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Macroeconomic Linkages and Agriculture: The African Experience

INTRODUCTION

Based on almost any indicator, Sub-Saharan Africa (SSA) emerges as the poorest and most economically distressed region of the world. The agricultural sector carries much of the burden of SSA economies, and hence, many of their problems could be traced to the sector's performance. This is explained by the fact that agriculture is the principal sector as it accounts for the dominant share of GDP, income, employment, food supply and export earnings. More specifically, the agricultural sector provides 30 – 60 per cent of GDP, about 70 per cent of the labour force and, except in countries where metals and minerals are prominent (for example, Nigeria, Zambia, Zaire, and so on), agriculture accounts for over 60 per cent of export earnings. Thus, agricultural output is indisputably the single most important determinant of African overall economic growth.

The rate of growth of SSA's agricultural sector has not only been sluggish but it has actually steadily declined since the 1960s. While agricultural output increased at 2.3 per cent annually in the 1960s, the growth rate declined sharply to about 1.3 per cent per annum in the 1970s. This pattern continued through the early 1980s (World Bank, 1986). The corresponding negative agricultural output growth per caput places SSA's agricultural performance well below that of other developing regions of the world. The poor aggregate agricultural performance is mirrored in the decline of about 2 per cent per annum in agricultural export volumes in the 1970s compared with a 5 per cent annual increase in the 1960s, as well as in the steady decline in food self-sufficiency and sharp increases in food imports.

Given the obvious importance of the agricultural sector for overall economic performance in SSA, it is important to identify the factors and policies which have hindered agricultural growth in the past and to determine what policies are needed to stimulate improved performance. Since the disappointing record of agricultural growth in SSA cannot, apparently, be ascribed exclusively to technical and sectoral reasons, it is necessary also to examine whether and the extent to which general macroeconomic developments and policies have had significant incentive/disincentive implications for the agricultural sector. This paper offers a broad survey of the African experience regarding macroeconomic linkages and agriculture. The paper first provides an overview of macroeconomic developments and policies, while the section following presents a sketch of the theoretical

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basis of the links between macroeconomic policies and production incentives in the agricultural sector. The empirical evidence on the effects of trade, exchange rate and general macroeconomic policies on agriculture is then reviewed and, finally, some conclusions and implications are presented.

OVERVIEW OF MACROECONOMIC DEVELOPMENTS AND POLICIES

In Africa, as in other parts of the world, macroeconomic policy was driven from the 1960s through the early 1980s by both internal and external factors. One of the more enduring internal factors was the deep commitment to a development strategy which placed great emphasis on industrialization as the key to economic development, and import- substitution with a closely controlled trade regime as the primary means of achieving the growth objective. This gave rise to a trade and exchange rate policy package which sought to transfer resources out of agriculture in favour of the industrial sector. A second major development is traceable to the increases in the world prices of certain primary and mineral products in the early 1970s. As these raised export earnings and government revenues, they also permitted expansionary fiscal and monetary policies. But when exports weakened by mid-1970 and government revenues fell off following subsequent declines in world commodity prices, expansionary government spending was not (and for socio-political reasons could not) be discontinued quickly. The resulting fiscal deficits were financed by external borrowing, expansion of domestic credit to government, and the accumulation of domestic and external trade arrears (Outtara, 1986). A largely inhospitable international economic environment compounded SSA's economic problems from the mid-1970s; the oil price shocks, economic recession in industrial countries, the steep rise in international interest rates and the worsening terms of trade created very difficult problems of economic management for the relatively fragile and undiversified African economies.

Partly as a result of these developments and the policy reactions to them, annual rates of inflation in SSA almost doubled from about 15 per cent in 1975 to almost 30 per cent in 1983. Fiscal deficits rose from 3.2 per cent of GDP during 1970–4 to 6.3 per cent in 1980–5; while debt service ratio increased sharply from less than 6 per cent in 1970 to 25 per cent in 1984. A particularly striking similarity in policy reaction among SSA countries was the attempt to maintain their official domestic exchange rates at constant levels in the face of rising domestic inflation rates and a widening gap between domestic and international rates of inflation, as well as other changing international economic conditions. To deal with the scarcity of foreign exchange resulting from both internal and external problems, most African countries resorted to trade and exchange controls and relied more heavily than before on external borrowing and foreign aid flows. In effect, SSA's real exchange rate appreciated by 31 per cent between 1969–71 and 1981–3 (Table 1). The SSA aggregate real exchange rate appreciation hides marked differences between individual countries. For instance, real appreciation was particularly substantial in Ghana and Nigeria whose real exchange rate fell by 92 and 59 per cent respectively between 1969–71 and

1981–3. In comparison, Malawi's real exchange rate appreciation was only 6 per cent over the same period; and some countries such as Senegal, Kenya and Cameroon were beginning by 1983 to achieve a turnaround in the direction of exchange rate policy.

ANALYTICAL FRAMEWORK

The difficulties which confronted African agriculture since the 1960s can be attributed to at least three major factors. First, at the level of the international economic environment, prices of SSA's major agricultural exports have exhibited a generally downward trend since the early 1970s, and a substantial terms of trade loss has occurred. Second, weather and other climatic factors have been unfavourable; both the Sahelian drought of the 1970s and the longer-term fragility of soils have obviously hindered agricultural growth. Third, domestic economic policies have also played an important part in the process of agricultural development.

Domestic economic policies play a role through their implications for agricultural production incentives. These incentives are derived partly from sector and commodity-specific government interventions and partly from economy-wide trade, exchange rate and general macroeconomic policies. Thus, realized (as compared with intended) agricultural production incentives represent the combined effect of sector-specific interventions with respect to agricultural input and

TABLE 1 *Index of real exchange rates in some Sub-Saharan countries* (1969–71 = 100)

Country	1973–75	1975–80	1981–83
Cameroon	75	58	80
Cote d'Ivoire	81	56	74
Ethiopia	93	64	67
Ghana	89	23	8
Kenya	88	69	86
Malawi	94	85	94
Mali	68	50	66
Niger	80	56	74
Nigeria	76	43	41
Senegal	71	60	85
Sierra Leone	100	90	73
Sudan	76	58	74
Tanzania	85	69	51
Zambia	90	79	86
All Sub-Saharan Africa	84	62	69

Source: World Bank, *World Development Report, 1987*, Washington, DC.

output marketing and pricing, on the one hand, and trade, exchange rate and general macroeconomic policies, on the other. In the 1960s and 1970s, research efforts focused largely on understanding and measuring the impact of sector-specific policies which had a direct bearing on agriculture. More recent attempts recognize that macroeconomic policies which apparently have no such direct impact may turn out to have significant adverse effects on the agricultural sector. This establishes the need to examine both sector-specific policies which have 'direct' effects and macroeconomic policies whose impact is largely 'indirect'.

Both types of policies impinge on agricultural production incentives by affecting relative prices. Sectoral policies, such as agricultural trade barriers, taxes, subsidies, and marketing margins as well as agricultural input and product price controls, place a wedge between domestic farmgate prices of agricultural products and their world prices at the border. When sectoral policies impose net taxes on agriculture they contribute to the bias against the agricultural sector and exacerbate the negative impact of other policies. These other policies refer to general trade, exchange rate and macroeconomic policies which are designed primarily for implementing a country's development strategy and for the macroeconomic management of its economy.

Because of the diverse objectives to which they can be targeted, general macroeconomic policies occur in various forms. The trade regime may, for instance, reflect a development strategy that seeks to promote industries behind tariff protection. The trade and exchange rate policies which sustain this strategy have the effect of shifting resources out of the agricultural sector by reducing its profitability relative to that of industry and thus turning the internal terms of trade against the agricultural sector. Thus, industrialization through protection penalizes agriculture: (a) by increasing the prices of import-competing industrial goods relative to the prices of import-competing and export agriculture; and (b) by increasing the cost of agricultural inputs. Macroeconomic policies may include expansionary fiscal and monetary measures targeted, perhaps, at employment generation and output expansion. But they may also lead to higher inflation locally than abroad and, unless exchange rates are appropriately adjusted, the local currency could become overvalued. In the event, the bias against agriculture worsens to the extent that the increased protection accrues to the industrial sector. The expansionary fiscal and monetary policies may owe their origins to a commodity boom and its associated capital inflows, but the effects may essentially be the same.

Both sector-specific and general macroeconomic policies can, in principle, have positive or negative effects on agricultural incentives. One set of policies may also be adjusted to neutralize the adverse effects of the other. Thus, policies within the agricultural sector may be designed to offset the implicit taxation imposed by general macroeconomic policies. But, by the same taken, sector-specific policies may, in fact, amplify the adverse effects of macro policies. Whether or not sectoral trade and pricing policies compensate for macroeconomic bias against agriculture, their effects cannot be adequately determined in isolation from the incentive impact of macroeconomic policies.

The real exchange rate approach (Valdés, 1986) tackles this problem by analysing how general policies affect agriculture in terms of their effects on the real exchange rate (RER). Defined as the ratio of the price of tradables to non-

tradables, RER plays a key role in the profitability of import-competing and export agriculture. It provides a long-term signal for the allocation and reallocation of resources among and within various sectors of the economy and serves as the primary mechanism through which trade, exchange rate and macroeconomic policies affect the agricultural sector.

Trade policies which sustain protection of the industrial sector result, for instance, in lower RER since protection increases prices of imported protected goods compared with prices of exportables and home goods. Thus, RER appreciation penalizes non-protected import-competing and exportable goods in the agricultural sector. Similarly, budget deficits which are financed by foreign borrowing or assistance reduce RER to a lower level than it would otherwise be. This RER appreciation imposes an implicit tax burden on agricultural tradables. Also, an expansionary fiscal policy which raises total government spending tends to reduce RER to the extent that part of the additional expenditure goes to home goods and increases their price. Furthermore, large shifts in the terms of trade associated with export booms and the Dutch Disease phenomenon as well as the corresponding capital inflows lead to an appreciation of RER (Corden and Neary, 1982). This occurs particularly because the 'spending' effect of the additional income emanating from the boom tends to boost the demand for both tradables and non-tradables and increase the price of the latter.

Both sector-specific and general economy-wide macroeconomic policies ultimately affect agricultural incentives through their impact on relative prices. Economy-wide policies exercise their impact on relative prices of agricultural products through changes in the real exchange rate. These policies can have particularly strong effects on agriculture in small open economies; and these effects may in fact overwhelm more favourable sector-specific agricultural policies.

EFFECTS OF TRADE, EXCHANGE RATE AND MACROECONOMIC POLICIES ON AGRICULTURE

In the 1960s and 1970s, much of the research on African agriculture concentrated on developments within the agricultural sector without linking agricultural performance to changing macroeconomic developments and policies. It is clear, however, that even when analysis is limited to the impact of sector-specific policies, improving agricultural incentives was not the primary aim of these policies in many African countries until at least the mid-1970s. Two basic considerations explain this general pattern. One was the commitment to industrialization and the financing of the industrial sector's development through the transfer of resources from the agricultural sector. The various ambitious development plans launched in Africa through the early part of the 1970s were constructed on the assumption that funds for their financing would be generated from the agricultural surplus, complemented by foreign assistance. The second reason is that many countries depended quite heavily on trade taxes as a source of government revenue and since agricultural exports accounted for such a large proportion of total export earnings it was inevitable that the agricultural sector would bear a heavy tax burden.

For these and other related reasons, the state in most African countries has played a critical role in the determination of producer prices for major crops through the use of parastatal crop authorities, the periodic fixing of single pan-territorial prices, the imposition of export taxes and, in some cases, input subsidies. As export taxes increased through the 1970s, parastatal marketing margins also widened so that producer prices tended to fall well below international prices converted to local currency at the official exchange rates. Kerr (1985) has assembled and aggregated the available estimates of nominal protection coefficients (that is, ratios of farm gate prices to border prices after adjusting for transportation and related costs) to produce a fairly representative evidence for all SSA countries.

It is clear from these estimates that sectoral pricing, marketing and trade policies have generally been unfavourable to the agricultural sector (see Table 2). The nominal protection coefficient (NPC) for all crops remained below one through the early 1980s, although the ratio of producer price to world price increased from 1978 onwards and approached unity by 1983. Thus, even without taking the effects of macroeconomic policies into account, sectoral measures were not adequately supportive in terms of agricultural incentives. There are distinctions to be made, of course, between various crop categories. One such marked difference relates to the treatment of export crops compared to cereals, particularly from the mid-1970s. While the taxing of export crops at the nominal level continued through the early 1980s, cereals received substantially improved protection, also at the nominal level, between 1978 and 1983.

A step towards getting at the effects of macroeconomic policies is to re-evaluate protection rates using estimates of the real exchange rate rather than the official exchange rate on the assumption that movements in the real exchange rate approximately capture macroeconomic policy changes. A comparison of the nominal protection coefficient computed at the official exchange rate with the real protection coefficient derived using real exchange rates provides some insights into the direction and approximate magnitude of the effects of macroeconomic policies. This procedure reveals that, in SSA countries, substantial improvements in agricultural incentives (measured by NPC) were sharply eroded by real exchange rate appreciation between 1969–71 and 1981–3 (Table 3). There is also a clear difference in incentives, both nominal and real, between cereals and export crop production. In the aggregate, while nominal incentives for cereal production in SSA increased by 51 per cent between 1969–71 and 1981–3, in real terms the improvement was only 9 per cent. In comparison, nominal incentives for export crops increased by only 2 per cent over the same period, and this ultimately translated into a net decline of 27 per cent in terms of real incentives. Thus, although net positive agricultural incentives were provided through various sector-specific policies, they were not high enough to mitigate the much stronger disincentives implicit in macroeconomic policies simultaneously implemented over the 1970s and early 1980s. The experience of individual countries gives strong support to this conclusion. Because of the sharp real exchange rate appreciation in Nigeria, for example, a 60 per cent increase in nominal incentives for cereal production was transformed into a 34 per cent fall in real incentives; at the same time, while export crop production incentives

TABLE 2 *Nominal protection coefficients for Sub-Saharan Africa, 1967–83*

Agricultural Crops	*1969–71*	*1973–75*	*1978–80*	*1981–83*
Cereals	0.75	0.61	1.04	1.12
Other food crops	0.60	0.40	0.70	0.88
Export crops	0.71	0.68	0.68	0.72
All crops	0.73	0.60	0.87	0.99

Source: Kerr (1985).

improved by 49 per cent in nominal terms, they actually fell by 37 per cent in real terms.

Implicit in this analysis is the idea that a given level of real agricultural price protection can be decomposed into at least two parts: a part which reflects the impact of sectoral policies and a second component which captures the effects of macroeconomic policies operating through changes in the real exchange rate. Following Kerr (1985), this decomposition shows (Table 4) that between 1969 and 1983: (a) the index of agricultural incentives attributable to macroeconomic policies fell progressively through 1980 and then regained a small part of this loss during the period 1981–3: (b) the index of agricultural incentives derived from sector-specific policies declined sharply during 1969–75 and then rose rapidly through 1983 so that for all crops an improvement of 36 per cent was achieved; and (c) as a result of the combined effects of (a) and (b), the index of real

TABLE 3 *Index of nominal and real protection coefficients for cereal and export crops in selected SSA countries 1981–3 (1969–71 = 100).*

Countries	Cereals		Export Crops	
	Nominal Index	Real Index	Nominal Index	Real Index
Cameroon	140	108	95	75
Cote d'Ivoire	119	87	99	71
Ethiopia	73	49	101	66
Kenya	115	98	98	84
Malawi	106	100	106	97
Mali	177	122	98	70
Niger	225	166	113	84
Nigeria	160	66	149	63
Senegal	104	89	75	64
Sierra Leone	184	143	92	68
Sudan	229	169	105	75
Tanzania	188	95	103	52
Zambia	146	125	93	80
All SSA Countries	151	109	102	73

Source: World Bank, *World Development Report, 1987*, p. 68.

TABLE 4 *Components of real incentives for Sub-Saharan African countries (1969–83)*

	Combined Index of Real Incentives	*Index of Incentives due to Sectoral Policies*	*Index of Incentives due to Macroeconomic Policies*
Cereals			
1969–71	100	100	100
1973–75	68	81	84
1978–80	90	139	64
1981–83	115	149	77
Other food crops			
1969–71	100	100	100
1973–75	55	67	83
1978–80	73	117	63
1981–83	102	147	69
Export crops			
1969–71	100	100	100
1973–75	80	96	84
1978–80	62	96	65
1981–83	71	101	70
All crops			
1969–71	100	100	100
1973–75	68	82	83
1978–80	75	119	63
1981–83	96	136	78

Source: Derived from Kerr (1985).

agricultural incentives for all crops fell sharply up to 1975 and then began a gradual upward movement which by 1983 left it slightly below its 1969–71 value. Because substantial improvements in incentives were derived from sector-specific policies by cereals and other food crops, their real incentive levels for 1981–3 exceeded that of 1969–71; the reverse applies to export crops. In general, it seems clear that the negative impact of macroeconomic policies was either amplified by disincentives due to sector-specific policies or that the former overwhelmed the latter when positive.

A different method for examining the impact of macroeconomic policies on agricultural incentives approaches the question by estimating the proportion of protection provided for import-competing economic activities by trade and macroeconomic activities which is shifted as a tax on the production of non-protected tradables (Sjaastad, 1980). The 'incidence' parameter estimated on the basis of this method provides an indication of how macroeconomic policies may override sector-specific measures to penalize a tradables sector such as agriculture. Available estimates of the 'incidence' parameter confirm that African agriculture has borne a heavy implicit tax burden as a result of industrial protection, real exchange rate appreciation and changes in associated macroeconomic policies (see Table 5). For example, in Cote d'Ivoire, Nigeria and Mauritius,

TABLE 5 *'Incidence' of macroeconomic policies on agriculture in selected African countries*

	Cote d'Ivoire (1970–84)	Nigeria (1960–82)	Mauritius (1976–82)	Sudan (1970–84)	Zaire (1970–82)
All Exports		0.55–0.90			0.52
Agricultural Exports	0.82	0.82–0.84	0.85		0.41
Non-Agricultural Exports	0.43	0.51–0.69	0.59		0.72
Cocoa		0.83–0.86			
Groundnuts		0.61–0.82		0.60	
Palm Kernel		0.66–0.71			
Gum arabic				0.80	
Sesame				0.40	
Sorghum				0.25	
Wheat				0.29	

Sources: Cote d'Ivoire and Mauritius (World Bank, 1987); Nigeria (Oyejide, 1986); Sudan (Elbadawi, 1988); Zaire (Tshibaka, 1986).

TABLE 6 *Explicit and implicit taxes (%) on major agricultural export crops, Nigeria, 1979–81*

	1979	*1980*	*1981*
Cocoa			
Explicit	38	8	–33
Implicit	42	42	42
Total	80	50	9
Groundnuts			
Explicit	1	11	–18
Implicit	36	36	36
Total	37	47	18
Palm Kernels			
Explicit	–3	0	–31
Implicit	36	36	36
Total	33	36	5

Source: Oyejide (1986), p. 50.

agricultural exports absorb as tax over 80 per cent of the protection provided for the industrial sector by the trade and exchange rate regime prevailing in those countries in the 1970s and early 1980s. Similarly, over 60 per cent of this protection was shifted as tax on groundnut export in Nigeria and Sudan; while Sudan's gum arabic export was subjected to an implicit tax burden equivalent to 80 per cent of the incentives provided for the protected import-competing tradables.

A further decomposition of total taxes on export crops into those emanating from explicit sectoral policies and those due to implicit macroeconomic policies provides another rough indication of relative impact magnitude and direction. The Nigerian experience in this respect demonstrates (Table 6) that while the impact of sectoral policies on the major agricultural export crops was gradually transformed from net taxation to net subsidy between 1979 and 1981, the direction and magnitude of the implicit impact of general trade and macroeconomic policies were strong enough to ensure that overall agricultural incentive remained negative throughout the period. In the case of cocoa, for example, overall tax was sharply reduced from 80 per cent in 1979 to 9 per cent in 1981, but significantly, a substantial subsidy of 33 per cent provided by sectoral policies was converted to an overall tax of 9 per cent because of the implicit tax of 42 per cent emanating from macroeconomic policies. A similar pattern is repeated for both groundnut and palm kernel export.

CONCLUDING REMARKS

African economies are uncommonly 'open', foreign trade accounts for about 25 per cent of GDP, and this trade is dominated by agricultural exports. Against this background, the lesson of the African experience regarding the effect of macroeconomic policies on agricultural performance is obvious. It has also been receiving attention in the context of various policy reform and adjustment programmes adopted by many SSA countries, particularly over the 1983–8 period. Policy reforms are focusing not only on sector-specific policies such as raising producer price levels, abolishing parastatal crop authorities and reducing marketing margins; they are also addressing macroeconomic policies, including the establishment of market-determined exchange rates, tariff reforms, trade liberalization and reduction of fiscal deficits (World Bank, 1986). If successful, these reforms are likely to liberate the agricultural sector from the adverse effects of unfavourable general economic policies. Preliminary assessments indicate that these reforms are already eliciting substantial responses from the agricultural sector. In Nigeria, for example, it is reported (Parker, 1987) that post-reform producer prices for the major agricultural export crops rose by 100–300 per cent while total agricultural exports increased by 556 per cent between 1985 and 1987. While it is perhaps too early to attempt a comprehensive and definitive assessment of the ongoing reforms in many African countries, it seems clear they are generally headed in a direction which may be expected to be beneficial to the agricultural sector.

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DISCUSSION OPENING – PETER HOPCROFT

It is a pleasure to find a paper with which one substantially agrees – perhaps we all like our biases to be reinforced. Since I do not plan to criticize the paper, especially in the absence of the author, my comments will, I hope, reinforce and illustrate it.

I would like to talk about expansionary macro policies, 'Dutch disease' and intersectoral distortions, all of which are covered in the paper. Whether a country can afford the expansion or not (in other words, whether it is the result of actively borrowing or merely the result of passively exchanging foreign earnings into local currency) there is a rapid effect on the domestic demand for both tradables and non-tradables. In the conventional model, tradables are elastic and non-tradables are not. In the absence of foreign earnings, the result is trade and payments balance problems, forcing a contraction and/or a devaluation, a fiscal and monetary cutback and/or an increase in the relative prices of tradables. In the case of a nice easy source of foreign exchange this adjustment is not necessary and tradables can move, as long as the source is there, to a lower price level. That lower price level for tradables, and the shift of resources out of tradable goods producing activities, is what we call 'Dutch disease'.

A large number of African countries at one time or another have had Dutch disease symptoms. Maybe oil (Nigeria), maybe copper (Zambia), maybe cocoa reserves at independence (Ghana), maybe a transitory commodity boom such as coffee in the latter 1970s (Kenya a full blown case), maybe foreign remittances (Lesotho), maybe foreign aid. It turns out to be a disease that is hard to shake off in its political and economic effects. Expenditure patterns within government get built into institutions and investments that are not easy to cut back or switch off. When governments are forced to cut back, bureaucratic politics generally dictate that they maintain staff and cut back supporting expenditure. Also powerful groups get very used to having access to low priced foreign exchange and tradable goods. They are not about to give them up without a fight. On the contrary, a number of countries with full blown Dutch disease have a policy regime that, far from mitigating the problem, appreciates the currency and suppresses the price

of key tradable goods even more. Nigeria is certainly such a case. Most countries have discovered an attractive alternative to raising the prices of all tradable goods across the board. It is far more appealing politically for governments to increase the prices of some tradables and keep down the prices of others. These are, of course, commodity-specific or even firm-specific trade interventions. And one sets high effective protection if a firm's imported inputs have suppressed prices while its outputs have inflated prices. A number of these interventions were seen, at least rhetorically, as an industrialization strategy, though this rhetoric became increasingly hollow as it became clear that the strategy was selectively subsidizing well-connected, inward-looking and often inefficient firms and discriminating against the rest. The result is familiar: a commodity-specific Real Effective Exchange Rate (inclusive of the price consequences of trade interventions) that is all over the place. Above all there is systematic distortion against non-protected tradable goods. So the result is against tradables implicit in an overvaluation, and a highly uneven, selective, and intensely politicized protection and exchange control regime that supports the overvaluation.

It does not take long virtually to kill off a manufactured exports subsector with such a regime. Most African countries did that in a rather short time. In Kenya the speed with which efficient and specialized manufacturing exporters shifted into inefficient and diversified import substitution with the introduction of a protective regime was remarkable. The result is that Korean type political pressures from manufacturers for a favourable exporting regime are not there. There are no exporting manufacturers to exert it. Rapidly, there is a whole manufacturing sector that is largely the creation of import barriers, that has grown used to and likes an overvalued currency with special access to low priced imports and FE, and is more or less totally dependent on FE earnings elsewhere in the economy – and that generally means agriculture.

Meanwhile, of course, agriculture is the quintessentially unprotected tradable goods sector. We are all familiar with the political economy of protection. It is where Anne Krueger first used the term 'rent seeking'. Whatever it takes to attract improved prices through the typical African political system, agriculture, and especially smallholder agriculture, is short of it. It comes out at the short end of the stick. I think that is the story behind the evidence marshalled in this paper. It is the same story that comes out of the Krueger-Schiff-Valdés study, and especially its African cases.

The conclusions are quite clear. The direct effects of sectoral policy and price interventions have typically been damaging to African agriculture, but they have received considerable attention in recent years. And there is clearly a budgetary limit on a poor country's ability to make transfers into agriculture if the macro, trade and exchange control regime is biased against it. The consequence of this whole story is the abysmal state of African agriculture over the last few years.

I also think that Oyejide is right in saying that the problem must be tackled at the level where it exists. There is an enormous tendency to justify a weird and wonderful programme of expenditures and 'institutional development' by reference to the problems generated by the Real Effective Exchange Rate faced by agricultural producers. Most countries have an agricultural subsidy budget item that sounds good, until one realizes that it generally picks up the budgetary costs of parastatal agencies that may be responsible for the remaining direct

distortions, and for the continuing politicization of market processes. One thing is sure, these subsidies are never a fair or rational compensation for the distortions.

A number of our agencies have been involved in Rural Development Programmes, always with the best intentions and sometimes with positive results. But it is hard to combat a systematic policy of extraction from the rural sector, operating through the REER for what agriculture buys and sells, with an R&D programme. The most effective R&D is a change in the REER and macro and trade distortions. I have been working in China recently and it is amazing what R&D you get when rural producers, traders and investors get a little money in their hands, generated by their own efficient productive activity. In this context, policy adjustment measures that affect incentives across the board, can be seen as a useful, and perhaps necessary, complement to other, more conventional, approaches to the development of African agriculture.