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THE LEGAL FRAMEWORK FOR FISCAL DECENTRALIZATION IN ETHIOPIA DURING THE TRANSITION PERIOD

Befekadu Degefe

Abstract: *The paper critically examines the system of fiscal decentralization in Ethiopia as defined in Proclamation 33 of 1992 from the legal point of view and precipitates the political and economic impacts thereof. Its findings are that the system is ambiguous, internally inconsistent and conflicts with the political paradigm of federalism as provided for by the different legislations including the Charter of the Transition Period.*

I. INTRODUCTION

The Transitional Government of Ethiopia (TGE) has embarked upon the task of revising the political and administrative landscape of the country. Starting early in its tenure and continuing thereafter, the TGE has been pursuing a policy of decentralization based on ethnolinguistic criteria. The Charter targeted and spearheaded the decline of the centre in favour of regional/national self-governments which are to assume the responsibility of managing the economy and society.

Along with the realignment of duties and responsibilities between the two tiers of government, the TGE has rearranged the fiscal paradigm. Under the new arrangement, revenue would be collected at both levels.

The political and fiscal model of the TGE is not unfamiliar in the long history of the country. It is more of a relapse into the customary and traditional mode of governance of bygone days. For the major part of the nation's history, the system of governance as well as the fiscal arrangement were closer to the federal structure under which warlords enjoyed complete autonomy over the regions they controlled. The minimum that the emperors required and the maximum the warlords were willing to concede was the payment of tribute and acknowledgement of the supreme political authority. Something of that nature is what is attempted by the current regime. What is significantly different is the flow of resources. Under the traditional regime resources were shared from the bottom to the top; the flow is reversed under the current arrangement.

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This paper evaluates the degree of fiscal independence conferred upon and possessed by the regional governments by focusing on the legal framework providing for fiscal decentralization.

The rest of the paper is structured as follows. Section II summarizes political decentralization both in theory and practice, while Section III focuses on the economics of the transition period. Fiscal decentralization in principle and practice are dealt with in Sections IV and V. Section VI suggests ways for strengthening the regional fiscal base, and Section VII summarizes and concludes the paper.

II. THE POLITICS OF THE TRANSITION PERIOD

A. Political Decentralization: The View from the Central Government

A conspicuous innovation of the Transitional Government is the reconstitution of the domestic political profile of the country on a mainly ethnolinguistic basis. The political and legal framework for such state formation is enshrined in Article 2 of the National Charter adopted in June 1991 [9], which reads as follows:

> The right of nations, nationalities and peoples to self-determination is affirmed. To this end, each nation, nationality and people is guaranteed the right to
>
> a) preserve its identity and have it respected, promote its culture and history and use and develop its language
>
> b) administer its own affairs within its own defined territory and effectively participate in the central government on the basis of freedom, and fair and proper representation
>
> c) exercise its right to self-determination or independence when the concerned nation, nationality and people is convinced that the above rights are denied abridged or abrogated.

This general principle was further enhanced by a series of proclamations which provided for the establishment of a three-tiered government structure and detailed the powers, duties and responsibilities of each tier. The most important of these proclamations is Proclamation 7 of 1992.

Proclamation 7 of 1992 created and defined the powers of a three-tiered government - central, national/regional and *woreda*. All three levels enjoy their respective political prerogatives and legal personalities - the central government by virtue of its status and nature, national/regional self-governments and woreda administrations by rights granted to them by the National Charter and Article 6 of this proclamation. The acknowledgement of legal personality further underlines the separation of powers between them and the central government. Based on Article 192 of the Civil Code [5], legal persons enjoy the rights of performing all acts of civil life applicable to capable physical persons. Such entities enjoy the power of independent decision and are responsible for the consequences of their actions and behaviour, all subject to legal limitations.

Such limitations are imposed on all the three tiers by this proclamation. The supremacy of the central government over the two lower bodies is acknowledged by Articles 5 and 9 (1) of proclamation 7 of 1992. Article 5 confers supreme political powers on the Council of Representatives of the Central Transitional Government, while Article 9(1) specifies activities appropriated to itself. These include

> defense, foreign affairs, economic policy, conferring of citizenship, declaration of state of emergency, deployment of army where situations beyond the capacity of national/regional transitional self-governments arise, printing of currency, establishing and administering major development establishments, building and administering major communications networks and the like.

Article 5 creates national/regional transitional self-governments and woreda administrations to give effect to the right of nations, nationalities and peoples to self administration and to implement rights of preserving the identity of the nations, nationalities and peoples, promote their culture and history, use and develop their languages, administer their own affairs and effectively participate in the central government.

Article 9(1) of the proclamation grants "legislative, executive and judicial powers in respect of all matters within their geographical areas" excluding those functions that were reserved for the central government. To exercise these rights, national/regional self-governments will structure themselves with the following offices (Article 5(1)): a) nation/regional council to legislate laws; b) executive committee; c)judicial organ; d) public prosecution office; e) audit and control office; f) police and security office; and g) service and development committee.

Under Article 38, the proclamation recognizes the woreda as the basic administrative hierarchy of all national/regional self-governments, provides it with (Art. 39) a council, executive committee, judicial organ, public prosecution office, audit and control office, security and police force office and a service and development office. Despite the legitimacy and extensive powers conferred on the *woredas*, they have no real significance or functions. They are totally subordinated to national/regional governments (Art. 40(2).

B. Political Decentralization in Practice

Pursuant to its pledge to share political prerogatives, decentralize functions and delegate responsibilities of managing society and economy with and from the centre to the regional/national governments, the Transitional Government created regional governments, reorganized organs of state and redefined their duties.

The organs of state at the centre are made up of the legislative, the executive and the judiciary. Legislative functions are exercised by the Council of Representatives, executive functions by the Council of Ministers, and judicial functions by the Council of the Judiciary. The judicial organ is segmented into supreme, high and woreda courts. The executive organ is made up of 20 ministries and 4 commissions (Art.3 and 25 of Proc. 41 of 1993).

The same organs are replicated at the regional/national level with parallel functions. Article 1 of Proclamation 7 of 1992 divided the country into 14 regional administrations consistent with Article 2 of the Charter. These regions have in turn established their respective governments, and ratified their constitutions. The national/regional councils and the judiciary exercise legislative and judicial functions while the executive powers reside in the executive councils, and the bureaus and commissions are the functional organs. Regional/national governments have 17 bureaus duplicating the 17 ministries and 3 commissions (Article 33 of Proc. 41 of 1994). The three ministries and the one commission missing from the national/regional governments are those of defense, foreign affairs, foreign economic cooperation and the compensation commission, respectively.

Functionally, the ministries and commissions at the centre develop policies which, if approved by the Council of Representatives, define the policy parameter of the central government. On the other hand, the bureaus at the national/regional level have their functions defined for them by their executive council consistent with the policy framework of the central government. They are independent of their counterpart at the centre in all other ways except for cooperating with them where this is necessary.

The perception of the extent of powers and duties that have devolved to the regional/national governments seems to be vaguely appreciated. Their constitutions conceptualize and detail procedural rather than substantive elements of their powers. An excellent sample of such a constitution is that of Region 14 [12].

This constitution begins with a preamble, identifies the physical location of Region 14 in Article 1, recognizes the residents of the region as the supreme political authority in Article 2, defines the rights, duties and obligations of the people in section 2 (Article 3 - 20), establishes a four-tiered structure of government as regional, zone, *woreda* and *kebele*, (Article 20(1), and organizes the regional government into legislative, executive and judicial organs (Article 20(2).

Articles 22-27 recognize the Regional Council as the supreme political organ of the region and authorize it to organize and supervise the executive, judicial and legislative offices, plan and execute short to long-term socio-economic development projects, approve the budget, and raise resources to finance them.

Articles 28-36 detail the powers and responsibilities of the executive committee, the chairman, the deputy chairman and the secretary general of the council. Articles 37-43 underline the independence of the judiciary and empower it to adjudicate cases within the jurisdiction of the region. The final articles deal with miscellaneous issues such as the regional flag and emblem, its capital city, working language, amendment to the constitution, etc.

Three salient points emerging from the regional constitution are that: a) the regional governments are under the authority of the central government; b) they have full and complete autonomy from the central government; and c) supreme political power resides in the people, which is exercised on their behalf and for their benefit by the regional council.

Such a power sharing arrangement has implications of great significance. What the central government did in effect is to pass all powers and responsibilities with the exception of defense, foreign affairs, foreign economic relations, currency and monetary policy to the regional/national governments. In consequence, regional/national governments are responsible for their social and economic development, including the provision of education and health services, building and maintaining roads and other communication channels, protecting natural resources and the environment, regulating trade, commerce and industry, maintaining internal law, order and security, etc.

III. THE ECONOMICS OF THE TRANSITION PERIOD

Beginning with the economic policy of the transitional period [8] and subsequent policy and legislative pronouncements, the government has highlighted its intention to fundamentally change the role of the state in the economy.

The proposed radical shift in the role of the government is encapsulated in the installation of the market mechanism as the sole determinant of resource allocation. Within this environment, the burden of development on the central government is to be reduced in two ways.

The first strategy is to withdraw the state from activities that are deemed non-strategic and to focus its attention on regulatory functions. In consequence, state farms are to be distributed to the residents of the regions, given to employees or privatized [8, p.25], and industries, with the exception of those considered strategic, are to be privatized [8, p.30]. Government intends, in the main, to withdraw from domestic and foreign trade as

well as from transport activities. These activities are expected to be taken up by both domestic and foreign entrepreneurs, for which purpose the government has promised to create an enabling environment and provide incentives that would make the emergence of a strong and vibrant private sector possible.

The second avenue that would change and reduce the role of the central government in the socio-economic development of the nation is demonstrated in the idea of shifting the responsibility to regional/national governments, enshrined in the Charter and enhanced by the proclamation which provided for the establishment of national/regional self-governments.

The Charter states in its preamble that the "self-determination of all the people shall be [their] governing principle of ... economic life". This principle is further accentuated by Article 2(b) of the Charter which states, inter alia, that the Region "administers its own affairs within its own defined territory".

These general principles were accorded explicit recognition in the proclamation establishing national/regional self-governments. Article 2(c) of the proclamation [10] explicitly states that "national councils within a region shall themselves decide on their own ... social and economic development activities." Article 10 of the same proclamation vests the national/regional self-governments with the power to: a) plan, direct and supervise social and economic development programmes; b) establish, direct and supervise social and economic development establishments and enterprises; c) employ and administer the personnel of their government on account of their own powers and budgets; d) acquire, own and transfer properties; e) prepare, approve and implement their budgets; and f) borrow from domestic lending sources and levy duties and taxes in their respective regions.

These powers and duties have been well internalized in the legislations and operations of national/regional governments. For example, the constitution of Region 14 [6] echoes both the preamble and the substantiative elements of Proclamation 7. It begins by underlining self-determination as the basis for economic development in its preamble and goes on to detail the powers and duties of the regional government with respect to social and economic development under Article 24.

Under this article the regional government asserts its authority to approve short and long-run socio-economic development plans, approve the budget, identify sources of revenue, levy duties and taxes, ratify credit agreements with domestic creditors, protect the environment, and seek direct assistance from donors.

In conformity with Article 24(6), regional administrations have established the requisite institutions to effectively discharge and fulfil their commitment.

IV. FISCAL DECENTRALIZATION

It is apparent from the previous section that the national/regional governments enjoy a broad latitude of political autonomy and carry the heavy burden of engineering their socio-economic development. The central government has extricated itself from the management, expansion and introduction of existing or new socio-economic institutions and infrastructure, relinquishing these responsibilities to the sub-national governments.

The shrinking role of the central government and the expanded responsibilities of the sub-national governments are accompanied by fiscal decentralization. This section discusses the essence of the new fiscal policy and evaluates its capacity to match the burden of socio-economic development imposed upon the national/regional governments.

A. Fiscal Decentralization: The Principle

The elements of fiscal decentralization were enacted in two legislations - the proclamation to define the sharing of revenue between the central government and the national/regional self governments [11] and the proclamation to provide for the lease holding of urban lands [13]. Of these two proclamations, the one defining the sharing of revenue is the more important since it covers the fiscal relationship between the sub-national and the central governments while the lease holding of urban land is limited to towns and cities.

The proclamation detailing the principles of revenue sharing begins with a brief preamble and defines the substantive and procedural elements of the new fiscal arrangements in 14 articles. The introduction justifies the need for the proclamation by invoking the principle of the right of nations, nationalities and peoples to administer their own affairs as enshrined in the Charter and its implementation by virtue of Proclamation 7 of 1992.

B. Categorization and Sources of Revenue

Article 35 of Proclamation 7 of 1992 identifies the four sources of income available to the regional/national governments. These are a) revenue collected from taxes allocated to them, b) grants to be given by the central government, c) domestic borrowing, and d) other sources of income. Article 36 defines the principle governing grants from the central government. Grants would be given and necessary manpower allocated by the central government to those regions which, on account of their underdevelopment, cannot provide basic social services and undertake essential economic development programmes.

The implications of Article 36 should be obvious. In essence the idea behind the government's new fiscal arrangements is that the regional/national self governments should finance their socio-economic development and the central government steps in with grants only if the sub-national governments cannot finance basic social services and economic development projects on account of their backwardness and poverty.

Article 35, in addition to identifying the sources of sub-national government finance, promised legislation to identify and govern the shares and coordination of the collection and utilization of revenue between itself and the regional/national governments. The preamble to Proclamation 33 of 1992 claims that this legal instrument honours that pledge.

Proclamation 33 begins by defining the objective of revenue sharing as (Art.3) a) enabling the central and regional/national governments to efficiently carry out their respective duties and responsibilities, b) assisting national/ regional governments to develop their regions on their own initiative, c) narrowing the gap in development and economic growth between regions, and d) encouraging activities that are of common interest to regions.

The determinants of revenue sharing are highlighted in Article 4 and include a) ownership of sources of revenue; b) the national or regional character of the sources of revenue; c) convenience of levying and collection of the tax or duty; d) population, distribution of wealth and standard of development of each region; and e) other factors that are relevant to an integrated and balanced economy.

Under Article 5 the proclamation divides revenue into three categories - those belonging to the central government, those belonging to the national/regional governments, and those jointly owned.

The revenue sources allotted to the central government include: a) duties, taxes and other charges on imports and exports, b) personal income tax collected from employees of the central government and international organizations, including NGOs, c) personal income tax, profit tax, and sales tax collected from enterprises owned by the central government, d) taxes collected from national lotteries and other chance winning prizes, e) taxes collected on income from air, train and marine transport activities, f) taxes collected from rent of houses and properties owned by the central government, and g) charges on fees and licences and services issued or rendered by the central government.

The revenue sources allocated to national/regional governments include: a) personal income tax collected from employees of regional governments, b) rural land use fee, c) agricultural income tax from farmers not incorporated in an organization, d) profit and sales tax collected from individual traders, e) tax on income from inland water transportation, f) taxes collected from rent of houses and properties owned by the regional governments, g) profit, personal income and sales taxes collected from enterprises owned by regional governments, h) income tax, royalties and rent of land levied on small to medium scale mining activities, and i) charges and fees on licences and services issued or rendered by regional governments.

Those identified as joint revenues and are sources are: a) profit, personal income and sales taxes collected from enterprises jointly owned by the central and regional governments, b) profit, dividend and sales taxes collected from organizations, c) profit tax, royalty and rent of land collected from large scale mining, petroleum and gas operations, and d) forest royalty.

C. Revenue Distribution

Of the three categories of revenue, the least problematic are the revenues designated as those of the region since they are collected and used by the regions as they deem fit.

The joint revenue sources and those of the centre are to be used by the centre and the regions. The proclamation stipulates that joint revenue sources would be shared between the central and regional governments while those designated as belonging to the centre are to be used to finance the needs of the central government and distributed as grants and subsidies among the regions.

1. Revenue Sharing

The methodology for sharing joint revenue between the centre and the regions is to be developed by a committee established by the Prime Minister and accountable to the Council of Ministers. The committee, composed of representatives from the central and regional governments (Art.6(2)), would submit recommendations to the Council of Ministers (Art. 6 (3)) on: a) the percentages in which the joint revenue is to be shared between the central government and the regions, b) measures for resolving issues regarding the sharing of revenue, and c) amendments or changes to revenue categorization, subject to the objectives and basis for revenue sharing given in detail under Articles 3 and 4 of the proclamation.

2. Grants

The central government has pledged to share the revenue allotted to it with the regional governments where this is deemed necessary. According to Article 36 of Proclamation 7 of 1992, grants are provided to finance basic social services and economic development programmes that cannot be accommodated from the region's resources due to relative underdevelopment. Art. 7(2) of Proclamation 33 of 1992 further specifies regional activities that are eligible for grants. These include regional endeavours aimed at a) promoting social services and economic development, b) accelerating the development of the hitherto neglected or forgotten areas, c) narrowing per capita income gaps between regions,
d) controlling negative and expanding positive externalities within and between regions,
e) increasing foreign exchange earnings, and f) undertaking other projects of national interest.

The proclamation spells out the procedures regional governments should follow in their quest for subsidy and the decision making process in Articles 7(3) to (5). National/regional governments should submit to the Ministries of Finance and Economic Development and Planning their a) subsidy request, b) total expenditure, and c) revenue forecast prior to the approval of their budgets by their respective national/regional councils. The ministries would review the applications from the regions relative to the purpose for which funds are required and central government revenue. The subsidy to be granted to any region is to be proportional to the revenue collected by the region and available to it to finance its total expenditure.

A major problem raised with the procedure for granting or denying the subsidy is that the organ of state deciding on the issue is not identified. The Ministries of Finance and Planning and Economic Development would evaluate the request from the point of view of the needs of the regional governments and the capacity of the central government to provide the subsidy. Presumably they would submit their views to the Prime Minister and/or the Council of Ministers. It is also possible that the Council of Representatives may be involved in approving the grant and subsidy. But where the power of decision lies, whether there is an avenue for appeal, etc. are unknown. This is of crucial importance, considering the fact that the major source of revenue remains to be the central government, a point dealt with in detail later in the paper.

3. Domestic Borrowing

Proclamation 7 of 1992 recognizes the rights of national/regional governments to borrow from domestic sources under Article 35, a prerogative that is affirmed by the constitutions of the regional governments. Proclamation 33 details the conditions and procedures under which the national/regional governments exercise this prerogative under Article 10.

The law requires national/regional governments to submit to the Ministry of Finance(MOF) or the Ministry of Planning and Economic Development (MOPED), as the case may be (presumably the division of labour between the two is for the former to deal with recurrent and the latter with capital expenditure, although this has not been indicated by the proclamation), the amount they would want to borrow along with statements showing a) the relation of the requested amount to their revenue forecast, b) economic indicators of their region (presumably to authenticate the realism in their forecast and gauge their capacity to repay the debt), c) their consolidated budget, and d) the feasibility study of the project for which the loan is required.

The ministry to which the request is submitted evaluates the application based on the information provided by the regions and the impact of the borrowing on the overall national deficit, advises the appropriate organ of state, and communicates the decision to the concerned region and the National Bank of Ethiopia, which authorizes disbursement of the loan on request.

This raises a number of interesting issues. Again the legislation fails to identify the organ of state that makes the final decision. However, the more interesting issue is whether the law really allows the regional governments to borrow, and if so who the lender is as well as the mechanism of borrowing. These points are discussed later in the paper.

The administration of foreign currency is the prerogative of the central government (Art.11 of Proc. 33 of 1992). Regional governments need to apply to MOPED to acquire the foreign exchange they need prior to having their budget approved by their Council. The Council of Ministers makes the decision on the amount of foreign currency to be authorized to each applying region, which is communicated to it through MOPED.

Regional governments are required to submit to MOF their monthly, quarterly, semi-annual and annual revenue and expenditure reports in accordance with directives to be issued to them under Article 12.

4. Tax Systems and Collection of Revenue

The power to tax and collect revenue is granted to the relevant levels of government under Article 9. Revenues belonging to the central government and those jointly owned are to be collected by the central government, while regional governments collect their own revenue from the sources allotted to them.

A point of crucial significance is the necessity of avoiding the cascading effect of the taxes levied by the central government and the regions. This is particularly important from the perspectives of regions to increase their revenue as much, and the tax payer's interest to pay as little as possible. The idea of targeting maximization rather than maximum revenue is set out in Article 8 of Proclamation 33 which uniformalizes and unifies the tax system and grants the MOF the responsibility to see to it that the regions adhere to this requirement. Tax rates of those taxes whose proceeds are earmarked for the centre and are to be shared between regions and the centre are to be fixed by the central government. What taxes the regions are to levy and how much to charge is (presumably) to be decided by the regions and approved by the Ministry of Finance.

5. Financing Urban-Based Expenditures

High population growth due to the natural growth process of the urban-based population as well as migration have significantly strained capacity to provide the basic requisite services. The proclamation to provide for revenue sharing between the central and regional governments did not address the needs of the urban areas. To redress the situation and give towns and cities an independent revenue base, the Transitional Government has provided them with the right to collect and use the income derived from leasing urban land.

Proclamation 80 of 1993 mandates towns and cities to lease the land under their jurisdiction by auction and use the proceeds to finance urban development. The proclamation further identifies the activities on which financial resources collected from the leasing of urban land should be expended. According to Article 12, at least 90% of such

income should be allocated to building urban infrastructure and for the construction and expansion of low-cost houses.

Although the proclamation provides urban centres with a distinct source of revenue, the feasibility and the benefits of the project remain questionable [3].

V. FISCAL DECENTRALIZATION: ISSUES, PROBLEMS AND PROSPECTS

Sections II to IV have outlined the system of political decentralization from the perspectives of the centre and regions, the changing functions of the state and fiscal decentralization from the legal point of view. What remains to be done and what is attempted in this section is scanning of the new fiscal landscape and assessing its likely impact on some important determinants of current and future welfare, including the degree of independence it confers on regional/national governments, its capacity and capability to enable them carry out their mandates effectively, its repercussions on allocative and distributional efficiency and its effect on macro-economic stability and economic development.

A. Fiscal Decentralization in Practice

Politically, regional governments are behaving as if they are sovereign states enjoying complete and unrestricted local autonomy. They have adopted their ethnic language as the official language, organized their bureaus (regional ministries), and have embarked upon the difficult task of socio-economic development.

These radical political and administrative transformations were accompanied by fiscal decentralization based on the simple and fundamental idea of fiscal independence. The regional/national governments are expected to finance their expenditure, with support from the central government where this is deemed necessary.

Regional governments have access to two sources of revenue, those which were designated as their exclusive income and those which they share with the central government. Two additional sources are grants from the central government and borrowing from domestic sources. The legal nature of these sources of revenue was discussed earlier. What remains is an assessment of the practical significance of these sources of revenue to the regions.

The implications of the division of the fiscal base and current fiscal stance between the regions and the centre are captured in Table 1.

Table 1: Revenue, Expenditure and Deficit of Regional Governments, 1993/94 Budget Year (Millions of Birr)

Regions	Own Revenue	Expenditure			[1] as % of [4]	Deficit
		Recurrent	Capital	Total		
	[1]	[2]	[3]	[4]	[5]	[6]
1	57.4	122.4	157.5	279.9	20.5	222.5
2	7.8	39.5	74.2	113.7	6.9	105.9
3	113.4	360.4	336.7	697.1	16.3	583.7
4	185.7	562.6	319.5	882.1	21.1	696.4
5	31.1	63.9	73.5	137.4	22.6	106.3
6	4.6	38.2	47.4	85.6	5.4	81.0
SEPA*	82.9	279.0	192.7	471.7	17.6	388.8
12	2.6	27.9	37.2	65.1	4.0	62.5
13	18.9	22.4	3.0	25.4	74.4	6.5
14	278.3	169.4	187.8	357.2	77.9	78.9
Dire Dawa	23.8	24.8	4.8	29.6	80.4	5.8
Total	806.5	1710.5	1434.3	3144.8	25.7	2338.3

Source: TGE, *Budget Proclamation for Fiscal year 1993/94*, various tables.
* = Southern Ethiopian People's Administration

Salient, features emerging from the table are:

a) The regions' own revenues are projected to finance no more than 47% of their recurrent expenditure, none of their capital expenditure, and 26% of their total expenditure.

b) The converse is that three quarters of the regional budgets are covered by central government grants.

B. Causes of Fiscal Dependence

The overwhelming fiscal dependence of the regional governments on the central treasury despite the celebrated autonomy is deeply rooted in the assignment of revenue bases between the centres and the regions as well as in the freedom of the latter to determine their own expenditure and develop their tax policies. These will be evaluated consecutively.

1. Revenue and Revenue Base

The entire revenue of Birr 861 million over which the regions had proprietary rights were entirely collected from those taxes and other sources of income assigned to them.

a) Own Revenue: The fiscal base assigned to the regional governments is very weak and generates revenue far below the level required to fulfil the objectives of fiscal independence. For all the regions, profit and sales tax on petty traders, charges and fees on licences issued and services rendered by them and personal income tax collected from their own employees are the most important sources of revenue and are likely to remain so for some time to come. The agricultural income taxes nationally add up to average about Birr 85 million, and are not expected to grow significantly without increases in productivity and raising the rate at which agricultural income is taxed.

Taxes to be collected from rent of houses, properties and enterprises owned by regional governments are virtually non-existent and would remain so until redistribution of assets between the central and regional governments and until the regional governments build up their stocks of these assets.

b) Shared Revenue: The second source of revenue for the regional governments includes taxes and royalty on jointly owned enterprises, and on large scale mining petroleum and gas operations and forests, none of which is of any current significance. This source of revenue has yet to be tapped by regional governments. The absence of revenue for the regions from this source may be more due to the unavailability of the formula that would determine the division of taxes and royalties on activities falling under this category. Mining activities in the Southern Ethiopian Peoples' Administration, *Tigray* and *Oromiya* are examples of potentially significant sources of income to these regions but are currently collected by the central government in their entirety.

2. Borrowing

Regional governments are granted the right to borrow from domestic sources. However, the exercise of this privilege is conditional, very stringent and above all problematic.

To begin with, regional governments can borrow only for the specific purpose of financing projects whose feasibility studies should accompany their request for credit to the Ministry of Finance or the Ministry of Planning and Economic Development. Secondly, the regions must prove, through revenue forecasts based on realistic economic indicators, their capacity to repay the debt.

The minister to whom the request is submitted recommends the amount each region can borrow after evaluating a) the debt servicing capacity of the region based on its revenue forecast and economic indicators, and b) the impact such borrowing would have on the national budget deficit.

Once decision is obtained on the credit application (from the Council of Ministers? the Prime Minister? the President? the Council of Representatives?) it would be communicated to the National Bank of Ethiopia(NBE) for authorization of the credit on request.

The law is not clear on who the borrower is and on the source of credit. Article 35 of Proclamation 7 and Article 10 of Proclamation 33 indicate domestic lenders as sources of credit to the regional governments. Article 10(3) of Proclamation 33 of 1992 requires the NBE to "authorize disbursement of loan on request" and not to make the resources available itself.

Considering the fact that the NBE has only regulatory power over banks and other financial institutions, it can not authorize them to make the credit available on request. This would be a clear violation of the autonomy and operational independence of banks and financial institutions.

Even if one assumes the capacity of NBE to order (authorize) banks and other financial institutions to lend money to the regional governments, two problems are likely to arise. The first relates to the identification of the borrower. If the central government borrows on behalf of the regional governments or the debt is guaranteed either by the central government or NBE, the process could be simple and disbursement quick. On the other hand, if the regional governments are to be the debtors, obtaining credit from banks and other financial institutions may not be that easy. Potential creditors may require guarantees and scrutinize the revenue raising capacity of the region and reevaluate the project for which credit is sought. Given the current low revenue capacity of regional governments, borrowing from the banks and financial institutions may not be an easy option.

The second problem relating to borrowing is the failure to mention the instrument of debt. For example, the central government could borrow from domestic sources by issuing treasury bills and bonds. No such instrument is acknowledged by or identified for the regional governments.

Could the central bank be the source of credit? Legally credit from the central bank is available only to the central government pursuant to Article 27 (1) and (3) of Proclamation 83 of 1994, so that this line of credit is not directly available to regional governments.

A very generous interpretation of the credit clause of the regional governments would have to transfer the exercise of this right to the central government. What may happen under such circumstance is that once the volume of credit to regional governments is approved, this is passed over to the National Bank of Ethiopia for disbursement. If such is the case, then the borrower and therefore the debtor is the central government and the source of credit would be the National Bank.

How much can the regions borrow, albeit indirectly form the central government? Not very much. The volume of credit to the central government from the central bank is limited. It can borrow (Article 25(3) (a), (d) and (e) of Proclamation 83 of 1994) no more than 15% of its average annual ordinary revenue of the past three years at market interest rate in direct advance. Repayment of all previous advances is a precondition for new advances. The central government can of course borrow as much as it possibly could through treasury bills (repayable within 12 months) and bonds (repayable within ten years) from the capital market. Given the absence of a capital market, the one major source remains the central bank, which is however limited to a maximum holding of 25% in treasury bills and 50% in bonds of the previous three-year average of the central government's ordinary revenue. These do not seem to provide significant volume of credit to finance regional development activities in addition to covering central government deficits.

Although the law does not limit how much regional governments can borrow from domestic sources, it is likely to remain insignificant, given the circumscribed arrangements through which these sources of resources could be tapped.

3. Central Government Subsidy

By far the most important source of revenue to the regional governments is and will likely remain subsidy or grants from the central government until the recategorization of the revenue base and redistribution of productive assets. As is evident from Table 1, no less than 47% of the recurrent and the entire capital expenditure are to be financed by the central government during the 1993/94 fiscal year.

Three issues of relevance at this juncture are the causes for such disproportionate fiscal dependence of the regional governments on the central treasury and the method of determining the share of the revenue that is to be granted and the mechanism for its distribution among the competing beneficiaries.

The cause for the significant mismatch between the revenue and expenditure of regional governments, as already pointed out, lies in the fact that the most lucrative sources of revenue are appropriated by the central government. The categories of revenue allotted to the central government and the estimated yield are shown in Table 2.

The Central government collects all tax revenue levied on international trade (including customs duty and taxes on imports and exports, excise and sales taxes on imported goods) which accounts for 40% and 32% of its own income and country-wide revenue, respectively.

Indirect taxes (which include excise, sales and service taxes on locally produced goods and stamp sales and duties) contribute 29% of the centre's and 23% of the total tax revenue. Non-tax revenues of the central government are collected from charges and fees, sales of goods and services and

Table 2: Categories of Revenue Sources Allotted to the Central Government and Annual Yield 1993/94 (Millions of Birr)

Revenue Base	Yield		Total
	Centre	Region	
Direct Tax	497.0	535.0	1032.0
Indirect Tax	892.7	120.6	1013.3
Taxes on Foreign Trade	1264.0	-	1264.0
Non-Tax Revenue	425.4	145.6	571.0
Capital Receipts	50.8	5.1	55.9
Total	3129.9	806.3	3936.2

Source: TGE, *Budget Proclamation for Fiscal Year 1993/94*

government investment income (of which more than 50% are the residual surplus and dividends from public enterprises) and account for 14% of its income and 11% of total revenue.

The net effect of the centre's control over these sources of revenue amounts to its appropriation of 80% of the country-wide revenue, leaving only 20% to regional governments. Consequently, this fact in combination with their expenditure responsibility which is imposed on them by the centre, makes the regions overtly transfer-dependent. An interesting implication here is that the near to sovereign status of internal autonomy regional governments enjoy is checked by financial constraints. This may be a strategy for maintaining the territorial integrity of what is left of the country. If this is the case, the political control of the previous orders is substituted for by the financial instrument of the current government.

The second question germane to central government subsidy is how the proportion of the revenue to be given to the regions is determined. We know from Article 36 of Proclamation 7 and Article 7 of Proclamation 33 that the central government has pledged to provide grants/subsidies to regional governments, but how much or what share of its total revenue this is to be is not given. If one may speculate, the decision of who gets how much is to be arrived at on a case by case basis, and whatever this amounts to would be distributed among the regions and the rest used by the central government.

The third issue focuses on the determinants of the grants to each region. To begin with, grants/subsidies are purpose driven. In general, grants are equity-based and aim at accelerating socio-economic development, with an accent on those areas that have so far been disadvantaged.

Article 7(5) of Proclamation 33, together with Article 7(2) of the same proclamation and Article 36 of Proclamation 7, give hints on the determinants of the flow of resources between regions. The beneficiaries would be those regions that cannot provide basic social services and undertake economic development activities of their own. According to Article 7(5) of Proclamation 33, the amount of subsidy to be granted would be proportional to the regions' revenue.

While the general determinants of grants are identified, no specific method or formula is given. In the final analysis, who gets what is likely to be decided through bargaining and negotiation, a strategy at which particularly the most disadvantaged may be very weak.

C. Impact Analysis

The new fiscal paradigm is bound to impact on various development parameters in a significant way. Before concluding this section, we would reflect very briefly and in a general way on the effects it is likely to engender on allocative efficiency, macro-economic stability and the economic development of the regions.

1. Effect on Allocative Efficiency

The idea of imposing the freedom and obligation of fiscal self-sufficiency on the regional governments has the potential to improve efficiency in resource use, impose the discipline of transparency and accountability on those in authority and transform the quality of governance.

The political paradigm has successfully transferred the responsibility of managing the economy and society to regional governments. But this has not been balanced with commensurate fiscal capacity. As shown earlier, more than 80% of the revenue is controlled by the centre, of which an unknown proportion is to be given to regional governments in the form of grants. Furthermore, the principle behind grant determination seems to favour equity more than efficiency.

While the idea of redressing inequality and supporting regions to broaden their fiscal base is acceptable, this should however not penalize efficiency and capacity in favour of equity.

If such an arrangement is implemented as the exclusive determinant of grants, it may discourage local revenue raising capacity, decrease local expenditure and otherwise suppress local initiatives, increasing the burden of financial support on the central government in the final analysis or decreasing the volume and quality of services provided by the regional governments. It would therefore be necessary to strike a balance between equity and efficiency.

2. Effect on Macroeconomic Stability

The changing role of government and fiscal decentralization were inaugurated under very difficult macroeconomic conditions. The huge government deficit needed to be trimmed, inflation controlled and the balance of payments positioned maintained at a

sustainable level. The new fiscal paradigm is structured in ways that would support initiatives at maintaining macroeconomic stability.

The central government has passed the responsibility of providing goods and services to the regional governments. What this means from the perspective of fiscal balance is that the deficit has been pushed downstairs.

At the same time, regional governments have no way except to operate on a balanced budget basis. They have no recourse to financing fiscal deficit. Grants and borrowing are targeted to specific activities and projects while recurrent and any additional capital expenditure must be financed from their own revenue.

Under conditions of hard budget constraints, options available to finance regional government deficits, if and when they arise, are indeed very narrow. In the absence of a deficit financing mechanism, the resources available to regional governments are increasing taxes or reducing expenditure. They could of course accumulate arrears over short periods but this is an unpleasant stop-gap short-term measure rather than a genuine deficit financing instrument.

Under conditions of financial difficulty of the central government, grants and borrowing as currently structured are compressible, i.e., when the central government needs to decrease its expenditure, it would reduce grants and subsidies. Consequently, the burden of maintaining fiscal prudence and stability is to be borne by regional governments. And, as pointed out above, the budget balancing strategy lies in increasing local taxes and/or decreasing the quality and volume of services provided.

Increasing local taxes and revenue may be difficult for three reasons. The first is the degree of freedom regional governments have in deciding what to tax and at what rate. Article 8 of Proc. 33 seems to restrict their freedom in the interest of avoiding cascading of taxes and uniformalizing tax policy.

The second point that may impinge on the taxing capacity of regional governments is its impact on tax payers. Regional governments would undoubtedly like to raise as much revenue as possible. But this could negatively affect the business environment by increasing cost and depressing the profit of enterprises. So the objective here would need to be maximization rather than maximum tax revenue, which inherently limits the volume of collection.

The third reason that affects revenue raising capacity is the extremely narrow fiscal base available to regional governments. With the exception of Region 14, taxable activities are extremely limited to personal income taxes of their own employees, taxes on petty traders, agricultural income tax and land use fee. The revenue productivity of these activities is small.

Consequently, the budget balancing mechanism seems to rest on decreasing sub-national government expenditure under conditions of fiscal crunch, a mechanism that would ease the central government's burden of reducing its expenditure to restore fiscal balance.

3. Effect on Socio-Economic Development

An assignment of enormous consequence thrust upon and assumed by the regional governments is the responsibility of socio-economic development. Beginning with the Charter and in subsequent legislations, the Transitional Government extricated itself from the duty of producing and distributing goods and services, limiting itself to regulating the market process.

Henceforth the tasks of supplying health and education services, building roads, establishing and managing industries, providing housing and other amenities, etc. are effectively transferred to regional governments.

To what extent would the regional governments succeed in their quest for socio-economic development? Given the current fiscal arrangement and institutional capacity, a realistic reply would be: not very.

As suggested earlier, the regional governments are likely to operate under stringent fiscal constraints. Their revenue base is too narrow to provide them with sufficient financial resources to effectively carry out these awesome responsibilities.

A major constraint, in addition to the narrow fiscal base, is the capacity constraint. Regional governments lack trained and experienced manpower in exploiting the revenue base, identifying, prioritizing and preparing projects and implementing them. This constraint is mainly due to the politically motivated retrenchment policy in which people with training and considerable experience are dismissed from their posts and are not eligible for employment at all levels of government.

VI. SOME SUGGESTIONS TOWARDS A STRONGER REGIONAL FISCAL POSITION

A cursory reading of the assignments of responsibilities and financial capacity reveals the considerable gap between means and ends. The central government has shifted many of its responsibilities downstairs without giving commensurate fiscal capacity. These need to be revisited and means and ends reconciled if unpleasant consequences are to be avoided. The following are some suggestions that could be looked into in the course of revising the revenue sharing mechanism between the centre and the regions. The objective is to enhance the financial capacity of the regions to effectively carry out their responsibilities and improve the welfare of their people.

The basic message of this section is that the revenue base assigned to the regions needs to be reassessed and revised in light of the enormous responsibility assumed by them. The fiscal adjustment should begin with recategorization of the revenue base and include reclassification of specific taxes between the centre and the regions, and develop a formula that would determine the volume of central government revenue to be distributed among the regions.

A. Own Revenue

In addition to the categories of taxes, duties and fees assigned to the regions, they should be given the authority to collect revenue for their own use from activities that are region- based. Sales and excise taxes on imported and locally manufactured goods are in the main assigned to the centre, regardless of where they are used or consumed. However, the regions provide essential services and infrastructure for their distribution and utilization and therefore should also benefit from the taxes imposed on these goods.

It seems more appropriate for the central government to limit itself to customs duties on imports, introduce the value added tax (VAT) for domestically produced goods and empower regional governments to collect and use the proceeds from those taxes which are paid by residents on the basis of where they are utilized and consumed. These would release considerable volume of revenue to the regions.

In addition, resource-based activities should be taxed at their origin. The current arrangement assigns revenue not on the basis of where the activities are sourced from or located but on the size of their operations. For example, in the case of large-scale industrial and agricultural activities, the regions provide the resources, the central government grants the licences and also collects the entire revenue from taxes and duties. Clearly there is no reason for such an arrangement, and a more equitable disposition requires, at the minimum, sharing such revenue or - even better - ceding it to regional governments.

Such a recategorization of the revenue base should be accompanied by some redistribution and transfer of assets from the centre to the regions. Currently, the central government appropriates for itself excise and sales taxes on public enterprises but also collects the profits. This does not seem to be a fair arrangement. The regional governments are liable to incur costs due to, for example, negative externalities such as pollution, the provision of housing and building infrastructure, the provision of health and education service for the children and those people working for these enterprises, without benefiting from the activities generating these additional costs. Even if there is no full asset transfer, regions should share the revenue with the central government.

However, in the process of asset transfer, care should be taken not to empower regional governments to develop protectionist policies in favour of enterprises located in their jurisdiction. The current arrangement, which assigns taxes from small operators and petty traders, may increase the desire of regional governments to discriminate against large

establishments in favour of these activities since they, and not the bigger ones, contribute to their income.

Grants from the central government should be sourced from nationally-based taxes rather than revenue collected from the regions. While poorer and more backward regions should be supported to increase their financial capacity, this should not be at the cost of other regions. Transfers should not penalize capacity and efficiency in favour of equity. Where grants are equity-driven, regional revenue raising efforts may be stifled.

Furthermore, grants and subsidies from the centre to the regions should be transparent and based on some kind of rule or formula instead of their current discretionary nature. The distributional formula should determine what percentage of the revenue is to be distributed, and what the share of each region would be. Such an arrangement, in addition to making transfers transparent, would put the burden of fiscal adjustment on both the centre and regions.

Given the cyclical nature of tax revenues, regional governments should be granted the power to borrow from the central bank and other domestic sources of credit. These should however be limited in volume to avoid excessive borrowing, impose fiscal discipline, and avoid crowding out the private sector out of the credit market.

VII. CONCLUSIONS

This paper had the task of analyzing the nature and degree of fiscal decentralization in Ethiopia during the transition period by examining the appropriate legal instruments. It was found that fiscal independence is highly correlated with political decentralization. The latter defines the essence and the former the means of realizing the autonomy of sub-national governments.

Politically, the regional governments enjoy an autonomy that is close to that of a sovereign state. The central government has transferred practically all duties, responsibilities and powers of governance to the regional governments, with the exception of defense, foreign affairs, currency, and foreign economic cooperation. Consequently, these sub-national governments are responsible for the provision of essential services and socio-economic development of their respective regions.

The Transitional Government has synchronized the devolution of political power with fiscal decentralization. Consequently, the regional governments formally have control over revenue bases that are ceded to them for their use along with the privilege of sharing revenue collected from specific activities with the central government. This access to revenue is further supplemented by grants/subsidies from the central government and the privilege of mobilizing resources from local credit markets.

Unfortunately, these formal concessions by the central government fall very short of the basic tenets of fiscal autonomy as well as the volume of revenue required by the regional governments to effectively fulfil their enormous responsibility. The productivity and elasticity of the revenue base assigned to the regional governments are too small to generate a significant volume of revenue. With the central government controlling all the productive assets, there has been no revenue sharing between the two. Consequently, the central government collects and controls 80% of the national revenue. With revenue falling considerably less than the regional governments' budgeted recurrent expenditure, the sub-national governments depend on the central government not only for their capital but also for their ordinary expenditure.

Grants from the central government are projected to finance 47% of their recurrent and 100% of their capital expenditure. Grants, in addition to significantly eroding the heralded fiscal autonomy, are discretionary and compressible. No formula or rule exists to determine what percentage of the total revenue collected by the centre would be allocated to grants, and how this is to be distributed between the different regions. Presumably, which region gets what is to be determined through bargaining and negotiation between the central and regional authorities. This process not only clouds transparency in distributing grants but also denies regional governments the opportunity of long-term planning.

The second problem in grants is their compressible nature. With no prior commitment on the percentage of central government revenue to be distributed, it is likely to be used as the adjustment factor in the process of correcting any fiscal imbalance.

Borrowing by regional governments seems to be more of a smoke screen rather than a genuine financing mechanism. The articles governing and defining the procedures involved and the sources of credit are muddled and vague. The most generous interpretation of the sentiment (and definitely not the appropriate legal provisions) leans towards a working arrangement whereby the central government borrows on behalf of the regional governments from the National Bank of Ethiopia.

An overall assessment of the fiscal stance of the regional governments as provided for in the various legislations is that they lack autonomy, are conspicuously underfunded relative to their responsibilities, and are expected to pursue a regime of balanced budget with no option to finance even the shortest of the short-term deficits.

An additional constraint on the activities of regional governments is their manifest lack of institutional capacity mainly because of shortages of trained and experienced manpower.

Genuine fiscal autonomy would require serious reconsideration of assignment of revenue base redistribution of revenue-generating assets and reformulation of the grant assessment and distribution mechanism.

Without commensurate fiscal base, the political, administrative and developmental responsibilities thrust upon the regional self-governments are likely to flop, with possibly

unpleasant consequences. If the central government is attempting to use fiscal instruments as tools to maintain the territorial integrity of what is left of the country, it has selected the worst possible means. A more mature and beneficial approach is needed to effectively implement fiscal decentralization and keep the nation together.

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ISSUES OF VERTICAL IMBALANCE IN ETHIOPIA'S EMERGING SYSTEM OF FISCAL DECENTRALIZATION *

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Abstract: *The major purpose of this paper is to examine the extent to which the Problem of vertical imbalance arises in Ethiopia's newly emerging system of fiscal decentralization and to critically assess existing arrangements for resolving it. It concludes that the degree of vertical imbalance in regional budgets is rather pronounced and that there are a number of limitations in the mechanisms used in resolving the problem. The revenue sources assigned to the regions are inadequate to help them discharge the weighty responsibilities assigned to them. Attention should be given to measures that will boost the capacity of the regions to enhance their efforts at resource mobilization. Since grants will be the major means of covering the revenue shortfall of regions, it is important to establish criteria and mechanisms for the provision of grants that are transparent and easy to administer. There should also be an attempt to depart from the practice of having only one type of grant (i.e., the matching type). It is further necessary to develop detailed criteria to govern borrowing by the regions from the central government. The existing legislative provisions are inadequate and full of ambiguities. Ultimately, however, the issue is a political one and centers on the relationship between the center and regional governments. The task is one of ensuring that this relationship is based on mutual understanding rather than distrust.In general, however, there is nothing to be gained by undue haste in implementing the new system of fiscal decentralization.*

I. THE PROBLEM

1.1 Background: The Tradition of Centralism

If one excludes the brief and unsuccessful efforts of Tewodros, the first serious attempts to introduce a centralized system of administration in Ethiopia were undertaken during the Menelik era. However, the person who did most to strengthen the hands of the central government as well as to institute a modern fiscal system was Emperor Haile Selassie [1],[4].

The administrative system which he built up was a highly centralized one, and it became increasingly so with time. Thus, the regions had no autonomy whatsoever and they were all administered by his own hand-picked representatives. Not only was the system highly centralized, but it was also very personal, in the sense that the monarch was the ultimate decision maker in all matters of consequence. Although his personal control

**From the Editors:* This article was submitted for publication before the New Constitution was adopted and hence some possible new developments may not have been highlighted.

declined over the years, partly on account of his advancing age, his reign was characterized by a system of administration that left very little power to regional administrations.

This naturally found its reflection in the fiscal system as well. All major budgetary matters, both on the expenditure and revenue side, were made by the central government. The Ministry of Finance did have branches in the regions, but these were merely its administrative arms, essentially meant to facilitate its tasks of revenue collection; and were not accountable to regional administrations. The only arrangements even remotely approximating fiscal autonomy for the regions were the education and health taxes, earmarked for financing primary education and health in the regions where they were collected. But even this was probably more form than substance [3].

The military government (1974-91) that replaced the imperial regime found it convenient to continue with this tradition of centralism in both administration and finance. When tne "People's Democratic Republic of Ethiopia" (PDRE) was set up, a new system of regional administration was introduced, with some regions designated as "autonomous". But even those so designated were not assigned any independent sources of revenue and had virtually no say in their expenditures [8],[12]. Thus, in spite of a change in form, the practice was virtually a continuation of the imperial tradition. In fact, the system was perhaps even more centralized on account of the institution of monolithic party rule and even greater concentration of power in the hands of one person.

Therefore, when it assumed power in 1991, the Transitional Government of Ethiopia (TGE) inherited a highly centralized system of administration and finance.

1.2 Towards Fiscal Decentralization

1.2.1 Regional Administration

However, the new government did not lose time in instituting significant departures in this regard. An early indication of new directions was the Charter which set up the TGE [16], in which were enshrined "the rights of nations, nationalities and peoples to self-determination and to determine their own affairs by themselves". The next significant legislative act was Proclamation No.7/1992, which provided for the setting up of "national/regional self-governments" [16].[1]

This law provided for a new administrative structure made up of a central government and fourteen regional governments.[2] Regional governments have two tiers, the *wereda* (which is defined as "the basic unit of hierarchy") and the region. However, they have the power to set up intermediate levels of government if they so desire, i.e., between the *wereda* and the region as well as between the *wereda* and the *kebele*. In fact, nearly all regions have "zones", intermediate between the region and *weredas*. The law stipulates that regional governments are responsible to **both** the Council of Representatives of the

central government **and** the people who elected them. It also defined the powers of the central government and regional governments (see 3.1 below).

The next major legal development in this regard was Proclamation No.41/1993 [17], which defined the allocation of powers and duties between the executive organs of the central government and the regional governments. In effect, what it set up in the regions were mirror images of the central government. The law provided for each region to set up, "as may be necessary", a number of "bureaus", or miniature ministries, including - for our purposes - a finance bureau.

1.2.2 Fiscal Decentralization

As indicated above, Proclamation No.7/1992 provided for the division of powers between the central government and the regions. Of those reserved for the latter, some were in the area of fiscal policy, including the right to "prepare, approve and implement their own budgets" and to "borrow from domestic lending sources and to levy dues and taxes".

The law further provided for grants from the central government to regions "that cannot undertake by themselves basic social services and economic development programs due to relative underdevelopment".

But the most important legal instrument with respect to fiscal decentralization is Proclamation No. 33/1992 [16], which defines the objectives of revenue sharing, sets out the principles used in framing revenue sharing arrangements, and proceeds to categorize revenue sources into three: those reserved for the center, those reserved for the regions, and those to be used jointly by the center and the regions (see section 3.2.1 below).

This law also makes provisions for grants (also called subsidies) from the central government to the regions, with the proviso that "the amount of subsidy to be granted shall be proportional to the contribution made from the revenue collected by the Regions". It also includes stipulations that would make it possible for the regions to borrow from central financial institutions. All these are very significant departures from past practice and are bound to raise several new problems, one of which is that of vertical imbalance.

1.3 The Issues of Vertical Imbalance

Any type of federal arrangement involves a division of functions between the central government and subnational governments (expenditure assignment) as well as assignment of different sources of revenue to different tiers of government (revenue assignment). In such circumstances, only rarely does one encounter balance between the spending needs and revenue capacities of either the central government or the regions. All too often, either the center is unable to cover its expenditure from its own fiscal resources or the regions face

a similar predicament. It is this mismatch between expenditure needs and revenue sources to which the term vertical imbalance is given[3] [13],[14].

Where a problem of vertical imbalance exists, it needs to be resolved somehow by filling the revenue gap at whatever level of government it appears. Action could be taken on the expenditure side, which would necessitate reassigning responsibilities for expenditure. However, it is more common to act on the revenue side, the mechanisms usually resorted to being revenue sharing and transfers between different levels of government. There could also be arrangements whereby regions could borrow from the center. But it is only rarely that these arrangements provide full and satisfactory solutions to the problem.

The major purpose of this paper is to examine the extent to which the problem of vertical imbalance arises in the Ethiopian context and to critically assess existing arrangements for resolving it. Since the country is just beginning to experiment with fiscal decentralization and given its tradition of a highly centralized fiscal system, it would not be surprising that, at least in the initial stages, vertical imbalance would feature in regional budgets. In making progress towards greater decentralization, the country would be well-advised to consider its steps carefully in order to avoid the extremes of either too weak a central government or regions that are autonomous only in name.

The exercise we are attempting here is rendered difficult by the novelty of the Ethiopian experience, which makes any empirical evaluation impossible. It is only for fiscal year 1993/94 that the budget has been presented separately for the center and the regions. Therefore, in this paper we will address the problem by confining ourselves to the relevant legislation and the 1993/94 budget [18]. Our intention is to identify problems that are likely to be particularly vexing and to draw attention to them before the new system of fiscal decentralization assumes final shape.

II. GENERAL PRINCIPLES

2.1 Expenditure Assignment

The central issue in decentralization is how much power to retain at the center and how much power to give to the regions.[4] Although the major driving force behind decentralization is usually political - not economic - there are also compelling economic arguments for decentralization. First, it is contended that subnational governments are closer to the people than national ones and are therefore most likely to be responsive to their needs. Thus, there are many instances where local provision of goods and services is more efficient, provides for greater accountability, is more manageable, and ensures greater autonomy of lower levels of government.

Second, it is argued that decentralization takes greater account of regional differences in resource endowments and makes it possible for subnational units to specialize in economic activities that are more consonant with their respective comparative advantages. In contrast, central provision may overlook such advantages or not give them the attention they deserve. In the cultural sphere, too, it is contended that decentralization allows more opportunity for regions to exercise greater control over spending on items such as education and culture, which are important in defining the unique identity of the people of particular regions.

Third, it is claimed that decentralization promotes competition between regions in attracting investment, thereby leading to greater efficiency in the economy as a whole.

However, not all virtue is on the side of decentralization. To begin with, there are many functions, which - because of their country-wide significance - are the proper domain of national governments. Examples are stabilization policy; monetary policy, including the regulation and supervision of the banking system; exchange rate policy, including the management of the foreign reserve; and overall fiscal policy, including the management of the aggregate budget deficit.

A second compelling case for central provision is that of goods and services characterized by significant economies of scale, examples being transportation, electricity, water and sewerage, telecommunications, etc. In such cases, local provision may not be feasible, and even if feasible, it may be prohibitively costly.

A third case where central provision makes more sense concerns goods and services with considerable external economies (and diseconomies), involving important regional spillovers of benefits and costs. In such circumstances, there is need to take account of all costs and benefits, which makes central provision the only viable option.

Fourth, however affluent a society may be, there are bound to be ceilings on its capacity to generate revenue, which means that there is a limit on the extent to which resources can be divided up between the center and the regions. A certain degree of centralization is therefore inevitable.

Fifth, a major practical problem is that subnational governments may have limited capacity in such areas as budget preparation and execution, as well as tax collection. And attempts to improve their administrative capacity may lead to unnecessary duplication of staff and skills at the central and subnational levels [18, p.157].

These are some of the general considerations that need to be borne in mind in allocating functions between the central government and regions as well as in assigning revenue sources to different levels of government. The first is the problem of expenditure assignment, to which we will now turn; the second is the problem of revenue assignment, which we shall consider later.

It is not accidental that expenditure assignment issues should be resolved prior to those related to revenue assignment, because, logically, in order to divide revenue sources between various levels of government, one needs to be clear about the functions each of them is expected to undertake.

However, there is no universally acceptable formula in allocating functions between various levels of government. Each country has to address this question based on its own individual circumstances. However, there seems to be a wide degree of consensus on the proper jurisdiction of certain functions. Thus, defence, foreign affairs, international and inter-regional trade, currency, highways, immigration, civil aviation, and environmental legislation, are usually assigned to the central government. On the other hand, police, local roads, the utilities, water and sewerage, and street lighting and cleaning are considered more appropriate for subnational governments. In between are services that require the involvement of both central and subnational governments, examples being education, health, and social welfare.

In this connection, there is an important distinction to be made between **providing** services and **financing** them. The level of government providing a given service does not necessarily have to finance it [20, p.64]. For instance, although the central government may finance social welfare programs, their administration may be better left to subnational governments.

Country experiences with respect to expenditure assignment represent a wide spectrum, from those in which the role of the central government is extremely limited (e.g., the former Yugoslavia) to those in which the center plays a dominant role (e.g., Brazil, India, the former Soviet Union). In this context, it is useful to distinguish between **de jure** and **de facto** arrangements for expenditure assignment, because there is often a divergence between the two. Thus, a central government whose role is rather narrowly defined by laws may in actual fact be far more dominant in practice [2, p.3].

2.2 Issues of Revenue Assignment

Once functions are allocated between the central and subnational governments, the primary task is one of assigning to each level of government revenue sources that will enable it to discharge the tasks with which it has been entrusted. This is the problem of revenue assignment.

It has been asserted that "ideally each subnational government provides both the level and mix of public services and the means of financing these services that most closely meet the preferences of individuals in its own jurisdiction" [21, p.157]. However, in practice, here too there is a wide range of country experiences, and it would be difficult to evolve rules that would meet universal acceptance, beyond the stipulation that the revenue sources assigned to a particular level of government should, as far as possible, be adequate to permit it to discharge its functions. However, on the basis of considerations of efficiency

(minimizing resource cost) and equity (consistency of revenue means with expenditure), Musgrave suggests the following principles:

i) Progressive redistributive taxes should be central;

ii) Taxes suitable for economic stabilization should be central; lower level taxes should be cyclically stable;

iii) Tax bases distributed highly unequally between jurisdictions should be centralized;

iv) Taxes on mobile factors of production are best administered at the center;

v) Residence based taxes such as sales of consumption goods to consumers or excises are suited for states;

vi) Taxes on completely immobile factors are best suited for local level;

vii) Benefit taxes and user charges might be appropriately used at all levels [13, pp.4-5].

But even agreement on these rules of revenue assignment leaves some questions unanswered. The assignment of certain revenue sources to a given level of government need not necessarily give it authority to determine the bases and rates of collection, or even their administration and collection. Thus, legal authority for levying a certain tax (including the determination of tax base and tax rates) may rest with the central government while a lower level of government may be given the authority to collect revenue from it and use it for its own purposes. Although there are no simple criteria to guide decision-making in this regard, clarity on jurisdictions is of the utmost importance.

In this connection, one can identify five possible categories of revenue sources: a)those levied and collected by the central government and used for its own purposes;b)those levied and collected by the central government, but used entirely by the regions;c)those levied and collected by the central government, but shared by it and the regions according to some formula or formulas;d)those levied by the central government, but collected by the regions and used for their own purposes; and e)those levied, collected and used by the regions.

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2.4 Addressing the Problem of Vertical Imbalance

2.4.1 Measuring Vertical Imbalance

As indicated earlier, vertical imbalance arises when expenditures and revenues at different levels of government - central or otherwise - do not match, a problem that is encountered in most federal arrangements. However, measuring the extent of imbalance may not be a straightforward matter.

But there have been attempts to suggest such a measure, usually referred to as the coefficient of vertical imbalance. Thus, Shah [13, p.27] suggests the following formula for the coefficient:

$$1 - \frac{(B + C)}{D},$$

where A= total revenue and grants;
B= transfers (grants from other levels of government);
C= net borrowing = (A-D); and
D= expenditures (total expenditure + lending - repayments).

A value of 1 for the coefficient would mean absolute control by the central government over lower units, whereas a value of 0 would mean that lower units are absolutely autonomous. While a high value of the coefficient is considered desirable because it would approximate the expenditure rules discussed above, a value of 1 is not set as a goal.

In another paper, Shah [14, pp.19-21] proposes three alternative measures for the coefficient of vertical imbalance, "one considering conditional transfers and borrowing only, a second one by incorporating unconditional transfers and a third one by bringing in shared taxes as well". These are referred to as V_1, V_2 and V_3, respectively, and their expressions are presented below:

$$V_1 = 1 - \frac{(S_c + B)}{E};$$
$$V_2 = 1 - \frac{(S_u + S_c + B)}{E}; and$$
$$V_3 = 1 - \frac{S_u + S_c + B + T_s)}{E};$$

where: S_c = conditional transfers from the center to lower units;
S_u = unconditional transfers from the center to lower units;
B = net borrowing by lower units;
E = expenditures by lower units; and
T_s = shared taxes.

Still another measure for the coefficient of vertical imbalance appears in Wallich [19]:

$$V = (a_1 T_o + a_2 T_s + a_3 NTR + a_4 Gu + a_5 G_c + a_6 B),$$

where,

V = coefficient of vertical imbalance;
a = 0 or 1, depending on whether the revenue source is controlled by lower levels of government or the central government, with possible variations between 0 and 1 if the center and lower levels share control over the same revenue source;

a_1 = own taxes;
a_2 = shared taxes;
a_3 = non-tax revenues;
a_4 = unconditional grants,
a_5 = conditional grants;
a_6 = borrowing by lower levels of government;
T_o = own tax revenue;
T_s = shared tax revenue;
NTR = non-tax revenue;
G_u = unconditional grants;
B = borrowing.

Whatever measure of vertical imbalance is used, where such imbalance exists, it calls for adjustments on the revenue side, on the expenditure side, or on both sides. As indicated above, on the expenditure side, it would involve re-assigning responsibilities so that expenditures would be more in tune with revenues. More often, however, the adjustments are made on the revenue side, and the principal mechanisms for doing so are revenue sharing and transfer arrangements. Loan finance, although somewhat different, can also be considered in this context.

2.4.2 Revenue Sharing

Conceptually, it is useful to distinguish between tax base sharing and revenue sharing. The former involves "two or more levels of government levying own rates on a common base" [13]. The usual practice is for the higher level of government to determine the tax base (e.g., sales) and for lower levels of government to levy supplementary rates on the same source. It is customary for one level of government to collect the revenues and share them with other levels [13, pp.6-7].

In the case of revenue sharing, "one level of government is given an unconditional access to a specified share of revenues collected by another level of government" [13, p.7]

on the basis of criteria mutually agreed upon. This requires a determination of what revenue sources to set aside for this purpose and the share of revenues going to different levels of government. This is by no means an easy task. However, the over-riding consideration is one of enabling the various levels of government to raise sufficient financial resources for the discharge of responsibilities assigned to them.

2.4.3 Inter-governmental Transfers

But revenue sharing arrangements by themselves are unlikely to resolve the problem of vertical imbalance. It is therefore inevitable that there will be need for transfers of finances from one level of government to others. Although the usual practice is for transfers to be made from the central government to the regions, it is also possible to have reverse flows [9, p.14].

One major motivation of grants is equity. Where resource endowments are uneven and different regions exhibit different levels of development, grants are an important means of narrowing regional inequalities, but it is also common to use grants for promoting efficiency as well.

Grants may either be general or specific. In the case of general grants, the practice is for the central government to set aside a certain proportion of total revenue as grant funds and distribute these among the various regions on the basis of certain criteria (e.g., level of development, population size, absorptive capacity, regional development initiatives and special political considerations, if any). With general grants, regions are not subjected to any restrictions in the use of funds; they can use them as they see fit. The major policy questions involve the size of the grant fund and the criteria to use in allocating money among different regions.

In the case of specific grants, however, funds are granted for defined purposes, usually activities that the central government wishes to encourage (e.g., rural road construction, primary education, basic health services, etc.).

Grants could also be classified as non-matching and matching. In the case of matching grants, the funds received by regions are proportional to what they themselves raise from their own resources, the basic motive being encouraging the regions to maximize initiatives for self-financing. If they are of the general type, they can be used to correct inefficiencies in the provision of public goods with significant externalities [13],[14]. But they are insensitive to regional disparities in fiscal capacities, because they operate on the principle "to those who have more, more will be given".

Non-matching grants (which could be general or specific) are funds transferred from one level of government to another without requiring the recipient to raise matching funds. While they widen the freedom of the recipient considerably and are less biased against

disadvantaged regions, they are not designed to encourage regional initiatives for resource mobilization.

The most fundamental policy issue is how to design a judicious package of grants that will, at the same time, enhance the fiscal capacities of regions, give them a reasonable latitude in spending, promote equity, and provide the center some control in the spending of money that it makes available.

2.4.4 Loan Finance

Even with revenue and transfer arrangements in place, regions may still find themselves with a shortfall of revenue relative to expenditure. This raises the need for regions to borrow from domestic and/or foreign sources. In most federal arrangements, borrowing from external sources is a power reserved for central governments, although some countries allow subnational governments too to borrow externally [2]. Therefore, we will confine ourselves to issues of domestic borrowing.

In principle, such borrowing could be made from the public (by floating bonds), from private financial institutions or from the financial institutions of the central government. Since the first two do not involve more than one level of jurisdiction, it is inter-governmental borrowing that interests us.

Such borrowing may either be general, i.e., devoted to the financing of the overall budgetary deficit or it may be tied to specific projects. From the perspective of the region taking the loan, loans are less preferred than grants because they involve repayment obligations. However, they have the advantage that they may provide greater spur to efficiency in their utilization because they have to be paid back, which means that resources for servicing them have to be generated.

From the viewpoint of policy, the major issues involved in loan finance are what the upper limit of borrowing should be, conditions of borrowing (including grace period, interest obligations and repayment period), criteria for eligibility (including whether or not they should be project-tied), and the formal procedures that have to be followed in acquiring them. While all these are important considerations, perhaps the most significant from the viewpoint of overall fiscal management is the extent to which regions are permitted to borrow from the central government. Their needs will have to be viewed in conjunction with macroeconomic concerns, which would necessarily dictate prudence.

2.4.5 A Summing Up

The discussion in this section may now be summed up by drawing some of the salient points together [13, pp.14-15], [10, p.6]. First, as much as possible, regional

governments should have broad autonomy in determining their own priorities with respect to functions assigned to them. Second, revenue assignment should ensure that, as much as possible, there is a matching between expenditure needs and revenue generated from their own sources. Third, where there is a mismatch between the two, there should be adequate provisions for resolving the matter, through revenue sharing, transfers and loans. Fourth, attention should be given to ensuring equity between regions. Fifth, center-region relations should be characterized by transparency and simplicity, which means there should be no room for arbitrariness regarding what regions can get from the center, and the rules and procedures should not be unnecessarily complicated. Fifth, a concern with equity should not, however, lead to the undermining of efficiency. Sixth, the system should, as much as possible, give incentives to subnational governments to maximize their resource mobilization efforts. Finally, whatever relationships are established between the center and the regions should not jeopardize overall fiscal management.

III. VERTICAL IMBALANCE IN THE ETHIOPIAN CONTEXT

3.1 Expenditure Assignment

3.1.1 Legislative Provisions

Table 1 summarizes the functions assigned to the center and the regions, based on Proclamation No. 7/1992 [16]. As is evident from the table, the regions have been assigned specific functions on top of which they are expected to perform those not explicitly reserved for the center. The responsibilities assigned to the regions are fairly extensive.

The division of functions between the central government and the regions seems fairly conventional. However, partly because the expenditure assignment is presented in a highly condensed form, it is characterized by many ambiguities. For instance, economic policy is reserved for the center, but it is not clear what aspects of economic policy this refers to. Presumably it means macroeconomic policy, but there is no explicit statement to this effect. A conspicuous omission in this regard is foreign trade, which normally falls within the jurisdiction of central governments, but there is no provision made for it in Proclamation No.7/1992.

In a similar vein, the task of "establishing and administering major development establishments" is reserved for the central government, but since no definition of "major" is offered, one is not clear as to the criteria establishments have to meet in order to be designated major. Obviously, there are various ways of defining "major", including size of investment and employment. Unless this is clearly spelled out, it provides opportunities for different interpretations, and therefore a potential for creating tension between the center and regional governments.

3.1.2 The 1993/94 Budget

Based on the 1993/94 budget, Tables 2 and 3 provide a summary of the distribution of expenditure between the central government and the regions, for recurrent and capital expenditure, respectively. Looking at the distribution of recurrent expenditure first, we note that the share of the regions is only slightly over 37%, indicating that the bulk of the expenditure is allocated to the central government.

There are, however, significant sectoral variations. The areas in which the shares of the regions are pronounced are essentially the social sectors as a whole (77.6%), particularly health (83.2%), and education and training (83.2%). Of spending on economic services, too, the share of the regions is a respectable 58.3%. Another area in which their share is significant is public order (65.8%). In contrast, their share in defence is nil, as is to be expected, and their share in general services is low (25.5%). One also notes that their share in "other expenditures" is low (8.8%). This category mostly consists of external debt service payments, the burden of which is totally borne by the central government, although the regions share in the benefits. In general, although their share in given sectors is quite high, they account for less than 40% of total expenditure because the sectors in which they have sizeable shares do not figure prominently in the recurrent budget.

Interestingly, their share of the capital budget is the same as that for the recurrent budget. Here again, one observes the same sectoral pattern, with most of the expenditure on the social sectors assigned to the regions: health (87.8%) and education and training (73.7%). A striking difference, however, is that their share of capital expenditure on economic services (28.3%) is much lower than the figure for recurrent expenditure (58.3%). The major explanation for this seems to be that capital expenditures in the areas of mining and energy, industry, transport and communications, trade, and financial services are largely borne by the center, whereas the regions have greater responsibility for such activities as agriculture and natural resources.

3.2 Revenue Assignment

3.2.1 Legislative Provisions

The major legislative act defining revenue assignment is Proclamation No.33/1992 [16], which deals with both tax base sharing and revenue sharing. According to this law, the objectives pursued by the government are enabling the regions to carry out the responsibilities assigned to them; encouraging regional initiatives; narrowing the development gap between regions; and promoting activities that are "of common interest to regions".

The criteria employed in assigning revenue sources are stated as being ownership of sources of revenue; the national or regional character of the revenue sources; convenience of tax levying and collection; considerations such as population size, resources and levels of development; and considerations of the integrated and balanced development of the economy.

The provisions of the law regarding allocation of revenue sources are presented in Table 4. A careful reading of this law reveals that there are a number of problems. First, what is the extent of the regions' powers in raising revenue? Although Proclamation 7/1992 is unequivocal in giving them the power to levy dues and taxes, the provisions of Proclamation 33/1992 seem to qualify this power considerably. In the first place, the rates of taxes reserved for joint use by the central government and the regions (in addition to those assigned exclusively to the center) are to be fixed by the central government. Thus, the regions have no say in these matters. What about the sources reserved exclusively for them? Specifically, can they introduce new taxes and can they raise the rates on existing ones. While Proclamation 7/1992 would suggest a positive answer on this score, the following provisions of Proclamation 33/1992 show that matters are not so simple after all:

> In order to avoid cascading incidence effect of the tax levied by the Center and the Regions and to enable the harmonized implementation thereof, the tax systems shall have a unified policy base.
>
> The Ministry of Finance shall ensure that the tax laws issued at both levels adhere to the provisions of sub-article 1 of this Article (the paragraph immediately preceding this one).

The phrase "unified policy base" is highly ambiguous and is therefore amenable to a variety of interpretations. At any rate, it is quite clear that the regions do not have a *carte blanche* even with respect to the revenue sources specifically assigned to them, since the last word seems to rest with the Ministry of Finance.

Secondly, even though the division of revenue sources between the center and the regions is generally clear, there are certain issues that could be contentious when it comes to practical implementation. Take, for example, the provision that reserves revenue from "profit tax, personal income tax and sales tax from enterprises owned by the Regional Governments" to the regions. This is not problematic in principle, but could create difficulties of implementation. It would require the handing over of certain enterprises to the regions, and this could cause problems of both equity and efficiency, given the uneven distribution of such enterprises between the regions. The same is true of "taxes collected from rent of house [sic] and properties owned by the Regional Governments"; however, it appears that ownership of most such properties has already been transferred to the regions.

Perhaps an even more difficult problem would be determining a formula whereby revenue from the sources for joint use by the center and the regions can be divided among them. It is stipulated that a committee will be set up "to study conditions and submit recommendations guiding sharing of revenue", including suggestions on how to resolve disputes when they arise. There is no public knowledge that such a committee has been set up. But one can foresee certain problems that it can encounter. In the first place, it will not be easy to work out a formula that will be acceptable to both the center and the regions. Secondly, the law seems to imply that joint sharing only applies to cases in which regions undertake the kind of activities mentioned, such as enterprises jointly owned by the center

Table 1
Expenditure Assignment in Ethiopia

Central Government	Regional Governments
Defence Foreign affairs Economic policy Conferring of citizenship	All matters with the exception of those listed in Column 1
Declaration of state of emergency	Borrow from domestic lending sources and levy duties and taxes
Deployment of army where situations beyond the capacity of regional governments arise	Issue and implement laws and rules relating to public services which do not conflict with the relevant policy of the central government
Printing of currency	Establish, direct and supervise social and economic development establishments or enterprises
Establishing and administering major development establishments	Prepare, approve and implement their own budgets
Building and administering major communications networks and the like	Administer, develop and protect their natural resources
	Employ and administer their own personnel in accordance with the public service and pensions laws of the central government
	Establish and direct security and policy forces in accordance with the policy and directives of the central government
	Establish judicial organs to decide on matters not specifically assigned to the central government
	Own properties of the region; acquire ownership of property; and transfer property

Source: [15]

and regions, organizations paying taxes, "large scale mining, petroleum and gas operations", and forests. This is bound to raise questions of equity in view of the uneven distribution of such resources between regions.

An additional problem concerns the adequacy of the revenue sources reserved for the regions, especially in view of the responsibilities entrusted to them. As will be demonstrated in Section 3.2.2 below, given the structure of the Ethiopian revenue system, the money likely to be raised from these sources is bound to be limited [8]. However, the special case of the agricultural income tax needs to be noted. Although the law provides an elaborate and progressive rate structure for annual agricultural incomes exceeding Birr 600 per year, past practice almost invariably has been that farmers pay the minimum flat rate of Birr 20 [5]. Now that the regions have a much greater incentive in the efficient collection of this tax, their revenues may increase considerably.

Table 2
Share of Central Government and Regions in Recurrent Expenditure (million Birr)

	Total	Center	Regions	Share of Regions (%)
Total	4600	2890	1710	37.2
Administration and General Services	1345	990	355	26.4
National Defence	658	658		0.0
Public Order	231	79	152	65.8
General Services	294	219	75	25.5
Economic Services	463	193	270	58.3
Social Services	1220	273	947	77.6
Education and Training	790	133	657	83.2
Health	301	50	251	83.4
Other Expenditures	1572	1433	139	8.8

Table 3
Share of Central Government and Regions in Capital Expenditure (million Birr)

	Total	Center	Regions	Regional Share (%)
Total	3847	2413	1434	37.3
Administration and General Services	152	92	60	39.5
Economic Services	3049	2185	864	28.3
Social Services	646	136	510	79.0
Education and Training	317	83	234	73.7
Health	198	24	174	87.8

Source for Tables 2 and 3: [18]

Still another problem that has not been addressed in the legislation is the allocation of external assistance and grants. In the 1993/94 budget these account for more than 50% of total revenue, which is evidence of their dominant role in the revenue structure. Given

their importance, the question of their allocation between the center and the regions should have been explicitly treated. Although the issue has not been dealt with in the relevant legislation, budget implementation requires that some **modus operandi** be developed, a problem to which we will return when considering the 1993/94 budget.

Finally, there is a larger political question which may also have an impact on center-region fiscal relations. This concerns the problem of the dual accountability of regional governments that is enshrined in Proclamation 7/1992. According to this law, regional administrations are accountable to both the people of the region and to the central government, a provision that is likely to be problematic when cases of conflict between regional governments and the central government crop up. In this connection, it should also be noted that the relationship between the Ministry of Finance and the regional finance bureaus is not clearly spelled out. In actual practice, however, it seems that this relationship is confined to purely technical and procedural matters, and that it is not jurisdictional. Thus, the formal procedure is for the Ministry of Finance to communicate with the council of the concerned region and not directly with its finance bureau.

3.2.2 The 1993/94 Budget

Table 4 summarizes the essential information regarding the distribution of revenue between the central government and the regions, although it is not at all clear how the distribution was made in the case of the revenue sources assigned for the joint use of the center and the regions. This table, read in conjunction with Tables 2 and 3, reveals the striking degree of vertical imbalance that prevails in the Ethiopian budget. The regions, whose share in both recurrent and capital expenditure is about 37%, account for less than 10% of total revenue. If foreign assistance and loans are excluded, their share of domestic revenue rises to slightly more than 20%, which is still low. It is thus quite clear that the revenue sources assigned to them fall significantly short of meeting their expenditure needs.

Another way of looking at the picture is to consider the share of the regions' expenditures covered by the revenues assigned to them. These revenues cover only about 26% of total regional expenditures, and less than half (47.1%) of recurrent expenditures. In other words, the regions do not even have enough revenue to cover their running costs. A rough figure for the overall coefficient of vertical imbalance would be 0.74, a very high figure.

This is to be explained largely in the structure of revenue, as explained above. Thus, the revenue sources in which the claims of the regions are largest are the agricultural income tax, the land use fee, the tax on rental income, stamp sales and duty, charges and fees, and the pension contribution. These revenue sources between them account for only 9.6% of total domestic revenue. On the other hand, the share of regions in the most important revenue sources is nil or insignificant. Thus, their share in foreign trade taxes,

which account for 32.1% of total revenue, is nil; and their share in indirect taxes, which account for 22.7% of total revenue, is only 11.9%.

As indicated below, external resources account for more than half of revenue, but it is not clear how these are distributed between the center and the regions. It seems that, of the portion of these resources devoted to recurrent expenditure, nothing is allocated to the regions. There is also no clear indication of how much of the resources allocated for capital expenditure belongs to the regions. One would have to arrive at a tentative figure by adding up the costs of the various projects assigned to the regions, in view of the fact that the entire capital budget is financed by external resources. The regions' share would probably fall short of 15%. The important point, however, is that there are no publicly known principles for allocation between the center and the regions or between the various regions. This is unfortunate because there are serious issues of efficiency and equity involved.[5]

Given this substantial degree of vertical imbalance in the regional budgets, the next question is how the system attempts to resolve the problem. This leads to the problem of transfers.

3.3 Dealing with Vertical Imbalance

As indicated earlier, inter-governmental transfers are one mechanism for dealing with vertical imbalance, and there are provisions for them in the Ethiopian legislation. There is, however, some terminological confusion. While Proclamation 7/1992 talks of subsidies, Proclamation 33/1992 talks of both grants and subsidies, apparently using them interchangeably (we will use the term grants in this paper). And matters are not made easier by the terminology used in the 1993/94 budget proclamation. In this piece of legislation there is an item entitled "grants in aid", which actually means subventions made to the Patriotic Association, the Ethiopian Red Cross Society and the Ethiopian Orthodox Church; and there is another category called "subsidy", under which the only item that appears is "fertilizer subsidy". Thus, there is no reference at all to inter-governmental transfers.

According to the Proclamation 33/1992, the objectives of grants are multiple, and they are set out as follows: to promote regional socio-economic development; to accelerate the development of relatively disadvantaged regions; to narrow income disparities between regions; to encourage activities with positive externalities and to control those with external diseconomies; and "to encourage foreign currency earning projects and other projects of national interest". These are standard objectives for inter-governmental transfers.

It is interesting to note that only one type of grant is envisaged, namely the matching type. The relevant provision states that "the amount of subsidy to be granted shall be proportional to the contribution made from the revenue collected by the Regions". It may also be noted in passing that the Amharic version gives a slightly different interpretation. Literally translated, it would read "A subsidy will be granted in a manner related to what

the region allocates from its own revenue". At any rate, there is no provision for non-matching grants. This is a provision that, although perhaps intended to encourage regional initiatives in resource mobilization, is of course disadvantageous to regions poorly endowed in resources, and therefore with low capacity to raise revenue. In view of this, it does not

Table 4
Revenue Assignment in Ethiopia
(Article 5, Proclamation No. 33/1992)

Central Government	Regional Governments	Central and Regional Governments
duties, taxes and other charges levied on the importation and exportation of goods; personal income tax collected from employees of the Central Government and International Organizations; profit tax, personal income tax and sales tax collected from enterprises owned by the Central Government; taxes collected from national lotteries and other chance winning prizes; taxes collected on income from air, train and marine transport activities; taxes collected from rent of houses and properties owned by the Central Government; charges and fees on licenses and services issued or rendered by the Central Government.	personal income tax collected from employees of the Regional Governments and employees other than those covered under sub-articles 2 and 4 of this Article; rural land use fee; agricultural income tax collected from farmers not incorporated in an organization; profit and sales tax collected from individual traders; tax on income from inland water transportation; taxes collected from rent of house and properties owned by the Regional Governments; profit tax, personal income tax and sales tax collected from enterprises owned by the Regional Governments; without prejudice to sub-article 4(c) of this Article, income tax, royalty [sic] and rent of land collected from mining activities; charges and fees on licenses and services issued or rendered by the Regional Governments.	profit tax, personal income tax and sales tax collected from enterprises jointly owned by the Central Government and Regional Governments; profit tax, dividend tax and sales tax collected from organizations; profit tax, royalty [sic] and rent of land collected from large scale Mining, any Petroleum and Gas operations; forest royalty [sic].

Table 5
Revenue Share of Center and Regions
(million Birr)

	Total	Center	Regions	Regional Share (%)
Total	8207	7401	806	9.8
Tax Revenue	3309	2654	656	19.8
Direct Taxes	1032	497	535	51.8
Personal Income Tax	294	155	139	47.3
Rental Income Tax	45	10	35	77.8
Business Income Tax	505	330	175	34.7
Agricultural Income Tax	107		107	100.0
Tax on Dividends and Chance Winnings	2	2		0.0
Land Use Fee	79		79	100.0
Indirect Taxes	1013	893	121	11.9
Excise on Locally Manufactured Goods	564	560	3.0	0.5
Sales Tax on Locally Manufactured Goods	348	293	56	16.1
Service Sales Tax	42	25	17	40.4
Stamp Sales and Duty	60	15	45	75.0
Foreign Trade Taxes	1264	1264		0.0
Customs Duty and Tax on Imported Goods	1210	1210		0.0
Duty and Tax on Coffee Export	54	54		0.0
Non-tax Revenues	571	425	146	25.6
Charges and Fees	84	25	58	6 9.0
Sales of Goods and Services	88	45	43	48.9
Government Investment Income	272	272		0.0
Miscellaneous Revenue	71	58	13	18.3
Pension Contribution	57	25	32	56.1
External Assistance	2012	2012		0.0
Capital Receipts	2315	2304	5	0.2

Source: [18]

seem that the objectives for grants set out in the law have been taken into account when defining the nature of center-region transfers.

With respect to procedures for regions to obtain grants from the central government, they are required to submit their requests to the Ministry of Finance and the Ministry of Planning and Economic Development, together with their planned expenditures. The two ministries then review the requests, but it is not clearly indicated what body makes the final decision. Nor is there any indication of the detailed criteria to be used in arriving at a decision. In the absence of such criteria, the danger is that the grant making process will lack transparency and depend on the negotiating strength of the regions rather than on their needs.[6]

The other means for dealing with vertical imbalance is borrowing by the regions from the center. According to Proclamation 33/1992, in order to borrow regions should

> submit to the Ministry of Finance or to the Ministry of Planning and Economic Development as the case may be, the loan amount required to cover their deficit together with statements showing the relations of the requested amount with the revenue collection forecast [sic] and with economic indicator [sic] and shall attach a copy of their consolidated budget and the feasibility study report of the project for which the loan is required with the loan application form.

The next step is for the relevant ministry to study the request by taking into account general economic indicators and the overall country-wide budget, and then "obtain decision [sic] on the amount that each Region may borrow within the national limit set by relevant laws and communicate the same to the National Bank of Ethiopia and to the Regions".

Here again, it is not indicated which body has the final authority in deciding on the regions' applications for loans. One gets the impression, however, that the loans are to be tied to specific projects rather than being for general deficit financing purposes. Also, it seems that the ceiling for borrowing is set by overall economic considerations. Therefore, it appears that the center will exercise tight control over borrowing by the regions.

These are the legal provisions. What practice was followed in drawing up the 1993/94 budget? Unfortunately, there is nothing one can get by scrutinizing the budget and there is little public information that is available elsewhere. It seems that for 1993/94, the regions are not expected to engage in borrowing, which means that all borrowing will be done by the center.

IV. CONCLUSIONS AND RECOMMENDATIONS

As suggested at the beginning of this paper, a central problem of fiscal federalism is how to avoid the extremes of too much concentration of fiscal powers at the center or at lower levels of government. The first leads to regional fiscal autonomy that is more form than substance while the latter leads to a central government that is so economically weak that it cannot perform even its most rudimentary functions.

Our review of the Ethiopian situation leads to conclude that the degree of vertical imbalance in regional budgets is rather pronounced and that there are a number of limitations in the mechanisms used in resolving the problem.

With respect to revenue assignment, it is obvious that the revenue sources assigned to the regions are inadequate to help them discharge the responsibilities assigned to them. It is also obvious that the present capacity of the regions for plan preparation and execution is extremely limited, although there are obvious regional variations. It is known, for example, that the 1993/94 budgets for the regions were essentially prepared for them by personnel of the central government. Since the country is new to the practice of fiscal federalism, neither this nor the limited revenue-generating capacity of the regions is particularly surprising. In fact, it would be more prudent to err on this side than to assign to the regions such revenue sources as will seriously incapacitate the center. As I argued in an earlier paper [8], there should be no rush to open Pandora's box.

However, attention should also be given to measures that will boost the capacity of the regions to enhance their efforts at resource mobilization. This will require, in the first place, removing all ambiguities in the law regarding their powers to determine tax bases and tax rates.

Since grants will be the major means of covering revenue shortfall of regions, it is also important to establish criteria and mechanisms for the provision of grants that are transparent and easy to administer. As much as possible, one should avoid the practice of determining grant sizes through negotiations. In this connection, it may be worth looking into the advisability of setting up a grants commission or some such arrangement (as is the practice in many federally structured governments) so that the process of advancing grants will be relatively free from political wrangling.

There should also be an attempt to depart from the practice of having only one type of grant (i.e., the matching type). It is especially necessary to introduce non-matching grants in addition to those already provided for in the law. This should be the major means of narrowing regional disparities in economic development. The procedures for providing grants should also be streamlined so that unnecessary red tape will be eliminated.

It is also necessary to develop detailed criteria to govern borrowing by the regions from the central government. The existing legislative provisions are inadequate and full of ambiguities.

Ultimately, however, the issue is a political one and centers on the relationship between the center and regional governments. The task is one of ensuring that this relationship is based on mutual understanding rather than distrust. Based on the experience of other countries, it has been observed that "regions will consent to the delegation of extensive powers to the central government only if each is confident that its voice will be heard in the formulation and development of policy" [9, p.17]. There is no formula for ensuring this, and only time will tell what kind of governance will emerge in the country in the next few years.

In general, however, there is nothing to be gained by undue haste in implementing the new system of fiscal decentralization. There is a vast amount of experience in other countries that Ethiopia can learn from them. The system that will eventually take root should be based on the benefits of such experience. At least in this respect, the country should avoid its unenviable tendency of stubbornly repeating the mistakes of others.

NOTES

1. In this paper, we shall eschew the cumbersome phrase "national/regional self-governments" and use "regions", "regional governments" or subnational governments", as distinct from the central government in Addis Ababa.

2. Five of the regions subsequently decided to consolidate themselves into one region. There are thus currently ten regions and the city of Dire Dawa.

3. This is to distinguish it from "horizontal imbalance", which "refers to inconsistency between revenue raising ability and fiscal needs to governments at the same level in a federation" [13, p. 26]. Horizontal imbalance raises fundamental issues of equity between regions and is therefore important. It is, however, outside the scope of our present concern, which is focused on center-region relations.

4. The treatment in Section w is intentionally highly condensed; it draws on Shah [13], [14], Wallich [19, 20], and Mahar and Dillinger [11].

5. I have been informed that projects have been distributed between the center and the regions on the basis of certain criteria, including the extent of a region's devastation by war, vulnerability to drought, degree of economic backwardness, etc. It does not appear that absorptive capacity has been given significant consideration. Attempts to figure out how external loans and assistance have been divided are complicated by the fact that, at least in the 1993/94 budget, counterpart funds have been used in the same way as domestic revenues.

6. This is a general statement, not one specifically related to the 1993/94 budget. In this case, if fact it seems that the regions were not even consulted.

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COFFEE PRICES AND SMUGGLING IN ETHIOPIA

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Abstract: *Official and black market coffee price series are brought together to discuss the incentives to produce coffee since 1963. On the basis of empirical analysis of prices and supply response, it is argued that some increased export earnings can be expected from a switch from smuggling into official channels. However, these increases will be relatively small. Coffee production is found to be responsive to prices, but this effect is most likely to be relative to other crop prices, in particular chat. During the period of the Dergue, supply response was found to be smaller than in the 1960s, reflecting the adverse climate for expansion of crop production existing during the 1970s and 1980s. Following the devaluation, coffee production may well increase again, but the increases are unlikely to be very large.*

I. INTRODUCTION

Recent economic reforms have raised hopes for a renewed impetus to the Ethiopian economy. Market reforms were started in the last year of the Dergue government including the liberalisation of grain markets. The present transitional government has extended these reforms, embracing IMF-backed stabilization and structural adjustment. These reforms are characterized by the reversion of a strict economic control system to a free market economy. The aim is to provide incentives to all sectors to reverse a long period of economic decline. At the macroeconomic level, stimulating growth and a reduction of the fiscal and trade balance deficits are high on the agenda. In this paper, a discussion is

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offered of the effects of the reform programme on coffee, the single most important export commodity in the country.

The start of the reform programme can be dated back to September 1992, with a large devaluation of the dollar exchange rate from 2.07 birr per dollar to 5 birr. Since then, at least some of the consequences have been remarkable. Consumer prices have not increased substantially since then. In fact, the 12 months following the devaluation were characterised by negative inflation[1]. Another, probably linked, observation is that the black market exchange rate did not move up substantially afterwards, remaining at about 7.5 birr per dollar ever since. During 1993, a harmonisation of the two exchange rate markets has started with regular foreign exchange auctions typically yielding rates of between 5.5 and 6 birr per dollar.

One of the main aims of the exchange rate policy is to stimulate exports. The trade balance has consistently been negative in the 1980s. During the last five years, exports covered less than half the import bill. Since long, coffee has been the most important source of foreign exchange, accounting for more than half of export earnings. Consequently, the effects on coffee production of increased export prices in local currency are important to be investigated. Besides the devaluation, a liberalisation of coffee marketing has also started.

The devaluation and liberalisation are expected to stimulate coffee production, and in this way export earnings. A more immediate effect which is hoped for is the reversal of the large flows of coffee into the parallel channels, both in the domestic and the export market. Much of the contraband trade was financed by illegal exports of coffee to Djibouti, Kenya and the Sudan. No estimates are available of the quantities involved, but they are thought to be very substantial. The gradual harmonisation of the official and the parallel exchange rate markets is hoped to bring these large volumes of trade back into the official circuit, helping to increase official foreign exchange earnings. Finally, Ethiopia is exceptional in Africa to the extent that there is a large domestic consumption of coffee. Any analysis of the effects on export earnings of increased incentives for coffee production needs to take this into account. This paper discusses the effects pricing policy, via exchange rate controls, export taxation and marketing controls has had on coffee production and the supplies to the official markets. It will therefore look at prices received by farmers in the official channels, and compare them with the incentives from the parallel, smuggling system. Contrary to most other African countries, farm-gate prices are not readily available, even for the official channel. In section 3, the methodology to obtain the relevant price indexes will be described. The actual outcome for farmers is a consequence of a combination of exchange rate, marketing and taxation policies. To understand the evolution of farm-gate prices, they are decomposed into these constituting factors. In section 4, a supply function for the official channel is estimated relating pricing policy to outcomes. Its implications for policy, especially for the role of coffee in increasing export earnings, is discussed in section 5. In the next section, a brief overview of the coffee sector, including the marketing arrangements, is given.

II. AN OVERVIEW OF THE COFFEE SECTOR

Coffee is mainly grown in five regions: Sidamo, Keffa, Wellega, Illubabor, and Hararghe. The first three account for more than 70 percent. Small holders account for most of the coffee production. Some commercial farms used to exist, but they were nationalised in the mid-1970s. Since the 1960s, three distinct periods can be considered with respect to the marketing structure[2]. During the Imperial government (until 1974), the marketing structure was market-based. Coffee was bought by traders at various levels of the marketing chain, some of which would reach the terminal markets at Dire Dawa and Addis Ababa where auctions in which exporters participated took place. Government intervention was limited to some regulation and quality control.

After the coup, the Military Government aimed to take over coffee markets at all levels. The socialisation of production was started with producer co-operatives being set up, even though more than 90 percent of coffee production continued to come from private smallholders. Private traders were condoned, but were severely constrained via price controls at all levels of the marketing chain. A government agency, the Ethiopian Coffee Marketing Cooperation (ECMC) took on substantial responsibilities in the marketing of coffee, and soon controlled more than 80 percent of officially handled supplies. Private traders could not freely sell coffee in the domestic markets. Auctions continued to take place in Addis Ababa and Dire Dawa, but prices at the 'auction' were in fact fixed by the Ministry of Coffee and Tea Development. Taxes on coffee were raised substantially, and included surtax, transaction tax, export duty and coffee cess, and became about half of the fob export prices. Tax rates levied on prices were also higher at higher world prices. This strict and high-tax control regime created strong incentives to sell and buy coffee in parallel markets, which emerged and flourished. Coffee was smuggled into Djibouti and Kenya to buy consumer goods; substantial amounts were also brought to the Sudan.

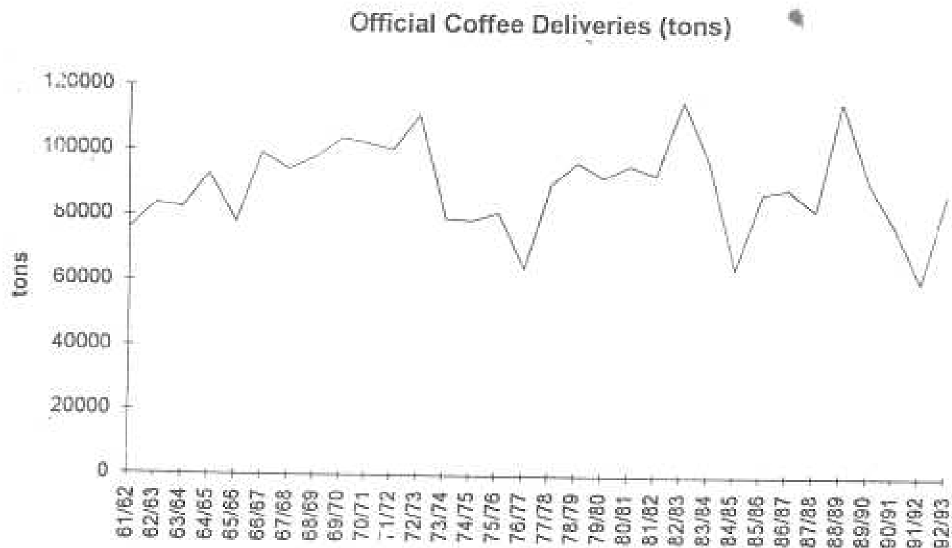
The Transitional Government reversed most of these measures in recent years. Co-operatives have been disbanded, and coffee marketing has been freed. Coffee traders can sell and buy as they wish, even though licenses are still required and are relatively expensive. Taxes have come down, but mainly because of the very low international prices. The auction is, however, allowed to function properly and all price controls have been removed. Instead, the ECMC offers farmers and traders floor prices, which some consider relatively high given the low international prices[3]. Parallel markets are, however, thought to continue to attract substantial flows.

The coffee supply data on quantities cover obviously only the official channels. Consistent data are only available for the two terminal markets, Addis Ababa and Dire Dawa and for exports. The former can give us an impression of the total official domestic plus export supply, and will be used throughout this paper. The ECMC, and at present also private traders, use low quality coffee, rejected for export at the auction, as their main source of 'official' domestic market supply. In coffee areas, it was always legal for licensed traders to sell directly to consumers, and this coffee will not be included in the statistics.

All other domestic and export sales are in fact 'parallel' market transactions, and are therefore also excluded from the statistics.

Figure 1 shows the quantities channelled through the official market since 1961/62[4]. Supplies increased gradually throughout the 1960s until 1972/73. With the revolution during 1973/74, a collapse can be observed, with further low levels until 1976/77. Then a recovery came, but at levels lower than before the revolution in 1974. Since then, there is apparently a decreasing trend, with substantial variability. Very low levels were obtained in 1984/85 (the drought and famine year) and 1991/92 (the year of the fall of the Mangiest government). It is likely that the low levels in these two years are related to these occurrences. Finally, a recovery can be noticed in 1992/93, even though to a level close to the earlier trend.

FIGURE 1



III. COFFEE PRICES IN ETHIOPIA

In this section, the evolution of coffee prices in Ethiopia is assessed since the beginning of the 1960s. In particular, we will discuss the consequences of implicit and explicit taxation on farm-gate prices. More specifically, we aim to disentangle the effects of the exchange rate policy, export taxation, and possible excessive marketing margins on prices. Also, we will try to provide some measure of the price farmers could expect to receive from supplying coffee on the black market for domestic use or export.

Farm-gate coffee prices are hard to come by in Ethiopia. Before 1974, pricing was free, and no prices were systematically recorded. During the military government, prices were controlled at all levels, but, contrary to most East-African coffee producing countries, they were not pan-territorial. Instead, a complex system of deductions relative to the auction and world price was used, implying different prices at each different location and for each type of transaction. Constructing a representative 'farm-gate price' series is therefore quite a haphazard undertaking. The ECMC supplied us estimates of the regional average coffee prices at the farm-gate level since the coffee year 1984/85 for washed and unwashed coffee. Using quantities supplied to the auction from the various regions for each year, average prices could be established for unwashed coffee for the country as a whole[5]. Before 1984/85, no data were available on farm-gate prices. Nevertheless, auction prices are available from before 1960. Assuming that the proportion taken for marketing costs from the farm-gate up to delivery at the auction has remained constant at roughly the average proportion between 1984 and 1992, we estimated farm-gate prices for the pre-1984 period as:

$$FGPBO_i = [\frac{1}{9}\sum_{j=1984}^{1992}(\frac{FGPBO_j}{APB_j})].APB_i \ldots\ldots\ldots\ldots\ldots \quad (1)$$

where $FGPBO_i$ is the (nominal) farm-gate price in birr in the official channel in year i and APB_i is the auction price in year i. The average ratio between the farm-gate and the auction price between 1984 and 1992 was 81 percent.

If anything, it may be thought that the rigidity of parastatal coffee marketing in a system that was gradually crumbling and collapsing (as the Ethiopian economy was) implied that marketing costs became higher on average in the 1980s than what they were either before the revolution or in the first few years afterwards. Consequently, it is likely that the estimated farm-gate prices are somewhat biased downwards. The real farm-gate price, a measure of the incentive price for coffee (RFGBO), were calculated by deflating the nominal prices by the consumer price index (CPI), recalculated to reflect coffee years[6]. To assess the consequences of the exchange rate policy, taxation and of marketing margins on the coffee prices a series of other price indexes are also calculated. The approach taken is described in Dercon [14, PP. 157-194]. Table 1 summarizes the formulas used.

Table 1. Price Indexes used in the Analysis

PCBO	= PC$*E
RPCBO	= PCB/CPI
RPC$	= PC$/PMV$
RPCBAT	= (RPCB)(1-t)
RFGPBO	= FGBPO/CPI
PCBS	= PC$*EBM
RPCBS	= PCBS/CPI
RFGPBS	= (FGB070/PCBS70).(PC$*EBM)/CPI
With:	
PCBO	= Export price for coffee in birr (current prices)
CPI	= domestic CPI (1970 =100)
PC$	= Export price coffee in dollars (current prices)
E	= Nominal exchange rate against the dollar, official
PMV$	= Manufacturing unit value index (in dollars)(1970 = 100)
RPC$	= Export price coffee in dollars (constant 1970 prices)
RPCBAT	= After tax export price of coffee (constant 1970 prices)
RFGPBO	= Real official farmgate price
FGBPO	= Nominal official farmagate price, birr
t	= Export tax rate
PCBS	= Export price coffee, in birr, smuggling_channel (constant 1970 prices)
RPCBS	= Export price coffee, in birr, smuggling channel (constant 1970 prices)
RFGPBS	= Real smuggling farmgate price
EBM	= Parallel market exchange rate against the dollar
FGPBO70	= Official farmgate price in birr in 1970
PCBS70	= Export price in birr, smuggling channel, in 1970

A measure of the world price for Ethiopian coffee is the unit export value index for coffee. The difference between the export price, expressed in Ethiopian birr, and deflated by the CPI, (RPCB) and the farm-gate price (RFGPBO) will give a measure of the total domestic margin for coffee. This margin is, however, divided between the government, via taxation, and the domestic marketing agents. By calculating the unit export value price for

coffee excluding export taxes (RPCBAT) and comparing it with the farm-gate price,(RFGPBO) an estimate of the marketing margin can be obtained. Finally, a measure of the overvaluation of the exchange rate can be obtained by expressing the unit export value index in terms of constant US dollars, (RPC$) using the official exchange rate and the Manufacturing Unit Value index (as calculated by the World Bank) as a deflator. This provides a measure of the international terms of trade for coffee. In this way, we can assess to what extent the exchange rate has not adjusted to domestic inflationary pressures relative to the international level. If the international real price has increased relative to the domestic real price, then domestic terms of trade have not kept up with international terms of trade - incentives for coffee production have been reduced because of overvaluation. To assess the incentives for smuggling coffee, first, the unit export value price for coffee in US dollars was converted into birr using the parallel market exchange rate [13], [22].

Next, an estimate of the farm-gate price for smuggled coffee (RFGPBS) was obtained by first assuming that in a base-year, 1970/71, there was no incentive to smuggle coffee, such that the coffee prices in the official system were the same as in the 'parallel' system at the farm-gate level. Furthermore, we assume that the proportion the farmer received from the smuggling border price in this year is the same proportion as in all years (about 52 percent). This may seem arbitrary but the resulting smuggling farm-gate price provides, if anything, a downward biased measure of the actual smuggling price. First, the assumption of proportional marketing costs will reduce the calculated farm-gate price in the latter years of the period considered, when in the parallel market the dollar was trading at premiums of 200 percent and more relative to the official exchange rate. The construct implies furthermore that in the base-year 1970/71 the risk-premium involved in trading in the parallel market is exactly equal to the gain from using the parallel market exchange rate and evading the export taxes. Consequently, the incentives for farmers to enter in the parallel market in other years, implied in the estimated farm-gate prices, are given relative to the incentives in the base-year. Note that smuggling prices are given relative to the parallel market exchange rate. The deviation of the parallel market exchange rate from the official market exchange rate is related to overvaluation. Because of overvaluation, exchange controls are binding and this causes a premium between the official and the parallel market exchange rate to develop. This does not necessarily mean that the parallel market exchange rate is the 'counterfactual' exchange rate 'if no overvaluation were present'. Consequently we did not use the parallel market exchange rate to construct a measure of taxation because of overvaluation.

These points can be illuminated by showing how these price indexes are related to each other. In particular, defining the real exchange rate against the dollar as $r = E^{*}PMV\$/P$, and m as the proportional marketing margin in the official market, then the real farm-gate price for coffee in the official channel can be rewritten as:

$$RFGPBO = (1-t).(1-m).r.RPC\$ \qquad (2)$$

In words, the real price received by the farmer is obtained by subtracting from the international terms of trade for coffee (the world price for coffee deflated by the MUV index) proportions for marketing margins, export taxes and overvaluation.

For the real price received by the farmer from smuggling a similar formula can be obtained as:

$$RFGPBS = (1-m_s).r_b.RPC\$ \quad \ldots\ldots\ldots\ldots (3)$$

in which r_b is the real *parallel* exchange rate (r_b = EBM . PMV\$/P), and m_s is the proportional marketing margin in smuggling, which has been kept constant at the 1970/71 level. In words, the real price received by the farmer from smuggling is obtained by multiplying the international terms of trade for coffee with real parallel exchange rate, allowing for a marketing margin. From (2) and (3), and defining z as the premium in the parallel market exchange rate (expressed relative to the latter), it follows that the relative incentive to supply coffee to the different channels can be defined as:

$$\frac{RFGPBS}{RFGPBO} = \frac{(1-m_s)}{(1-m)(1-t).(1-z)} \quad \ldots\ldots\ldots\ldots (4)$$

in which EBM(1-z) equals E. Since the incentive for selling to the parallel market and to the official channel is assumed to be the same for the base year 1970/71, it follows that (4) can also be written as:

$$\frac{RFGPBS}{RFGPBO} = \frac{(1-m_{70})(1-t_{70}).(1-z_{70})}{(1-m).(1-t)(1-z)} \quad \ldots\ldots\ldots\ldots (5)$$

The subscript 70 refers to the value in the base year. This shows the point that by construction, the relative price incentives to supply officially or in the parallel market are determined relative to the base year.

To compare these series, scaling them as index numbers is necessary, if only because the real dollar price can otherwise not be compared with the other prices, expressed in Ethiopian birr. The base-year chosen was again 1970/71 and the real unit export value (RPCB) and the real dollar price index (RPC\$) were both put equal to 100. This assumes that all overvaluation in the other years has to be considered relative to the existing overvaluation in the base-year[7]. The export price after tax (RPCBAT), official farm-gate price (RFGPBO) and the smuggling farm-gate price (RFGBS) were all converted to an index proportional to the unit export value index, by deflating each of these prices by the real unit export value in 1970.

In particular, both the smuggling and the official farm-gate price were in 1970/71 56 percent of the unit export value index, while the after-tax unit export value index was 77 percent of the export value index. Consequently, smuggling and official farm-gate prices were put in an index with 1970/71 equal to 56 and the after-tax index has been scaled to the 1970/71 value of 77. The implication is that the differences between the different series reflect the true (relative) margins between the prices.

FIGURE 2

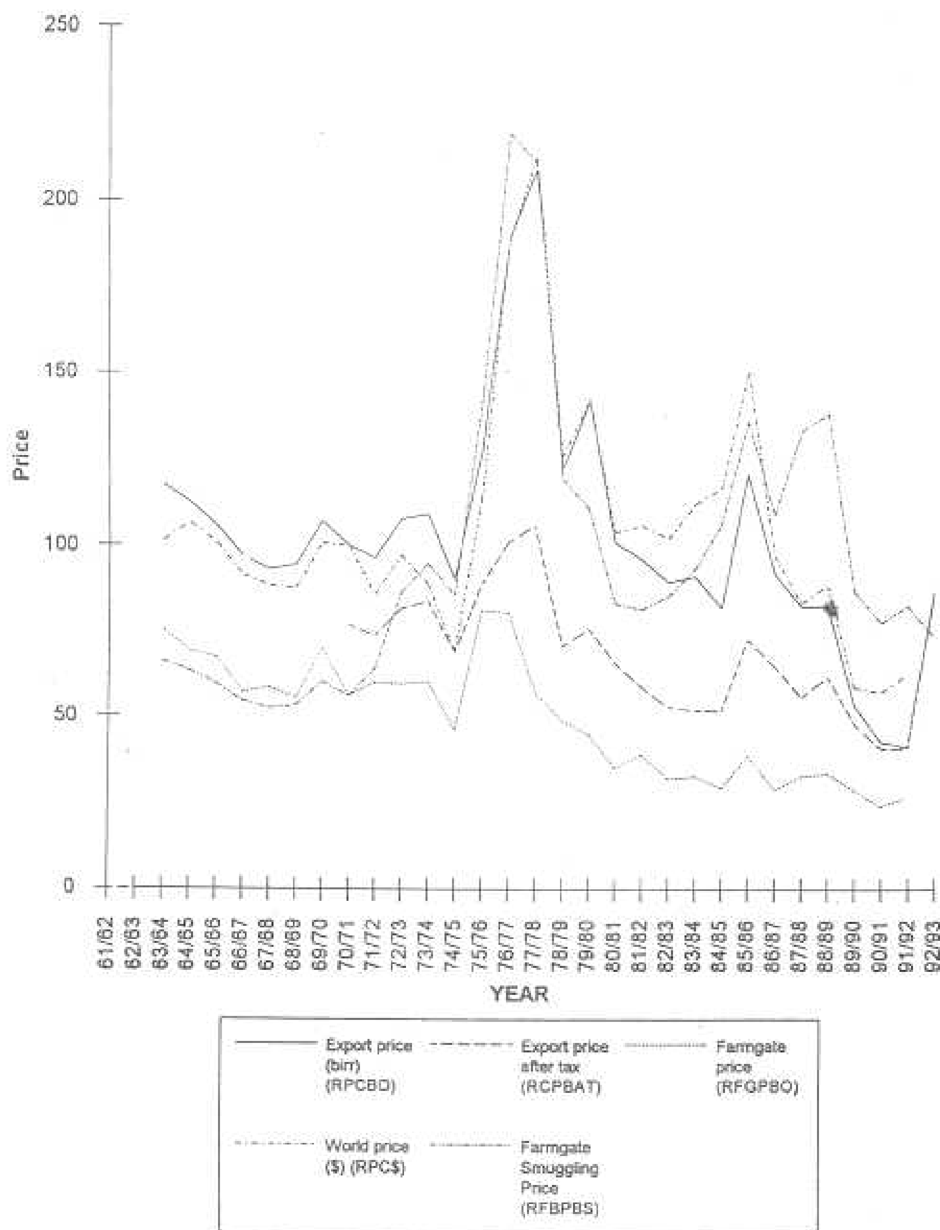


Figure 2 shows the results. First, the unit export value index in dollar prices reflects the evolution in the world price for coffee. Prices gradually declined in the 1960s, but they suddenly surged up during the coffee boom years in the mid-1970s. Afterwards, prices declined again, but quite high levels were reached again around 1985/86. Since then, world prices have slumped to all time lows. The Ethiopian birr unit export value index follows this pattern. In the 1960s and early 1970s, it stayed somewhat above the dollar price index, suggesting some undervaluation relative to the levels in the base-year 1970/71. From late 1970s up to 1980, the two prices were virtually identical, but then overvaluation set in. The overvaluation became large by the mid-1980s, though it declined for a while afterwards; it started growing again from 1990 onwards. Finally, the devaluation of September 1992 went beyond what was needed to restore the terms of trade of coffee in domestic currency, relative to the international terms of trade - at least compared to what they were in 1970/71 - resulting in the 1992/93 index ending much higher than the dollar price index. In other words, the devaluation created possibilities to increase incentives to coffee growers, beyond what was needed to keep up with international market incentives for coffee production.

In fact, the exchange rate policy did not create very high implicit taxation, at least compared to the direct taxation via export taxes (in various forms). Total taxes went up with higher world prices, resulting in a much flatter index of unit export value prices after taxes. As a percentage of the unit export value price, nearly a quarter was paid in taxes between 1970/71 and 1975/76, rising after the revolution to 44 percent in the latter half of the 1970s, and 40 percent between 1981/82 and 1985/86. With declining world prices, rates dropped to about 25 percent between 1986/87 and 1989/90. The further decline in world prices and the start of gradual economic reforms brought the tax rate down to about 4 percent in 1990/91 and 1991/92. By 1992/93, taxes as a percentage of the unit export value index were very small.

The farm-gate prices are heavily affected by these export taxes. In fact, they were calculated relative to these prices, with deductions at the various levels of the marketing chain. Recall that the farm-gate prices from 1984/85 onwards are the actual prices where as those before this date are calculations relative to the auction price in Addis Ababa, an important part of the marketing chain. Despite a lot of political and economic upheavals in the 1980s, the marketing deductions did not change dramatically as figure 2 confirms. Consequently, the estimated farm-gate prices for the earlier period may well be quite reasonable approximations. The series consistently mirrors as one would expect the unit export value series after tax. The implication is that the series reflects the declines of the world prices, but has not been allowed to benefit from the boom in the mid-1970s nor from the mini-boom in the mid-1980s. Ever since the revolution in mid-1970s, prices have declined. The first recovery came only after the devaluation. Note however that the increase is far less than the increase in the after-tax unit export value index.

Finally, the smuggling price needs to be considered. Note that this price is calculated with moderate assumptions about marketing margins so that it will mainly reflect the effects of the parallel market exchange rate and the high coffee taxes. Incentives to smuggle must have been low in the 1960s, according to these estimates. A first jump came in the early 1970s when the parallel market rate for currency moved up with increased policy

uncertainty before the revolution. The high taxation during the coffee boom and further rise in parallel market exchange rates more than doubled the smuggling price for coffee in just two years. Even though it declined with declining world prices in the first part of the 1980s, it shot up again in the mid-1980s, staying at high levels despite lower world prices by virtue of further depreciation of the birr in the parallel market. Even after the devaluation, a large premium remained in 1992/93 in the parallel market, implying that the smuggling price at the producer level has remained substantially higher than the official market price: strong incentives to smuggle coffee remain.

Table 2 summarizes the effects on the coffee price of the various implicit and explicit taxes, with 1970 referring to the coffee year 1970/71. It gives the percentage increase in the real coffee price which could have been possible if a particular explicit or implicit tax had been removed. The total effect of export taxes and exchange rate overvaluation is particularly large in the period since the mid-1970s. Between 1976 and 1980 prices could have increased by more than 130 percent if virtually all export taxation were abolished. Between 1981 and 1985, this went up to 176 percent, with increasing implicit taxation through the overvaluation of the birr exchange rate. Since then, lower world prices gave less possibilities to increase producer prices, but still more than 70 percent higher prices could have been paid between 1986 and 1991, increasingly due to increasing overvaluation. Devaluation has rectified the taxation of coffee, as the figures for 1992 show, relative to the 1970/71 levels. Ignoring any effect of the marketing margin, prices now would have only been a quarter of the present coffee producer prices if devaluation had not taken place.

Table 2. Effects of Taxation

	Percentages with which real official market coffee producer prices could have increased if taxation were removed						
	63-69	70-75	76-80	81-85	86-89	90-91	92
Effect of tax (1)		43%	128%	111%	65%	6%	3%
Effect of overvaluation (2)	-11%	-22%	5%	64%	14%	70%	-75%
Total Effect of overvaluation and tax (3) = (1) + (2)		21%	133%	176%	79%	76%	-72%
Effect of margin kept at 1984/85 level (4)				15%	13%	-28%	46%
Total effect of overvaluation, tax and margin 1984/85 : (5) = (4) + (3)				191%	92%	47%	-26%
Premium on smuggling (% relative to official producer price)	-9%	45%	173%	195%	273%	216%	70%

This result is, however, somewhat misleading. It assumes that the marketing margin in each year including 1992/93 has been reflecting real marketing costs under efficiency. If the marketing margin had stayed exactly at its 1984/85 level (in real terms), in most years of the 1980s, prices could have been somewhat higher. However, by 1990/91 and 1991/92, margins seem to have been squeezed, allowing the coffee prices paid to farmers not to drop by a further 28 percent. After the devaluation, margins became in real terms 46 percent higher than that in 1984/85 . This may be a reflection of somewhat higher marketing costs - the CPI used may not appropriately reflect the effects on fuel prices and other transport costs; in other words, the factors important for marketing costs.

Still, the large increase in margins for the marketing agents seems to be excessive, and the result was that despite an increase of close to 150 percent in the birr/dollar exchange rate, farmers' prices are only about 60 percent higher in real terms than those before the devaluation (ie. the net effect of devaluation and increased margins is that removing both effects would reduce prices by a quarter). Marketing agents have taken the lion's share of the effects of the devaluation. Note further that the increase in farm-gate prices in 1993/94 is unlikely to have reversed this fundamentally.

The premiums which farmers would get from smuggling coffee on top of the official price are also shown in table 2, expressed as the percentage of official farm-gate prices farmers participating in the parallel market would have got. Since the latter part of the 1970s smuggling allowed large rents to farmers, with parallel market farm-gate prices which may well have been up to 4 times the official price by the end of the 1980s. With the gradual removal of export taxes and the reduction of official margins, smuggling premiums started to decline in the beginning of the 1990s. The devaluation erased most of the premium, even though a 50 percent premium in parallel market exchange rates initially remained. The increased margins in the official market meant that coffee prices in the parallel market were estimated to be still 70 percent higher than the official prices[8]. Note that these parallel market prices for coffee are calculated as national averages, using conservative estimates of marketing margins. However, some additional risk premium may need to be deducted. But this risk premium is in many areas not likely to be very large, since a lot of coffee is grown in areas with easy access to neighbouring countries.

IV. EFFECTS OF COFFEE PRICING

Coffee pricing policy and the incentives to smuggle coffee are likely to have affected coffee production and official market supply considerably. In this section we will try to quantify this effect. Data on coffee prices could be reconstructed going back up to 1963/64. Supply to the official market data since that date are also available. The approach taken is to estimate an official market supply function as a log-linear approximation. The dependent variable is the log of the total supply to the auctions from all the regions per coffee year.

The first explanatory variable attempts to measure the 'switching effect' between the official and the black market. We use the logarithms of the ratio of the incentive prices for

coffee in both the black and the official. Since supply to official channels has to be looked at relative to the incentives to supply in the black market, the ratio, rather than the levels of official and smuggling prices, was used. This also means that the results will be independent of the choice of the base-year and the actual level of the smuggling price in that year, contrary to the analysis in the previous section. Furthermore, since all the variables are in logarithms, the use of the calculated producer price index for smuggled coffee is equivalent (up to some constant) to using the unit export value index expressed in birr using the black market exchange rate. It seems reasonable to assume that the producer prices, for coffee that will be smuggled, will be related to the border price using the black market exchange rate. Therefore, the only assumption we need to make in the analysis is that the actual price received by farmers is in some sense proportional to this border price, without needing to specify explicitly the marketing margin nor the risk premium. We do not try to model the black market for domestic consumption of coffee separately. Since coffee is very tradable, it is reasonable to assume that the domestic black market and the smuggling market are integrated, and the domestic black market price will be closely related to the smuggling prices: for farmers and agents in the chain it does not matter whether coffee is in the end smuggled out of the country or moved to consumers to other parts of the country.

Relative black market to official prices will measure the incentives for farmers behaviour as traders, not as producers. In particular, if both official and black market prices go up, farmers may be producing more, and supply more to the official market as well, despite a constant ratio between official and black market price. This effect would be the production supply response of farmers. The expectation would be for this response to be positive. Two forms of production responses ought to be considered: aggregate and relative supply responses. An aggregate supply response measures the production increase following an increase in the price which does not imply any reduction in the output of alternative crops. A relative supply response measures the increase in production of one crop which occurs at the cost of a reduction of the output of another crop through an increase in one crop price relative to other crop prices.

To assess the relative price responsiveness, the main competing crop needs to be included. A typical alternative for coffee is *enset* (false banana) in Ethiopia. *Enset* is highly valued as a food crop. As a cash crop, it has its limitations, since the market for it is confined to specific ethnic groups and since it is bulky to transport. Most coffee producers would intercrop coffee with *enset*, but reliance on the latter for cash earnings is rather rare. In some areas, (such as in Kembata), farmers have started to grow avocados, other vegetables or tobacco as alternatives to channel new investment into. Fruit trees have also been introduced in larger numbers. However, by far the most popular alternative for coffee appears to be *chat*, (Q'at), the mild stimulant increasingly popular throughout Ethiopia and in the surrounding countries (Djibouti, Somalia, Yemen and other Arab countries). Even though it has been made illegal in most Western countries, its consumption is fully legal in Ethiopia and the neighbouring countries.

Even though its optimal growing conditions are not exactly the same as for coffee, in most coffee growing areas it has become a highly valued alternative crop. Indeed, during

field trips, we found *Chat* being grown for sale not just in its traditional areas in Hararghe, but also in Jima, Shashemene (Southern Shoa), Sidamo, Kembata, Gurage and even as far afield as Debre Libanos (Gojjam), though with very little success in the latter. *Chat* is a perennial crop, just as is coffee, but it can be harvested already after a few years. The young leaves can in principle be harvested gradually throughout the year, but after harvesting, they need to reach the market still fresh to keep its value. Consequently, most peasants seem to wait before harvesting until itinerant traders pass nearby. Transport and marketing is entirely controlled by private traders, and government intervention is minimal. *Chat* is moved to the markets by trucks and other vehicles, but also by chartered planes to Djibouti and to the Arab world.

Figures 3 to 5 illustrate the attraction to enter into chat production. Figure 3 gives the unit export value index, deflated by the CPI, since the beginning of the 1960s, data availability permitting. Trade statistics for some years have been repressed, since by the 1960s it was considered too sensitive to publish information on *chat*, since it has all the characteristics of a soft drug. Export taxation has consistently been minimal (close to 4 percent on average), so this index will give an indication of the changing incentives to produce the crop, assuming that farm-gate prices are directly related to export prices (which is likely since it is a tradable, not liable to controls). The real dollar price index, calculated using the official exchange rate and the manufacturing unit value index, gives the unit export value index in dollars, which is the international terms of trade of chat, and avoiding a bias because of overvaluation in the former index, as before. Finally, an export unit value index in birr is presented using the parallel market exchange rate, to show incentives to smuggle the commodity. All figures are scaled to 1970/71 equal to 100. (Note that the calculations are similar to the one for coffee presented earlier.) The figures show that world *chat* prices experienced a temporary slump in the 1970s, but since the mid-1970s they have been rising to reach double of their world price levels of 1970/71. The devaluation has meant that even at the official exchange rate, prices are about 3 times the 1970/71 levels, and double the levels of the mid-1980s. The rise in the parallel market exchange rate has meant that incentives to smuggle the commodity have consistently been rising: levels are close to 4 or 5 times the 1970 level, and 10 times prices of the mid-1970s. The main reason for the rise in world prices is the rapidly expanding demand in the Arab world.

Figure 4 shows the prices of coffee and chat, using the unit export value indexes of both products, reflecting the relative incentives on the world market. This implicitly gives the relative incentives in the parallel market or the relative incentives if the coffee market were liberalised and taxes were abolished. A second index gives a relative price index of the official coffee market price and the export unit value index for *chat* at the parallel exchange rate. The latter will be directly related to the parallel market farm-gate price for *chat*. Since no control mechanisms on the export of *chat* existed (such as price fixing, trade restrictions, high export taxation and other government interventions), there would have been little incentive to use 'official' channels for exporting the commodity. Given the large premiums involved in the parallel exchange market, it appears that the parallel market *chat* price would best reflect the incentives to grow *chat*. Consequently, the index in figure 4 will therefore show the relative incentives to grow chat or to grow coffee for the official market.

The pattern of the indexes of international or domestic prices is initially similar, even though the taxation in the coffee market has meant that relative farm-gate prices declined well before the fall in world prices for coffee and the increase in world chat prices. During the coffee-boom, the relative coffee - *chat* prices were 6 times higher than that in 1992/93, even ignoring the overvaluation effect. This is unlikely to be a temporary change, it is rather part of a longer cycle of relative prices.

Figure 5 gives relative unit export value indexes since 1944. Chat prices did not follow the commodity boom periods near the Korea-war and in the 1970s. Nevertheless, the increase in *chat* prices relative to coffee goes much beyond any relative price level in the post-war period. These graphs show that, during the last decade, *chat* prices have risen very substantially. The increases are largely demand-led, and the substantial habit formation involved in its consumption are likely to make these increases to persist in the medium run. It provides strong incentives for farmers to invest into this crop rather than planting new coffee. It may not be the only alternative to coffee in Ethiopia, but the large relative price increases have made it very attractive. In the supply function official coffee prices relative to parallel market *chat* prices will be used to capture the changes in relative incentives. The missing data for some years in the 1960s for *chat* were reconstructed using linear interpolation.

In the estimation, a relative price index of the official coffee market price and the export unit value index for chat at the parallel exchange rate is used to capture the relative incentives to produce coffee and chat. Consequently, it will allow us to assess the relative supply response of coffee relative to *chat*. The expectation is a positive effect: the higher the relative coffee and *chat* price, the more coffee will be grown. The existence of an aggregate supply response can also be tested via the inclusion of the official coffee price deflated by the consumer price index, as was used before. If this additional effect is positive, then one may conclude that coffee production can be increased without a reduction in other crops.

Since coffee is perennial crop, some further considerations have to be taken into account. Coffee is a perennial crop, and substantial lags (3 to 7 years) exist before a harvest can be obtained from any newly planted coffee trees. This means that farmers will have to base their planting decisions (and therefore supply) on their expectations about future prices. By lack of data on expectations, lagged prices are included to account for the lags in production responses[9].

Estimating a supply function implies an important assumption about the constancy of parameters over the sampling period. This could especially be troublesome for the present data set. The period after the revolution must be looked upon as being fundamentally different from the earlier period. The change in economic policies after the revolution meant that a strict control regime was installed, in which all factor markets became liable to important restrictions. If supply response is possible through a reallocation of factors of production to more profitable activities, then the supply response may well have been reduced considerably in the period after the revolution. Furthermore, the investment climate will not have been conducive for long term investment and since coffee

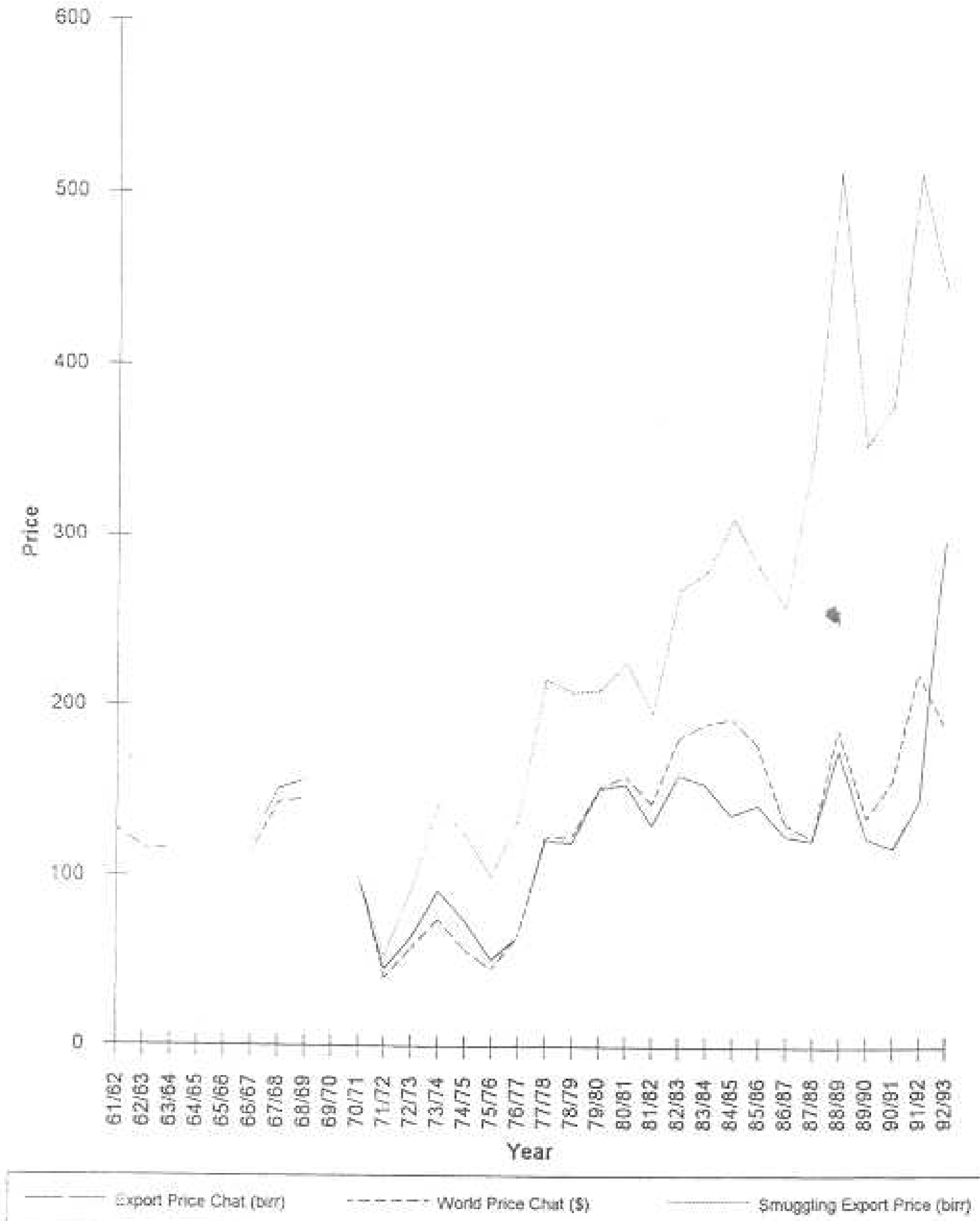
is a perennial crop, the responsiveness to incentives may have been reduced even further. To allow for a different supply responsiveness, we allowed for a different production response for the period after 1973/74 than before.

Finally, we allowed for a temporary disruption in supplies to the official markets in three periods. First, between 1973/74 to 1976/77, to account for the effects of first the revolution, followed by the uncertainty over land ownership until the land reform in 1976. The 1977/78 figures reflect the first full coffee year after these disruptive period. A dummy for the period mentioned was introduced. Secondly, we allow, using a dummy, for the specific disruption during the worst year of the drought and the famine in 1984/85. The famine disrupted not just the main (Northern) famine areas, but the effects were felt throughout the country on production and through transport bottlenecks and migration disrupting food and other trade. Finally, we allow for a dummy for the coffee year coinciding with the last year of the Mangiest regime and the take-over by the new government. War disrupted in that year movement considerably, and Addis Ababa was effectively closed off for a few months, implying difficulties to deliver coffee to the capital. The introduction of these dummies may seem arbitrary, but their main effect has been to increase the efficiency of the estimation. Virtually exactly the same, but less significant, results were obtained if they were dropped, but the same conclusions were reached, suggesting that their combined effects have little correlation with the actual movement of relative prices.

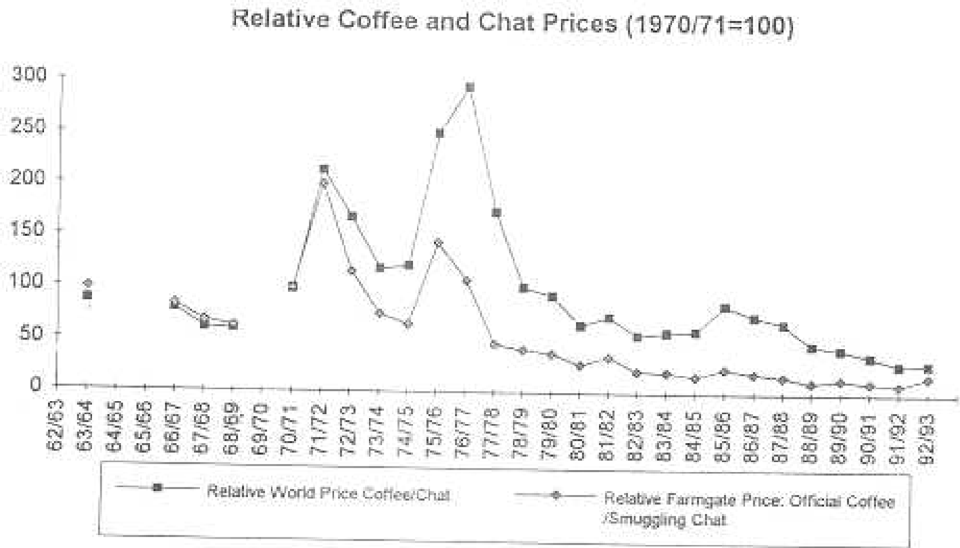
$$\ln Supply_t = \alpha_0 + \alpha_1 . \ln \frac{P^{cof}_{smug,t}}{P^{cof}_{off,t}} + \alpha_2 . \ln \frac{P^{cof}_{off,t}}{P^{chat}_{smug,t}} + \alpha_3 . \ln \frac{P^{cof}_{off,t-i}}{P^{chat}_{smug,t-i}} + \alpha_4 . \ln \frac{P^{cof,60s}_{off,t}}{P^{chat,60s}_{smug,t}} + \alpha_5 . \ln \frac{P^{cof,60s}_{off,t-i}}{P^{chat,60s}_{smug,t-i}} + \alpha_6 . dummy_{74-76} + \alpha_7 . dummy_{84} + \alpha_8 . dummy_{91} \ldots \quad (6)$$

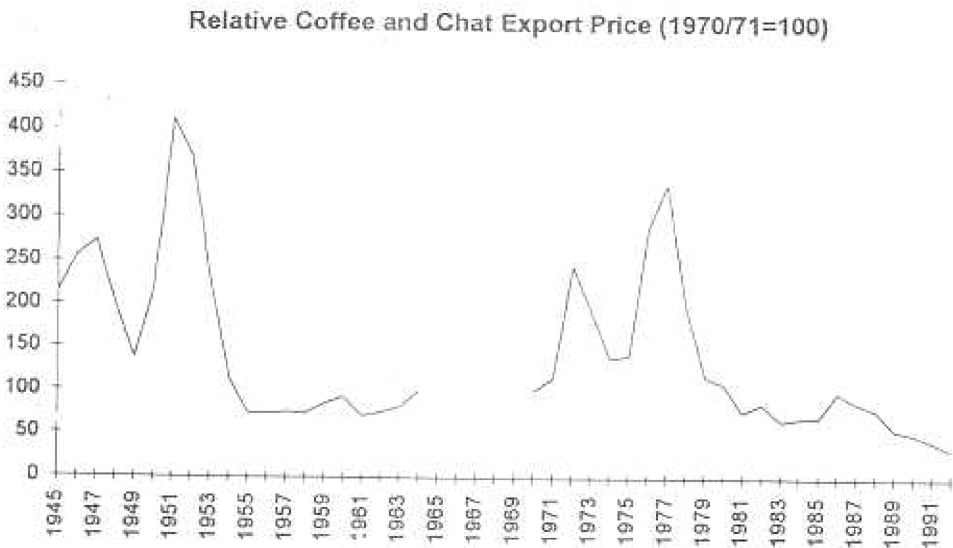
All these variables were included in a log-linear specification of total official supply (equation (6)). The premium was expressed as the ratio between black and official market prices for coffee ($P_{smug,t}^{coff}$ / $P_{off,t}^{coff}$), and the coefficient is expected to be positive. Note that no lagged price is included: one is likely to be able to switch between markets relatively fast. To capture supply response to increases in official market prices from an estimation of the official supply function, the ratio between official coffee prices and its main competing crop, chat ($P_{off,t}^{coff}$ / $P_{smug,t}^{chat}$) is included. We included the same price series again for the sixties, setting its values zero after 1972/73, to capture the potentially different supply response in each period. Consequently, the short run supply response in the 1960s can be found as ($\alpha_2 + \alpha_4$), while in the later period it is only α_2. The long run supply response will be found as ($\alpha_2 + \alpha_3 + \alpha_4 + \alpha_5$) in the 1960s, while from the 1970s it is ($\alpha_2 + \alpha_3$). An issue to be resolved is the choice of the lag structure for prices. Since it takes at least of few years before any newly planted chat or coffee can be harvested, some experimentation was done. The (absolute) minimum number of years needed before any newly planted coffee or chat can be harvested is about 3 years, even though for coffee trees it takes longer to mature fully. The estimates were quite similar when we used 3 or 4 lags.

FIGURE 3



FIGURES 4 AND 5





So in order not to lose too many degrees of freedom, three years lagged prices were included to capture the long-run planting effects on chat and coffee.

Table 3. OLS-Regression of Logarithm of Official Supplies

Dependent Variable : ln(Supply): Sample 1966/67 to 1992/93		
Variable	Coefficient	t-Value
Constant	4.59	(124.23)**
$\ln(P_{smug,t}^{coff}/P_{off,t}^{coff}$	-0.11	(-2.21)**
$\ln(P_{off,t}^{coff}/P_{smug,t}^{chat})$	-0.10	(-1.11)*
$\ln(P_{off,t-3}^{coff}/P_{smug,t-3}^{chat})$	0.10	(1.62)*
$\ln(P_{off,t}^{coff,60s}/P_{smug,t}^{chat,60s}$	0.17	(1.97)**
$\ln(P_{off,t-3}^{coff,60s}/P_{smug,t-3}^{chat,60s}$	-0.06	(-0.40)
$Dummy_{74-76}$	-0.23	(-3.43)**
$Dummy_{84}$	-0.38	(-6.24)**
$Dummy_{91}$	-0.41	(-5.65)**
$R^2 = 0.77$	DW= 2.10	
Joint Significance F(8,18) = 7.46**		
Hausman-test for endogeneity		
- adding predicted value of ln(Psmug,tcoff/Poff,tcoff): t-value = 1.098		
- adding predictd value of ln(Poff,tcoff/Psmug,tchat): T-value = 0.908		
**= Significant at 5%	*= Significant at 10%	

Table 3 shows the results of the log-linear OLS regression of official supply (1970/71=100)[10]. First, a significant negative effect can be detected on the relative prices in each market: a ten percent increase in the black market coffee price relative to the official price will reduce supplies in the official market by 1.1 percent. This is clear evidence for switching on the part of farmers from supplying in the official channel to supplying in the black market in response the increasing premium during the 1970s and 1980s. Secondly, a significant long-run supply response to increases in official market prices(α_3) can be detected for the period as a whole, but also a significant additional short-run effect for the 1960s (α_4). No short-run effect can be detected for the later period (α_2), nor any extra long-run effect for the 1960s (α_5). These effects have to be interpreted with caution because of the insignificance of the latter terms.

Table 4 summarizes the implications of the production response estimates. If we ignore the insignificant terms (ie. put them equal to zero, as the test results would not discourage us from doing so), then the short-run elasticity since the 1970s has been virtually zero, but the long-run elasticity is 0.10 percent. In the 1960s, the elasticities both in the

short-run and in the long-run were higher, 0.17 percent and 0.27 percent. The latter estimates are quite in line with estimates for coffee in other countries (Askari and Cummings, 1977). If the insignificant estimates are included as well, then the results are somewhat different, but again, the estimates in the 1960s are higher than afterwards. In fact, the elasticities may even have been negative in the short run and zero in the long run in the 1970s.

Table 4. Supply Response Estimates

Effects of 1 percent change in coffee prices relative to Chat black market prices on official supplies (Ignoring insignificant estimates)		
	Short-run	Long-run
1966/67 - 1972/73	0.17%	0.27%
1973/74 - 1992/93	0.00%	0.10%

Some further tests were performed on the presence of an *aggregate* supply response, by including official coffee prices in real terms. Missing variable tests were performed by adding these variables in various combinations and performing F-tests under the null hypothesis that the additional variables were jointly equal to zero. An F-test of adding present and lagged (3 lags) coffee prices for the entire period and for the earlier period was insignificant ($F(1,17)=0.620$), not rejecting the null that they were irrelevant. Other combinations of these variables, such as testing whether they matter only in the 1960s, or only in the short run, or only in the long run, also did not suggest that they were missing variables in the regression. Consequently, no evidence exists to suggest that an aggregate supply response existed in coffee, neither in the 1960s nor later. The only supply response is relative to other, competing crops.The result implies that expansion of coffee production in response to better incentives will most likely be accompanied by a reduction of other crop output. Given that land is increasingly become scarce in highly fertile areas, this ought not to come as a surprise. In other countries similar results have been found (for evidence on Tanzania, see [14, PP. 157-194]).

The period after the revolution is therefore clearly characterized by a reduction in the supply responsiveness of production, both in the short run as in the long run. The response may even have become insignificant during this period. The restrictions on factor markets for land and labour, rationing in input and in consumer goods markets, and a generally unfavourable investment climate would contribute to little resource mobility and insignificant responses to changing incentives [16, PP. 1400-1417]. In the 1960s, it was possible to increase production in the short run by switching resources and inputs between competing crops, while later on factor mobility may have become far more limited during a period of controls over labour, fertiliser and pesticide markets.

Even though the production response found in the model is broadly consistent with those in other coffee producing countries and in line with expectations, the relatively low significance urges us to be cautious about the interpretation of the results. The estimated

coefficient on the relative smuggling and official price of coffee - the switching effect - seems more robust[11]: increases in the premium caused quantities of coffee to switch from the official market to the black market. From this figures, and assuming that in the beginning of the 1970s the black market did not exist, it is possible to quantify the volumes of coffee which were smuggled. A counterfactual official supply series was calculated, assuming that parallel market prices relative to official market prices had remained at their 1970/71 level. This counterfactual series was then subtracted from the actual official supply series. Table 5 summarizes these results.

Table 5. The Size of the Parallel Market

Switching Effect: Lost Supplies to Official Channel from increased smuggling						
Year	1973-75	1976-80	1981-85	1986-89	1990-91	1992
Extra Official Supplies (in tons) if no incentive to smuggle (average per year)	4997	10281	11350	14956	9479	5377
Estimated black market share	6%	11%	11%	14%	12%	6%
In million dollars (export unit values)	7	37	37	44	22	12

Source : Own calculation from different documents.

The estimates suggest that during the period 1976-91 about 10 to 15 percent of total marketed production was switched from the official channel into the black market. Since the devaluation, the black market may have contracted by about half. The estimates do not account for the additional effects captured by the dummies in the regression. While the 1984-dummy additional negative shock is mainly related to the drought and famine, some of the negative effects on the official supplies in the immediate period after the 1974 revolution ($Dummy_{74-76}$) and the fall of the Mengistu-government ($Dummy_{91}$) may have involved additional quantities sold in the parallel market. Note however that the 1992/93 estimated share of the parallel market is unaffected by this: even if in 1991/92 substantially higher quantities went into the black market, by 1992/93 the black market share after the devaluation is still about 6 percent.

Unfortunately, there is very little scope to cross-check these estimates with published statistics[12]. Statistics from the Sudan or Kenya on their coffee *exports,* or at any point of the marketing chain do not distinguish between Ethiopian or local coffee. Djibouti is a different case: since it produces no coffee itself, all the coffee exported is Ethiopian coffee. Even though Djibouti's trade statistics are often decades out of date, the ECMC obtained some data on coffee exports, and which can be cross-checked with its own statistics. In particular, data could be obtained on Harar coffee, a particular, high quality coffee variety, only cultivated in the Haraghe region. This particular quality is only exported via Djibouti,

and is virtually not sold for domestic consumption (in Ethiopia and in Djibouti), since it is sold at a high premium at the world market. Consequently, total marketed production for this variety is close to the total exports from Djibouti. From these data and from the data on official coffee supplies to the ECMC of this coffee quality, it was found that average exports from Djibouti during the period 1984 and 1991 for this variety was about 4180 tons per year, of which 3470 tons on average could be accounted for by the ECMC as official exports from Ethiopia, suggesting that about 710 tons came from coffee smuggled from Ethiopia. Since no other destination is likely to exist for this particular coffee variety, given the location of the only production region, this leads us to find an estimate of the black market share in total marketed coffee production of this quality of about 17 percent. This estimate is slightly higher than what was found from the econometric analysis. However, the area involved is notorious for its traditions of smuggling and contraband trade, and government control in that region was very weak during that period. In some other areas smuggling is likely to have been far more difficult, so the estimates from the econometric model may be realistic for the country as a whole.

These estimates of black market activity imply that the benefits to be expected from the reform programme and the devaluation may not be very large, at least with respect to encouraging the return to the official channels of the black market coffee exports. The black market in coffee is likely to disappear and the quantities may flow back to the official market. However, the gains to be expected from the disappearance of the black market in the short run may not be more than about 12 million US dollars of extra export earnings at 1992 prices, or about 2 percent of the trade deficit in 1992.

V. CONCLUSIONS

This paper attempted to analyze coffee pricing and its consequences in Ethiopia since the 1960s. Taxation, overvaluation and high marketing margins contributed to the development of black markets for coffee in this period. During the second half of the 1970s, export taxation was the most important factor for the low official market prices. In the first half of the 1980s this effect was compounded through increasing overvaluation. Just before the fall of the Mengistu government, taxation became down, but overvaluation increased. In 1992 the trend was reversed with a substantial devaluation. Nevertheless, increased marketing margins reduced the net increase in coffee prices. These forms of implicit and explicit taxation resulted in substantial premiums in the black market, of around 200 percent and more in the 1980s. After the devaluation, a 70 percent premium has remained.

Testing the responsiveness to the premium in the black market is quite straightforward, since lags are unlikely to be relevant. A negative effect was found, consistent expectations. Higher black market prices resulted in quantities to be switched to the black market. It is estimated that these quantities resulted in a decline in foreign exchange earnings in the official market equal to between 20 and 40 million dollars per year between 1976 and 1991.

With respect to the production response, only evidence for an effect relative to its main alternative, chat, could be found. Nevertheless, the estimation was hindered by the perennial nature of coffee, with substantial lags between planting and harvesting. Furthermore, the results are likely to have been convoluted by other factors, such as the repression of factor markets during most of the period, and other policy factors. Nevertheless, a small, but significant long run effect could be detected since the 1970s (0.10 percent following a one percent price increase). For the 1960s, a significant additional short run supply response (0.17 percent) could be detected, and by implication a larger long run supply response (0.27 percent). However, other policy factors during the period after the revolution could also account for this difference.

The implication of the results is first that the black market may not have been as large as is sometimes is thought. During the period 1976 to 1991, the share of total marketed production which went to the black market is estimated at about 10 to 15 percent. While this is significant, and even if the recent reforms and further devaluations will succeed in making the black market become unattractive, its effect on exports and on the trade balance will remain relatively small.

The recent strong price increases of chat have made this crop a very attractive alternative, and the elasticities suggest that switching between crops has been taking place, especially if supply responses are restored to the levels found in the 1960s in response to the reforms. However, since the black market exchange rate will have been reflected in the farm-gate chat prices, the increases in the official market coffee prices following devaluation will contribute to some strengthening of the position of coffee production relative to *chat*. The recent strong increases in coffee prices following world price movements will help, at least temporarily. Nevertheless, given the possibly secular rise in *chat* prices, policy makers may be fouled by believing that coffee production expansion will be at the root of strong improvements in the trade balance.

These conclusions may seem to be very pessimistic. On the one hand, coffee is a crop for which Ethiopia is renowned in the world and it has an undeniable comparative advantage of producing some of the highest quality varieties. Nevertheless, its contribution to the regeneration of the Ethiopian economy may be limited. Chat, on the other hand, is essentially a soft drug with likely addictive characteristics. While it undoubtable has a social function, some are concerned about its negative impact on health and social life. To put the future of Ethiopian exports in this crop may seem questionable.

This reading of the results is however too limited. The relative incentives have undoubtably moved in favour of chat in recent years and for the near future this situation may well remain so. Nevertheless in the long run the international market for *chat* is likely to be relatively limited. Despite the nature of *chat*, it is very encouraging to observe that farmers in rural Ethiopia respond significantly to increased incentives for alternative crops, and in this process better themselves. The widespread adoption of *chat* illustrates that many Ethiopian farmers are far more entrepreneurial and dynamic than policy makers may give them credit for. The worst possible policy response to the increased popularity of chat would be to try to repress this market and even make it illegal. The consequence would be

that Ethiopian farmers are again discouraged to grow the crops which are most profitable for them. At the same time, it would be providing new incentives to set up black markets and induces again losses of foreign exchange via legal trade.

The constructive response would be to realize that coffee may not be the future for Ethiopia. Farmers will only produce coffee if it is profitable for them to do so. At present, chat is the most profitable alternative, but in the future other crops may emerge. Nevertheless, the institutional set-up is biased against any alternative for coffee. Marketing infrastructure, the provision of modern inputs or extension services in the traditional coffee growing areas are all exclusively focusing on coffee, and biased against any potential alternatives. Investment in marketing infrastructure and non-price support for crop agriculture should not be limited to coffee. Export crop policy in Ethiopia should recognize reality and provide positive and equal support to all activities, rather than just sticking to the traditional support for coffee.

NOTES

[1] Collier and Gunning (1992) have provided a plausible explanation for this. Very few consumer transactions on tradables passed via the official channels, but, instead, via the black market, where prices reflected the black market exchange rate. Devaluation of the official exchange rate would not affect these prices, especially since the official and black foreign exchange markets were relatively segmented with very little possibility nor incentive for cross-trade. The negative inflation figures are slightly misleading because of the exceptionally good harvest in 1992/93. However, correcting for this effect, inflation figures remained very low and remarkable.

[2] For an overview of coffee marketing, see Akalu Negewo (1993).

[3] The evidence in this paper does nevertheless not support this view altogether.

[4] Data are for coffee years, ie. from October to September. All the data used are given in the appendix, with references of the sources involved. Further details on the data can be obtained from the authors on request.

[5] These estimates exclude the Hararghe data, to allow a direct comparison with the auction prices in Addis Ababa. Hararghe coffee is supplied to the Dire Dawa auction and is of a far higher quality, fetching better prices. Including them would not change fundamentally the results, but would be misleading with respect to the average marketing margins between the farm-gate and the auction prices.

[6] Consumer price indexes under systems of price controls and black markets may be poor indicators of actual prices if statistical offices concentrated on the official prices. In Ethiopia, however, the data collection procedures at the Central Statistical Authority may have avoided this problem since it always collected most of its data at the open market. Furthermore, for most consumer goods official prices were set for rationed sales at the government retail outlets, while it remained legal for private retailers to sell consumer goods at market prices. It is therefore unlikely that the CPI has been systematically and considerably underestimating the actual cost of living. Nevertheless, in some years, underestimation may have occurred, although no obvious alternative exists.

[7] At the time the parallel market exchange rate was about 2.50 birr for a US dollar, compared to 2.30 in the official market.

[8] Since then the premium has declined further through a further, gradual devaluation of the official exchange rate.

[9] This does not mean that short-run responses are not possible: farmers may respond to increased incentives by increasing their own labour supply on the crop or by increasing the use of fertilisers, pesticides, etc. Production can still increase in the short-run, even without new plantings. This short-run effect is however likely to be smaller than the long run response.

[10] No obvious problems with the error structure could be detected in this regression. Lagrange multiplier higher autocorrelation tests proved insignificant, as did χ^2-test for non-normality of the errors and a Reset test for adding the squared predicted values.

[11] The robustness of this coefficient was tested by the changing lag structure of the other variables and by including and dropping dummies for particular periods. Estimated values consistently remained between 0.075 and 0.12, and significant.

[12] The Central Statistical Authority is responsible for most data collection on production and yields for agricultural production. Their sample survey programme only focused on annual food crops, and no coffee statistics can be found in their publications. The FAO produces coffee area, yield and production statistics in its annual yearbooks on all countries of the world. The source of their data is

unclear. Until the end of the 1980s their statistics follows closely the pattern of the series of official supplies, with the exception of a few years. In 1984/85 (the year of the drought), FAO reports an unlikely record harvest, returning afterwards to the earlier trend. From 1990 the series becomes suddenly much higher than both the official series and our estimated total marketed production series. The FAO production increase coincides with a sudden jump in yields from between 400 and 470 kilogrammes per hectare in the 1980s to between 600 and 730 kilogrammes since 1990. Such yield increases were quite impossible in Ethiopia at the time, suggesting the unreliability of production and yield data. The same applies to the data on areas harvested: from 1991 the series suddenly shew of decline by one-third. The series had previously been revised downwards by almost half in 1986.

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APPENDIX

KEYS:

Tables

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Table 2: Effects of Taxation
Table 3: OLS-regression of logarithm of Official supplies
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Table 1. Deflators Used

Year (G.C)	Year (Eth. C.)	CPI '70/71=100	MUV$	E	EBM
61/62	1954		82	2.50	2.50
62/63	1955		81	2.50	2.50
63/64	1956	77	82	2.50	2.50
64/65	1957	85	83	2.50	2.50
65/66	1958	88	85	2.50	2.50
66/67	1959	89	87	2.50	2.50
67/68	1960	89	87	2.50	2.50
68/69	1961	90	89	2.50	2.50
69/70	1962	97	94	2.50	2.50
70/71	1963	100	100	2.30	2.30
71/72	1964	96	108	2.30	2.71
72/73	1965	100	123	2.07	2.95
73/74	1966	108	147	2.07	3.20
74/75	1967	116	168	2.07	3.48
75/76	1968	141	176	2.07	4.08
76/77	1969	169	188	2.07	4.25
77/78	1970	195	213	2.07	3.70
78/79	1971	225	243	2.07	3.58
79/80	1972	243	269	2.07	2.86
80/81	1973	257	278	2.07	3.03
81/82	1974	273	275	2.07	3.11
82/83	1975	276	270	2.07	3.50
83/84	1976	291	264	2.07	3.76
84/85	1977	336	262	2.07	4.24
85/86	1978	332	296	2.07	4.10
86/87	1979	315	332	2.07	4.30
87/88	1980	327	359	2.07	5.90
88/89	1981	352	365	2.07	6.10
89/90	1982	373	378	2.07	6.00
90/91	1983	470	391	2.07	6.70
91/92	1984	551	405	2.07	7.30
92/93	1985	551	405	5.00	7.50
93/94	1986	579	_	_	_

Definitions: (see also main text) Data are for coffee years.

CPI = Consumer price index (1970/71=100).
MUV$ = Manufacturing Unit Value Index (G5 countries) (1970/71=100)
E = Official exchange rate (Birr per US dollar)
EBM = Black Market Exchange Rate (Birr per US dollar)

Sources: All data compiled from publications available at the Institute of Development Research Library at Addis Ababa University, except for black market exchange rates and some of the data after 1989.

CPI = Statistical Abstracts since 1963 and data supplied by the Central Statistical Authority
MUV$ = World Bank Development Reports (various years) and Commodity Outlook Reports
E = National Bank of Ethiopia
EBM = Cowitt (various years), World Currency Yearbook Series.

Table 2. Nominal Prices

Year	Year (EC)	PCBO	CTAX	PCBAT	APB	FGPBO	PCS	PCBS	PChBO	Ch TAX	PCh BAT	PChS	PChBS
61/62	1954	1705			1307	1043	681	1705	2865			1146	2865
62/63	1955	1671			1268	1014	669	1671	2609			1043	2609
63/64	1956	2058			1655	1323	823	2058	2611			1044	2611
64/65	1957	2185			1681	1344	874	2185					
65/66	1958	2125			1700	1359	850	2125					
66/67	1959	1965			1456	1164	786	1965	2716			1086	2716
67/68	1960	1900			1496	1196	760	1900	3420			1368	3420
68/69	1961	1947			1431	1144	779	1947	3567			1427	3567
69/70	1962	2361			1941	152	943	2361					
70/71	1963	2284	535	1749	1610	1287	992	2281	2538	102	2436	1102	2535
71/72	1964	2118	496	1622	1651	1320	920	2492	1102	44	1057	478	1296
72/73	1965	2456	575	1881	1707	1365	1186	3500	1621	65	1556	783	2111
73/74	1966	2691	630	2061	1866	1492	1300	4100	2507	100	2407	1211	3876
74/75	1967	2398	560	1838	1532	1225	1158	4031	2177	87	2090	1052	3659
75/76	1968	1099	1220	2879	3281	2625	1980	8079	1816	75	1743	877	3579
76/77	1969	7523	3430	3893	3896	3115	3538	15035	2751	110	2641	1329	5648
77/78	1970	9330	4590	4740	3190	2550	4507	16677	5946	218	5700	2871	10629
78/79	1971	6281	3620	3661	3150	2519	3034	10863	6841	274	6568	3305	11812
79/80	1972	7886	3680	4206	3122	2496	3810	10896	9323	375	8948	4501	12879
80/81	1973	5932	2080	3852	2595	2075	2866	8683	10041	402	9640	4851	14698
81/82	1974	5991	2310	3681	3044	2434	2894	9001	8947	358	8589	4322	11441
82/83	1975	5660	2310	3350	2528	2021	2714	9570	11136	445	10681	5371	18812
83/84	1976	6076	2640	3436	2728	2181	2915	11017	11337	453	10884	5477	20593
84/85	1977	6116	2330	3986	2878	2261	3051	14465	11524	461	11063	5567	26388
85/86	1978	9171	3620	5551	3896	2938	4411	18116	11889	476	11414	5744	23740
86/87	1979	6645	1950	4695	2792	2087	3210	13911	9826	393	9433	4747	20569
87/88	1980	6171	2010	4161	3054	2461	2981	17688	10002	400	9602	4832	28668
88/89	1981	6662	1700	4962	2742	2717	3218	19739	15466	619	14847	7471	45824
89/90	1982	4560	510	4050	3018	2466	2203	13144	11577	463	11113	5595	33360
90/91	1983	4616	232	4384	3728	2593	2230	14866	13958	558	13398	6743	64933
91/92	1984	5227	109	5118	4214	3389	2525	18518	20223	809	19414	9770	71644
92/93	1985	10988	150	10838	7005	5468	2198	16487	41611			8122	62417
93/94	1986				8081	6309							

Definitions : (see also main text) Data are for coffee years.

PCBO = Export price for coffee in birr per ton (current prices); CTAX = Export tax paid per ton
PCBAT= Export price coffee after tax per ton (current prices); APB = Auction price for unwashed coffee at Addis Ababa
FGPBO = Farm-gate price for coffee per ton (national average excluding Hararghe price); PC$ = Export price in US dollars per ton (current prices)
PCBS = Export price in birr per ton in smuggling channel (current prices); PChBO = Export price for chat in birr per ton (current prices)
ChTAX = Export tax on chat exports in birr per ton (current prices); PChBAT =Export price chat after tax per ton (current prices)
PCh$ = Export price chat in dollars per ton (current prices); PChBS = Export price chat in smuggling channel per ton (current prices)

Sources : All data compiled from publications available at the Institute of Development Research Library at Addis Ababa University, except for black market exchange rates and some of the data after 1989. PCBO, CTAX, PCBAT, PC$, PChBO, PChBAT, ChTAX, PCh$: Data from Statistical Abstracts (various years) Foreign Trade Tables and (for most recent years) supplied by National Bank of Ethiopia and Ministry of Planning and Economic Development.
APB: National Coffee Board of Ethiopia, Coffee Statistics Handbook 1962/63 - 1971/72 (July 1973); Coffee and Tea Develpment and Marketing Authority, Coffee Statistics Handbook 1961-62 to 1975-76 (July 1977); Ministry of Coffee and Tea Development, Coffee Statistics Handbook 1967/78 to 1989/90, (December 1990), and for most recent years, data supplied by the Ministry of Coffee and Tea Development.
FGPBO:Calculated from data supplied by the Ethiopian Coffee Marketing Corporation (see text for details)PCBS, PChBS: Caculated from sources as in PCBO and EBM (see main text).

Table 3. Real Prices and Quantities

Year	RPCBIO	RPCBAT	RAPB	RFGPBIO	RPCS	RPCBS	RFBPBS	QUANTITY	RPCMBIO	RPCM$	RPCMBS
61/62								76077		122	
62/63								83470		117	
63/64	118		94	76	103	118	66	82552	134	116	134
64/65	113		87	69	107	113	64	92909			
65/66	106		83	68	101	106	60	77918			
66/67	97		72	57	91	97	55	99223	120	114	121
67/68	93		73	59	89	93	53	94226	151	143	151
68/69	95		70	56	88	95	53	97984	156	145	156
69/70	107		88	70	101	107	60	103741			
70/71	100	77	70	56	100	100	56	102388	100	100	100
71/72	97	74	75	60	86	114	64	100458	45	40	53
72/73	108	82	75	60	98	153	86	111185	64	58	91
73/74	109	84	76	60	89	169	95	79374	91	75	142
74/75	91	69	58	46	69	152	86	78918	74	57	124
75/76	127	89	102	81	114	251	142	81181	31	45	100
76/77	190	101	101	81	190	390	220	64565	64	64	112
77/78	209	106	72	57	215	375	211	90048	120	122	215
78/79	122	71	61	49	126	212	119	96620	120	124	207
79/80	142	76	56	45	143	197	111	92040	151	152	209
80/81	101	66	44	35	104	148	83	95641	154	158	226
81/82	96	59	49	39	106	145	82	92813	130	142	195
82/83	90	55	40	32	102	152	86	115857	159	181	269
83/84	93	52	41	33	112	166	94	96988	154	188	279
84/85	82	52	38	29	117	189	106	64349	135	192	310
85/86	121	73	51	39	151	242	136	87435	141	176	282
86/87	92	65	39	29	98	194	109	88765	123	130	258
87/88	83	56	41	33	84	237	134	82095	121	122	346
88/89	83	62	34	34	89	246	139	115502	173	186	514
89/90	54	48	36	29	59	154	87	90650	122	134	353
90/91	43	41	15	24	57	139	78	77316	117	156	377
91/92	42	41	33	27	61	147	83	60155	145	219	513
92/93	87	86	56	43	55	131	74	87669	298	187	447

Definitions: (see also main text) Data are for coffee years.

RPCBO = Export price for coffee in birr per ton (real terms, 1970/71=100)
RPCBAT= Export price coffee after tax(constant prices, index relative to RCPBO)
RAPB = Auction price for unwashed coffee at Addis Ababa (constant prices)
RFGPBO = Farm-gate price for coffee per ton (national average excluding Hararghe price, in real terms, index relative to RCPBO)
RPC$ = Export price in US dollars per ton (real terms, 1970/71=100)
RPCBS = Export price in birr per ton in smuggling channel (real terms, 1970/71=100)
RFBPBS = Estimated farm-gate price for coffee per ton in smuggling channel (real terms, relative to RCPBO)
RPChBO = Export price for chat in birr per ton (real terms, 1970/71=100)
RPCh$ = Export price chat in dollars per ton (real terms, 1970/71=100)
RPChBS = Export price chat in smuggling channel per ton (real terms, 1970/71=100)

Sources: Prices are calculated from tables 1 and 2. For details see main text.
Quantities = total supply marketed in official channels. Compiled from National Coffee Board of Ethiopia, Coffee Statistics Handbook 1962/63 - 1971/72 (July 1973); Coffee and Tea Develpment and Marketing Authority, Coffee Statistics Handbook 1961-62 to 1975-76 (July 1977); Ministry of Coffee and Tea Development, Coffee Statistics Handbook 1967/78 to 1989/90, (December 1990), and for most recent years, data supplied by the Ministry of Coffee and Tea Development.

Table 4. Relative Coffee and Chat Price Index (Export Prices) since 1945

Year	P.I	Year	P.I	Year	P.I	Year	P.I	Year	P.I	Year	P.I	Year	P.I	Year	P.I
1945	214	1951	412	1957	76	1963	82	1969		1975	140	1981	75	1987	86
1946	256	1952	370	1958	73	1964	100	1970	100	1976	288	1982	85	1988	79
1947	274	1953	224	1959	86	1965		1971	115	1977	339	1983	65	1989	55
1948	198	1954	113	1960	93	1966		1972	245	1978	200	1984	68	1990	50
1949	117	1955	74	1961	72	1967	92	1973	191	1979	117	1985	70	1991	42
1950	220	1956	74	1962	76	1968	71	1974	137	1980	108	1986	98	1992	33

Source: As in Table 2.
Earlier data found in Ethiopia, Background Data on Agriculture (mimeographed, s.d.), which contains export/import data compiled from Statistical Abstracts since 1945.

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LABOR-INTENSIVE RURAL ROADS IN KENYA, TANZANIA, AND BOTSWANA: SOME EVIDENCE ON DESIGN AND PRACTICE

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Abstract: *The labor-intensive road programs in Kenya, Tanzania, and Botswana share a great deal of common features. The programs are by and large experimental and donor supported. They are small in terms of their share in total road networks and employment. They promote the twin goals of improving access roads and generating employment. Employment is open to all working adults. Wages are time rated, administratively determined, and uniform. But real wages vary across time and space, and, consequently, labor supply responses vary accordingly. Implementation of road works rests largely on public institutions, but with minimum community involvement (except for provision of local labor).*

The evolution of the programs in the 1970s and 1980s shows a pattern of convergence among the three programs in design and implementation practices. The road programs are shifting towards road maintenance, where unit cost of output is lower and share of labor cost is higher as compared to road construction and improvement. Such a shift promises a greater and more stable employment, and an increase in share of labor income. Tanzania and Botswana are approaching Kenya in their evolution towards a consolidation of their road programs into a national planning framework, and setting standard guidelines and procedures in identification, implementation, and monitoring of road works. Kenya's current experiment on alternative low-cost technologies for road works (Project 2000) marks an important advance that will soon have an impact on these other countries.

The sustenance of these programs depends on how much they progress towards self-sustenance and cost-efficiency. And, as the evidence from Kenya shows, such progression needs to take into account the potential for these programs to contribute to short-term poverty reduction through asset creation with a minimum adverse effect on long-term growth. Policy makers have an important role in translating these insights and knowledge into improved policy design. Since government has an important role in such an experimental and translation process, it is crucial that it overcomes its current ambivalence towards labor-intensive public works schemes.

I. INTRODUCTION

The application of the concept of labor-intensive public works programs has expanded in Sub-Saharan Africa since the 1980s [5]. These programs have been applied to a wide variety of projects, but most fall into a few categories, such as rural road projects, irrigation, and resource conservation and afforestation. With some exceptions, these projects are rural-based. This paper focuses on a brief review of the evolution, design, and growth of rural road projects in Kenya, Tanzania, and Botswana. Since the road works constitute the major component of public works programs, they provide a reasonable approximation to the

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understanding of the characteristics of labor-intensive public works in these three eastern and southern African countries.

The paper begins with a brief clarification of the concept of labor-intensive public works. It then traces and compares the evolution, design, and outcome of the programs across the three countries. The final section highlights the main features of the programs, indicates the direction to which the programs are evolving, and draws some policy recommendations.

II. CONCEPT AND ISSUES

Labor-intensive public works programs (LIPWP) produce public goods such as roads, irrigation schemes, and afforestation through a choice of production processes that have a large proportion of unskilled labor. By definition, the set of choices of the production process in terms of factor-factor space is limited to the area where the proportion of labor to capital is more than unity.

Typically, these programs have dual objectives: asset creation and employment generation. And these twin objectives have important welfare functions at household or individual level. First, access to public works (in form of employment in short run or benefits associated with created assets in the long term, including the labor market effect) contributes to improvement in the level of income and consumption. Second, access to public works contributes to a stabilization of income and consumption, particularly in an environment where there are fluctuations in employment and income. This consumption smoothing function becomes critical in countries that are prone to natural disasters like drought, floods, and large population movements due to war. And when the stabilization function is guaranteed (or available on demand), public works schemes add an important feature of risk insurance [14]. Access to guaranteed employment protects the poor from engaging in undesirable survival strategies, which involve liquidation of productive assets, distress migration, indebtedness, and reduction of food consumption (see, for example, [20]). The weights attached to these multiple functions in a particular country context depend on an initial set of conditions that prompt their initiation.

When such programs are targeted to the poor through provision of employment or distribution of income associated with created assets, the programs contribute to a reduction of poverty. When such a reduction in poverty translates into improved consumption, especially food consumption, the programs then address the problem of food security. How much such programs contribute to food security of the poor then depends on (1) the extent to which the poor are involved in the programs (that is, degree of participation); (2) a net increase in employment, allowing for substitution of labor times; (3) the extent of net income transfer

(allowing for cost of participation); and (4) the share of additional income that is allocated to food consumption.

The key factor that determines the extent of employment creation and labor income is the factor proportion (labor to capital ratio) that is embodied in LIPW programs. Where factor markets are functioning, such factor proportion is market determined by relative factor prices. The growing use of labor-intensive production techniques in Africa, for example, is partly in response to changing factor market prices [5].

However, public policy can modify such market-determined factor proportion to alter the relative weights attached to asset creation, employment generation, and income transfer functions. Typically, factor proportions are set high to ensure such programs promote employment creation and income transfer, or wage rates are set below market wages to promote high intensity of labor. A key design attribute of public works is, in fact, the use of wages to self-select the poor. Here, wages are set below reservation wage of the non poor so that only the poor are willing to self-select into the programs.

But such emphasis on income transfer may involve economic inefficiency, which may be decomposed to technically inefficiency (for example, the same output may be produced with less labor) or allocative inefficiency. The latter may assume importance if the goal of income transfer entails a substantial trade-off between current income transfer goals and future income. How much such trade-off occurs depends on the marginal rate of substitution between current income maximization and future income foregone. The policy challenge for poor countries that face resource constraints is how to lower such trade-offs to ensure that short-term poverty reduction is achievable at a minimum cost of future income generation.

III. EXPERIENCE WITH LABOR-INTENSIVE ROAD WORKS

The demand for public works has its origin in the growing demand for investment in productive infrastructure, and changing labor market environment and incidence of poverty. The three case countries below demonstrate how these sources of demand for public works prompted the evolution of labor-intensive road programs in three case countries. The brief review of these programs that follows is intended to enhance the understanding of their design and implementation features and their contribution to asset creation, employment generation, and poverty alleviation.

3.1 Origin and Goals

The Kenya labor-intensive road works program started in the 1960s [1]. It was reinitiated in 1974, following the recommendations of the 1972 International Labour Organization (ILO) strategy document on promoting productive employment in Kenya [9]. A special labor-intensive road program was instituted to construct rural access roads—the Rural Access Roads program. These roads were unclassified within the country's road network, but operated under the Ministry of Public Works. And since 1986, the program has expanded to minor roads, which includes both unclassified rural access roads and classified lower-traffic roads.

The labor-intensive rural road program in Botswana (officially designated as program LG 34) had its origin in the relief food-for-work program that operated in the 1960s. The relief program appeared as cash-for-work program during the 1978-79 drought. In the aftermath of the drought, the country introduced a regular road work program (LG 34) and experimented with it between 1980-82. The LG 34 expanded to all districts in 1986. It has since then operated independent of the relief works programs.

The road project in the United Republic of Tanzania (URT) started in 1978 as part of the multi-sectoral special public works program. The project focused on improvement of rural access roads in Rukwa and Ruvuma regions. The whole program phased out in these regions in 1992. However, there are still small-scale donor-supported labor-intensive road programs in the country (NORAD in Tanga and Mbeya regions, SDC in Morogoro region, and FINNIDA in Mtwara and Lindi regions).

All these road programs share a common set of goals: (1) road improvement and maintenance; (2) employment creation for unskilled rural labor; and (3) income generation for the participating rural population. Poverty reduction is more often an implicit, rather than explicit, objective in all three countries. However, there are some variations in weights attached to these goals in practice.

3.2 Cost Structure

The work schemes in Botswana and Tanzania follow administratively set guidelines on setting the factor proportion between labor and capital. Typically, 60 to 70 percent of the project costs are allocated to a wage bill to cover payments for unskilled labor. The Kenya program is an exception. Here the Minor Roads program has a latitude to vary the proportions of labor to capital, depending on the type of road work (that is, road improvement that includes graveling and maintenance), and technical conditions (for example, soil, topography, skill intensity of work).

In practice, there are some notable deviations from the prescribed factor shares. The actual shares of labor cost are in general lower than what are often stated in project design. For example, the shares of unskilled labor averaged 65 percent of the operating costs in Botswana during 1986/87 and 1990/91 [20]. In Tanzania, the road works in Ruvuma averaged 60 percent of the operating cost in the first phase of the program --1980-86 [23].

These shares are much lower when the costs of technical assistance and project overheads are factored into the total costs. These two cost components account for nearly 30 percent of the total project costs in Botswana. The percentage is even higher in Tanzania. The combined cost of technical assistance and overheads accounts for about one-half of total funds. When the cost share of unskilled labor is seen in context of the entire cost of the projects, it is too low in some of these schemes, so that they hardly qualify as labor-intensive [12], [25]. This also applies to the road improvement and graveling work in Kenya, where the share of labor accounts, on average, for 36 percent of the total project cost [15].

3.3 Source of Financing

The programs in all the three countries are largely donor supported. The Minor Roads program in Kenya is funded by a group of bilateral donors. As of 1993, the government of the Republic of Kenya (ROK) gets financial and technical support from the governments of Canada, Switzerland, Sweden, Denmark, and the Netherlands [15]. In 1992-93 fiscal year, for example, these donors accounted for 90 percent of the total financial contributions [15]. The capital share of the government was only 7 percent. But the government covers the expenses for local staff and administrative overheads.

The capital component of the road work in Botswana (LG 34) is fully funded by the government of Norway. The government of Botswana, which was able to spend as much as 13 percent of its capital budget to finance the 1982-87 drought relief program, has not yet committed itself to provide capital funding to the regular labor-intensive road program (LG 34). It has only committed to finance the maintenance of the improved roads.

The program in Tanzania is jointly supported by the United Nations Development Programme (UNDP), and the International Labour Office (ILO) with financial contributions from the Netherlands, Germany, Denmark, and the European Community (EC). The contribution of the government of Tanzania was about 11 percent of the total capital fund.

The financial arrangements in all the three countries exhibit similar features. First, the capital budgets of the road programs are largely donor funded. The contribution of national governments to capital funding is marginal. Second, the provisions of these capital budgets are often tied with technical assistance. Third, the national governments bear the costs for local staff and administrative overheads. Fourth, the responsibility for financing maintenance work is largely assumed by national governments.

3.4 Organization and Management

The implementation of the minor roads program in Kenya rests with the Ministry of Public Works. At the district level, the implementation of the program is placed with District Maintenance and Improvement Engineers (DMIEs), inspectors, and overseers. The overseers are directly responsible for supervision of the works at road sites.

In Botswana, the road program (LG 34) is located in the Ministry of Local Government and Lands. It is linked to the Ministry of Public Works, which coordinates classified road networks in the country, at the district level through the District Council Road Units. These units are responsible for implementation of all district roads. They are staffed by trained technical officers and are responsible for supervision of all road works, including the labor-intensive road works.

In the case of Tanzania, the special public works program is coordinated within a special unit of the Prime Minister's office. At the national level, there is little linkage between the special unit and the Ministry of Public Works. The national coordinating committee that is supposed to oversee the works of the special unit has not been effective in practice. At the regional level, implementation of the program is coordinated through regional development committees. But the labor-intensive road projects are not integrated within regional and local development plans and hence government ministries had no jurisdiction on implementation and supervision of the special program.

Different types of labor arrangements are practiced at work sites. The dominant mode, which is particularly applied to road construction and improvement, is the technician-foreman-gang mode. The modality changes for routine maintenance. Here, work allocation follows the length-man approach, where a headman or team leader is assigned to a group of workers to supervise a given length of road. Each contractor (length-man) is typically assigned between 1.5 to 2.0 kilometers of road work.

The three country cases represent different degrees of progression towards integration of labor-intensive road works into the national planning and administrative framework. All road works in Kenya are coordinated and executed within the Ministry of Public Works. Selection, construction, and maintenance of these roads are subjected to standard guidelines and procedures. The Ministry ensures that the different categories of roads fit into the national road networks. The labor-intensive road work in Botswana is integrated within the district plans. But, integration and coordination of labor-intensive work at national level is weak. The problem of lack of integration and coordination is much accentuated in the case of Tanzania. The projects under the special public works program operated in the 1980s as independent units, with little effective coordination at national, regional, and district levels.

3.5 Selection of Roads

Choice of roads follows prescribed guidelines in Kenya. District-level development committees draw up list of roads. The roads are then subjected to a series of standard screening process, which involves testing if the roads (1) pass through high and medium potential agricultural areas with a minimum defined population density; (2) meet the minimum traffic volume of 70 vehicles per day, and (3) link up to the network of roads. Roads that meet these qualifications are further subjected to technical and financial feasibility analyses. Then, these roads are prioritized. The number of roads selected in a particular year depends on the level of committed capital funds. These roads are then integrated into the national roads program.

The process is less rigorous in Botswana. Road sites are identified in consultation with local communities. The district technical staff undertake feasibility assessment and prioritize the roads. The ranked road links are then passed to District Development Committees for further evaluation. The final decision rests with district councils, whose members are elected representatives of the district population. Roads that are selected are eventually incorporated into the district development plans. But, unlike the procedures in Kenya, there are no standard procedures and guidelines on the choice of roads [8]. No comprehensive network plan exists for district roads [8]. Thus, the process varies across districts.

The process is even less standardized in the case of Tanzania. A special unit in the Prime Minister office identifies roads in consultation with rural communities. The special unit is supported by ILO technical assistance and UN volunteers for identification, implementation, and monitoring of road works. Similar to Botswana, there are no standard selection guidelines. And the roads in the special public works program are not integrated within both national and regional road plans.

3.6 Physical Output and Growth

As of 1991, Kenya had nearly 62,000 kilometers of classified roads [16]. This was 41.3 percent of the total length of road network in the country. The balance was unimproved earth roads. By the end of 1992-93 fiscal year, the minor roads program improved a total of 3,238 kilometers of earth roads. As compared to the total classified roads, this accounted for a mere 5.2 percent. And compared to the unimproved earth roads, this covered 3.3 percent.

The recent records on annual output of improved roads show a declining trend (Figure 1a). For example, yearly output of improved roads (earth construction and graveling) dropped from 1,381 kilometers in 1989-90 to 473 kilometers in 1992-93. Thus, as the figure shows, the cumulative growth curve is increasing, but at decreasing rate.

Such a decline is, in part, due to a public policy shift towards strengthening existing improved roads in two ways. First, there is an increasing emphasis on graveling existing earth

roads. Between 1988-89 and 1992-93, for example, the share of graveling in total improved roads increased from 49 percent to 60 percent. Second, there is a shift towards maintenance of improved roads (Figure 2a). For example, annual average road maintenance increased from 8,600 kilometers in 1988-90 to 9,600 kilometers in 1991-93 periods. The 1991 strategy proposal goes further to extend labor-intensive road maintenance to all classified roads with low traffic volume [16].

As of 1990-91, the labor-intensive road work program in Botswana produced a total of 1,054.6 kilometers of earth roads. This accounted for 5.8 percent of the total road network in the country [4]. As compared to total earth and sand roads alone, its share was close to 10 percent.

The mean level of yearly output has increased over the years, but with sizable variations around the mean, as shown in Figure 3a. For example, yearly output increased at an average rate of 6.1 percent between 1986/87 and 1992/93. But the trend in annual growth rates shows a wide range between minus 9.1 percent and plus 25 percent over these years. Such annual variations are often linked to irregularity in flow of capital funds and problem of labor shortage in some parts of the country, especially districts close to major towns, such as the southeast district near Gaborone, or thinly populated, such as the western districts in the Khalhari Desert.

The Tanzanian experience is quite different. Being a project targeted to be phased out at the end of 1991, the road works came to an end in 1990. But there is little information on length of road rehabilitated under the project. A recent project document on Rukwa road work indicates that actual output was only 29 percent of the planned level [10].

The growth of these roads has been largely linked to the availability of funds, especially to donors' support for capital budget. National governments have shown a great deal of ambivalence towards the application of labor-intensiveness to roads works. Even Kenya, which has shown a great deal of conviction to the labor-intensive method, still calls on donors to provide 70 percent of the required capital budget for funding its planned expansion of maintenance work [16]. Although Botswana has placed a central role on public works as an income transfer instrument in time of drought, it has not yet committed to expand the small Norwegian-funded road project (LG 34) in its non-drought period. The Norwegian support, which appears to operate under a fixed budget to hire as many as 3,000 unskilled laborers, is intended to be demonstrative and hence may not be committed further to expand the project. On the other hand, a major effort is underway in Tanzania through donors' support to consolidate and coordinate a nationwide program to rehabilitate and maintain priority rural roads [24],[26].

3.7 Employment Design and Practice

The minor roads works in Kenya show a declining trend in level of unskilled labor employment. Over the last five fiscal years, the road works absorbed, on average, 16,700 casual workers per year (less than 1 percent of the 1988 estimated 6.1 million smallholder work force). The peak occurred in 1989-90 fiscal year, when it reached 20,300 workers. Since 1989-90, the level of yearly employment has been declining. It reached its lowest level of employment ever in 1992-93. Such a decline in employment is directly related to the contraction of road improvement work and the lower labor intensity of maintenance work. The rate of growth of maintenance works has not been sufficient to compensate the loss in employment in road improvement.[1] Without rapid expansion of the maintenance program, it is unlikely to reverse the current trend in employment contraction.

As of 1992/93, the road work program in Botswana has created temporary employment for about 3,700 casual workers in construction and maintenance works (nearly 2 percent of the agricultural labor force). The trend over the years shows an increasing cumulative growth. This is attributed to expansion of both construction and maintenance of earth roads. The minor roads program in Kenya, where maintenance employment is increasing at the expense of falling road improvement work, Botswana has managed to promote the growth of the two road works.

However, the recent trend shows that the share of maintenance labor in total employment is rapidly growing-- an indication that the program is facing a problem of accelerated growth in construction of new roads. The share of maintenance labor increased from 15.2 percent in 1986/87 to 37 percent in 1992/93. And with the increasing emphasis of the government on maintenance of existing earth roads, such share is likely to grow. Such a shift to maintenance work has been accompanied with an increasing share of female labor. During the same period, the share of female labor in total unskilled labor force increased from 22 percent to 48 percent, respectively.

The road work projects in Tanzania (the Ruvuma project, in particular), by far, dominated the scale of employment that was generated through the special public works program in 1980s [23]. In the period between 1980-86 (the first phase of the program), the road projects hired 46 percent of the total employment (124,000 workdays per year). Ruvuma road work alone accounted for 39 percent of the total employment. The Rukwa project largely failed, as the government that was responsible for financing the wage bill resorted to a "self help" mode of labor mobilization [11]. The contribution of the two road projects declined to 32 percent (53,100 workdays) in the second phase of the program (1987-1990).

Employment in all these road programs have some common features. First, employment is open to all who are able to work. Second, initial selection is typically done through some administrative screening. When there is excess supply of labor to available positions, different methods of quantitative rationing are applied (random selection through lottery technique, quota

setting by sex, limit on number of participants per household). Recruitment and selection continue at the road sites, where workers are often employed on demand because of high labor turnovers.

Third, the average length of employment per worker is short for non-maintenance workers. The explanations lie mainly in the nature of the road work, labor laws and regulations, and labor supply characteristics of the workers themselves. First, the length of employment is directly linked to the duration of road work in a specific area. Often the work force is changed when the road work shifts its location of operation. Second, in areas where there is an excess labor supply, the practice of job rotation to reach all job seekers translates into low days per capita. Third, projects that operate in a legal environment where casual workers have to change into permanent status after a defined period of time (for example, three months in Kenya and Tanzania) prefer to rotate labor for circumventing the legal requirement and avoid the additional labor cost. Fourth, some workers enter into road work as stopgap measure (for example, school leavers) and choose to quit working as they find better and stable employment opportunity. Also, given the inflexibility of wages to accommodate spatial variations in transport and other commuting costs, workers have little incentive to supply their labor in distant project areas. This is particularly problematic in areas where local labor supply is insufficient to meet labor demand.

Fourth, the road works tend to stabilize intra-year employment fluctuations, but not on a sufficient scale, because of the failure to synchronize with seasonality of agricultural work. A study in Tanzania finds a weak correlation between labor days in agriculture and labor days in project work, which suggests that more could have been made of labor during the slack season [12]. Some degree of counter-seasonality is evident in Kenya, but largely by default than by design (Figure 4a). The flow of funds to road works tapers off towards the end of the fiscal year (April-June), which coincides (by default) with peak farm activities [23]. Similarly, there is some counter-seasonal pattern in Botswana by default. The months when the projects are closed for holidays (part of December and January) coincide with the seasonal peak in demand for farm work (Figure 4b).

There may be an exception in the case of poor households (or poor areas or poor agricultural season) that have limited choices during the peak farm season. For example, a study in Kenya shows that the poor (the near landless and landless) tend to stay on the road works (rather than look for spot casual employment), but this involves a change in labor supply strategy for own-farm work (work longer duration, pool family labor into farm work, including the young and old, and exchange of labor). The road projects thus intensify the work burden on these often labor-short households.

The shift towards road maintenance in Kenya and Botswana has some implications on the type of emerging employment pattern. First, the length-man approach becomes the dominant mode of employment as opposed to revolving gang approach. Second, workers on

routine maintenance assume a long-term employment contract. Hence, maintenance work offers a more stable and permanent employment to road workers. Third, access to employment will concentrate on those who reside close to road sites, since the prerequisite to qualify for such employment is a close proximity to work site. Workers have to attend the maintenance work on a regular basis. Finally, the Botswana case suggests that such type of work favors female workers. But this cannot be generalized without understanding the local labor supply conditions, as the evidence from Kenya shows.

3.8 Wage and Labor Supply

Wages are fixed by the government in all the three countries. Wages are often linked to minimum wage policies to ensure some subsistence level. In Tanzania, the minimum wage is applied as a ceiling wage in rural areas [7]. In all the programs, wages are set uniformly regardless of type of work, location of work site, and interpersonal variations of workers (age, sex, education, experience, and so forth). Wages are set on a daily basis. And workers are paid cash wages once in a month.

The project wages are at variance with comparable unskilled wages in rural areas. In Kenya, the road wage in 1993 was equivalent, on average, to 71 percent of daily farm wages [22]. But it varied between 60 percent in high-wage districts and 125 percent in low-wage districts. In Tanzania, road wages are closely at par with wages of farm workers on maize and paddy fields, but less than the wages paid for coffee workers [23]. In Botswana, wages in road works are higher than comparable unskilled wages (herding, domestic work, and sorghum stamping) in small villages, but much lower in areas close to big villages and towns, where the road work often faces a tight labor supply, particularly male labor.

In real terms, these pan-territorial wages vary across space because of variations in regional costs of living indices. For example, the mean provincial prices of maize in Kenya, the dominant food crop, varied by a ratio of 1:1.41 between the lowest and highest provincial level prices. These differences are bound to be large where there are large variations in food prices due to poor market integration.

Trends in real wages across time shows an irregular lag response to inflation. That is, wages are often increased in step wise progression but lack a built-in mechanism to respond to changing inflation rates. For example, real wages paid for workers in minor roads program in Kenya increased 4.9 percent between 1988-89 and then averaged negative growth between 1989-91 (negative 5.0 percent between 1989-90 and 25.0 percent between 1990-91). The wage rate was increased 56 percent in 1992-93, but was offset by an equal growth in the inflation rate [22]. The trend in real wages in Botswana shows a positive but uneven growth. They barely kept growth rates above the rates of inflation in the 1980s (for example, it grew, on average, 1.9 percent per year between 1986/87 and 1988/89). However, there is an apparent

higher growth in the early 1990s—the annual growth rate averaged 2.3 between 1989/90 and 1991/92.

On the other hand, a decomposition of the growth rate of the unit cost of labor per kilometer (which is a difference between growth rates of nominal wages and productivity of labor as measured by average labor per kilometer) shows a close association between growth in unit cost of labor and nominal wage rates. That is, growth in real wages responds relatively more to the trend in inflation rates than to the change in productivity growth. For example, annual growth rates for nominal wage and labor productivity in Botswana averaged 7.1 and 4.4 percent, respectively, in 1988/89 [20]. In 1990/91, the respective growth rates were 30.6 and 16 percent, respectively. The examples illustrate that the current design and practice of these programs appears to be lax on the central importance of enhancing productivity growth to support high wage rates. Improvement in productivity of labor is crucial to justify the basis for improvement in wage rate, unless these works are considered as a sole income transfer instrument.

The restrictive structure of pan-territorial wage rates limits the flexibility of the road programs to adjust wage rates in accordance with local labor supply conditions. The current wage structure implicitly assumes: (1) there is sufficient unutilized labor in rural areas that is readily available at some subsistence wage rate; (2) the subjective price of labor is the same for all rural households; and (3) augmentation of labor demand, and not labor supply, is instrumental to employment creation in rural Africa.

By and large, such type of unconstrained labor supply behavior has only been witnessed in some of the countries that experienced severe decline in farm employment due to droughts in the 1980s (for example, the 1982-87 drought years in Botswana). Because of an excess supply of labor, jobs had to be rotated in Botswana to ensure that jobs were equally shared among the rural population.

However, there is growing evidence to contradict some of these key design assumptions. First, rural labor markets in Africa, albeit small in size, are active. These markets are strongly linked to agricultural seasons. And wage rates vary across space and time, largely due to factors that affect labor supply to and demand factors for agriculture, and due to variations in food prices.

Second, because of the non-uniformity of real wages, the extent of labor supply varies across seasons and locations. Labor supply falls short of prescribed employment quotas when projects operate during peak farm seasons or where project wages are too low as compared to other competing wages in areas located close to major villages and towns or simply insufficient to cover transaction costs of labor mobility, due to the high cost of transportation, especially in low-population dense areas.

Some of the road projects practice different compensation schemes to bypass official wage rates and obviate the problem of attracting labor to road works. In most cases these are accomplished through manipulation of the productivity parameter (given the constancy of wages, this is the main parameter available to project managers). For example, task rates are adjusted such that workers obtain the same wage rate per day but for a shorter length of work. And all tasks are adjusted such that all the workers complete their piece rate at the same duration of work per day. This is achieved by adjusting the productivity norm downward. In some instances, cash wages are supplemented with food to boost real wages.

3.9 Reaching the Poor

The three reviewed programs have no explicit policy of targeting the poor. That is, the setting of the design (for example, location of projects, wage rates, and employment policy) is not explicitly intended to screen the poor into the road works. But, in practice, it is plausible that the poor are participating in the programs. Although what is important is to assess the proportion of the poor in the road programs relative to the rural population, the existing evidence falls short of establishing such incidence of poverty targeting. But the cases below indicate that the poor are drawn into the programs.

Findings from surveys of female participants in Tanzania [19] show that female participation is high in areas with a higher concentration of landless or small farmers with no access to alternative wage employment. These areas also witness a high male out-migration in search of employment. Where there are few employment options, more older women participate in rural works schemes. Women with children have a greater propensity to participate in poor areas. In areas where women have alternative employment with better returns, young females with no children tend to participate in rural works schemes [17].

The results of the 1991/92 International Food Policy Research Institute (IFPRI) sample survey of project villages in Botswana also indicate some degree of poverty targeting [21]. First, the road work project tends to have a large proportion of low asset-holding households with working adults, especially female adults. Female households with adult working males have higher representation in areas closer to towns and large villages. Better-off households (those with many livestock and land, their own business, and salaried income) are less likely to participate in the road work. Second, these low asset-holding participating households allocate a large share of their economic time to project work. Participating households in remote villages, in particular, allocate a greater share of their economic time to project work.

The results from a recent rapid survey of project villages in three districts of Kenya (Kirinyaga, Kitui, and Laikipia) also indicate a large representation of poor families in road employment [22]. The poor in Kenya, according to the perception of villagers in the project areas, are typically families who are (1) young with large dependents; (2) landless and near-

landless; (3) engaged mainly in casual wage employment for livelihood; and (4) at risk of chronic food insecurity. The small but randomly selected sample in these project villages found a high representation of these families in the road work sites. The self-reported reservation wages of these families indicate that they are willing to take lower wages than what the road project offers as a premium for regularity and security of road work compared to the alternative sporadic casual rural wage employment. The premium they are willing to offer is even higher for off-farm season when alternative off-farm wage employment is thin in rural areas.

3.10 Sustenance of Benefits

The short-term benefits of the road programs accrue to those who engaged in construction work [21]. The recent IFPRI study in Botswana shows that road projects have unambiguously increased the income of participating households through a combination of a net addition in time allocated to work and a shift from activities with lower returns. The project has also improved the relative income position of the participants, at least in moving them towards the middle-income group. Participation in the project has also contributed to an added advantage of improved access to the rural credit market. That is, access to cash employment substitutes for collateral in rural areas to establish a credit line.

A recent IFPRI village-level survey in Tanzania shows that income from rural works projects reach at least 64 percent of the survey villages in project areas [23]. Employment in the projects ranks at least as the third major source of income in these villages. Moreover, access to wage employment through the projects (64 percent of the villages) exceeds the access through other non project wage employment. However, the direct link between employment and income flow is delinked where rural households contribute unpaid labor (self-help scheme). This concept was tried in the Rukwa road project but failed, partly, since such a type of public asset cannot ensure the full accrual of benefits in accordance to labor input.

The long-term effects of these road works depend on income generated directly from the created assets and labor market effects. Evidence is, in general, thin on such long-term effects. But there are a few cases where second-round income effects (income from created assets or labor market effects) are sizable. For example, four impact studies in Kenya, which were based on comparison of control and road project areas in central (Kirinyaga and Nyeri Districts) and Nyanza (Kisumu and South Nyanza Districts) provinces in the late 1980s, highlight some of the long-term effects. First, improvement of rural roads contributed to an increase in road accessibility, a greater density of traffic, and a shift to motorized traffic. The extent to which these changes accrued varied across areas, depending on the initial level of economic activity. Second, improvement in roads was associated with an increase in density of social infrastructure and service centers. Third, in some areas, there was a marked increase in volume of marketing due to an increase in marketable surplus and entry of new products.

Fourth, the presence of roads contributed to an increase in farm income through increased intensification of inputs and extension contacts, increased yields and output, and a shift in crop composition to high valued crops. Fifth, these roads also contributed to an expansion of the income base of the rural population through increased diversification of income sources. Sixth, the rural population in the road areas shifted their expenditure patterns, especially towards increasing shares of nonfood consumption expenditures and investment in household and farm activities.

The sustenance of these benefits depends on maintenance of created assets. The current emphasis on maintenance of roads in Botswana and Kenya confirms the realization of the need to generate these gains on a continuous basis. But such long-term effects are much diminished in the case of Tanzania, due to poor maintenance of assets. For example, a recent project document acknowledges that 2,903 kilometers of the 3,700 kilometers of roads in Ruvuma are in need of rehabilitation because of extensive deterioration [13]. Fragmentary records invariably ascribe the sources of such rapid loss of assets in Tanzania to failure to integrate the program into the national planning framework; lack of public commitment to fund maintenance work; undervaluation of nonlabor inputs; failure to involve community participation in identification and confirmation of demand for such assets; and lack of a remunerative policy for maintenance of community-owned assets like village access roads.

IV. CONCLUSION AND POLICY RECOMMENDATIONS

The road programs in the three countries examined share comparable length of experience in labor-intensive public works. These programs expanded particularly in the 1980s in response to declining employment and deepening poverty, which were heightened during the prolonged drought years, declining real wages relative to cost of capital, and increasing donors' support in experimenting with labor-intensive works schemes.

In many respects, the road programs in the three sample countries are similar. They share common goals of improving access roads, and generating employment and income to the rural population. Employment in road works is open to all working adults, but priority is often given to villagers who are close to road sites. Factor shares between labor and capital are administratively determined. And wages are also administratively set, uniform, and often linked to minimum wage policies to ensure some subsistence level. Implementation rests largely on public institutions with minimum community involvement (except for provision of local labor).

However, there are some differences in design and performance parameters. For example, the institutions responsible for road works vary across the three countries. All road

works in Kenya are coordinated and executed within the Ministry of Public Works. On the other hand, the road projects under the special public works program in Tanzania operated as independent units outside the national planning framework. Second, Kenya follows national standard guidelines and procedures in selection of roads. Botswana follows a somewhat similar guideline at the district level, but there is no evidence of application of such guidelines in selection of roads in the case of the special public works program in Tanzania. Third, all classified roads, including minor roads in Kenya are linked to the national road network. This concept was not widely shared in the other two countries. On the other hand, Botswana has adopted the concept of labor-intensive public works as a drought-relief intervention and has integrated it into its national development framework. The other two countries, especially Kenya, have not yet incorporated it into its drought relief program.

Nevertheless, these programs are now evolving towards some convergence in at least four important directions: (i) integration of road works within centralized ministries, especially the Ministries of Public Works in Kenya and Tanzania; (ii) application of the concept of linking specific road projects within the national road network (for example, the current road policy in Tanzania adapts the Kenya's model of establishing a network of priority roads); experimenting with program design (the Project 2000 in Kenya) and implementation parameters (for example, the use of private contractors in labor-based maintenance works in Tanzania); and placing greater emphasis on maintenance of road works through the labor-intensive method. The current initiative in Tanzania comes a long way in moving the country (at least in design) at par with the progress that has been achieved in Kenya in the 1970s and 1980s.

But, there are still important issues that deserve policy resolutions. First, there is a need to take a fresh look at the concept and goals of these programs. Current thinking appears to be driven from a conceptual framework, where, given that wages and factor shares are fixed, employment growth is set as a simple function of a financial resource available to cover the wage bill. But such a concept conflicts with the goal of low-cost asset creation, which assumes flexible factor prices and a factor proportion that corresponds with technical and economic efficiency. The path of employment maximization will not necessarily coincide with an efficient cost path of production.

Second, it is crucial that the issue of what these works programs stand for clearly defined (create roads to enhance future income and consumption level or transfer income to the poor to deal with transitory poverty). If these two objectives should be integrated, then it is necessary to define the necessary conditions and design features. Employment creation needs to be viewed only as an intermediary goal derived largely from these two primary objectives, but not as an end in itself.

While the emphasis on labor intensity is justifiable under current trends in factor prices, there is no empirical basis to set uniform factor intensity regardless of project type (factor intensity of road work should not be necessarily the same as irrigation work), purpose (projects

designed for income transfer may allow a greater margin of labor share than what is technically defensible), and factor prices (factor prices, particularly labor, may vary across time and space and, therefore, factor ratios). The current effort to identify appropriate technology for road maintenance work in Kenya (Project 2000) is an important example for other countries to consider.

The concept of experimenting needs to be expanded, but it is crucial that an effective monitoring and evaluation component be built in early on to internalize the learning process. For example, there are little success lessons that Tanzania has learned today from its fragmentary labor-intensive works programs of the 1980s. The lessons from the current experiment in the choice of technology (Project 2000) and institutional innovation (the prime contractor approach in Tanzania) are important examples that these countries should document and share with others.

These experiments are likely to contribute to cost efficiency in the operation of these programs (for example, the search for appropriate technology is likely to move the program to a low-cost production path or the private contractor approach may allow a moving of the current wage setting process to a market-based mode, which is flexible to respond to changing factor endowments). In addition, there are measures that need to be instituted to cut current non operational costs, especially administrative overhead and technical assistance. Investment in training of nationals is essential to create an "in-house" ability to ensure the programs are sustainable with little technical support.

Government has an important role in such an experimental and transition process. It has to overcome its current ambivalence, which manifests itself in a low level of commitment in provision of capital funding, inadequate institutional arrangement to integrate labor-intensive road works in a national planning framework (Kenya is the exception), and insufficient willingness to experiment and adjust policies accordingly. It is crucial that the sources of such ambivalence be identified and rectified, especially problems related to attitude towards a labor-intensive concept and resource constraints (both finance and skilled manpower). If public resources should be committed, it should be in context of a sound macroeconomic framework, transparent and flexible management arrangement, and an accountable financial structure.

The Kenya and Botswana experiences also have a far-reaching implication to design of such programs for poverty reduction. As the recent study in Kenya shows, the labor-intensive road work approach promises to integrate short-term poverty reduction through asset creation with a minimum adverse effect on long-term growth and poverty reduction. The key policy design lies in finding the right incentive for the poor to participate in the program with low foregone employment and income opportunity. Moving the projects to the place where the poor are concentrated, which, in Kenya, is also the locus of growth potential, and making it available when competition with other productive employment is low are likely to improve the

participation of the poor. The current shift towards labor-intensive maintenance work promises a high rate of employment creation, and asset sustenance to perpetuate long-term benefits.

NOTE

Given the differences in levels of labor intensity between road improvement (which averages 2,881 labor-days per kilometer), the latter has to increase nearly twenty-nine fold for every kilometer of road improvement to maintain the same level of employment. It is not clear why such expansion has not possible been given that the unit cost saving from improved road work (which averages KSh 440,000 per kilometer in 1992-93 prices) could finance 72.1 kilometers of road maintenance work (at present average real unit cost of KSh 6,100 per kilometer in 1992-93 prices). That is, the cost saved from road improvement can create 7,200 labor-days in routine maintenance (2.5 times more than what it could create in road improvement). The switch to routine maintenance, in fact, promises a much larger employment creation effect.

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APPENDIX

Figure 1b—L... ys for road improvement in Ke... 988-1993

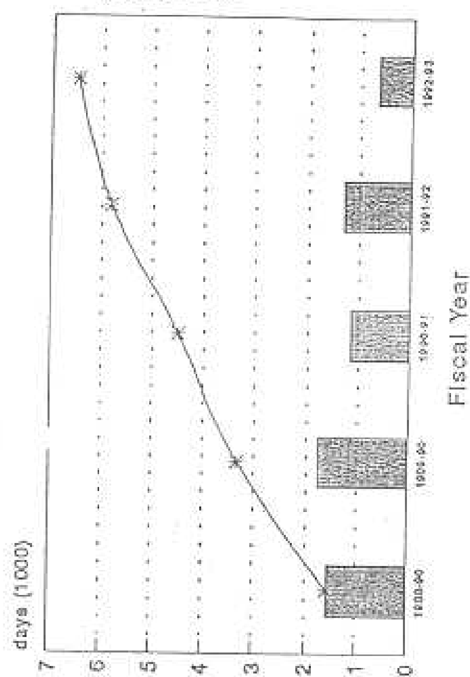
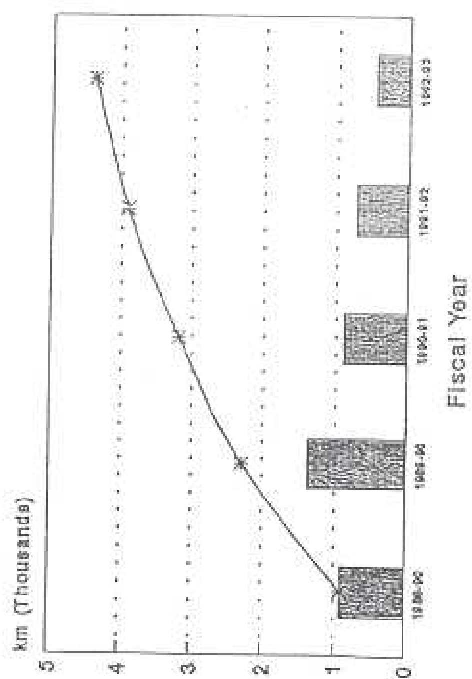


Figure 1a—Road improvement in Kenya, 1988-1993



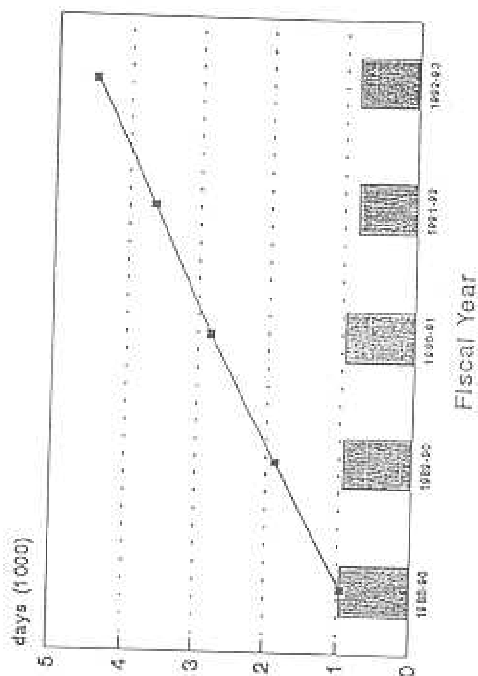


Figure 2b—Labor days for road maintenance in Kenya, 1988-1993

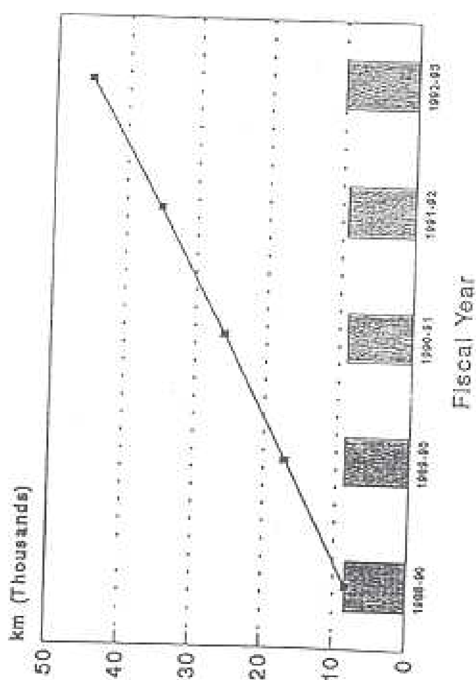


Figure 2a—Road maintenance in Kenya, 1988-1993

Figure 3a—Construction of earth roads, Botswana, 1986-1993

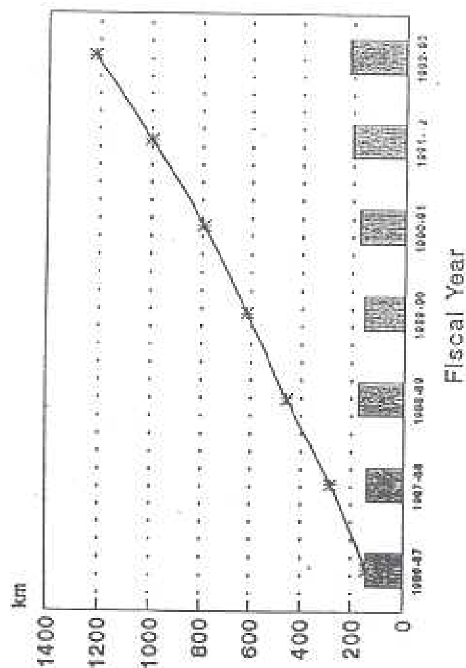


Figure 3b—Total labor used in road construction, Botswana, 1986-1993

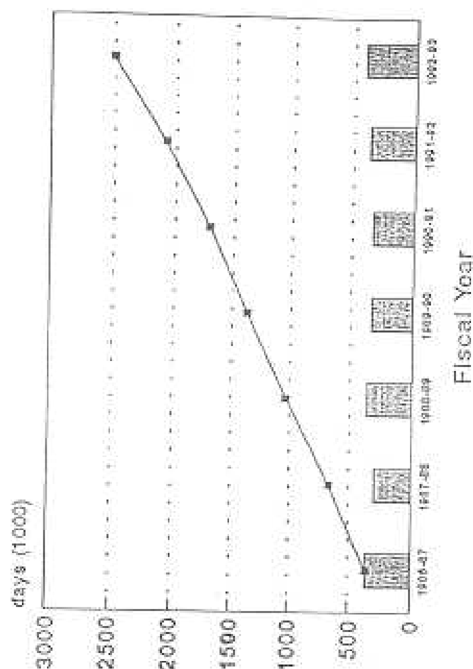
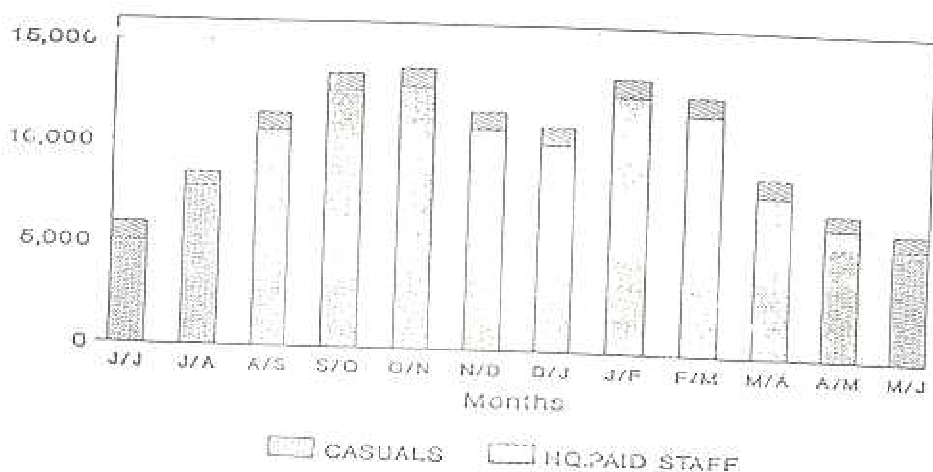
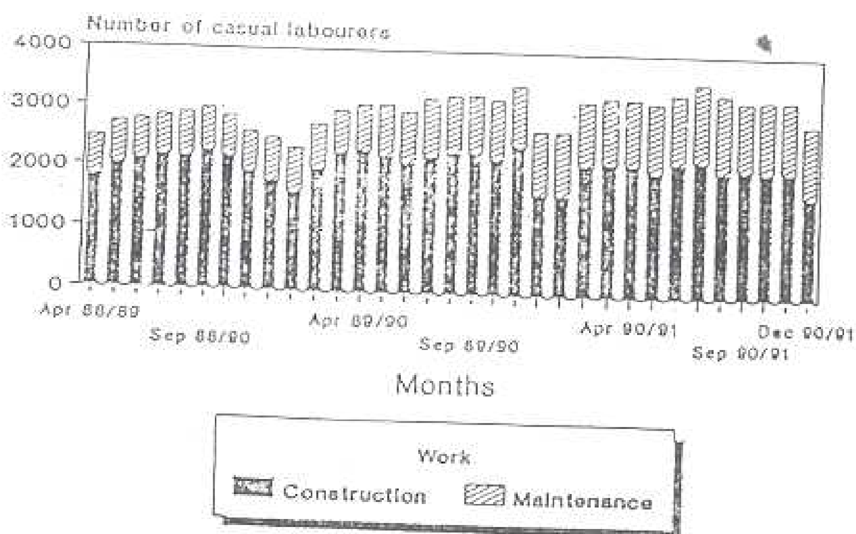


Figure 4a—Monthly average labor force for the financial year 1992-93



Source: ≥1

Figure 4b—Casual labor force, Botswana



Source: Bruderfors (1991).

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Glossary of Economic Terms Nos. 156-166,

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And
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156.	absolute advantage (n)	ፍጹም ብልጫ (ስ)
157.	comparative advantage (n)	አንጻራዊ (ስ)
158.	command economy (n)	የእዝ ክምን (ስ)
159.	mixed economy (n)	ቅይጥ ክሙና (ስ)
160.	price ceiling (n)	የዋጋ ጣራ (ስ)
161.	price floor (n)	የዋጋ ወለል (ስ)
162.	consumer sovereignty (n)	የሸማች ልዕልና (ስ)
163.	partnership (n)	ሽርክና (ስ)
164.	transfer payment (n)	ተዛዋሪ ክፍያ (ስ)
165.	market failure (n)	የገበያ ውድቀት (ስ)
166.	transaction costs (n)	የግብይት ወጪ (ስ)

Comment from the Authors

The terms we coined for this volume are simple and do not therefore require a lengthy comment. In most cases, the simple loan trannslation method is used and we are ready to consider any comment on any one of the coinages.

The other thing we would like to say a few words on is on Dr. Baye's commentary on the terms we coined for Vol. III, No. 1. He recommends that we 'avoid ክብ as it is redundant' (p.89). We do not think so. The word አዙሪት does not necessarily indicate turning round in a circle. It stands for the English vicious akin to vice prep from L.abl. of vicis change, turn (See Webster's New Collegiate Dictionary). We figured that by using the Loan translation method, the word አዙሪት can replace vicious, and the word ክብ can replace circle, thus giving us አዙሪት ክብ for vicious circle. We do not also agree with Dr. Baye that the prefix ኢ be used in ኢቀልጣፋ 'inefficnet.' We believe the

Amharic prefix indicates something that is against something as in,

for example, <u>ኢሰባዊ</u> 'inhuman', <u>ኢሳይንሳዊ</u> 'unscientific'.
The one we suggested <u>ቅልጥፍና አልባ</u> 'inefficient' is a bit clumsy but semantically clearer. We agree with Dr. Baye when it comes to nos. 143 and 144.

Finally, we apologize for inadvertently including the words <u>efficienty</u>, <u>efficient</u>, and <u>inefficient</u> in Vol.III No. 1, which in fact had already been printed in Vol. II No. 2.

ETHIOPIAN JOURNAL OF ECONOMICS, Vol. III, Number 2, October 1994, P. 109

Comments on Terms No 156-166

Moges Yigezu

Department of Linguistics, Addis Ababa University

I liked most of the coinages and traslations.

160 የዋጋ ወለል, for example, is a good one for it contrasts with a commonly used word የዋጋ ጣራ

158 & 159 I prefer ኢኮኖሚ for it is a commonly accepted and used word by the people at large including the media; unless ከምን is preferred for technical purpose

162 ሸማች seems to exclude service consumption instead I prefer የተጠቃሚ ልዕልና

165 I prefer የገበያ መናጋት since የገበያ ውድቀት relates more to price failure.

NOTES TO CONTRIBUTORS

1. Draft articles (for publication in the EJE are sent to the editor in triplicate, typed double-spaced and on one side only of an A4-size paper. Although no strict limits are imposed on the size of an article, current editorial policy limits this to a maximum of 40-50 pages (for text only).

2. An article submitted to the EJE has the following features:

> i) On the front page: Title, Author's full name (plus affiliation and acknowledgements if any), the Abstract (in single space and in not more than 100 words), and a portion of the text.
>
> ii) The article is divided into sections and sub-sections, sequentially arranged and numbered (using arabic numerals), followed by Appendices, Notes and References.

3. The references used in the article are arranged according to alphabetical order, numbered sequentially in squared brackets and placed at the end under a heading, References. Quoting a specific reference is effected by writing the serial number of the reference in square brackets at the relevant location in the text. Notes are sequentially numbered using numerical superscripts and placed in the section labelled, Notes, before References.

4. Diagrams should be properly labelled and carefully drawn, and preferably kept in a form suitable for photographic reproduction. Tables too are sequentially numbered with a descriptive heading and kept within the space provided in a page (at the most). Details of mathematical and statistical work in support of the publishable portion of the manuscript should also be sent to the editor for use by the referees.

5. All manuscripts should be submitted with a statement by each author explaining the status of the manuscript, i.e. whether or not it is published (or submitted for consideration) elsewhere.

6. Copyright of accepted articles is vested with the Ethiopian Journal of Economics.