sh25 per day, while child labor would be worth even less. In a perfectly functioning market, the marginal cost of hired labor would equal its marginal benefit, so the coefficient of hired labor would equal the wage. In this situation, given both uncertainty concerning the price of continue

output at the time of hiring labor and an imperfectly functioning market, the coefficient could differ from the wage. Donated labor—which can be substantial for some households—occurs when a family is suffering from a tragedy, such as a family member's death or incapacitating illness. It also is a factor for the elderly who do not have younger family members in the household. In these cases, relatives who are not household members, members of the church, or neighbors work for free on the household's farm. Although we expected this work to have a positive impact on output, large amounts of donated labor could serve as a proxy for poor quality household labor, leading to an insignificant or negative coefficient.

The largest single type of physical capital used for agricultural production by the households was the value of livestock. This was supplemented by the value of farm implements, which is quite small. Because no rental market or freely functioning credit market are available, we used the value of the capital stock as the independent variable rather than multiplying by an arbitrary interest rate to get the value of capital services. The last capital variable is the value of purchased inputs, such as fertilizers, pesticides, and fungicides.

Scores from three tests administered to the agricultural decisionmakers in the households served as proxies for human capital. The tests measured reasoning power, literacy, and numeracy. We also used an experience variable, calculated as the number of years since the head of household set up his or her own household. This variable was entered as a quadratic to allow for both decreasing marginal productivity of an additional year of experience and possible declines in ability to manage a farm as experience—and thus age—increase to high levels. In addition, we tested to see if a variable for years of schooling provides a better measure of cognitive skills.

Raven's Colored Progressive Matrices Test was used to measure the agricultural decisionmakers' reasoning power. This simple thirty–six question test can be administered in approximately fifteen minutes, and does not require literacy. The average score on this test for our agricultural decisionmakers was eighteen correct answers, with a range from five to thirty–four and a standard deviation of 6.9.

Literacy and numeracy tests developed by Knight and Sabot (1990) and modified slightly for our project were used to measure cognitive skills. Questions range from quite simple to fairly complex, and are similar to those found on the primary and secondary school national examinations. We added the scores on the two tests for our measure of cognitive skills. Out of a maximum of sixty–two correct answers, the total scores on these tests ranged from sixteen—random guessing, the number assigned if the person could not read well enough even to begin the test—to forty–nine, with a mean and standard deviation of 24.0 and 9.7, respectively.

Because of time constraints, we did not administer any of these tests to members of the household other than the agricultural decisionmaker. To test for the importance of the education of family members, we included a dummy variable equal to one when the decisionmaker was functionally illiterate, but someone else in the household had completed seven or more years of schooling.

We used a simple linear functional form, which had the advantage of allowing us to distinguish between different types of labor, capital, and land that we assumed had different marginal productivities. Making these distinctions is impossible in a Cobb–Douglas or translog production function because of zero entries for some of these factors for some households. The linear functional form has the disadvantage of requiring constant mar–soft

ginal rates of substitution of one factor for another. Results using a Cobb–Douglas or translog form with aggregated factors are not markedly different from those presented here. See Pinckney 1996.

Estimation of the Agricultural Production Function

Table 5–7 presents regression results. Regression 1 estimates the model discussed above. The regression as a whole is highly significant, as expected. There is evidence of heteroskedasticity at the 95 percent level, so White–corrected standard errors are used for calculating *t*–statistics. As hypothesized, coffee land has a higher coefficient than noncoffee land, but surprisingly neither is significantly different from zero. Similarly, returns to household labor at K Sh5 per day are, as anticipated, less than the daily wage for casual labor of K Sh20 to K Sh25. The marginal return to hired labor is somewhat higher at about K Sh7 per day, but also is not significantly different from zero. This coefficient is, however, significantly less than the prevailing wage rate, indicating that hired labor was paid more than its marginal product, at least during the year of our survey. Given that farmers do not know the return to the coffee crop for more than a year after hiring labor, this is not necessarily irrational behavior. The coefficient on child labor is large and highly significant. One possible explanation is that parents grossly underestimated the amount of time their children worked, but that different parents were fairly consistent in the degree of underestimation. Donated labor has a strong negative coefficient. The proxy for low–quality household labor is dominating the presumed positive impact of the labor itself on output.

Coefficients of the physical capital variables are large and significant. The coefficient of the value of purchased inputs is less than, although not significantly different from, one, possibly indicating that these farmers are overusing purchased inputs. This would not be too surprising. Given rapid changes in relative prices between coffee inputs and coffee, full adjustment to the new price regime may not yet have taken place. The coefficients of livestock assets and, especially, other assets are exceptionally high, implying large rates of return to investment in these assets. We did not include the value of agricultural buildings in our variables, and these returns may be reflecting returns to additional investments not included, thus producing a larger coefficient than expected.

The human capital variables are of most interest to us. Of these, the experience variables, although insignificant individually, are of plausible size and sign, implying that returns to experience decrease slightly as experience increases. Together these two coefficients (experience and experience squared) are significant at the 95 percent level in an *F*–test. For the reasoning and cognitive skills tests, theory provided us with no obvious functional form to use. We thus originally tested the variables as five different levels of dummy variables. The results indicated that for both reasoning power and cognitive skills, positive returns were obtained up to a certain level and few returns thereafter. Thus, in this equation we specified the reasoning and cognitive skills variables as dummy variables equal to one when the reasoning test score was thirteen or greater and when the cognitive skills test score was twenty–two or greater.⁵ Approximately 24 percent of the agri–soft

5 de la Cruz (1991) attempts to measure the impact of cognitive skills on agricultural productivity in Pakistan using a similar test, but fails to find a significant relationship. Jamison and Mook (1984) similarly fail to find a significant relationship between reasoning ability and production. The plateau effect described here could explain

the insignificance in both cases.

Table 5–7 . Production Function Estimates

(dependent variable: value of output, final goods, agriculture and livestock, K Sh)

Variable	<i>Regression 1</i>		Regression 2	
	Coefficient	t–statistic	Coefficient	t–statistic
Constant	–5130		–5369	
<i>Labor</i>				
Man–days of adult, household	5.18	1.54	4.99	1.54
Man–days of child, household	27.7	2.11	29.7	2.26
Man–days of hired	6.58	1.35	6.79	1.42
Man–days of donated	–165	–2.32	–161	–2.20
<i>Land</i>				
Acres of coffee	1,301	1.40	1,432	1.56
Acres of other	336	0.70	353	0.74
<i>Capital</i>				
Livestock assets	0.791	2.31	0.759	2.18
Other agricultural assets	3.44	4.09	3.34	4.20
Value of purchased variable inputs	0.635	2.08	0.636	2.09
<i>Human Capital</i>				
Experience	310	1.41	302	1.36
Experience squared	–1.29	–0.42	–1.29	–0.42
Reasoning test ≥ 13	5,519	2.69	5,464	2.72
Literacy/numeracy test ≥ 22	9,253	4.11	8,941	3.79
If lit/num test <22 , presence of primary school leaver	8,080	3.80	8,014	3.75
Some primary education	–5,593	–2.62	–5,385	–2.54
Some secondary education	–921	–0.55	–1,069	–0.64
Knowledge of extension recommendations	—	—	1,378	1.00
R–squared	0.75		0.75	
Adjusted R–squared	0.70		0.70	

The Evaluation of Public Expenditure in Africa

Observations	103		103	
Breusch–Pagan statistic	28.67	(16 d.f.)	28.6	(17 d.f.)
Mean of dependent variable	22,907		22,907	

d.f. Degrees of freedom.

Note : The t–statistics for both regressions use White–corrected standard errors because of significant heteroskedasticity.

cultural decisionmakers scored below thirteen on the reasoning test and 50 percent scored below twenty–two on the cognitive skills tests. The implication is that some minimum level of reasoning ability and cognitive skills is necessary if one is to be an efficient farmer, continue

but that additional gains in reasoning power or cognitive skills have no further impact on efficiency. Both of these test scores are low. Someone who could describe the basic topic of a paragraph after reading it, successfully add and subtract two–digit numbers, and randomly guess at answers to the remaining questions would attain a cognitive skills score of twenty–two or above.

When specified in this way, reasoning power has a large, significant impact on agricultural incomes. The coefficient, more than K Sh5,500, represents almost 25 percent of the average value of agricultural production. Farmers with a minimum level of reasoning skill—a skill that most analysts believe is not taught in schools—performed much better than their counterparts, but this regression does not suggest that past positive estimates of the impact of education on agriculture are solely the result of leaving out reasoning skill. The coefficient of cognitive skills is even larger and statistically more significant, equal to 40 percent of the average value of agricultural production. Attaining the minimum standards of literacy and numeracy represented by a score of twenty–two on our tests has a profound impact on agricultural productivity. Those households that have an illiterate agricultural decisionmaker, however, can do almost as well as those who do not if a person with primary education lives in the household: the coefficient of this dummy variable represents 35 percent of the average value of agricultural production.

All these results suggest that education has a large impact on productivity, much larger than earlier studies have estimated. The dummy variable for primary schooling of the agricultural decisionmaker, however, presents a puzzle, as it is large and significantly negative. This raises the question of how school can have a negative impact on agricultural productivity. This coefficient implies that going to school without learning anything lowers one's agricultural productivity.⁶ This result conceivably could be related to negative attitudes toward agriculture picked up in school, an idea much discussed in the country in the early 1980s. For example, the 1984–88 Development Plan emphasizes the need to change the attitudes of parents and students, who view "formal education as a route to modern sector employment" when most school leavers will have to work in "small–scale agriculture and rural non–farm activities" (Republic of Kenya 1983, p. 149). This discussion was part of the reason for the eight–four–four reform of the Kenyan school system, whose goal was a shift in the content of the curriculum to make it more appropriate for those who would live in rural areas.

Given the age distribution of our agricultural decisionmakers, however, such an explanation seems to be a stretch. If negative attitudes toward agricultural work picked up in school have an impact on agricultural productivity today, those attitudes would have to persist and be effective for decades to be significant in our sample. Such persistence seems unlikely. An alternative explanation of the negative coefficient could be that the schooling variable proxies for uncontrolled personal characteristics other than reasoning ability that have an impact on success in both school and agriculture. One possible candidate for such a characteristic could be having a positive work ethic.

One possible explanation for the positive impact of education on productivity is that people who are more literate are better able to read literature provided by extension ser-soft

6 This negative coefficient does not result from school leavers who did less well in school and remained in rural areas, because we control for both reasoning ability and cognitive skills, and because several of our respondents worked elsewhere in salaried employment for many years, then returned to the farm.

vices and more likely to know the recommendations of the extension service. If this were the case, some of what appear to be returns to education in regression 1 would more correctly be labeled a return to government investment in extension. We tested for this in regression 2. We asked all of the agricultural decisionmakers four questions related to Ministry of Agriculture recommendations for fertilizer use on maize and coffee, spraying of coffee, and spacing of maize. The district agricultural officer told us that he believed that all farmers in the district would know these recommendations (interview with District Agricultural Officer Murang'a May 14, 1992). Only 14 percent of the agricultural decisionmakers could, however, cite all four recommendations correctly.

For regression 2, we added a dummy variable equal to one if the decisionmaker knew three or four of the recommendations. The coefficient, while not trivial in size at 6 percent of the value of agricultural output, is nowhere near statistical significance, and its introduction has only a small effect on estimated coefficients for the other human capital variables. Knowing these extension recommendations is not the story behind the large impact of education on productivity.⁷

Estimation of Cognitive Skills Production Function

Regression 3 and 4 in table 5–8 examine a production function for cognitive skills, asking the question, how much do cognitive skills increase with additional years of schooling? Regression 3 relates cognitive skills to reasoning power and years of schooling. Both variables are highly significant and quite large. The results are also exceptionally close to those reported by Knight and Sabot (1990) for urban Kenya. Each year of schooling increases cognitive skills by about 1.6 points.

Since our regression above, however, indicated that increases in cognitive skills above a minimum value had little impact on productivity, regression 4 estimates a logit model in which the dependent variable is a dummy equal to one if the cognitive skills are above this minimum level. Once again, the fit is good and the results are statistically significant. We can use these logit results to simulate the impact of schooling on the probability of having cognitive skills at or above the minimum of twenty-two. With a reasoning test score of eighteen—the mean for our sample—the probability that a primary school completer would have cognitive skills of twenty-two or more is 85 percent. After four more years of schooling and completion of secondary school, this probability increases to 98 percent. Another student with very low reasoning power—a reasoning test score of ten—would have a 70 percent chance of having cognitive skills above the minimum after primary school and 95 percent after secondary school. A student with high levels of reasoning power as measured by a reasoning test score of twenty-five would have a 92 percent chance of having cognitive skills above twenty-one with only a primary education and a probability over 99 percent after secondary education.^{break}

7 These results are robust across different specifications of the extension variable. The results look more favorable—although still insignificant—for extension if the dummy is specified as one when the farmer knew one or more of the recommendations, but because only five farmers knew none of the recommendations, this specification is not very informative.

Table 5–8 . Cognitive Skills Production Function

(dependent variable: score on literacy and numeracy test)

Variable	<i>Linear regression</i>		<i>Logit regression</i>	
	Coefficient	t–statistic	Coefficient	t–statistic
Constant	9.16		–4.07	
Years of school	1.51	7.69	0.550	4.86
Score on reasoning test	0.497	4.69	0.107	2.31
R–squared	0.62			
Adjusted R–squared	0.61			
Observations	103		103	
Mean of dependent variable	24.6			
Breusch–Pagan statistic (2 degrees of freedom)	11.8			
Percentage of correct predictions			82	
Log of likelihood			–41.4	
Restricted log of likelihood			–71.4	

Note : The t–statistics reported for the linear regression use a White correction for standard errors because of the significant Breusch–Pagan test.

These numbers call into question the efficacy of secondary school education for agricultural managers. If our earlier agricultural production functions are accurate, increases in cognitive skills past rather low levels have little or no impact on increasing productivity. If the vast majority of agricultural decisionmakers can reach that minimum level of cognitive skills with only primary schooling, the justification for expansion of secondary schooling will have to come from quarters other than agriculture.

Conclusions

Kenyan policy toward the expansion of education was originally driven by the desire of the public sector to Africanize the civil service. This led to large private gains for those educated before or immediately after independence, and presumably to social gains as well. The population, seeing those large private gains, demanded more education, which led to large private investments in further educational expansion. After the original justification for educational expansion was met, more and more educated people remained in rural areas. Theoretical reasoning and evidence from other countries suggest that this increase in rural education should improve agricultural productivity. These results give strong, additional support to that conclusion, as subjects learned in school have a marked impact on farmers' productivity. Just as important, in those households with an illiterate decisionmaker, the presence of an educated person in the household increases productivity almost as much as the education of the decisionmaker. Therefore, we expect the future large increases in the number of educated people in rural areas to benefit agriculture.

These returns from agriculture alone are much higher than the costs of education. One can calculate a rough approximation of the internal rate of return that accrues from edu–soft

cating a child. Assume that this child attends primary school for seven years, then stays as a laborer on his or her parents' farm for, say, fourteen years. Assume furthermore that this educated child has no impact on farm productivity during that period, but then after the fourteen years becomes an agricultural decisionmaker and continues to be one for thirty years. The internal rate of return to the investment in schooling using the coefficient of cognitive skills in regression 1 for the impact on productivity (adjusted for the probability of attaining that level of cognitive skills by attending school) yields a result between 8 percent and 12 percent.⁸ This return is huge, given that the assumption of no positive returns to education until the person becomes the head of a household is extreme. Primary education can indeed be justified on the basis of its contribution to agricultural productivity alone. Kenya's large investments in education do not require job availability in the formal sector for their justification.

These results need to be tempered in four ways. First, our empirical measurements were estimated for only one agro-ecological zone. Returns to education in an annual cropping area unsuited to dairy production might be smaller than at our site. Further research in such areas should be a priority.

Second, the negative coefficient on attending school, holding cognitive skills constant, casts some doubt on the efficacy of schooling. This negative coefficient could be interpreted as the impact of negative attitudes toward agriculture learned in school. If this is the case, school has both positive and negative impacts on agriculture. The net impact is estimated to be positive, but the negative effect is disturbing. We doubt, however, that this negative coefficient is the result of lingering negative attitudes toward agriculture learned in school decades previously, and are persuaded that this coefficient more likely proxies for unmeasured personal characteristics that lead to lack of success in both school and agriculture. If this is the case, the negative coefficient is not a result of school, and thus should not be subtracted from the coefficient of cognitive skills to calculate the net impact of education on productivity.

Third, the level of cognitive skills necessary to achieve productivity gains in agriculture is low, attainable with only a few years of formal education. There is no evidence that secondary schooling, or even upper primary school, leads to improvements in productivity. Basic literacy and numeracy is all that is required, despite the rather complicated agricultural economy of this coffee and dairy environment. Thus, to reap the agricultural productivity gains from the education of farmers, the government needs to continue to support primary schools. Expansion of secondary schools, however, cannot be justified on the basis of its direct impact on farmers' productivity.

Fourth, the gains to agricultural productivity measured here accrue to the household of the educated individual. They are thus private gains rather than social returns. If families have perfect foresight, they should be willing to make these investments in education, and the evidence cited earlier shows that Kenyan households have indeed been willing to continue

⁸ Wolff (1984) reports that the total cost of educating one Kenyan in primary school for one year in 1980 was K Sh400, or US\$53. To use these numbers in the above calculations, they were inflated using consumer price indexes for the two currencies. The benefits are based on the coefficient of cognitive skills in regression 1 multiplied by 0.85, the probability that a person of average reasoning skill will attain cognitive skills of at least twenty-two by the end of seven years of schooling. The calculation in U.S. dollars results in an internal rate of return of about 8 percent while the calculation in K Sh results in an internal rate of return of about 12 percent.

invest large amounts in education. However, note that in the rural area we sampled households with a child of school age are already spending more than 40 percent of nonfood expenditure on education. In the absence of well-functioning capital markets, these families are unlikely to be able to continue to purchase as much education as at present without government subsidies, even if they wish to. Thus, we believe that a continued subsidy to primary education is justified. The experience of the *harambee* school movement combined with the empirical

results of this paper, however, cast some doubt on justifying subsidies to secondary schools on the grounds of agricultural productivity.

Despite these caveats, the basic result of this paper stands: Increases in education have had and will continue to have a large positive impact on agricultural productivity in Kenya. Through investment in education, the government unknowingly increased agricultural productivity substantially. The benefits of these investments will be seen in rural Kenya for many years to come.

References

- Achola, P. W. 1988. "Mobilizing Additional Funds for Secondary and Higher Education in Kenya," *Kenya Journal of Education* , vol. 4, no. 1.
- Behrman, Jere and Anil B. Deolalikar. 1988. "Health and Nutrition." H. Chenery and T.N. Srinivasan, eds., *Handbook of Development Economics* , vol. 1, chapter 14. Amsterdam: North Holland.
- Bogonko, Sorobea Nyachieo. 1986. "Aims of Education in Kenya Considered in the Context of Independence." *Kenya Journal of Education* 3(1): 112–37.
- de la Cruz, Lynnette. 1991. "Human Capital Accumulation in Rural Pakistan: Its Effects on Agricultural Productivity in Post–Green Revolution Areas." Williamstown, Massachusetts: Williams College, Center for Development Economics.
- Eshiwani, G.S. 1990. *Implementing Educational Policies in Kenya* . Discussion Papers, Africa Technical Department Series, No. 85. Washington, D.C.: World Bank.
- Foster, Philip. 1965. "The Vocational School Fallacy in Development Planning." C.A. Anderson and M.S. Bowman, eds., *Education and Economic Development* , pp. 142–63. Chicago: Aldine Publishing.
- Gerhart, John D. 1974. *The Diffusion of Hybrid Maize in Western Kenya* . Ph.D. diss., Princeton University.
- Hopcraft, P.N. 1974. "Human Resources and Technical Skills in Agricultural Development." Ph.D. diss., Stanford University.
- Jamison, Dean T., and Lawrence J. Lau. 1982. *Farmer Education and Farm Efficiency* . Baltimore, Maryland: Johns Hopkins University Press.
- Jamison, Dean T., and Peter R. Mook. 1984. "Farmer Education and Farm Efficiency in Nepal: The Role of Schooling, Extension Services, and Cognitive Skills." *World Development* 12(1):67–86.
- International Labour Organisation. 1972. "Employment, Income and Equality—A Strategy for Increased Productive Employment in Kenya." Geneva.
- Knight, John B., and Richard H. Sabot. 1990. *Education , Productivity , and Inequality: The East African Natural Experiment* . Oxford, U.K.: Oxford University Press.
- Mingat, Alain, and Jee–Peng Tan. 1988. *Analytical Tools for Sector Work in Education* . Baltimore, Maryland: Johns Hopkins University Press.
- Mook, P. R. 1973. "Managerial Ability in Small Farm Production: An Analysis of Maize Yields in the Vihisa Division of Kenya." Ph.D. diss., Columbia University, New York.

The Evaluation of Public Expenditure in Africa

- . 1981. "Education and Technical Efficiency in Small Farm Production." *Economic Development and Technical Change* , 29:723–39.
- Mwiria, Kilemi. 1985. "The Kenya Harambee School Movement: A Historical Perspective." Ph.D. break
Diss., Stanford University.
- Ogutu, G.E.M. 1986. "Quality of Secondary School Education and its Relevance to Self–Employment in the Rural Areas of Kenya." Kenya Educational Research Association, Research Report No. 2.1. Nairobi: Kenyatta University, Bureau of Educational Research.
- Pinckney, Thomas C. 1996. "Does Education Increase Agricultural Productivity in Africa?" in Roger Rose, ed., *Issues in Agricultural Competitiveness: Markets and Policies* . Brookfield, VT: Dartmouth Publishing Co.
- Psacharopoulos, George. 1986. *Financing Education in Developing Countries* . Washington, D.C.: World Bank.
- Raven, J., J.C. Raven, and J.H. Court. 1991. *Manual for Raven's Progressive Matrices and Vocabulary Scales , Section 1: General Overview* . Oxford, U.K.: Oxford Psychologists Press.
- Republic of Kenya. 1909. *Report of the Commission to Recommend Structure of Education for the East African Protectorate* . Produced by J. Nelson Fraser.
- . 1952. *Binns Report* .
- . 1983. *Development Plan: 1984–1988* . Nairobi: Government Printer.
- . 1988. *Rural Literacy Survey* . Nairobi: Government Printer.
- . 1992. *Economic Survey* . Nairobi: Government Printer, various years.
- Shiundu, John Oyula. 1988. "Primary Education and Self–Employment in the Rural Informal Sector in Kenya: A Study of Primary School Leavers in Suna, South Nyanza." *Kenya Journal of Education* 4(1):88–117.
- Tan, Jee–Peng, and Alain Mingat. 1992. *Education in Asia: A Comparative Study of Cost and Financing* . Regional and Sectoral Studies. Washington, D.C.: World Bank.
- Tan, Jee–Peng, Kiong Hock Lee, and Alain Mingat. 1984. *User Charges for Education: The Ability and Willingness to Pay in Malawi* . Staff Working Papers No. 661. Washington, D.C.: World Bank.
- Thias, Hans H., and Martin Carnoy. 1972. *Cost–Benefit Analysis in Education: A Case Study of Kenya* . Staff Occasional Papers No. 14. Washington, D.C.: World Bank.
- Thomas, Barbara P. 1981. "Local Organization, Politics and Participation in Rural Development: A Study of Harambee Self–Help in Kenya." Ph.D. diss., Brandeis University.
- . 1987. "Development Through Harambee: Who Wins and Who Loses? Rural Self–Help Programs in Kenya." *World Development* 15:4:463–81.
- UNESCO (United Nations Educational, Scientific, and Cultural Organization). 1992. *Statistical Yearbook* . Paris.

- Verspoor, Adriaan. 1989. *Pathways to Change: Improving the Quality of Education in Developing Countries*. Discussion Papers No. 53. Washington, D.C.: World Bank.
- Wolff, Laurence. 1984. *Controlling the Costs of Education in East Africa: A Review of Data, Issues and Policies*. Staff Working Papers No. 702. Washington, D.C.: World Bank.
- World Bank. 1989. *Sub-Saharan Africa: From Crisis to Sustainable Growth*. Washington, D.C.
- . 1992. *World Development Report*. Washington, D.C.
- . 1993. *World Development Report*. Washington, D.C.

6—

The Effects of Public Expenditures on Kenya's Macroeconomy

Catharine B. Hill, Kenneth M. Kletzer, and Arunkant A. Shah

By the early 1980s, Kenya's development strategy had led to repeated balance of payments crises. The government outlined a major policy shift in its Sessional Paper *Economic Management for Renewed Growth* (Republic of Kenya 1986), which contained many components of traditional stabilization and liberalization programs. The government called for increased reliance on the private sector and a "shift away from a heavy dependence on import substitution and protection as the means to stimulate industrialization, towards a policy of exposing industry progressively to international competition and encouraging nontraditional exports" (Republic of Kenya 1986, p. 3). At the same time, the government called for a reduction in the government deficit as a share of gross domestic product (GDP) "to control inflation, restrain public indebtedness, increase government savings and avoid 'crowding out' private investors who need access to domestic credit" (Republic of Kenya 1986, pp. 18–19).

In this document, the government discussed its views on the role of the private versus the public sector. In the future the private sector would have to generate most employment and income growth. The government would provide the social and administrative services that the private sector could not. The government saw itself remaining as the main provider of basic needs—education, health, and water—balancing guaranteed access for those unable to pay and cost recovery by charging beneficiaries. The government was also to provide infrastructure and a regulatory structure to "channel private activity into areas of greatest benefit for all Kenyans" (Republic of Kenya, p. 19). The government had endorsed many of these objectives earlier as it had moved to stabilize the economy in the early 1980s. During the last decade, international donor organizations—the World Bank, the International Monetary Fund (IMF), and the U.S. Agency for International Development (USAID)—have all been involved in Kenya's attempted policy shifts toward a more outward-oriented strategy.

This chapter examines the Kenyan government's attempts to meet these objectives during the 1980s, particularly through its public expenditure policies. It begins by reviewing Kenya's overall macroeconomic performance over the last two decades. It then examines the pattern of aggregate public spending in Kenya, relating it to the aggregate growth of the economy. Next it looks at the components of public expenditures. Certain types of continue

government expenditures may be more conducive to growth and/or more sensitive to movements in aggregate spending than others. The chapter summarizes how public expenditures in Kenya may have responded to output growth and discusses the effects of structural adjustment in the 1980s on public expenditures, particularly those believed to contribute positively to growth and development. Finally, the chapter examines the role of public

expenditures in aggregate demand management and macroeconomic stabilization and discusses how public expenditures in Kenya have responded to variations in export earnings and, consequently, in public revenues. It examines whether or not public spending has served to help stabilize national consumption and income with respect to these fluctuations.

A General Survey of Kenya's Macroeconomy

Kenya's economic growth from 1965 to 1980 compared favorably with growth in other low-income countries and in Sub-Saharan Africa as a whole. Annual GDP grew at 6.8 percent (3.2 percent per capita), compared to 4.2 percent (1.5 percent per capita) for Sub-Saharan Africa and 4.8 percent (2.3 percent per capita) for low-income countries other than India and China. Inflation over the same period in Kenya averaged about 7.2 percent, compared to 11.4 percent for Sub-Saharan Africa. Real per capita GDP growth slowed to 0.4 percent from 1980 to 1990, and inflation increased moderately to 9.2 percent. In Sub-Saharan Africa real per capita GDP declined on average by 1 percent, while inflation averaged 20 percent. Thus Kenya's overall growth and inflation performance was slightly better than the average for the region through 1991.

Since independence in 1963, growth in manufacturing has been primarily for the domestic market, with tariffs and licensing arrangements protecting the domestic import-competing sector. Kenya relies on exports of coffee and tea. Kenya's terms of trade deteriorated from an index of 161 in 1964 to 74 in 1987, making this reliance on primary commodities costly. Offsetting this, tourism has represented an increasing share of foreign exchange earnings over time. Tourism receipts increased by 60 percent between 1980 and 1990.

Kenya experienced a balance of payments crisis in the early 1970s. The oil price shock, world recession, and declining terms of trade led to large current account deficits. Inflation was increasing and growth was slowing. In 1975 Kenya adopted an adjustment program to gain access to IMF credits. Kenya devalued the shilling by 12 percent against the special drawing right, to which it had been pegged since 1974. The adjustment program was designed to reduce the growth rate of the money supply. Coffee revenues unexpectedly boomed in the second half of 1975, relaxing the external crisis. The authorities abandoned the macroeconomic adjustment efforts agreed to in the first half of the 1970s, and the real exchange rate started to appreciate.

The coffee boom ended in 1978, but increased domestic demand persisted, leading to continued high imports, the reappearance of current account deficits, and increasing budget deficits. The real exchange rate continued to appreciate. With government revenues from the coffee boom slowing in the mid-1970s, Kenya's budget deficit was financed first by borrowing abroad, and then from the domestic banking system. In the early 1980s the second oil shock and the world recession pushed Kenya back into recession, and by 1982 another balance of payments crisis had developed. In response, the country moved toward stabilization and structural adjustment (Swamy 1994). The government devalued the shilling twice in 1981. In 1983, it launched macroeconomic adjustment in line with a continue

March 1983 IMF agreement. The Kenyan shilling was further devalued, and the budget deficit declined as a share of GDP. The macroeconomic adjustments continued in 1984-85. Many of the reforms were aimed in part at increasing exports of nontraditional commodities.

Attempts at adjustment continued into the second half of the 1980s. In 1986, however, another, smaller coffee boom occurred and oil prices declined. The government relaxed its macroeconomic policies in response. Then in 1987 the terms of trade declined and the current account deficit increased. Since then, inflation has been increasing and net private sector investment has been negative. In 1989, coffee prices collapsed, exacerbating these problems. During the late 1980s, however, foreign aid, which reached almost 12 percent of GNP in 1989, hid many of Kenya's problems.

In November 1991 international donors froze new lending to Kenya in response to government policies. In 1993 the government renewed its commitment to adjustment. Many in Kenya as well as in the international community consider that macroeconomic adjustment and economic liberalization are important for renewed growth.

As a result of many of its policies, Kenya has long faced an employment crisis. The USAID projects that the labor force will grow by 3.7 percent annually, while the economy is currently creating new jobs at a rate of 3.0 percent. Unless the demand for labor increases, unemployment and underemployment will increase during the next decade. From 1963 to 1985 public sector employment grew by 5.5 percent a year, while modern wage employment in the private sector grew by only 1.5 percent annually. The government objective to reduce the deficit as a share of GDP by cutting expenditures requires constraining employment growth in the public sector.

It is within this macroeconomic context that the role of public expenditure in Kenya will be discussed. Public expenditure policies have both contributed to macroeconomic conditions and been affected by attempts at stabilization and adjustment. At the same time, the objectives of specific expenditure programs have sometimes been frustrated by overall macroeconomic conditions.

Aggregate Public Spending and Economic Growth in Kenya

At independence, Kenya started with a lower share of total government expenditures and government consumption in GDP than the average for the region as a whole. Until 1980, the growth rate of the share of government spending in national output was significantly higher for Kenya than the average for the region. In 1980 total government expenditures for Kenya were 31 percent of GDP, about equal to the average for all Sub-Saharan Africa, while central government spending was 29.8 percent of GDP for Kenya and 22.7 percent for Sub-Saharan Africa.¹ The growth rate of the share of government consumption spending averaged 10.6 percent from 1965–80 for Kenya and 7.0 percent for the region (World Bank 1991).

Since 1980, the pattern has changed somewhat. The collapse of the coffee boom in 1978 followed by the recession in the industrial countries and the debt crisis in the early 1980s continue

¹ These figures are for the total of expenditures plus lending minus repayments and are from *Government Finance Statistics* (published monthly and annually by the IMF). Local government makes up a small share of total public spending for Kenya. Transfers from the central government to local levels of government are an extremely small share of the central government budget.

led to reduced economic growth for Kenya and a reduction in the growth rate of the share of government in output. Government consumption spending grew at an annual rate of 3.4 percent, compared with 0.9 percent for Sub-Saharan Africa from 1980 to 1991. The share of central government expenditures in GDP leveled off after 1982. This happened as interest payments by the central government rose as a share of central government expenditures from 10.6 percent in 1981 to 19.0 percent in 1986. This rise in the interest share of expenditures without an overall trend upward in the share of government spending in national output meant that other forms of public spending grew by even less or contracted as shares of output.

A notable change in the level of public spending occurred in the late 1970s. As government revenues rose with the increase in national income during the coffee export boom of 1976 and 1977, government spending also rose. However, as revenue growth fell again as the world price of coffee fell with the end of the boom in 1978, public expenditures stayed at their new higher percentage of national output. During 1977–81 the share of government expenditure in GDP grew from 19.5 to 27.7 percent, while it declined slightly on average for the region as a whole. This type of ratcheting upward of government expenditures with temporary revenue increases appears to have been repeated during Kenya's smaller coffee boom of 1986, during which the price of coffee rose by one-third. This pattern of expenditure growth with cycles in export revenues and national income is discussed at

greater length later.

A third interesting change in the pattern of growth in public spending began in 1987. As part of its structural adjustment program, Kenya undertook a comprehensive reform of its tax policies. This led to a successful broadening of the tax base and an increase in compliance rates along with an overall effort to rationalize the tax structure and reduce subsidies and trade taxes. The end result was an increase in revenues, but the share of government spending appeared to rise along with revenues. Government expenditure increased from 24.3 to 27.9 percent from 1986 to 1987. The data more generally suggest a possible relationship between government consumption spending and government revenue collections (see figures 6–1 through 6–6).break

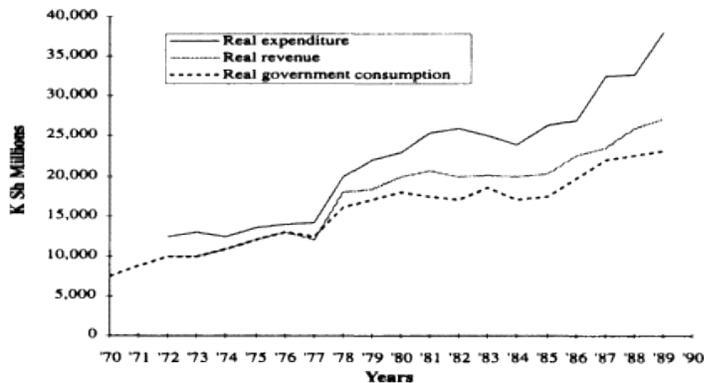


Figure 6–1.
Real Government Consumption,
Revenue, and Expenditure (base year 1985)
Source : IMF, *International Financial Statistics* (various years).

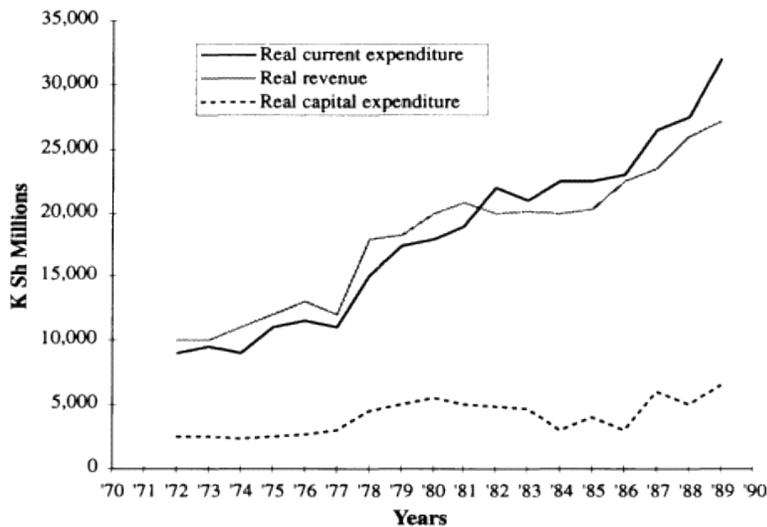


Figure 6–2.
Real Current Expenditure, Capital
Expenditure, and Revenue (base year 1985)
Source : IMF, *Government Finance Statistics* (various years).

The Evaluation of Public Expenditure in Africa

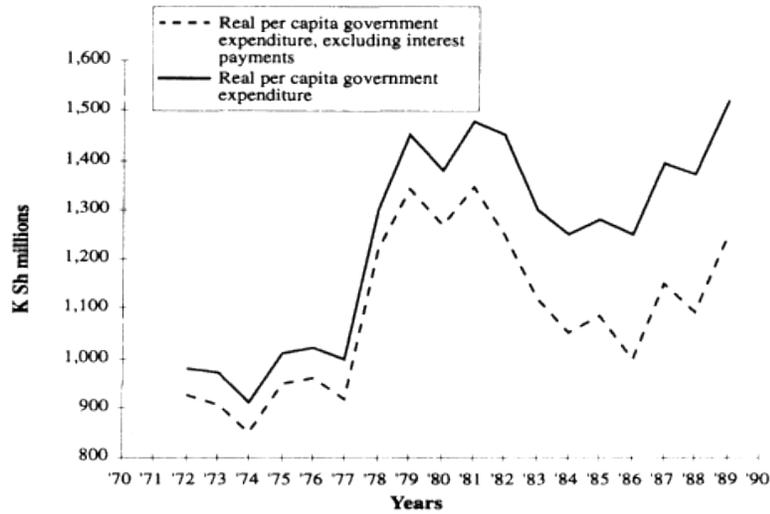


Figure 6-3.
Real per Capita Government Expenditures (base year 1985)
Source : IMF, *International Financial Statistics* (various years).



Figure 6-4.
Government Consumption,
Expenditure, and Revenue as a Share of GDP
Source : IMF, *International Financial Statistics* (various years)

The Evaluation of Public Expenditure in Africa

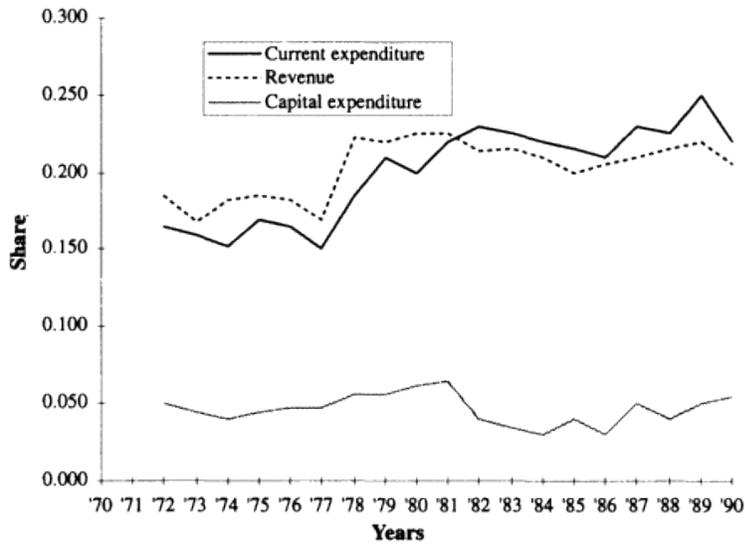


Figure 6-5.
Current Expenditure, Capital Expenditure, and Revenue as a Share of GDP
Source : IMF, *Government Finance Statistics* (various years)

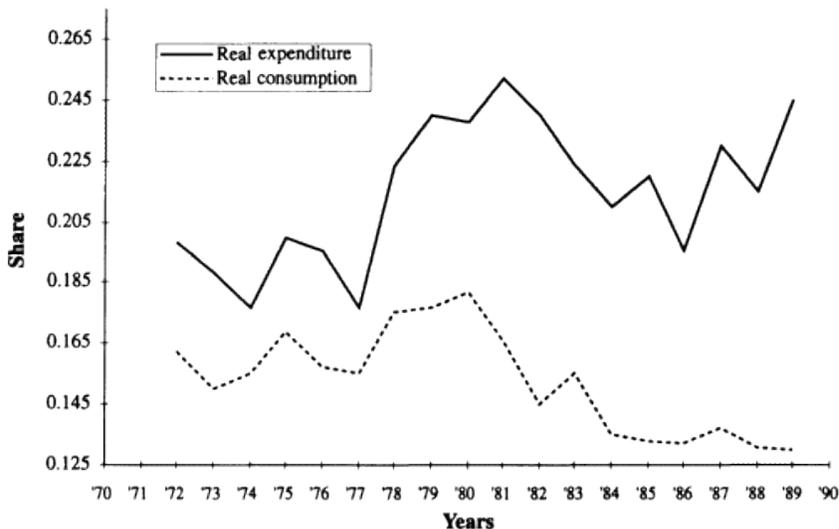


Figure 6-6.
Government Consumption and Expenditure, Net of Interest Payments as a Share of GDP
Source : IMF, *International Financial Statistics* (various years).

Figure 6-3 shows real government expenditures on a per capita basis, gross and net of interest payments. Because interest payments have accounted for an increasing share of government expenditures and the population growth rate has been high, real per capita expenditures by the government excluding interest payments declined by about 25 percent from 1981 to 1986, recovering somewhat thereafter.

The government adopted economic stabilization policies in the first half of the 1980s. The growth rate of real government expenditure and consumption slowed, and actually declined as shares of GDP during the first half of

the 1980s. From 1986 the share of government expenditure has increased somewhat, while that of government consumption has remained about constant.

Much of the movement in government expenditure in Kenya in the last ten to fifteen years is similar to that in other Sub-Saharan African countries (Sahn 1992). Sahn found that total government expenditures increased in Sub-Saharan Africa during 1977–89, but that the growth of population eroded this increase on a per capita basis, and total government expenditures net of interest payments declined as a share of GDP as interest payments became an increasingly large share of expenditures.

The Composition of Public Expenditure and GDP Growth in Kenya

Government expenditures on public sector capital and certain categories included in public consumption spending, such as education and health, serve to raise a country's productive capacity. Additions to infrastructure in such areas as transportation, continue

communication, and water and electricity supply may contribute to growth by increasing the productivity of inputs used by the private sector. It is convenient to think of government capital as an input in the production functions of private firms, leading to an increase in the marginal productivity of factors employed in the private sector. For example, public sector investments in electrification can reduce total capital costs for firms by more than the public costs by taking advantage of economies of scale in power generation, thereby eliminating the need for firms to operate small generators. A presumption is that public capital spending can have a positive effect on private investment spending and on the level, and perhaps the growth rate, of output. Whether it does depends on the public sector projects undertaken and the efficiency of input use.

Figure 6–5 shows capital expenditures as a share of GDP for Kenya from 1970 through 1990, and figure 6–7 shows capital expenditures as a share of total government expenditures. These show that the share of capital spending has varied from year to year, particularly during the 1980s. Capital expenditures as a share of public spending fell in the early 1980s, followed by some recovery toward the end of the decade. In comparison with the region, capital spending has been a smaller fraction of total government expenditures while current expenditures have been a greater fraction.

During adjustment episodes, capital expenditures and recurrent expenditures may both be cut. Cutting capital expenditures can directly reduce long-run growth. Cutting recurrent expenditures excessively to protect capital expenditures may not be the solution, however. Reducing recurrent expenditures can lead to reduced maintenance and rapid deterioration of the existing capital stock. The existing capital stock may be underutilized because of inadequate complementary inputs. Some expenditures classified as recurrent may also really be investment rather than consumption. In practice, cutting capital expenditure may be easier than cutting recurrent expenditures. This may result from the need to make debt service payments and from pressures not to cut the wage bill (Sahn 1992).break

The Evaluation of Public Expenditure in Africa

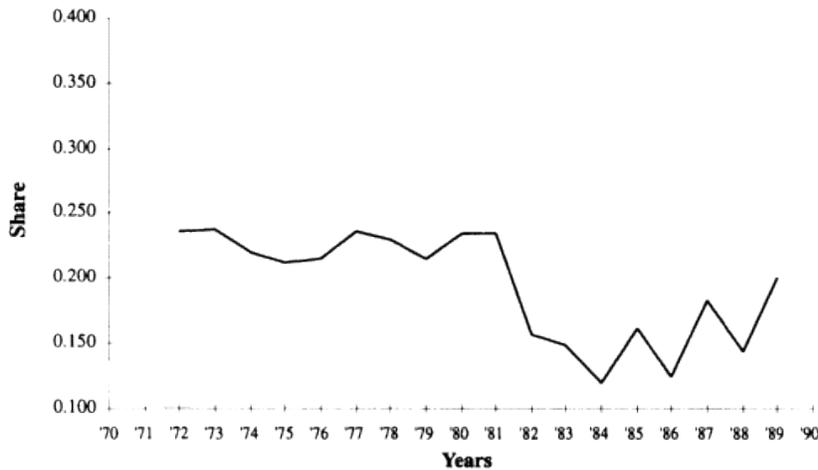


Figure 6–7.
Government Investment as a Share of Government Expenditure.
Source : IMF, *Government Finance Statistics* (various years).

In Kenya much of the adjustment in government spending in the early 1980s clearly fell on capital expenditures. From 1982 to 1986 Kenya spent, on average, about 3.5 percent of GDP per year on public investment. From 1987 to 1990 this average increased to about 5 percent. Real public sector fixed investment declined by 6 percent in 1991 compared to 1990, and a further 14 percent in 1992 as a result of fiscal adjustment (Republic of Kenya 1992, 1993). Sahn (1992) reports that the ratio of government recurrent to capital expenditures went from 4.8 in 1980–83, to 6.7 in 1984–86, to 5.3 in 1987–89. For Sub-Saharan Africa (excluding the Central African Republic and Mali) the comparable figures are 3.8, 4.0, and 3.6, suggesting that Kenya's allocation is skewed away from capital expenditures compared to other countries in the region.

The productivity of capital often depends upon the efficient use of that capital after it is in place. Spending on the operation and maintenance of public capital is a crucial input that can, in some cases, yield far greater returns than replacing worn out stocks. For example, the cost of replacing unmaintained roads tends to be many times more than the cost of maintaining them. Some important areas of spending for operation and maintenance purposes are included in economic affairs and services spending, with Kenya spending a slightly larger share of GDP on these than the region. An important aspect of such spending is the allocation of inputs to these purposes. In developing countries, the ratio of labor inputs to material inputs in government consumption tends to be higher than in industrial countries. The ratio of wages and salaries to other current purchases of goods and services is higher in Kenya (1.5 in 1985) than the average for Sub-Saharan Africa as a whole (1.3 in 1985).

Spending on Wages and Salaries

The share of wages and salaries in central government expenditures for Kenya was 50 percent higher than the average for the region. Tables 6–1 and 6–2 show expenditures by type as a share of current and total expenditures.

The shares of wages and salaries in current expenditures and total expenditures increased modestly from 1980–84 to 1985–89. With interest payments increasing as a share of current and total expenditures, other categories have declined. In particular, the category "other purchases of goods and services" declined steadily during the 1980s as a share of current and total expenditures. This led to an increase in the ratio of wages and salaries to other purchases of goods and services during much of the 1980s.

The Evaluation of Public Expenditure in Africa

Civil service employment grew at about 10 percent annually in the 1970s and 4.8 percent in the 1980s (Republic of Kenya *Statistical Abstract* various years; Swamy 1994, p. 48). From 1974 to 1984, central government wage employment grew at about 7.5 percent (excluding teachers), while employment in the private sector grew at less than 3.0 percent (Republic of Kenya 1986, p. 32). The wage bill was held down by declining real wages, which were distributed unevenly so that salary compression resulted. With upper-level salaries falling relative to salaries for lower skill levels, important upper-level jobs have remained vacant.

In 1985 the government initiated a budget rationalization program to increase operating and maintenance expenditure in an attempt to reduce the share of wages and salaries in government expenditures. It did not succeed (Swamy 1994, p. 21). Nonwage operations and maintenance expenditures declined from 36 percent of total recurrent expenditures in 1981, to 26 percent in 1986, to 22 percent in 1990. The government's sessional paper (Republic of Kenya 1986) indicated that the government's employment policy was unus-soft

tainable and called for a variety of measures to address the problems. These included no longer guaranteeing employment for graduates of government training programs and universities. The number of students entering training programs was also to be guided by demand in the private and public sectors. The overall policy orientation of the Sessional Paper was to increase the role of the private sector, thereby increasing its demand for labor (Republic of Kenya 1986, pp. 33-34). In the last few years of the 1980s the growth of private sector employment started to pick up. The shift toward a more liberalized, outward-oriented economy is meant to increase the demand for labor by both increasing growth and shifting incentives toward labor-intensive sectors.break

Table 6-1 . Expenditure by Type as a Share of Current Expenditure, 1972-90

<i>Year</i>	<i>Wages and salaries</i>	<i>Other purchases of goods and services</i>	<i>Interest payments</i>	<i>Subsidies and other current transfers</i>
1972	0.585	0.201	0.074	0.139
1973	0.540	0.238	0.081	0.140
1974	0.521	0.245	0.078	0.156
1975	0.436	0.232	0.071	0.258
1976	0.454	0.189	0.081	0.272
1977	0.426	0.283	0.087	0.201
1978	0.396	0.339	0.086	0.175
1979	0.351	0.441	0.090	0.113
1980	0.354	0.381	0.092	0.169
1981	0.380	0.322	0.106	0.188
1982	0.350	0.297	0.145	0.204
1983	0.374	0.301	0.172	0.149
1984	0.369	0.269	0.180	0.179
1985	0.363	0.239	0.180	0.215
1986	0.393	0.237	0.212	0.156

The Evaluation of Public Expenditure in Africa

1987	0.393	0.243	0.200	0.162
1988	0.378	0.230	0.217	0.173
1989	0.365	0.205	0.215	0.214
1990	0.388	0.246	0.242	0.123

Source : IMF, *Government Finance Statistics* (various years).

Table 6–2. Expenditure by Type as a Share of Total Expenditure

<i>Year</i>	<i>Wages and salaries</i>	<i>Other purchases of goods and services</i>	<i>Interest payments</i>	<i>Subsidies and other current transfers</i>
1972	0.447	0.154	0.057	0.107
1973	0.412	0.182	0.062	0.107
1974	0.408	0.192	0.061	0.122
1975	0.343	0.183	0.056	0.203
1976	0.357	0.149	0.063	0.214
1977	0.325	0.216	0.066	0.153
1978	0.305	0.261	0.066	0.135
1979	0.276	0.348	0.071	0.089
1980	0.272	0.293	0.071	0.129
1981	0.292	0.247	0.081	0.144
1982	0.295	0.251	0.122	0.173
1983	0.318	0.257	0.146	0.127
1984	0.324	0.236	0.158	0.158
1985	0.304	0.200	0.151	0.181
1986	0.345	0.208	0.186	0.137
1987	0.322	0.199	0.164	0.133
1988	0.324	0.196	0.185	0.148
1989	0.303	0.170	0.179	0.178
1990	0.311	0.197	0.194	0.099

Source : IMF, *Government Finance Statistics* (various years).

Recently the government again reiterated that a shift toward a lower share for wages and salaries is still an objective. The 1992–93 budget proposed a shift toward growth in operating and maintenance expenditure in some ministries, along with a reduction in the rate of growth of wages and salaries in current expenditures. The government has not been filling some vacancies and has frozen some recruitment, but has recognized that a more major policy shift toward retrenchment would be required to have a significant effect on current expenditures. As a result of not filling vacancies and freezing recruitment, the growth of employment in the public sector declined

from 2.4 percent in 1989, to 2.2 percent in 1990, to 2.1 percent in 1991 (Republic of Kenya 1992, p. 41). In 1993, however, the government announced a general increase in civil service salaries that is expected to increase public sector expenditures (Republic of Kenya 1993, p. 10). A civil service reform program has been officially put in place, including both retrenchment of lower grade employees and a safety net. It is clearly too early to anticipate the effects of these reforms, if successfully implemented (Swamy 1994, pp. 61–62). Retrenchment programs can lead to rising expenditures in the short run, even if successful in the longer run.break

Spending on Education

In 1981 Kenya spent about 5.5 percent of GDP, or about 20.5 percent of total expenditures, on education (see tables 6–3 and 6–4). As a share of GDP, education expenditures declined during the first half of the 1980s, then recovered from 1984 to 1989. High population growth rates have also meant that increasing real expenditures on education have not led to increased real spending per pupil (table 6–5). In Kenya, the average annual growth of population was 3.6 percent during 1965–80 and 3.8 percent from 1980–90. In 1991 49 percent of the population was younger than fifteen. In contrast, declining population growth rates in the East Asian countries reduced the school–age population (zero to fourteen years) as a percentage of the total population from shares similar to Kenya's in 1965 to approximately 20 to 35 percent by 1991. In Kenya, increasing expenditures are needed just to maintain basic education, while in East Asia quality and quantity can be improved instead or expenditures as a share of GDP reallocated to alternative uses (World Bank 1993, p. 194).²

Evidence indicates that in the developing countries, the social rate of return for primary education is higher than for secondary and tertiary education. Kenya has done well at increasing primary education. In 1970 58 percent of the appropriate age group was enrolled in primary education, increasing to 94 percent in 1990. This compares with rates of 46 percent in 1970 and 68 percent in 1990 for all of Sub–Saharan Africa. Gender bias has also declined in Kenya over time, with the rates for female students increasing from 48 percent to 92 percent. The percentage of the appropriate age group enrolled in secondary education in 1970–90 increased from 9 to 23 percent in Kenya, compared with 6 to 17 percent in Sub–Saharan Africa as a whole. The proportion of untrained teachers in primary and secondary school declined between 1990 and 1991, from 29.8 percent to 25.5 percent in primary schools and from 36.5 percent to 30.3 percent in secondary schools.

At the same time, the primary sector is experiencing a variety of problems. Dropout rates are high, with more than half the children who begin primary education not finishing, and dropout rates are higher for girls than for boys. In 1991 and 1992 primary school enrollments grew at about 1 percent, significantly less than the growth rate of school–age children (Republic of Kenya 1993, p. 185). In terms of social returns, primary education needs greater attention.

A recent study (Sahn 1992) reports that only seven of thirty–two African countries spent more than 50.0 percent of their recurrent education expenditures on primary education in 1983, with the average being 43.7 percent. In 1983–84, Kenya spent 65 percent of its recurrent education expenditures on primary education and about 10 percent on higher education. By 1989–90 these shares were 50.5 percent and 17.5 percent, respectively, suggesting a shift to higher education, where social rates of return may be lower. During this time the share of secondary education shifted modestly, up from 12.5 percent to 16.0 percent. As a share of development education expenditures, the shift was more dramatic. Development education expenditures for primary education fell from 6.1 to 2.8 percent during 1983–84 to 1989–90, while the share of higher education increased from 20.5 percent to 63.1 percent.break

² Swamy (1994) argues that the demographic transition started in Kenya in the early 1980s. This will help in the future, but not in the near term.

The Evaluation of Public Expenditure in Africa

Table 6-3 . Expenditure by Function as a Share of Total Expenditure

Year	General public services	Defense	Public safety and order	Education	Health	Social security and welfare	Housing and community development	Recreation, cultural, religious affairs	Fuel and energy	Agriculture, forestry, fishing, hunting	Mining, manufacturing, construction	Transportation and communication	Other economic affairs and services	Other expenditures
1977	0.172	0.119	0.000	0.218	0.082	0.002	0.041	0.022	0.010	0.100	0.017	0.110	0.026	0.083
1978	0.184	0.160	0.000	0.187	0.074	0.002	0.060	0.020	0.001	0.085	0.024	0.084	0.032	0.087
1979	0.173	0.177	0.000	0.179	0.072	0.002	0.063	0.021	0.001	0.084	0.021	0.081	0.043	0.083
1980	0.168	0.164	0.000	0.196	0.078	0.001	0.050	0.025	0.000	0.083	0.019	0.089	0.036	0.090
1981	0.105	0.107	0.071	0.206	0.078	0.001	0.048	0.025	0.000	0.112	0.036	0.072	0.041	0.098
1982	0.086	0.132	0.066	0.199	0.073	0.002	0.047	0.025	0.000	0.090	0.020	0.086	0.033	0.140
1983	0.094	0.138	0.041	0.206	0.070	0.001	0.032	0.031	0.000	0.101	0.020	0.070	0.028	0.167
1984	0.085	0.127	0.057	0.196	0.067	0.001	0.040	0.031	0.000	0.075	0.026	0.065	0.054	0.175
1985	0.107	0.086	0.052	0.196	0.064	0.001	0.026	0.038	0.000	0.103	0.028	0.050	0.080	0.169
1986	0.086	0.089	0.057	0.226	0.065	0.002	0.027	0.033	0.000	0.097	0.024	0.041	0.055	0.198
1987	0.121	0.091	0.052	0.212	0.060	0.001	0.033	0.043	0.000	0.114	0.023	0.032	0.040	0.177
1988	0.093	0.122	0.060	0.221	0.059	0.001	0.025	0.039	0.000	0.071	0.020	0.027	0.061	0.200
1989	0.095	0.078	0.056	0.198	0.054	0.001	0.035	0.026	0.000	0.146	0.028	0.044	0.048	0.191
1990	0.117	0.100	0.060	0.199	0.054	0.001	0.038	0.023	0.000	0.059	0.032	0.043	0.073	0.201

Source : IMF, *Government Finance Statistics* (various years).break

Table 6-4 . Expenditure by Function as a Share of GDP

Year	General public services	Defense	Public safety and order	Education	Health	Social security and welfare	Housing and community development	Recreation, cultural, religious affairs	Fuel and energy	Agriculture, forestry, fishing, hunting	Mining, manufacturing, construction	Transportation and communication	Other economic affairs and services	Other expenditures
1977	0.033	0.023	0.000	0.042	0.016	0.000	0.008	0.004	0.002	0.100	0.003	0.021	0.005	0.016
1978	0.044	0.039	0.000	0.045	0.018	0.000	0.014	0.005	0.000	0.085	0.006	0.020	0.008	0.021
1979	0.046	0.047	0.000	0.047	0.019	0.000	0.017	0.006	0.000	0.084	0.006	0.021	0.011	0.022
1980	0.044	0.042	0.000	0.051	0.020	0.000	0.013	0.006	0.000	0.083	0.005	0.023	0.009	0.023
1981	0.029	0.030	0.020	0.057	0.022	0.000	0.013	0.007	0.000	0.112	0.010	0.020	0.011	0.027
1982	0.024	0.036	0.018	0.055	0.020	0.001	0.013	0.007	0.000	0.090	0.005	0.023	0.009	0.038
1983	0.024	0.036	0.011	0.054	0.018	0.000	0.008	0.008	0.000	0.101	0.005	0.018	0.007	0.044
1984	0.021	0.032	0.014	0.049	0.017	0.000	0.010	0.008	0.000	0.075	0.006	0.016	0.013	0.044
1985	0.028	0.022	0.014	0.050	0.016	0.000	0.007	0.010	0.000	0.103	0.007	0.013	0.021	0.044
1986	0.021	0.022	0.014	0.055	0.016	0.000	0.006	0.008	0.000	0.097	0.006	0.010	0.013	0.048
1987	0.034	0.025	0.015	0.059	0.017	0.000	0.009	0.012	0.000	0.114	0.006	0.009	0.011	0.049
1988	0.025	0.032	0.016	0.058	0.016	0.000	0.007	0.010	0.000	0.071	0.005	0.007	0.016	0.053
1989	0.029	0.023	0.017	0.059	0.016	0.000	0.010	0.008	0.000	0.146	0.009	0.013	0.014	0.057
1990	0.032	0.027	0.016	0.054	0.015	0.000	0.010	0.006	0.000	0.059	0.009	0.012	0.020	0.054

Source : IMF, *Government Finance Statistics* (various years).break

Table 6-5 . Real Education Spending per Pupil, 1977-90

(base year 1985)

Year	Thousands of pupils	Real expenditure on education (K Sh millions)	Real spending per pupil (K Sh/pupil)
1977	3,300	4,242	1,285

Spending on Education

The Evaluation of Public Expenditure in Africa

1978	3,366	4,262	1,266
1979	4,093	4,540	1,109
1980	4,367	4,989	1,142
1981	4,413	5,758	1,305
1982	4,579	5,367	1,172
1983	4,838	5,130	1,060
1984	4,916	4,864	990
1985	5,163	5,080	984
1986	5,324	6,231	1,170
1987	5,571	6,960	1,249
1988	5,686	7,109	1,250
1989	6,054	7,300	1,206
1990	6,038	6,576	1,089

Source : Republic of Kenya, *Statistical Abstract* (various years); IMF, *Government Finance Statistics* (various years).

In 1991 the actual fiscal deficit exceeded estimates for a variety of reasons, including unanticipated increases in expenditures on university education. From 1986–87 to 1990–91 enrollment at the University of Nairobi increased from 6,506 to 14,607 students. The shift in development expenditures to higher education is problematic. A very small group benefits from university education and the social returns do not justify increasing government expenditure in this area. The large government subsidies have led to rising private demand for higher education, as evidenced by enrollment increases, even in the face of unemployed university graduates. The government has historically acted as the employer of last resort for university and training program graduates, but fiscal restraint and the need to contain wages and salaries make this policy unsustainable. All this suggests an inefficient allocation of government resources toward higher education.

Spending on the Health Sector

Health expenditures comprise a higher share of total expenditure in Kenya than for the region as a whole. Kenya's health expenditures are less than half of the expenditures on education and have declined as a share of total expenditure during the last fifteen years. On a per capita basis, real spending per person by the government on health has gone from KSh 81 (in 1985 shillings) in 1977 to KSh 114 (in 1985 shillings) in 1981, back to KSh 81 (in 1985 shillings) in 1989.

The income distribution effects of these changes depend on the allocation of health services. Social services, including health and education, are often biased toward urban, continue

higher-income populations. The effects on the poor of reductions in services may be less than suggested by the numbers on average real expenditures. During the 1980s the number of hospitals relative to the number of total health institutions did not increase. The data on doctors and nurses are slightly more ambiguous. Since 1977, the ratio of doctors to nurses increased slightly, from 9.3 percent in 1977 to 14.5 percent in 1990. To the extent that nurses supply most primary health services, this may reflect a shift of services away from lower-income, more rural households (Republic of Kenya various years). The ratio of doctors to nurses for Sub-Saharan Africa was

9.6 percent in 1981 and 9.9 percent in 1984.

In the past, the Kenyan government's health expenditures were biased toward the urban sector. The health sector has also been affected by the shift in recurrent expenditures toward wages and salaries and away from nonwage goods. This has contributed to inadequate maintenance, particularly in rural areas (Swamy 1994, p. 53). In 1989 and 1990 the government adopted policy changes to increase resources and efficiency in the health sector, but it is early to ascertain whether these reforms will be sustained and successful.

Other Categories of Spending

Interest payments are a large and increasing share of the central government's expenditures. The growth in the share of interest payments in central government spending in the 1980s along with the absence of growth in public spending meant that other expenditures declined as shares of GDP. Rising interest payments have resulted from the government's fiscal policy, which is discussed later.

Defense spending may or may not be productive. It mostly rose as a share of total spending during the 1960s and 1970s, but has fallen since 1979. The sum of defense spending and public order and safety expenditures averaged around 15 percent of total expenditures during the 1980s. As a share of noninterest government expenditures it has risen.

Some smaller categories of spending fell dramatically, for example, spending on roads and transport declined by 65 percent from 1982 to 1987. Expenditures on transport and communication have declined over much of the last decade, falling from 11.0 percent of total expenditures in 1977 to a low of 2.7 percent in 1988. As a share of GDP, they declined from 2.1 to 0.7 percent, recovering slightly in 1989 and 1990.

Recent evidence on government investment in infrastructure suggests that it may contribute positively to growth (Easterly and Rebelo 1993). The Kenyan government's expenditures on some aspects of infrastructure seem to have been heavily affected by macroeconomic adjustment policies and rising interest payments during the 1980s. Compared to other countries in Sub-Saharan Africa, expenditures on transport and communication as a share of total expenditure were on the low side in the 1980s, although the data are far from complete.

The Effects of Macroeconomic Adjustment on Expenditures

Adjustment in Kenya has not resulted in major reallocations away from social sectors, but longer-run problems of declining per capita spending remain as a result of high population growth rates and high interest payments. The allocation within categories, already skewed toward urban higher-income groups, may also have shifted slightly more toward components with lower social rates of return and higher-income groups.

Government capital expenditures in Kenya are lower relative to recurrent expenditures than in the region as a whole, and capital expenditures were more heavily affected by adjustment in government spending in the 1980s. Wages and salaries are also high relative to the purchase of goods and services. While perhaps expedient, this distribution of government spending may involve costs in terms of longer-run growth.

The Role of Public Expenditures in Macroeconomic Stabilization

Fiscal policies play a fundamental role in macroeconomic stabilization and structural adjustment. They can also be a source of macroeconomic instability. To a large extent, the impact of fiscal policies on output and inflation is determined by the size and timing of the public sector's budget deficit and whether it is financed through borrowing or monetization. Deficits are not necessarily undesirable. The government's ability to separate the timing of tax receipts and other revenues from the timing of public expenditures plays an essential role in the

conduct of fiscal policies that can raise national welfare and promote economic growth and development. The ability to finance extraordinarily large public expenditures partially through future (or past) taxes rather than in a pay-as-you-go fashion with current taxes can reduce the costs to allocative efficiency caused by distortionary taxes.

Sustainability of Fiscal Plans

Current public sector deficits have consequences for the future conduct of fiscal policy. An important consideration in assessing the impact of deficit financing of public spending programs is whether current tax and expenditure policies will need to be revised in the future to avoid default or repudiation of outstanding debts by the government. If current policies are unsustainable in the sense that the government will either have to increase taxes or the rate of money creation or reduce expenditures, then private investors and savers are likely to expect these policy changes and respond, thereby reducing domestic investment and increasing the acquisition of foreign financial assets.

Kenya has run a deficit every year since 1972 and a primary deficit every year except 1986 and 1988 (table 6-6). As a share of GDP, the total deficit has varied from a low of 3 to 4 percent to a high of more than 7 percent. It reached its peak in 1982 (7.7 percent) in response to increasing expenditures and declining revenues after the end of the coffee boom in the late 1970s and international shocks in the early 1980s. The government adopted stabilization policies and reduced the deficit as a share of GDP significantly through 1984. In the second half of the 1980s, much of this adjustment was reversed. These numbers on deficits in the 1980s fall in about the middle of the range for deficits as a share of GDP for developing countries in the 1980s. The World Bank (1993, p. 109, table 3.1) reports an average public deficit for forty developing countries of 6.39 percent of GDP in 1980-88.

The financing of the deficit has varied over time, with foreign borrowing, domestic borrowing, and money creation all playing a role. After remaining more or less constant during 1972-78 at about 30 percent, public debt to GDP increased to 57 percent in 1984. From 1986 to 1988 the public debt to GDP ratio declined some and remained below 50 percent through 1990 as a result of the adjustment process during the 1980s. However, since the middle of 1992, preliminary figures reveal a rise in public debt as a share of output. There continue

is also evidence of significant monetization of deficits following the government's departure from the structural adjustment program prescribed by the World Bank and the IMF.

Total external debt as a percentage of GNP increased from 49 percent in 1980 to 90 percent in 1991. As a share of exports of goods and services, it increased from 167 percent to 318 percent. For 1991 the comparable numbers for Sub-Saharan Africa were 108 and 329 percent, respectively. For all low- and middle-income developing countries, the respective numbers in 1991 were 42 and 177 percent.

One point of concern frequently expressed about public budget deficits is that they are a source of inflationary pressure. This link between deficits and inflation arises because governments can finance public expenditures by creating money. By paying for goods and services that it uses with new issues of money, a government can effect a transfer of real resources, called seignorage, from the private sector. In a growing economy the demand for base money grows, so the government can collect seignorage revenues without inflation resulting from increases in the money supply. As the government attempts to raise seignorage beyond that consistent with the growth rate of the economy and the demand for money, inflation can result. It is this mechanism that gives rise to worries that persistent large deficits ultimately lead to inflation.break

The Evaluation of Public Expenditure in Africa

Table 6–6 . The Government Deficit and Financing, 1972–90

Year	<i>KSh millions</i>					<i>Ratio</i>	
	Total deficit	Interest payments	Primary deficit	Net domestic borrowing	Net foreign borrowing	Deficit to GDP ratio	Debt to GDP ratio
1972	566	175	391	229	167	0.039	0.30
1973	906	213	693	503	429	0.054	0.31
1974	587	240	347	266	209	0.029	0.28
1975	1,151	291	860	356	425	0.048	0.29
1976	1,709	391	1,318	1,574	774	0.059	0.32
1977	1,327	479	848	979	464	0.036	0.27
1978	1,627	656	971	594	466	0.040	0.29
1979	3,015	850	2,165	2,803	1,107	0.066	0.41
1980	2,409	961	1,448	90	1,268	0.046	0.36
1981	4,002	1,361	2,641	993	1,876	0.066	0.37
1982	5,463	2,371	3,092	3,163	2,063	0.077	0.41
1983	3,838	2,919	919	3,353	1,825	0.050	0.46
1984	4,281	3,472	809	2,997	1,548	0.049	0.57
1985	6,245	3,919	2,326	4,403	1,842	0.062	0.51
1986	5,144	5,321	–177	6,012	–868	0.044	0.48
1987	8,329	6,004	2,325	7,926	403	0.063	0.49
1988	6,242	7,407	–1,165	3,747	2,181	0.041	0.44
1989	11,193	9,268	1,925	3,577	3,968	0.065	0.47
1990	10,912	10,404	508	18,031	2,519	0.055	0.47

Source : IMF, *Government Finance Statistics* and *International Financial Statistics* (various years).

Both the external sector and domestic credit to the Kenyan government have driven the growth of the monetary base. The coffee boom of the mid–1970s and the miniboom in 1986 led to increases in the monetary base. Government deficits were financed by increases in domestic credit to the government in the early 1980s, from 1985 to 1987, and more recently. In general, however, money supply growth has not been as rapid and variable as in many other developing countries.

From 1971 to 1990 Kenya's inflation rate has varied from 3.4 percent per year to 17.0 percent per year, averaging 10.5 percent over the 1970s and 1980s (see table 6–7). This is low compared to other low– and middle–income countries and other Sub–Saharan African countries.

Table 6–7 . Inflation and Real Interest Rates, 1971–93

(percent)

<i>Year</i>	<i>Inflation</i>	<i>Real interest rate a</i>
1971	3.35	–2.29
1972	5.79	–4.71
1973	8.21	–10.84
1974	15.16	–11.02
1975	16.15	–5.06
1976	10.18	–7.78
1977	12.90	–9.35
1978	14.48	–2.32
1979	7.45	–2.32
1980	12.15	–6.40
1981	10.54	–1.69
1982	16.94	–4.74
1983	10.34	2.93
1984	9.27	2.50
1985	11.50	–0.25
1986	3.75	7.50
1987	7.15	3.16
1988	10.05	0.28
1989	11.46	0.54
1990	13.49	0.18
1991	19.83	—
1992	29.56	—
1993	45.71	—

— Not available.

a. Calculated using the deposit rate reported in the source. The deposit rate is not reported for 1991 to 1993. Using the treasury bill rate, the real interest rates for 1991, 1992, and 1993 are –3.24, –13.03, and 4.09.

Source : IMF, *International Financial Statistics* (various years).

The inflation rate for Kenya has risen steadily since 1989, however, and is reported to have been 19.8 percent in 1991, 29.6 percent in 1992, and 46.7 percent from February 1992 to February 1993. The increase in inflation coincided with an increase in the rate of growth of the money supply (M3) of about 20 percent in 1991 and 39 percent in 1992. This rise in the rate of growth of the money supply was partly caused by the monetization of public budget deficits. The rise in inflation suggests that the current rate of seignorage collection and tax and spending policies are not sustainable. When seignorage leads to inflation, the real value of money holdings for firms and households declines. An important constraint on inflationary financing of expenditure programs is that the demand for real money balances typically declines with inflation. Eventually, the government will need to find additional revenues, reduce expenditures, or face the possibility of defaulting on part of its domestic or foreign debt.

Inflation can affect important relative prices in the economy, including the real exchange rate (see deGroot 1991 for a detailed discussion of Kenya's real exchange rate since 1975). After evidence of appreciation in response to the coffee boom in the mid-1970s, the real exchange rate depreciated during the 1980s. Through 1991 inflation had not led to real appreciation of the exchange rate. Since then, there has been some evidence of real appreciation. In 1991-92 the government created a legal parallel exchange market, and initially the official and parallel rates were quite close, suggesting little overvaluation. The official rate appreciated slightly in 1992, increasing the premium (Swamy 1994, p. 14).

The inflation rate resulted in negative real interest rates from 1971 to 1982. The World Bank (1993) reports an average real interest rate in Kenya from 1967 to 1990 of -2.33 percent. At the end of 1992 all interest rates were negative in real terms.³ Negative real interest rates penalize savings through financial intermediaries. This can reduce growth by reducing funds for investment. Negative rates also imply credit rationing, which can lead to a misallocation of investable resources, further hurting growth.

Fiscal deficits in Kenya have contributed to increasing domestic and foreign debt and, more recently, to rapid growth in the money supply and inflation. Continually rising debt relative to GDP and increasing inflation cannot be sustainable and can reduce growth in a number of ways. Fiscal adjustment should be an important government objective in Kenya. The Kenyan government has stated that "the best option is to reduce the deficit through cutting government expenditure" (speech by Saitoti, Vice President and Minister of Finance, delivered to the National Assembly in June 1992 when presenting the 1992/93 budget). One rationale is that the ratio of total revenue to GDP is high, and increasing it could reduce incentives to work and invest, thereby negatively affecting growth in the private sector and overall growth. At the same time, the government believes that expenditures can be cut without negatively affecting growth. Whether this will be the case depends on what is cut. Repeated commitments to reduce the deficit by cutting expenditures have not been completely realized, however. In 1992 public expenditure on the elections, security, refugees, and famine relief all contributed to a fiscal deficit higher than expected. In 1993 the government announced a general increase in civil service salaries. Restraining public expenditures has not proved easy in Kenya.^{break}

³ In 1992, the average savings account rate was 12.5 percent, half the rate of inflation (Republic of Kenya 1993, p. 24).

Booms and Busts in the Export Sector, Public Expenditure, and Aggregate Demand Management

If fiscal policy is being used countercyclically, one would expect to see increases in government expenditures and the government deficit and decreases in government revenues associated with periods of recession. In Kenya there appears to be a weak positive relationship between changes in real GDP and changes in real government expenditure, revenue, and the deficit. The three correlations are .20, .12, and .11. This suggests that government expenditure and the deficit move procyclically rather than countercyclically. These simple correlations suggest that government expenditure and the deficit have not contributed to stabilizing GDP in Kenya.⁴

Kenya relies heavily on coffee exports as a source of foreign exchange, and the macroeconomic performance of the Kenyan economy depends on the revenues earned from coffee and tea exports. During the 1980s the share of coffee exports in total exports varied from 20 to 40 percent. Like many primary commodity prices, the world price of coffee fluctuates widely over time. In the case of coffee this is primarily because of crop failures caused by adverse weather in Brazil and other South American producer countries.

Kenya's coffee sector has experienced several major booms and busts. Coffee prices increased sharply in 1976 and 1977 because of a frost in Brazil in 1975. World coffee prices doubled in 1976 and then increased by more than 50 percent in 1977. Another smaller boom occurred in 1986, when drought in Brazil led to a 30 percent increase in world coffee prices.

In Kenya, in contrast to many developing countries, the private sector directly receives the boom income. Davis (1983) estimates that producers got more than 95 percent of the boom in the 1970s. Even though the Kenyan government does not directly receive the income from coffee booms, government revenues are sensitive to booms and busts. Booms have a multiplier effect on the economy, increasing government revenues through normal income tax channels, with a lag. In addition, coffee booms lead to increased imports and trade tax revenues. During the coffee boom of 1977–78, public sector revenues rose from 17 percent of GDP to 22 percent because of increases in total tax collections. Government expenditures also increased from 19 percent of GDP in 1977 to 26 percent in 1979, increasing the deficit as a share of GDP. Bevan, Collier, and Gunning (1990) discuss the fiscal response to Kenya's 1976–79 coffee boom. Government spending increased significantly after the coffee boom, with most of the increased spending going to consumption despite intentions to increase investment. The rise in expenditure exceeded the rise in revenue, leading to rising deficits, with the government's propensity to spend out of boom revenue equal to 135 percent (Bevan, Collier, and Gunning 1990, p. 372).

When the price of coffee collapsed in 1979, expenditures remained at the higher share of GDP. Thus the consequence of the coffee boom was an increase in the central government deficit as a fraction of GDP that was at first financed by borrowing abroad, and then by an increase in the rate of growth of the money supply. This led to increases in the rate of inflation. When a smaller coffee boom occurred in 1986, expenditure rose from 24 percent of GDP in 1986 to 28 percent in 1987, increasing the deficit by 2 percentage points of GDP.⁴

4 Real GDP, government revenue, expenditure, and the deficit all exhibit positive trends over time. If the variables are first detrended and the relationships between deviations from a deterministic time trend are examined, the relationships have the same sign but are slightly stronger. The three correlations are .51, .52, and .19. Government spending, revenues, and the deficit all increase with increases in GDP.

This pattern of allowing commodity revenue booms to ratchet the share of government spending in GDP upward was also followed by Côte d'Ivoire (in the case of cocoa and coffee) and Nigeria (in the case of oil), where monetization of deficits and inflation rate increases also ensued. Botswana and Cameroon followed a rather different path. Cameroon used the oil boom as an opportunity to reduce its foreign indebtedness with a slow and continued rise in spending by the government. Botswana increased its foreign reserve holdings with the diamond boom that began in 1983, and government consumption as a share of GDP actually fell as public expenditures were smoothed over time to an extent exceptional in the developing world.

Some natural guidelines for prudent management of commodity export revenue booms and busts are available (see Bevan, Collier, and Gunning 1987, 1990; Cuddington 1988; Davis 1983; Edwards 1984 for discussions of managing coffee booms and busts in developing countries). The appropriate response for public spending depends on whether the movements in primary commodity export prices are expected to be temporary or persistent. Large increases and decreases in the price of coffee do not persist, and econometric studies confirm that the price of coffee regresses toward a mean. The common prescription for a government concerned with household welfare is to save most of the revenues from a temporary boom, because the rise in permanent income is a fraction of the

rise in income during the boom. The permanent increase in national consumption per capita that can be achieved with the boom revenues is equal to the interest income that can be obtained by investing the export earnings during the boom. This calls for an increase in the public sector surplus during temporary price booms and a rise in the deficit during temporary price busts. By following such a smoothing path, the government can provide a smooth level of public goods and services and smooth out private consumption of private goods. If the price rises are known to be permanent, then aggregate demand should be allowed to rise to reflect the increase in national wealth.

On the face of it, the government of Kenya seems to have disregarded this rule of thumb, as suggested by the correlations between real GDP, government expenditure, revenue, and the deficit discussed earlier. The government spends its income. This income is variable, partly because of the variability of coffee export revenues, and as a result government consumption and government investment are also variable and move procyclically. The Kenyan government has not used public expenditure to stabilize the macroeconomy, and instability in income from the export sector and government revenues may have contributed to government failure in macroeconomic management.

Conclusions

During the 1980s, the Kenyan government discussed structural reform at length, but adjustment has proven difficult to achieve. Many of the problems facing the economy that were recognized in the first half of the 1980s remain in the first half of the 1990s. Public expenditure was 27 percent of GDP in 1982 and 1990. In 1990 the deficit was 5.5 percent of GDP. Much of the economic stabilization achieved in the first half of the 1980s was reversed in the second half. The allocation of public expenditure during the 1980s has moved toward components that may not contribute as much to growth as others, with rising shares of interest payments and wages and salaries, and some increase in the misallocation of social expenditures may have taken place. Commodity booms and busts have contributed to macroeconomic mismanagement.
break

Kenya's public expenditure programs and deficits have not entirely prevented some shift toward export promotion and away from an inward-oriented set of trade policies. Exchange rate management, import liberalization, and export promotion policies have all been working in the same direction, in decreasing order of importance (Swamy 1994, pp. 26–33). The merchandise trade deficit improved from 15 percent of GDP in 1990 to 11 percent in 1991, with exports growing at 26 percent and nontraditional manufactured goods increasing 40 percent in value. However, some of the improvement resulted from slow growth in imports caused by both the depressed economy and some increased restrictions on imports resulting from foreign exchange constraints.

The government of Kenya has stated that a reduction of the fiscal deficit, achieved primarily through a reduction in government expenditures, is a major component of its policy to shift the economy toward an outward-orientation. Much remains to be done to this end during the 1990s. Economic management deteriorated during the first years of the 1990s. Monetary policy became somewhat expansionary, increasing inflation and generating negative real interest rates. Because of concern about economic management, bilateral and multilateral donors stopped lending to Kenya in 1991 and 1992. Since then, Kenya has adopted a variety of adjustment policies (Swamy 1994). Many of these are promising in terms of addressing the problems that the government failed to deal with in the 1980s: The authorities have tightened monetary policy; instituted financial market reforms; adopted policies to reduce the fiscal deficit; devalued the exchange rate, unifying the official and market rates in October 1993; announced a civil service reform program; and reallocated health and education sectors expenditures toward priority sectors and increasing cost recovery. It is too early to tell whether these policies will be sustained.

References

- Bevan, D.L., P. Collier, and J.W. Gunning. 1987. "Consequences of a Commodity Boom in a Controlled Economy: Accumulation and Redistribution in Kenya, 1975–83." *World Bank Economic Review* 1(3):489–513.
- . 1990. "Fiscal Response to a Temporary Trade Shock: The Aftermath of the Kenyan Coffee Boom." *World Bank Economic Review* 3(3): 359–78.
- Cuddington, John. 1988. "Fiscal Policy in Commodity–Exporting LDCs." Policy Research Department Working Paper. Washington, D.C.: World Bank.
- Davis, Jeffrey M. 1983. "The Economic Effects of Windfall Gains in Export Earnings, 1975–1978." *World Development* 11(2):119–39.
- DeGroot, Albert. 1991. "Adjustment Policies and the Real Exchange Rate in Kenya Since 1975." *World Development* 19(10):1399–408.
- Easterly, William, and Sergio Rebelo. 1993. "Fiscal Policy and Economic Growth: An Empirical Investigation." Washington, D.C.: World Bank.
- Edwards, Sebastian. 1984. "Coffee, Money and Inflation in Colombia." *World Development* 12(11/ 12):1107–17.
- IMF (International Monetary Fund). Various years. *Government Finance Statistics* . Washington, D.C.
- . *International Financial Statistics* . Washington, D.C.
- Republic of Kenya. 1986. *Economic Management for Renewed Growth* . Sessional Paper No. 1. Nairobi: Government Printing Office.
- . Various Years. *Economic Survey* . Nairobi: Government Printing Office.
- . Ministry of Planning and National Development, Central Bureau of Statistics. Various Years. *Statistical Abstract* . Nairobi: Government Printing Office.
- Sahn, David E. 1992. "Public Expenditures in Sub–Saharan Africa During a Period of Economic Reforms." *World Development* 20(5):673–93.
- Swamy, Gurushri. 1994. "Kenya, Structural Adjustment in the 1980s." Policy Research Working Paper No. 1238. Washington, D.C.: World Bank.
- World Bank. 1991. *World Development Report 1991* . Washington, D.C.
- . 1993. *The East Asian Miracle* . Policy Research Report. New York: Oxford University Press. break

7—

What Have We Learned?

Henry J. Bruton and Catharine B. Hill

In this chapter we attempt to summarize the main points of the case studies and to identify the issues that have emerged from the studies that are of particular relevance to further work on public expenditure in Africa.

The objective of development policy is to put in place an economy whose routine functioning generates sustained growth of output that in turn helps to increase the population's well-being. To do this requires increasing the productivity of the factors of production. Government can contribute to the achievement of this objective in a variety of ways: taxes, regulations, exchange and interest rate policies, and many other ways, including government expenditure. This book is concerned primarily with the role of government expenditures in achieving the development objective.

The basic rationale of any government spending is that such spending contributes more to the development objective than if the spending were left to the private sector. The market is therefore assumed to fail. We have discussed standard market failures: economies of scale, externalities, and public goods. We have argued that while these traditional forms of market failure are not irrelevant to development, a variety of other sources of market failure may be much more important. Standard discussions of market failure tend to concentrate on the efficiency with which given resources are allocated at a given point in time. Generating sustained growth that contributes to increased well-being is a more complex task and, therefore, may call for more (and different) government expenditures compared to those dealt with in the standard arguments.

Two great difficulties arise with this kind of argument. The first is that government failure must be recognized to exist along with market failure. The mere occurrence of market failure is therefore not a sufficient condition for a government to intervene. The existence of both market and government failure greatly complicates the analysis. The second difficulty arises from our primitive understanding of the sources of productivity growth. Sustained growth of output requires continuing growth of productivity of resources, and despite a vast array of studies on the subject, our understanding of how to bring it about remains extremely limited. Such ignorance means that being sure what exactly the "right" policies are, or what exactly is the "right" role of government spending, or where market or government failure exist is often impossible. One might say then, that in addition to market and government failure, there is also the failure of professional economics.

At the end of chapter 1 we listed eight questions, the answers to which would help us to appraise the appropriateness of the examples of government spending examined in the case studies. In this chapter we use these questions to identify the overall results of the case studies. A final section tries to generalize further on what we have learned.

Justification for and Consequences of Government Expenditures

The case studies document quite convincingly that African governments believed that market failure was rampant. This is true with respect to specific sectors as well as to the economy in general. Were the various governments' interpretation of this situation fairly accurate? There are a couple of general points to make before we examine the specific cases. These points are especially relevant now because of the widespread belief that market failure is much less rampant than was believed to be the case in the 1950s, 1960s, and 1970s and that government failure is greater and more damaging than was believed to be the case in past decades. The main point of these observations is to call attention to the difficulties in determining whether, in a given situation, there is market or government failure.

The first decades after World War II were also the first decades of independence for many African countries. The leaders of the independence movements and the new presidents and ministers were acutely aware of the many failures of market economies in the two decades between the world wars and of the dislocations imposed on their

countries by the wars. Thus their grave doubts about market solutions to their problems are not surprising. That they saw market failure everywhere is therefore quite reasonable.¹ In addition, many leaders saw a basic greediness and materialism in the market that they rejected, partly because it seemed to characterize their former colonizers. Market failure, therefore, was seen not only in terms of low incomes, unemployment, and instability, but also as a source of inequity, of which income inequality was only the most obvious. The issue was made more complex because then, as now, economists' understanding of the sources of growth, particularly productivity growth, was extremely limited.

A second point is a bit messy. The presumption of market failure may lead to policies that actually help perpetuate it. Thus if the market is assumed to be generally unresponsive to price signals, then market prices are not important in directing the economy. So getting prices right hardly matters. In general, as stated in chapter 1, market failure is usually considered in the context of a market in which price signals convey the real supply and demand situation. Where this is not the case then the question arises whether one is observing market failure or the consequences of unfortunate policies.² In the latter case, correcting the wrong policies eliminates the observed market failure. If that is not the case, then correcting the wrong policies could make things worse. This last point is not given much attention nowadays.

A related point has to do with the government's capacity to induce—through taxes, subsidies, jawboning, and so on—the private sector to act in accord with the development continue

1 The views of Western economists were similar. Most economists and international organizations advocated comprehensive government planning as the primary instrument for development.

2 Government policies are, of course, not the only source of market failure as emphasized in chapter 1.

objective. If the government is unable to do this and then performs the tasks itself, should this incapacity be looked upon as a form of government failure?

Another issue, illustrated in the case studies, complicates identifying the source of the failure, namely, ignorance. Thus governments may take decisions with the greatest care and commitment and still be wrong because their understanding and knowledge of the process is inadequate. Finding examples of mistaken analysis and policy advice by highly trained professional economists is not difficult.

Thus, governments must decide whether market or government failure exists, and therefore where they need to pay attention to policy. This is a complex matter when one is looking at specific cases, but a task that governments must nonetheless attempt.

Parastatals in Zambia

In Zambia, large-scale government ownership of enterprises resulted from firm beliefs that the market would fail in a variety of ways. At independence foreign firms dominated the private sector. The government, with revenue from the exports of the foreign-owned and -operated copper mines, bought many of these firms out, partly because it believed that such firms were repatriating their profits rather than reinvesting them in Zambia. In addition to these nationalizations, the government created a substantial number of new firms. The rationale for doing this was the belief that the private sector could not create enough new firms of the right kind because of inadequate information, strong risk aversion, and the existence of defective capital markets. The government also believed that government-owned and -controlled firms would serve the general social objectives of development more satisfactorily than would private firms, either foreign or domestic.

While some of Zambia's state-owned enterprises have provided the government with net revenue, the government has clearly not been able to operate them in a way that it assumed was possible when it created them or took them over. If one accepts that the basis for the nationalizations and the creation of new parastatals rested on legitimate (though possibly misinformed) concerns, then the policy the government followed was wrong. The government was unable to do what it assumed it could do, and the state-owned enterprises have not contributed, or have contributed little, to the achievement of the basic development objective. At the same time, we do not know whether foreign firms would have acted as the government wanted them to or whether the private sector could have created new firms. Thus, the government's concerns were understandable.

Should the Zambian government have known that it could not manage the large-scale, foreign created firms well? Similarly, should it have known it was not equipped to establish and operate new firms efficiently? Even in the hopeful atmosphere of newly gained independence, it is difficult to believe that the government could not have recognized that it was not equipped to do what it undertook to do. It is, however equally difficult to believe that the economics profession offered a body of thought on which the Zambians could have drawn that would have led them to the "right" strategy in that particular environment at that particular time. This resulted in government failure in the presence of widespread ignorance and overly ambitious expectations.

Thus, the point is not to condemn the government for failing and for not knowing that it was pursuing a policy that could not work in Zambia at that time. Rather, the continue

question is, given that the government made understandable mistakes, what can it do now?³ A corrective strategy has many aspects, but one seems especially important. One particularly effective way to initiate privatization is to establish an economic environment that provides strong inducement for the appearance of new, small-scale, indigenous firms. If a buoyant, small-scale, indigenous manufacturing sector is in place, then privatizing or closing down the state-owned enterprises completely will be more acceptable, both from a narrowly economic standpoint and from a political standpoint.

Health Care in Botswana

Botswana's health care story illustrates the importance of a government approaching an issue of great relevance for general welfare and social equity, as well as political importance, with an awareness of what it can do reasonably well. The story is even more illuminating, because Botswana's resources, mainly from its diamond mines, could well have induced it try to do more than its real resources would permit. Plentiful funds can induce a government to undertake activities that its labor and management capacities will not allow. Botswana seems to have avoided this source of failure.

The main market failure in the health sector that the government identified concerned equity. The government believed that if health care were left to the market, it would be much better in urban areas, especially for the well-off, and essentially nonexistent in rural areas and for very poor Botswana everywhere. So the government insisted that basic health care should be available to everyone, and that no one should have access to superior care, at least in Botswana. The government also argued that the availability of basic care would contribute to increasing productivity through greater stamina and fewer bouts of illness. In this way the health care program would contribute to the basic development objective as well as to the prevailing idea of social equity.

The arguments in the chapter show that the market in Botswana could not have met these health care objectives. The role of nurses is extremely important, and the private sector did not have the capacity to turn out sufficient nurses without government support. The government would have had to provide most of the financing and to have supervised the training programs. To design and enforce regulations governing this sort of activity is as complex as managing the training. No sort of competitive pressure could be expected to solve these kinds of problems. Thus the market could not have met this widely recognized and supported objective.

There were failures by the government, of course. To ensure the presence of an appropriate number of nurses in rural areas has proved difficult. Similarly, the problem of finding the wage rates that would induce people to enter the training programs and remain as nurses is proving complex. Their wages are tied to other civil service wage rates and are difficult to adjust to meet the requirements of a particular sector. Nevertheless, the conclusion that the market would have failed to meet this health care objective is valid, and the government was generally successful. Primary health care has been made available to a large share of the population, including those living in rural areas. This would not have been possible had this activity been left to the market.

Zambia faced many other problems, and we do not wish to imply that the state-owned enterprise question was either the only one or the major one.

Comparing this case with the Zambian case is instructive. In the latter case, the Zambian government took on tasks that it was simply unable to carry out. It therefore failed. In Botswana, the government limited its efforts to activities that were consistent with the skills and understanding available to it. This is an important lesson.

The rapid growth of Botswana's economy has resulted in a demand for medical care well beyond that the government offers. It is therefore experiencing pressure to allow the private sector to offer services to those who can pay for them. Such an arrangement violates the government's original notion of equity and complicates the task of ensuring an appropriate supply of nurses for the government installations. This creates a range of interesting issues. If private sector services erode the equality of service, pressures will surely arise to add to the capacity of the services available to everyone. This will especially occur when people realize that only rich Botswana and foreigners have access to the best service. For the government to try to provide the best service to everyone would, of course, lead to unmanageable difficulties that would result in government failure. At the same time, forbidding the private sector from offering health care seems inappropriate. One solution to this dilemma is to minimize income inequality and allow the private sector to respond to the resulting demand among Botswana, and to require that foreigners go abroad. In an economy growing as rapidly as Botswana's inequalities will almost certainly emerge and eliminating them would involve a variety of costs. Thus the government will have to wrestle with this issue.

The general point is of some interest. What is the proper mix of public and private sector efforts in a given activity? The question arises with respect to activities other than health, for example, housing, education, and access to water. Where the equity objective is especially important, the market's role may have to be limited more than where equity is given less weight.

Employment in Ghana and Guinea

The chapter on Ghana and Guinea is concerned mainly with the efforts of these two countries to reduce government overstaffing after everyone realized that such overstaffing was a major source of the government's financial problems. This problem arose in the first place because of the belief that the private sector could not offer enough demand for labor to match the supply, and because of the expectation that governments would play an increasingly large role in their countries' economic development. Especially in Guinea, there was a strong ideological push to reduce the size of the private sector and for the government to control almost the entire economy. The problem was later exacerbated in both countries by hiring to meet certain political necessities. Added to this was the push for higher education on the assumption that it was an essential ingredient of development. The guarantee of a job in the government to college graduates in the context of widespread excess labor supply forced the government to hire too many people.

The market would not have generated a demand for almost all labor, given the government's general economic policy. The real source of the difficulty cannot be said to be market failure, however, but rather the government's failure to establish any sort of general environment within which an effective private sector could function. That

this was indeed the case seemed clear as it was happening, and the "solution" in terms of government overstaffing could not have been considered a long-term solution by anyone observing either of these economies. Even where the policy was specifically intended to reduce the continue

size of the private sector, the lack of recognition that government overstaffing could not solve the problem is difficult to believe.

The problem was exacerbated by the belief that higher education was necessary for development. At the time economists were emphasizing the role of higher education, and countries such as Ghana and Guinea were under some pressure to encourage people to attend postsecondary schools. Guaranteed employment was one way to do this. Such encouragement was at first based on the push to "Africanize" the civil service, but as that was accomplished, there was little understanding or appraisal of the economy's capacity to create productive employment for people with college training. As the private sector offered little employment for such people, the government deemed itself obliged to do so, even if it recognized that it had no work for the people hired. In this case, one must acknowledge that part of the difficulty arose from widespread views on the role of education in development. Government hiring met a genuine short-run problem while creating an increasingly complex long-run problem.

The chapter on Ghana and Guinea is concerned with how the two countries went about extricating themselves from this impossible situation. Ghana has achieved considerable success, but it has not been easy. People who have been turned out of government jobs have often faced difficult times even though, in Ghana especially, they received sizable severance payments. They often used these payments to live on rather than to search out or create new sources of employment. Changing the economy so that the private sector will respond as necessary to create a high-level demand for labor is proving to be a time consuming task. In this respect, Ghana's situation seems more hopeful than Guinea's.

A moral emerges from this story. Correcting mistakes, no matter what their source, is difficult and often costly to everyone. One would think that Ghana and Guinea should have known that their employment policies were leading toward disaster but what the "right" policy was, however, was not clear at the time. The emphasis economists placed on higher education was strong and misguided. Thus the difficulties emerged with severe results. Proceeding slowly and cautiously and maintaining considerable flexibility is perhaps the obvious counsel, but may be ignored or impossible for governments to follow for political or other reasons.

Education in Kenya

The case of education illustrates some additional points about government expenditures. In Kenya education received much government attention after independence for many of the same reasons that health expenditures did in Botswana. The widely recognized externalities attributed to education mean that if it is left entirely to private decisions, people will spend less on education than the social optimum. Kenyan authorities were also concerned about equity issues. In particular, they argued that education was an effective way to attack poverty and inequality. Finally, education has major consequences for the kind of society that is evolving, and society may believe that schools should teach in such a way that society's interests are understood, appreciated, and served.⁴

⁴ This does not mean that schools are to be instruments of propaganda (although they sometimes are), but rather that schools, especially primary and secondary schools, should represent society. Obviously this position can be easily abused.

In the early years of independence, education was intended primarily to equip Africans to assume positions that had been held by the British. For this, secondary and post-secondary schooling was deemed necessary. As the Africanization process was completed, doubts arose about the productivity of higher education. Because agriculture was the dominant activity in the economy and was likely to remain so for the foreseeable future, the impact of schooling on the productivity of resources in agriculture became an important issue. The empirical evidence reported in the chapter supports the position that primary schooling does contribute to agricultural productivity, but the secondary and higher education do not. This has obvious policy implications. The chapter recognizes that the evidence is not yet conclusive, but its statistical results strongly support the hypothesis. Kenya must justify its expenditures on higher education in other ways, while emphasizing primary education as a means to increase productivity in agriculture. This policy conclusion is consistent with other findings about the role of education in development.

The evidence is convincing that if left to the market, education would not have performed in as socially productive ways as was possible with the government taking a dominant role. Market failure would have resulted, but the government's actions prevented that failure from materializing. One can also state that the government carried out its activity in a fairly effective way. One might argue that the government could have induced the private sector to create the proper types of education and induced students to attend by means of subsidies and other direct grants. While this is conceptually possible, it was not a viable alternative in Kenya at the time. For the government to have approached the task in this way would have resulted in widespread government failure.

The government now faces the decision of whether to act on the evidence that primary schooling is currently the most productive area of education. If it decides to act, it must begin to dampen its commitment to higher education to some extent, which takes time and imposes some costs, both real and political. Note that given the objective of Africanizing the civil service and ministerial-level personnel, this shift is not a consequence of past mistakes, but rather the recognition of the economy's changing needs.

Private sector education does have a role to play here, and is similar in some ways to private sector health care in Botswana. If private higher education does increase with rising incomes and the government commitment to higher education falls or does not increase, misallocation of resources may increase. If unemployment of college graduates surfaces, then pressure will be exerted on the government either to hire them directly or to distort the economy in such a way as to create jobs, for them. Again, the difficulty of coming up with a simple public or private route to a particular objective arises. In this case, the past policy of encouraging higher education did meet a legitimate need and university graduates have played an important role. This is different from the experiences in Ghana and Guinea.

Macroeconomic Management in Kenya

To evaluate the role of aggregate government expenditures in Kenya requires different sorts of questions from those asked in the preceding review. Three reasons for aggregate spending may be identified along the lines developed in the first chapter. First, the government may believe that government spending will increase output and employment. It may perceive that the market alone will not generate as much total demand as the economy can absorb before "too much" inflation sets in. This possibility is not only old fash—soft

ioned Keynesianism at work. It is also relevant in an economy undergoing considerable and widespread flux—high rates of urbanization, large-scale labor movements, the emergence of new nontraditional activities, increased foreign trade, and so on—and the notion of aggregate supply is therefore even less definable than is usually the case. A market that does not generate as much aggregate demand as is deemed suitable has, of course, failed, and this reason for government spending is therefore to correct market failure. The assumption is that indirect measures, such as interest and exchange rate manipulations and tax policy, cannot completely correct the market failure, and that the government can identify activities that contribute to the development objective.

The second reason for aggregate spending is something of the reverse of the previous reason. The macroeconomy sets limits on what can be done, more specifically, on what the government can do. Just as the government may spend to correct market failure evidenced by deficient aggregate demand, so it may have to limit its spending because of the constraints imposed by the need to keep aggregate demand within the boundaries of aggregate supply.

These two reasons lead to a third. A government failure that takes the form of an inability to levy and collect taxes in such a way that public spending can be at the level that the government believes to be appropriate, will mean that the economy produces less and offers employment to fewer people than is possible. Similarly, even if aggregate demand is adequate, but the government can acquire control over only a specific amount of resources, the development objective may be poorly served. Suppose, for example, that the Kenyan economy was functioning near its allowable aggregate maximum. Suppose further that analysis showed that activities with strong externalities, or equity, or other development consequences were not being fully exploited because the government could not capture the necessary resources from the private sector. Then the government would not be making as full a contribution to its development objective as its resources would allow. This point seems worth emphasizing because of the prevailing widespread view that the government has control over too many resources in most developing countries. It is also an issue even if one believed that the market economy in a country such as Kenya, if left to itself, would generate the "right" level of aggregate demand.

The story of Kenya's macroeconomic history after independence suggests that it did not take full advantage of the possibilities of more refined macroeconomic management. Heavy reliance on import substitution, protection, and large government deficits have contributed to repeated balance of payments crises that have impeded growth. To a great extent increases in expenditures were determined by increased revenues, and these were determined largely by receipts other than direct taxes. When revenues slowed or declined, expenditures remained high, leading to deficits.

Reliance on import substitution as a means of encouraging industrialization was not unique to Kenya. As discussed in chapter 1, many reasons led the government to believe that such a development strategy made sense. Calling this problem a government failure is therefore misleading. Along with problems created by relying on coffee exports, moving away from this approach has proved difficult in Kenya.

Controlling government expenditures and the deficit have also been problematic, and the macroeconomic implications of the deficits have at times had unintended effects that countered the objectives of the policies. As an example, fiscal deficits have contributed to increased domestic and foreign debt, causing rapid growth in the money supply and inflation. Increasing debt has led to high interest payments. Given constraints on overall continue

spending, this has constrained other expenditure programs. Similarly, inflation can affect important relative prices in the economy, including the real exchange rate and the interest rate. Negative real interest rates have hindered investment in Kenya at the same time that the government has had policies in place to encourage investment. Likewise, the real exchange rate has at times moved toward protecting the nontraded goods sector at the same time that the government has pursued other policies to encourage exports.

Some General Issues

Five case studies do not provide the basis for strong generalizations. The cases do, however, reveal a number of considerations and ideas that we believe are worth attention. Some of these ideas emerge directly from the case studies and others have been revealed as we discussed the various issues associated with them. These points are as follows:

The Evaluation of Public Expenditure in Africa

- The distinction between market failure and government failure is imprecise and can often be misleading. The two failures are closely intertwined and contribute to each other, and reducing one source of failure is rarely possible unless the other source is also reduced.
- An effective private sector requires an effective government. In the presence of both market and government failure, improving the government's capacity is an important task, in many cases more important than increased reliance on the private market. Economists and other investigators may profitably spend more time studying how to make the government work better.⁵
- During the last decade or so a widely held view as to the source and content of successful development has emerged. The evidence is far from conclusive, however, and we urge that ignorance be recognized and acknowledged. In particular, as noted earlier, our understanding of how to increase the productivity of capital and labor is sorely lacking. For example, the role that education plays has changed over the years and the transfer of technical knowledge is now seen to be vastly more complex than was previously thought. If ignorance is appreciated, then continued searching and learning about how an economy functions is necessary. We need to improve our understanding of where and how the market can work and where it cannot, and possibly how its performance and the government's performance can be improved. This objective must be accomplished in a given country as so much depends on a society's prevailing environment and resources.
- Ghana, Guinea, and Zambia followed policies that met an immediate concern at the same time that they created an unsustainable situation. Correcting mistakes is often a painful and costly process. This often experienced situation suggests the great advantage of acting slowly and on the basis of considerable understanding, and especially of being able to adapt policies to changing conditions.
- In the Kenya education and the Botswana health cases the government seemed to envisage rather clearly the way these activities could act on the development objec–soft

⁵ Economists are increasingly realizing that the government's role has been crucial in the success of Japan, Korea, and Taiwan (China). Policies followed in these countries have also been followed in other countries with much less success. One important reason is that governments in these latter countries have functioned less well than they have in the Far East success stories.

tive. This is extremely important. Whenever a policy is adopted or an activity is undertaken, a detailed statement of exactly how the action will affect the basic development objective can help in their design and can help prevent mistakes, such as solving short–run problems by means that create long–run problems.