TAX FINANCING OF GOVERNMENT AGRICULTURAL EXPENDITURE IN ETHIOPIA

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ABSTRACT: *Recent improvements in agricultural tax performance (indicated by the tax revenue growth) can be traced back to tax reforms in earlier periods. But, rapid growth in government agricultural expenditures and public expenditures generally could not be covered by tax and other non-inflationary revenues alone. The system of deficit financing pursued by the Government has resulted in the manifestation of the so-called "recurrent cost problem" and the "monetization of deficits".*

1. INTRODUCTION

For a number of poor African countries a central economic management problem today is how to finance agricultural expenditures. On the one hand, there are many sources of finance including taxation, external loans and assistance, price policy and domestic borrowing. Part of the problem stems from the failure to identify, develop and determine the optimal level and configuration of agricultural finance. On the other hand, the problem may be focussed around expenditure management. There is the view, currently in vogue, that government expenditure, regardless of its structure, would "have a deleterious effect on growth performance" [1]. The reasons given are many but centered on the relative inefficiency of government production, i.e. relative to that of the private economy. But this is not an uncontested position. There are those (the "structuralists" in particular) that consider economic development in poor countries an unlikely proposition without government intervention to remove impediments to growth and active participation in the management of economic production and distribution.

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The purpose of this short study is to examine the relationship between government finance and expenditure in agriculture in a poor country, Ethiopia.

There are important justifications for focussing on agricultural taxation and expenditure. First, the traditional dominance of agriculture is long established and sustained. In 1980/81 agriculture accounted for 49.4 percent of GDP (at current factor cost) and in 1990/91 it is estimated at 45.7 percent of GDP. Almost all the foreign exchange earnings of the economy originate in agriculture [13]. Over 70 percent of the population is rural and depends for its livelihood on agricultural activities. The pervasive stance of agricultural activities in the Ethiopian economy is further underscored by the fact that even the small and fragile manufacturing sector depends for its inputs and finance on agriculture, so that if a broader classification system were used, a large share of the "manufacturing output" in the economy would be designated agricultural. Since economic surplus of some magnitude obtains mainly in agriculture, economic strategists have always argued that agriculture should finance not only agricultural expenditures but also economic growth generally [7,20, 25, 26].

Second, there have also been significant economic resource transfers from the private to the public sector. Until recently, and as a direct outcome of government policy the private sector and the market system had diminished roles in the economy and a condition of heavy reliance on the State for economic growth and development prevailed. During the past two or so decades, the Ethiopian Government attempted to draw resources from agriculture by means of a nationalization drive, heavy taxation, reduced grain procurement prices paid to private farmers/peasants and the establishment of many multi-purpose state institutions and systems [15,1985]. Because of these developments agricultural development in particular and that of the economy generally are made dependent on the level and pattern of government expenditures.

Thirdly, during the late 1970's there have been some significant revisions of the tax laws including those pertaining to agricultural taxation. These discretionary changes have

altered both the rate of taxation and the efficiency of tax collections. An important consideration would be to analyze and measure the relative potency of agricultural taxation as a means of financing government expenditure.

Finally, another important justification for this development had been the failure of traditional agriculture to reform itself. The traditional Private and communal agriculture could not sustain production levels in consonance with population growth and the growth needs of the economy. Absence of incentive systems in communal land holdings, abuse of the physical environment and lack of private investment have resulted in land degradation and reduced land and labour productivities in agriculture. Recurring drought, famine and economic stagnation were manifest outcomes of these processes and underscore the need for government action. The destructive wars have also aggravated the problem of agricultural finance and broadened the bases of the economic crisis.

Is the problem one of deficient supply of agricultural finance or the inefficiency in the management of government agricultural expenditure? Both constitute important problems of agricultural expenditure finance in Ethiopia. Limited range of policy options (tax instruments used are few, external loans and foreign assistance are both small and unstable and other sources including domestic borrowing and pricing policy are not properly developed for the purpose) and low taxable capacity have caused the generation of insufficient finance. On the other hand, government expenditures show allocational inefficiency (imbalances in the sectoral allocations of government expenditures and in the distribution between current and capital expenditures are noted, for example) and are not always cost effective.

The mode of financing too affects the pattern of agricultural expenditure finance. The evaluation of the agricultural tax laws in terms of their effectiveness and contribution to agricultural expenditure finance would have been relatively easy if the taxes were formulated on the basis of the so-called "benefit principle". Only the defunct education and health tax laws (which were paid as one with land taxation) are possible candidates of earmarked taxation [5, 6, 8]. But the tax revenues generated by these sources have been

relatively small and the great disparity between revenue and expenditure and the inequity they create among the beneficiaries (for example, agriculturalists pay for the education of urban children under these tax systems) disqualify these taxes from becoming good examples of earmarked taxation. Presently, the overt tax system consists of land use fees (which are fixed and are in the nature of a poll tax) and agricultural income taxation which is designed on the basis of the "ability to pay principle" [22, 24]. Government agricultural expenditure is financed from general government revenue and not from earmarked sources. However, the failure to develop varied and versatile agricultural tax systems has constricted the yield from this source and forced government agricultural expenditures to rely increasingly on nontax finance.

2. AGRICULTURAL TAXATION AND EXPENDITURE

One of the major consequences of government economic policy changes since 1975 (when the Provisional Military Administrative Council, which supplanted the Monarchy, gradually transformed itself into the Socialist Government of Ethiopia) has been the dramatic rise in the tax/GDP ratio. This ratio averaged a low 5.2 percent per year for the period 1950-1960, rose to the average yearly level of 8.5 percent during the 1960-1975 period and reached the level of 17.6 percent per annum during the period 1975-1990.

Tax effort indices computed for a number of developing and industrialized countries show that the Ethiopian effort is relatively high, indicating the trend toward "larger government" and improvements in budgetary performance [30,1988]. According to some of these estimates the Ethiopian tax/GDP ratio is much higher than its expected or predicted value by world wide experience[1].

2.1 Agricultural Taxation

Agricultural taxation makes a contribution to this overall tax performance improvement. The principal elements of the tax system include direct agricultural taxes, indirect domestic taxes and export taxation. Total agricultural tax revenues can thus be defined as the sum of direct agricultural tax revenues, indirect domestic agricultural taxation and the taxation of agricultural exports. In theory, agricultural import taxation may be included in order to provide a system of comprehensive accounting for agricultural taxation. However, the exclusion of the taxation of agricultural imports is justified for the following reasons. During earlier periods only small amounts of grain (and other agricultural products) were imported and their tax revenues must have also been small since even the high digit commodity classification tax records do not report them. In recent years grain imports were coming in mainly as food aid with very little contribution to tax revenues. Agricultural import taxation is thus excluded, not only because of data lacunae, but also because it does not form a significant and stable source of (government) tax revenue.

The system of direct agricultural taxation evolved over the years (since the 1920s), first as a complex system of land taxation. In later years (during the late 1960s) some form of income taxation was added to the system of land taxation until 1976 when eventually a unified system of income taxation was introduced. This was revised in 1978 and remains to this day the basis of agricultural taxation in Ethiopia.

Domestic indirect taxation also evolved as a complex system until 1991 when it was replaced by a unified system of sales taxation. In addition to specific commodity taxes (such as tobacco taxes) domestic indirect tax laws relate to manufactured products and basically consist of excise, transaction and turnover taxes. The *Transaction Taxes Proclamation No.205 of 1963* as well as its amendment, *Transaction Taxes (Amendment) Proclamation No. 159 of 1979*, are applied on imports and locally manufactured goods and not on domestic agricultural production or on its sales. Of the domestic indirect taxes only the turnover tax is of some relevance because, according to its broad provisions, it applies to all sales,

including the sale of grains and other agricultural produce. But the tax yield from turnover taxation is very small, accounting for about 3.6 percent of total tax revenue. Since the bulk of locally traded items are products of domestic industry and imports, the share of turnover tax revenue collected from agriculture would be insignificant. Furthermore, according to proclamation N0. 254 of 1967 the sale by a farmer or agricultural producer of his/her produce is exempted from the payment of the 2 percent turnover tax normally levied on sales. Therefore, it may be concluded there is no agricultural tax revenue generated by the system of indirect domestic taxes.

Finally, agricultural export taxation has a long history in Ethiopia and includes export duties, transaction tax levied on exports, surtax and *cess* (paid on coffee exports). By far the largest share of export tax revenues come from the taxation of coffee exports, and coffee export taxation may thus be used as a proxy for total agricultural export tax revenue. But total agricultural export tax revenues can also be approximated by total export taxation since almost all of the visible export trade from Ethiopia is made up of agricultural products. It is this latter approximation of agricultural export taxation that is used in this study.

The revenue from agricultural taxation was increasing steadily over the years (see Table 1). Agricultural tax revenues (measured in real terms) increased at the rate of 7.2 percent per annum during the period 1950-1964, at 9.3 percent during 1965-1975 and had an average yearly growth rate of nearly 11.4 percent during the 1975-1989 period. This increase is accounted for by the growth of both agricultural direct and indirect tax revenues.

The last three rows in Table 1 show the continuing decline in the rate of revenue growth in all the tax systems due to the erosion of the tax base and failure of the system of tax administration in the years 1989, 1990 and 1991. Furthermore, for the post-1964 period, the rate of increase of total agricultural tax revenues have been higher than the rate of tax revenue growth generally. This is perhaps a reflection of the relative revenue effectiveness of the discretionary measures introduced in agricultural taxation.

The relatively high tax revenue growth rates observed for the period 1976-1989 are due to the tax reforms during the period, which broadened the tax base, increased the rate of taxation and introduced efficiency in tax administration. The *Rural Land Use Fee and Agricultural Activities Income Tax Proclamation 77/1976* and its amendment *Proclamation 152/1978* not only replace (and put an end to) the archaic and complex system of agricultural land and income taxation with its many qualifications, varied exceptions and limitation clauses, but also increase the government tax revenue intakes from agricultural activities significantly.

Table 1: Real Agricultural Tax Revenues
Annual Rates of Growth
(percent)

Period	Number of Observations	Total Tax Revenue	Agricultural Tax Revenue		
			Total Agricultural Tax Revenue	Direct Agricultural Tax Revenue	Indirect Agricultural (Export) Tax Revenue
1950 - 1964*	16	11.33 (11.32)	7.23 (16.02)	3.31 (8.33)	22.83 (57.19)
1965 - 1975	11	5.15 (4.80)	9.32 (34.55)	0.40 (33.75)	15.50 (39.02)
1976 -1989	13	7.85 (9.29)	11.42 (47.13)	14.96 (45.41)	8.96 (45.70)
1976 -1990	14	6.45 (10.34)	7.09 (48.10)	12.76 (44.40)	3.22 (48.88)
1976 -1991	15	5.29 (10.93)	4.44 (47.50)	10.48 (43.69)	-0.63 (49.4)

*This first row calculations are based on monetary values (because the implicit GDP index series are unavailable for the pre-1960 period

NOTE: The figures in parentheses are the (sample) standard deviations of the annual growth rates.

SOURCE: Based on Data from the Ministry of Finance, *Government Revenue and Expenditure*. (various years)

Regarding agricultural indirect (export) taxation the major reforms were undertaken in 1976 when *The Customs Tariffs Regulations of 1976 (Legal Notice No.42/1976)* and *The Cess (on coffee exports) Regulations, Legal Notice No.47/1976* replaced the 1964 provisions and resulted in a significant increase in the taxation of agricultural exports. In addition to these discretionary changes there were also important reforms made in tax administration. The most important of these was the reorganization of rural administration (involving the use of the peasant associations in land administration and taxation) which brought a measure of efficiency in tax collections. The overall tax effect of these reforms had been to "double the agricultural tax receipts for the post-1976 period over the pre-1976 levels" [16].

The increase in the rate of agricultural taxation may be justified on grounds of both efficiency and equity considerations [20]. The relative supply inelasticity of agricultural goods and the need to transfer resources to sectors of relatively higher rates of return (in this case from agriculture to industry) favour heavier agricultural taxation and constitute an important efficiency argument for turning the terms of trade against agriculture.

An important equity argument is that the application of progressive and increased rate of taxation penalizes the rural rich more than it does the poor and so tends to diminish rural income differentials. Furthermore, the contribution of agricultural finance through improved (increased) taxation may have to be gauged to the relative productivity share of agriculture in the economy, an argument already made in the introduction of this essay.

Another way of looking at the growth of agricultural tax revenue would be to analyze the trend of its relative revenue shares over time. Despite the remarkable growth of agricultural tax revenue, its share in the total tax revenue was declining over the longer term (i.e. over the 1950-1990 period). This share was 28.0 percent per year (on the average) for the 1950-1964 period, 15.9 percent for the 1965-1975 period and 19.1 percent for the period 1976-1991. The main explanation for this development is the relatively higher revenue yield

from the indirect tax system generally. Agricultural taxation (both direct and indirect) accounts for less than a fifth of total tax revenue at present.

Indeed, the share of total tax revenue in the total domestic government revenue was also falling over the years. It made up 87.5 percent of the total domestic revenue per year (on the average) during the period 1950-1964, 85.9 percent during 1965-1975 and 75.3 percent during 1976-1991 (see Table 2). The main explanation for this phenomenon is to be found in the relative growth of non-tax revenues in recent years. It is thus to be concluded that the share of agricultural taxation in the total tax revenue was falling as were the shares of taxes in the domestic revenue system generally. The declining shares have become particularly marked in the last few years (since 1989).

Table 2: Agricultural Tax Revenue Shares
(Yearly Averages)

Period	Number of Observations	Total Tax Revenue/Total Domestic Government Revenue	Agricultural Tax Revenue/Total Tax Revenue	Direct/indirect Agricultural Tax Revenue
1950 - 1964	16	87.49 (2.26)	28.02 (5.01)	226.77 (175.53)
1965 - 1975	10	85.85 (1.86)	15.87 (2.97)	82.50 (24.47)
1976 - 1991	16	75.32 (7.21)	19.07 (8.78)	73.92 (81.42)

NOTE: The figures in parentheses are the standard deviations of the annual values
SOURCE: Based on data from the Ministry of Finance, *Government Revenue and Expenditure*. (various years)

It is also interesting to note that, whereas direct agricultural taxes contributed more to government tax revenue than indirect agricultural taxes in the earlier periods, they gradually loose their relative importance over the years as agricultural export taxation

becomes a major tax revenue source. The direct/indirect agricultural tax ratio was 226.8 percent per year for the 1950-1964 period, 82.5 percent for the 1965-1975 period and only 73.9 percent for the period 1976-1991. It appears that the relative decline in the share of total agricultural taxation is associated with this rise in the indirect/direct agricultural tax ratio.

2.2 Government Agricultural Expenditures

Measurements concerning the level of agricultural government expenditure during the decade of the 1980s show strong variations across regions and countries but they indicate little change over time. The level of government expenditure on agriculture averaged (with little variation from year to year) about 1.0 percent of the GDP per year for the world, 0.8 percent of GDP for the industrialized group of countries and around 2.0 percent for the developing countries. The average agricultural expenditure ratio for the African region varied slightly from time to time but remained higher than the 2.0 percent shown for the developing countries [9, 1990]. In Ethiopia, the agricultural expenditure/GDP ratio was a low 0.2 percent in 1960, 0.7 percent in 1970, 1.8 percent in 1980 and 3.1 percent in 1990[2]. The cross-section data above suggests that the ratio is a declining function of the process of economic development. On the other hand, the Ethiopian time series data shows the government agricultural expenditure/GDP ratio is an increasing function of time. The relationship between the ratio and level of development cannot be established from these trends and the only fact that the data reveal is that the rate of government agricultural expenditure increase was relatively high in Ethiopia.

Indeed, post-1974 developments in Ethiopia are marked by a relatively high growth of government agricultural expenditure. During the period 1965-1975 real government agricultural expenditure had an average annual rate of growth of 23.5 percent and during the period 1976-1989 the growth rate was still a high 13.2 percent per annum (see Table 3).

These growth rates are higher than the corresponding growth rates for agricultural tax revenues or the general level of government expenditure.

Following the rural and urban land proclamations of 1975 and 1976 and subsequent declaration of the Government's socialist *Programme of the National Democratic Revolution of Ethiopia (PNDRE)*, there was a significant restructuring of property ownership patterns. These processes transferred large economic resources from the private sector to the state sector and greatly increased state participation in agricultural activities [21]. Sweeping nationalization of private commercial farms were carried out and, in order to effect a new land management system, an enlarged state machinery was established.

The Ministry of National Resource Development was established early in 1975 to serve as the government "receiver" of nationalized private farms and other private economic assets. The Ministry of Agriculture was greatly expanded to meet the challenge of food self-sufficiency and agricultural development. Within the Ministry new departments were created (such as, the Agricultural Marketing Corporation, Forestry Department, and agricultural research and training institutions) and new functions (including the responsibility of organizing service and producers cooperatives) were also added. Since April 1978, a Ministry of State Farm Development was established, which at the beginning had a personnel of 8000 [14]. Presently the Ministry consists of "... 7 corporations, 14 organizations, 58 state farms, 16 animal husbandry centers, 17 factories and two abattoirs" [14, p.10]. In addition, a Ministry of Coffee and Tea development was established to enhance quality production and export promotion of the indicated cash crops.

Table 3: The Growth of (Real) Government Agricultural Expenditure
Average annual Growth Rates (percentages)

Period	Number of Observations	Total Government Expenditure	Government Agricultural Expenditure		
			Total(Government) Agricultural Expenditure	Agricultural Recurrent Expenditures	Agricultural Capital Expenditures
1960 - 1964	5	16.23 (12.06)	33.10 (33.37)	22.17 (31.97)	56.80 (44.93)
1965 - 1975	10	8.08 (10.44)	23.47 (31.95)** 57.87 (100.1)*	9.94 (12.27)** 75.97 (244.4)*	38.93 (59.35)** 39.96 (61.72)*
1976 - 1989	13	9.53 (12.91)	13.20 (42.77)	9.35 (10.27)	15.11 (51.96)
1976 - 1990	14	8.38 (13.13)	12.37 (41.21)	8.82 (10.06)	14.13 (50.06)
1976 - 1991	15	7.29 (13.34)	10.24 (40.55)	7.35 (11.25)	11.73 (49.12)

NOTE: *The figures for 1971/72 are obtained by taking the average for the previous and subsequent year. The recurrent cost is obtained by subtracting the capital expenditure from total agricultural expenditure and unusually large recurrent agricultural expenditures obtain for 1971/72.

**Based on actual figures for 1971/72

SOURCE: Ministry of Finance, *Government Revenue and Expenditure*. (various years)

Among the important functions of the Ministry of Agriculture had been organizing the peasantry into service and producers' co-operatives. By June 1984, the number of service cooperatives reached 3813 embracing 17716 peasant associations with a total membership of 4.4 million households [18, 25], [26, p.41]. The number of producers' co-operatives established by the Ministry fluctuated and by the end of the six annual plan period in 1984 there were 1489 producers' co-operatives with a membership of 94368 households [18, p.46], [26]. State activity in the agricultural sector was given a further boost by two other developments - the villagization and land settlement programmes of the socialist government. Actively pursued after the disastrous drought and famine of 1983-1985 the government sponsored settlement programmes transferred and permanently relocated more than half a million persons from the drought and war ravaged areas in some 88 large

settlement centers (excluding those resettled in less densely populated peasant associations under the *sigsega* scheme[3]) [26, p.43], [28]. Apart from expensive transport and up-keep costs, there were large expenditure finances needed in rehabilitation and establishment programmes. Some of these are "transient" or "one-time" costs, others are covered by international assistance and there remain still other cost elements requiring government budgetary provisions and commitments on a permanent basis.

The villagization programme was also extensive. According to a National Villagization Coordinating Committee report, by 1987 13083 villages were established in the country embracing 1.2 million household heads or 6.3 million household members [19]. Although carried out as a campaign programme (involving the transfer of human, material and financial resources from other uses) and thus in a somewhat cost-effective manner, there were residual activities the programme generated which required the longer term commitment of the central government toward economic development [10, 11, 19].

The expanded bureaucracy and the extension of the functions of government into the spheres of economic production and distribution created large establishment and operational expenditure requirements. The government was also providing fertilizers, improved seeds and pesticides at reduced prices to farmers, was running extensive subsidy programme to the state farms and cooperative sectors, and managing massive agricultural extension services and training programmes. Regarding the last item, for example, during the six campaign years (1978-1984), training was given to 1300 employees of the Ministry of Agriculture (in local institutions and abroad), and some 300000 members of cooperatives were given training in diverse fields (including in accounting, animal husbandry, plant science, soil and water conservation and home economics) [18, p.25]. All these result in a significant growth of the level of government expenditure.

Regarding the actual mechanism of this growth, typically, the government was drawn into "campaign" programmes and expansion activities (of existing institutions and functions) which required large initial financial injection and also resulted in the (permanent)

institutionalization of new government expenditure budget lines. The campaign periods are often prolonged and tend to be succeeded by new campaigns. For example, the Somali war of aggression of 1978 and the war of cessation in the North siphoned off extensive finances relating to food production and distribution activities. Similar increases in government expenditure resulted following the land reform, resettlement, villagization and state farm development campaigns and activities. Much of these campaigns are financed by extra-budgetary sources but also caused extreme budget imbalances. In effect, the Peacock and Wisemans's "displacement, inspection and concentration effects" of government expenditures[4] are at work [29]. To the initial "campaign" finances, additional and more permanent budget lines are needed to sustain the resultant high level of public expenditures.

The failure to provide for the greatly increased government expenditure levels leads to serious economic difficulties. Development projects are abandoned with only a fraction of the phases covered or the implementation period is extended, project workers remain unpaid for prolonged periods of time, (production) activities are operated with intermittent stoppage and fluctuating pace, and the process of currency debasement (and inflation) is greatly accelerated. At the same time the capacity to increase the level of non-inflationary (or less inflationary) revenues, especially tax revenues and foreign aid and loans, are eroded and, as the data of the last three years reveal, tax revenues may even be falling. The stable and non-inflationary revenue system fails even to cover the recurrent budget expenditures, let alone contributing to the finances of capital budgets. This crisis of government finance characterizes fiscal developments in much of the Sahel countries as well as in Ethiopia and is dubbed "the recurrent cost problem" [4].

Agricultural expenditure growth is also associated with the agricultural capital expenditure budgetary allocations. In particular, there had been a marked growth of capital agricultural expenditure which in turn influenced, in a profound way, the general level and structure of government agricultural expenditures. Between 1960 and 1964 government agricultural capital expenditures were half the value of the recurrent expenditure. But the

ratio changes quickly and by 1990 agricultural capital expenditures (in Agriculture) rise to five times the level of recurrent costs[5]. The main subsector where capital expenditure growth is most marked is the state farm subsector. The Ministry of State Farm Development was established to serve as the government arm for agricultural modernization activity - including agricultural mechanization, heavy construction and improved farm management practice [14, pp.9-15]. Accordingly, most of the government investments in agriculture took place in the state farm subsector. Within the Ministry's Agricultural Machinery and Technical Services Corporation alone the level of expenditures on tractor and other machinery purchases and the purchase of spares and parts, on land surveying work, interior road and local airport construction, irrigation network laying and other heavy construction activity accumulated to well over 600 million birr during the decade 1978 - 1988 [14, pp.43-44]. These capital investments cause the establishment of permanent expenditure budget lines in maintenance and management activities. Here again, the investment multiplier is at work. Other than requiring relatively higher financial outlays, the rapid increase in the level and share of investment appears to have a "snowball effect" on agricultural as well as on general expenditure levels (through many expenditure linkages and associated multipliers).

The growth of government agricultural expenditure was also such that, in later years, it could not be covered by agricultural tax revenues alone. While in 1959/60 agricultural tax revenues collected had been six times the level of government agricultural expenditure, they were only twice as much in 1980/81, and in 1990/91 agricultural tax revenues covered only 27 percent of agricultural government expenditure. Furthermore, for the period after 1984/85 agricultural tax collections consistently remained below the level of government agricultural expenditures (see Table 4). Contrary to the commonly held position that in agrarian economies agricultural taxation should finance economic development (and beyond paying for agricultural expenditures), in the Ethiopian case it fails even to cover government agricultural expenditures.

Table 4: Government Agricultural Tax Revenue to Agricultural Expenditure Ratios

Period	Yearly Averages (standard Deviations)
1960 - 1964	6.7457 (2.8597)
1965 - 1975	2.4944 (1.0647)
1976 - 1991	1.0615 (0.6664)
1984/85	0.5657
1985/86	0.7777
1986/87	0.5148
1987/88	0.5929
1988/89	0.6449
1989/90	0.3223
1990.91	0.2693

SOURCE: Computed from Data obtained in Ministry of Finance, *Budgetary Revenue and Expenditure*. (Various years)

3. DETERMINANTS OF AGRICULTURAL EXPENDITURE

From the foregoing analysis it may be hypothesized two sets of factors constitute the most important determinants of agricultural expenditure: the structure of government finance and expenditure. Changes in the level and structure of government expenditures affect agricultural expenditures and can be measured in many ways. The most common measurements of these changes include the level (and rate of change) of total government expenditures (GE), the share of agricultural expenditure in the total government expenditure (AEGE) and the allocation of agricultural expenditure between "capital" and "recurrent" expenditures (ACEARE).

The level of total government expenditure affects the level of government agricultural expenditure in a direct way. This is not necessarily a tautology since the possibility exists for a change of government expenditure emphasis away from agriculture. The ratio AEGE,

on the other hand, looks into the sectoral allocation of government expenditures. Government agricultural expenditure levels may rise as a result of deliberate government plan expenditure allocation in favour of agriculture. It is already shown that agricultural expenditure was growing faster than total government expenditure and, as a consequence, the share of agricultural expenditure in the total is rising (see Table 3). Thus, these changes in the level of total expenditures and sectoral allocation of government expenditures are reflected in the growth of total agricultural expenditure levels.

The second factor relates to the structure of capital expenditure which affects agricultural productivity and has profound economic growth implications. In general, investment resource allocations improve future economic development prospects more than consumption expenditures do. Among the various measurements concerning this variable, the Ethiopian data suggests the following possibilities: agricultural capital/recurrent expenditure ratios (ACEARE) and the sectoral capital allocation, agricultural capital expenditure/total capital expenditure ratio (ACETCE). Concerning the factor ACEARE, the point is already made a) that it is increasing over time and, b) that the growth of capital expenditure affects directly agricultural expenditures generally and through the investment multiplier. With regard to the latter measurement, ACETCE, it can be shown that capital expenditure allocations have favoured agriculture since non-agricultural sectors were receiving decreasing shares. For example, during the period 1960-1964, the yearly average ACETCE was only 4.14 percent. However, this ratio rises to the level of o.1639 for the period 1965-1975 and during 1976-1991 the yearly average share reaches the high level of 0.3073.

Concerning the level and structure of government finance and its agricultural expenditure effects, similar conceptual and measurement problems arise. First, there are many elements in government finance. For example, these may include direct agricultural taxes (DAT), indirect agricultural taxation (IAT), total tax revenues (TTR), domestic government revenues (GR) and total government finance (equal to total government

expenditure, GE). All these may be considered as alternative measurements of government finance. Which of these is to be used in the determination of agricultural expenditures is an outcome of a selection process involving various measurements for each explanatory variable and related correlations with the dependent variable, AE.

Changes in the structure of finance may be approximated by many ratios including: direct agricultural taxation/total agricultural tax (DATTAT), indirect agricultural tax/ total agricultural tax (IATTAT), total tax revenue/government domestic revenue (TTRGR) and total tax revenue/total government finance (TTRGE). Since, in most recent years it is known that government expenditures are being financed by domestic bank borrowing, the inflationary effects of such a process aside, domestic deficit financing (measured here, say, by the ratio of domestic bank borrowing/total government finance (BBGE or BBGR) becomes a factor to consider. Again, which to take as the best measure of changes in the structure of finance depends on the selection trials involving various definitions and measurements of these factors and their correlation with the dependent variable, government agricultural expenditure (AE).

Finally, there is a problem concerning the use of monetary values of variables since these include the effects of inflation. The dependent variable, government agricultural expenditure, is measured in real terms. The deflator used for the purpose is the implicit GDP index, which is given as the ratio of GDP at current factor cost to GDP at constant factor cost of 1980/81 prices. The same indices are applied to deflate all revenue and expenditure variables. Inflationary effects are also removed in those cases where variables are measured as ratios of monetary values.

The determination of agricultural expenditures is indicated by the results in Table 5. The specific transformation used is arrived at after some trials (using scattergrams) and gives a better fit to the data than other results tried. The coefficents are unstable and change with changes in variables and measurements. Clearly multicolliniarity is a serious problem since we are dealing with closely related variables.

Table 5: Determinants of Agricultural Expenditure

Regressor	Coefficient	T-ratios
A	-8.3819	-5.7443
LRGR	1.2413	16.7935
BBTAT	0.0223	2.6139
AENAE	7.0560	3.1930
ACETCE	1.5363	2.7100
R^2 = 0.9880 R bar squared= 0.9861 F(4,26) = 533.2404 Standard error of estimate = 0.1519 DW statistics = 1.1019		

Where,

A = a constant
LRGR = natural logarithm of (real) government domestic revenue
BBTAT = domestic bank borrowing to total agricultural taxation
AENAE = government agricultural expenditure to non-agricultural expenditure
ACETCE = government agricultural capital expenditure to total government capital expenditure

It is to be noted, for example, that DAT and IAT are excluded in the reported regression because consistently the coefficients are found to be small and statistically insignificant (at the five percent level). However, aggregated measures of finance such as the level of domestic revenue (GR) and the level of total government finance (GE) (and to a lesser extent TAT) yield better results. In these cases the coefficients are stable, high and statistically significant (at the one percent level). These confirm the view that agricultural expenditures are financed from and depend on general government budgetary expenditure appropriation and not on earmarked taxation. Furthermore, both GE and GR can be looked at as indicating similar concepts (GE equals total government expenditure or finance and differs from domestic government revenue (GR) by the latter's exclusion of foreign resources) and are highly correlated. While, therefore, both can not be kept in the same regression, whichever is to be retained depends on relative correlations with the other explanatory variables and with GE. For example, when GE is kept and GR excluded bank

borrowing would have no effect on agricultural expenditures and the sectoral allocation effects of government expenditures would be reversed (i.e. the coefficient will have a negative sign).

All the coefficients in the reported regression (Table 5) are statistically significant (at the one percent level) and they all have the expected signs. The selected measure of the general level of government expenditure and its sectoral allocation is AENAE, and the results show that overtime the share of agricultural expenditure in the total has been rising. This deliberate government expenditure emphasis toward agriculture is a factor explaining the increase in the level and rate of growth of government agricultural expenditures. Likewise, increasing shares of government capital expenditures (see the coefficient of variable ACETCE) went into agriculture, which it is argued not only raises the general level of government agricultural expenditures directly, but also through the investment multiplier. While it may prove interesting to differentiate between these direct and indirect capital expenditure effects, it is the overall effect of the capital expenditure structure that is reflected in the coefficient of ACETCE. Other measures of this factor tried include the ratio of agricultural capital expenditure to agricultural recurrent expenditure (ACEARE) and the share of agricultural capital expenditure in the total government expenditure (ACEGE), but these did not yield satisfactory results. That agricultural expenditures (measured by LRAE) are responsive to the changes in the level of domestic finance is indicated by the relatively high value and statistical significance of the coefficient of LRGR. Regarding domestic bank borrowing, the results in Table 5 show that the increases in government agricultural expenditures are indeed covered (albeit only partially) by such borrowing. However, LRAE is relatively inelastic with respect to the changing shares of deficit finance, BBTAT.

But, recent trends (especially in the last three years) indicate that the government is becoming increasingly dependent on deficit financing to cover its bulging public expenditures, including expenditures on agriculture. With no concomitant increase in the

levels of production of goods and services, the expected inflationary effect of such a development is already being felt. For example, according to the Central Statistical Authority, the general price index for Addis Ababa (1963 = 100) was 145.0 in 1970, 353.5 in 1980, 544.2 in 1990 and a high 738.7 in 1991. This trend is continued into 1992 (for example, the March 1992 index is 781.2). The growth rate of this composite price index (our measure of inflationary trends) was particularly high during the past three years and, this development coincides with rapid increases in money supply, a major component of which is government borrowing from the banking system.

4. CONCLUSION

During the course of the past twenty years, the continued rise in the level and relative shares of defense and related expenditures, a rapid expansion of state activity in the production and distribution spheres and a heightened effort at the centralized management of the economy have led to the dramatic growth of the public sector and public expenditures. A contributive factor to this growth of the public sector has also been a rapid increase in the level of agricultural expenditures. Both recurrent and capital agricultural expenditures as well as the relative share of capital expenditure in the total government outlay were on the increase.

At the same time recurring drought, gross economic mismanagement and wars exerted additional demand on the public coffers while contributing to a decline in the growth of domestic finance. Economic mismanagement were in evidence in agriculture where many public sector enterprises were operating with loss and were sustained by continued government subsidy.

An important feature of the dramatic expansion of the public economy and the rise in public expenditures had been a strong manifestation of the so-called "recurrent cost problem" - a condition characterizing fiscal developments in the poorest African countries

[3, pp. 101-117]. In Ethiopia investment projects (agricultural projects included) are abandoned for lack of funds, some have their construction phases over-stretched, compieted projects have extended running-in periods and existing plants are operating with considerable excess capacity. The problem of expenditure finance is fast approaching crisis levels with government revenues failing to cover recurrent budgetary expenditures and with this gap (between total government finance and recurrent budgetary expenditures) ever widening.

Tax revenues, inspite of impressive improvements in tax performance, are declining in their relative importance as sources of government finance, judging by the most recent trends. Agricultural taxation too increased considerably, following tax reforms and improved tax administration, but its relative share in the total tax receipt has been decreasing (see Table 2). Increasingly, the bulging public expenditures (including expenditures in agriculture) are being covered by deficit financing. The principal mode consists of overdraft from the National Bank of Ethiopia (NBE), although Treasury Bills (mainly from the Commercial Bank) are also used to finance short-term expenditures and Bonds from the NBE to finance both short- and long-term expenditures [13, 1976]. Unfortunately this mode of financing government expenditures leads to the "monetization of deficits" and the aggravated inflationary state of the economy [1, pp. 39-73].

NOTES

[1]Using Tanzi's results [27], the tax/GDP (at current factor cost) for Ethiopia is estimated at 3 percent which is far below the 17 percent actual for 1981

[2]Using data obtained in Ministry of Finance, *Government Budgetary Revenue and Expenditure* (various years) [12]

[3]The Amharic word *Sigsega* refers to the accommodation (or absorption) of settlers in already existing relative low-density peasant associations located far away from base

[4]They showed that public expenditure grows in step-like fashion and they also established the down-ward rigidity of these expenditures

[5]Government Agricultural Capital/Recurrent Expenditures
Yearly Averages (percent)

Period	Yearly Averages (and Standard Deviations)
1960-1964	53.13 (22.48)
1965-1975	172.75 (118.68)
1976-1991	501.20 (204.10)
	484.97 (207.59)

SOURCE: Computed from data obtained from the Ministry of Finance, [12]

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