Distortions to Agricultural Incentives in Cameroon

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Agricultural Distortions Working Paper 42, December 2007

This is a product of a research project on Distortions to Agricultural Incentives, under the leadership of Kym Anderson of the World Bank's Development Research Group. The author is grateful for helpful comments from workshop participants and for funding from World Bank Trust Funds provided by the governments of Ireland, Japan, the Netherlands (BNPP) and the United Kingdom (DfID).

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Cameroon is among the more prosperous countries in Africa, thanks to relatively abundant agricultural land and offshore petroleum. These spurred an economic boom from unification of the country in 1972 until 1986, which was followed by a decade of decline from 1986 to 1995 and a limited recovery since then (Appendix Figure 1). In terms of social indicators, primary school enrollment rates fell from nearly 100 percent in the 1980s to 62 percent in 1997 (World Bank 2002), and child mortality rates worsened from 139 per thousand in 1990 to 151 per thousand in 1995, and it was still 149 in 2006 (World Bank 2006, 2008). Recovery over the past decade has been significant, but poverty remains widespread. In 2001, 17 percent of the population had incomes under one dollar per day in purchasing power parity terms, and 51 percent had incomes under two dollars per day (World Bank 2006).

Prior to the economic crisis of the late 1980s, Cameroon's development strategy efforts were managed through a series of five-year Development Plans. In these, agriculture was described as the priority sector and the government intervened massively in rural development, both directly through the establishment of state-owned agro-industries, rural corporations and settlements, and also indirectly through various support programs. Later reforms and the devaluation of 1994 improved performance through allowing more market incentives to play a role. In this chapter we use the methodology of Anderson et al. (2008) to quantify the evolution of those distortions to farmer incentives, measuring the incidence of government policy on producers and consumers each year in Cameroon from 1961 to 2004. For each of the major activities we compute Nominal Rates of Assistance (NRAs), which are then aggregated into a variety of other indexes.

The chapter is organized as follows. The next section provides a brief overview of agriculture's role in the economy. A summary of the main agricultural policy incentives, interventions and reforms is then provided, before describing the country's growth performance over time. The main section computes and analyzes government distortions to agricultural incentives, and the concluding section speculates on prospects for future policy reform.

Agriculture's role in the economy

Cameroon is a bilingual country, whose French and English speaking regions became independent on January 1, 1960 and October 1, 1961 respectively, and were united in 1972. At independence about 85 percent of the population lived in rural areas and relied principally on agriculture for their livelihoods. Since then, the country has urbanized faster than most other African countries. By 2005, the share of the population living in rural areas is estimated to have fallen below 50 percent, as compared to an African average of 64 percent (FAOSTAT 2006).

As oil exports grew after 1977, the resulting Dutch Disease contributed to stagnation in both industry and agriculture, with a boom in the oil and services sectors that at times generated more than two-thirds of GDP (Benjamin and Devarajan 1989, Blandford et al. 1995). Agriculture was particularly vulnerable to Dutch Disease, due to lower returns to growing both exportable and import-competing products, and with only limited demand for nontradable foods. Shifts in production within the sector are described by Courade and Alary (1994), Janin (1996) and Touna-Mama (1996). Changes in input use were also important, particularly after the government phase-out of subsidies for fertilizers, pesticides and herbicides in 1989–92 (Ndoye and Kaimowitz 2000, Sunderlin et al. 2000).

Main agricultural policy incentives, interventions and reforms

The evolution of Cameroon's agricultural policy may broadly be divided into four phases. The first phase runs from independence to the end of the 1960s, and is marked by a continuation of French and British colonial agricultural policies and institutions. The second, characterized by a proliferation of new agricultural interventions, covers the late 1960s to late 1970s. A third phase marked by attempts at agricultural policy reform goes from the late 1970s to the late 1980s, and the fourth phase, dominated by agricultural policy liberalization, began around 1990 and is ongoing.

Colonial agricultural policies and institutions

Cameroon was colonized first by the Germans (1894-1916) and later by the French (1916-60) and British (1916-61) with the country partitioned between them, and strong dualism between European-owned large-scale plantations and Cameroonian peasant small-holdings. Agricultural policies were closely linked to the politics of colonialism, as well as the changing economic conditions in the colonies. Emphasis was placed exclusively on export crops. Development of the indigenous food sector received little attention or was actively discouraged because it conflicted with the labor needs of the European-owned large-scale plantations. Numerous measures were taken by the administration to stimulate the creation and expansion of plantations: large expanses of fertile land were appropriated from natives without compensation and given to planters; taxation, forced labor, and other methods were used to insure an abundant and cheap supply labor to plantations; and a network of transportation and marketing facilities was developed to serve the plantation areas and link them to the coast (Ntangsi 1988).

During the second half of colonial rule, colonial powers shifted their emphasis to peasant production which provided the basis for the rapid expansion of exports (Secretariat Général du Gouvernement 1961). With the expansion of peasant production, an attempt was made to extend roads and railways beyond the plantation areas into the major peasant producing areas.[1] A number of agricultural institutions were established to provide extension and marketing services to farmers. On the French side, the most important of these was the 'Secteurs de Modernisation' (SEM), financed by FIDES (Fonds d'Investissement pour le Développement Economique). It provided a tight network of technique and crop-oriented extension services and handling seed production, pest control, and some agro-processing activities (rice milling). Furthermore, there was the SAP (Société Africaine de Prévoyance) which provided credit and the Caisse de Stabilisation which handled marketing. Specialized research institutes were also established for cotton (CFDT, the Compagnie Française pour le Développement des Fibres et Textiles), for cocoa and coffee (IFAC, the Institut des Fruits et Agrumes), and for palm oil (IRHO, the Institut de Recherches sur les Huiles et Oléagineux). On the British side, there was less emphasis on smallholders and priority was given to private large-scale plantations operated by the Cameroon

[1] In order to link the important cocoa economy of South-Central Cameroon to the coast, the railway was extended from Douala to Yaoundé and from Otélé to Mbalmayo.

Development Corporation, Elders and Fyffes Ltd., and others. Extension was provided by the Department of Agriculture, Cooperatives, and Community Development, the marketing of export crops by the Marketing Board, and research by the Department of Agriculture.

The 1960s

The post-independence period saw substantial continuity in the colonial agricultural policies and institutional structure. Until 1972, the country was ruled under a federal system with two states, East and West Cameroon. The DARA (Department of Agriculture and Rural Animation) was created in 1964 under the Federal Ministry of Planning to coordinate the agricultural development efforts of the two states. The extension system was then based on what has been referred to as the 'diffusion/modernization model', with three main features: it was centered on the peasantry as the primary agents for agricultural development, it involved the transformation of peasants through the progressive diffusion and adoption of innovations, and it relied on only limited government intervention (research, extension, availability of inputs, etc.) to obtain changes in peasant behavior in view of their autonomy in decision-making. This approach was implicitly adopted in the first Five-year Development Plan of the country (1961-1965) and, to some degree, in the second (1966-1970).

Signs of dissatisfaction with peasant agriculture were noted in the second plan, with the clear statement that, notwithstanding the satisfactory performance of the agricultural sector, growth in output had come from increases in area under cultivation and not from yield gains. The second plan envisaged experimentation with other forms of intervention structures in agriculture and new forms of production, and in 1972 the unification of the country and creation of a new Ministry of Agriculture led to substantial modification in the colonial institutional structure.

The 1970s

As in most countries around the world, the late 1960s and early 1970s saw a movement towards greater intervention in agriculture, with the direct involvement of government in functions hitherto carried out by the private sector such as agricultural input distribution and marketing of food crops. In Cameroon, increased government intervention and centralization of decision-making involved concentrating government expenditure in the state plantation sector, with almost

complete neglect of smallholders. In fact there was increased indirect taxation of peasants through the marketing board, the Office National de Commercialisation de Produits de Base (ONCPB), which had been created mainly for cocoa and coffee. This period also witnessed the multiplication of new intervention institutions and new forms of production as recommended by the second plan.[2] By 1970 a total of ten parastatal development agencies had been created and fourteen more were formed during the Third Plan (1971-75). The Fourth Plan (1976-80) in addition to continuing the projects of the Third Plan, attempted a further expansion of intervention. Some twenty new projects were proposed, most of which were never implemented because foreign aid donors were no longer willing to fund them.

The growth of Cameroon's state-led agricultural interventions had been supported by donors for a variety of reasons. These agencies were to be run as quasi-private enterprises, with administrative, technical and financial autonomy and therefore potential efficiency. In addition, most of the projects aimed to combine marketable output with basic farmer needs, an idea that fitted very well within the basic-needs-approach to rural development widely adopted by donors and the international intellectual community during the early 1970s. But Cameroon's attempt to create a modern agricultural sector through this kind of intervention proved to be very costly and had only a marginal impact on total agricultural output. The proliferation of new institutions and structures was particularly counter-productive. Agencies were supervised by different government ministries with little provision for the coordination of activities. Lines of responsibility often overlapped, agencies worked at cross purposes, and leaders were occupied in power conflicts among themselves. The poor performance of the interventionist strategy led to donor retreat and helped to awaken government doubts about the approach.

The 1980s

The year 1977 saw the start of Cameroon's oil boom. In that year farmers were offered a large increase in real producer prices for cocoa, coffee, and cotton. Those gains were quickly eroded by subsequent inflation, however, and on balance agricultural production was heavily burdened during the boom years.

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[2] The second plan had recommended the expansion of the estate sector (either privately or publicly owned), rural settlement projects to move the population from densely populated to sparsely populated areas, specialized crop development corporations charged with organizing and supervising the production of specific crops grown by small farmers, and integrated rural development projects stimulating production as well as providing social services.

During the boom, three distinct kinds of resource misallocation became increasingly severe. The most fundamental were classic Dutch Disease misallocations due to unsustainable price incentives, which limited investment in smallholder agriculture. Prior to the oil boom, the sectoral balance had already leaned heavily against agriculture as a whole, and within agriculture resources were concentrated in the relatively small estate sector which produced no more that 10 percent of total agricultural output. These biases worsened during the boom, which made smallholder farming even less attractive and increased the number of unskilled workers seeking non-farm work.

A second kind of misallocation occurred within government institutions, due to unsustainable management structures. Prior to the oil boom, an extreme centralization of decision-making had resulted in heavy red tape and fragmentation of responsibilities in the bureaucracy and the extension service. This resulted in poor policy implementation, and misallocation of what little expenditure was targeted to smallholder agriculture during the boom.

A third kind of misallocation was under-investment in new technology. Although Cameroon did have a significant public agricultural research and development program, during the boom there were few incentives for technology adoption, so yields for most crops stagnated or declined (MINAGRI 1980).

All three kinds of problems were widely recognized in Cameroon during the oil boom, but significant policy change did not take place until the boom ended and the debt crisis of the mid-1980s made reform unavoidable.

Ongoing liberalization since the late 1980s

Faced with a brutal fall in living standards after 1986, the government felt it had to implement Structural Adjustment Programs (SAPs) supported by international donors. Sector-specific policy reforms of the SAPs in agriculture included both privatization and liberalization. Those reforms targeted input production, transfer of technology and know-how through research and development, marketing, training and information as well as sanitary and phytosanitary control. They aimed to guarantee food security, promote and diversify agricultural exports and increase income in the rural area.

Reforms which attracted the greatest attention involved liberalization of product marketing. The Food Crop Development Authority (MIDEVIV) and the National Produce

Marketing Board (ONCPB), which had controlled cocoa and coffee, were both liquidated along with many other development agencies. Their withdrawal improved average incentives, but for many products and regions there were very few private traders available, so for these farmers marketing costs actually rose, at least temporarily. This deterioration of local marketing conditions inhibited farmers' production, which in turn limited the speed and number of new entrants into private trading to serve these markets.

Liberalization of international trade involved gradual abandonment of the existing quantitative restrictions, and the adoption of a simplified tax system. With the adoption in 1994 of the Regional Fiscal Reform Program (RFRP) initiated at the sub-regional level through the Economic and Monetary Community for Central Africa (CEMAC), the international tax system of agricultural and food products was simplified and average taxation rates were reduced (Bamou, Njinkeu and Douya 2003).

On the inputs side, one particularly important set of changes were the Sub-Sector Fertilizer Reform Program (SSFRP) launched in 1987 with the assistance of USAID, and the Special Program for the Importation of Fertilizers (SPIF) launched in 1988 with the support of the European Development Fund (EDF). Their goal was to put in place an effective private system for importing and distributing fertilizers, but Ntsama (2000) found that importers formed an oligopoly that enabled them to fix sale prices at an unusually high level relative to cif values. In general, Ntsama argued that SSFRP and SPIF programs were more concerned with serving existing importers than with expanding the size of the market: for example, SSFRP did not offer a credit mechanism to expand the number of farmers able to buy fertilizers.

Retrenchment in the public sector hit all kinds of services, including particularly agricultural research for new crop varieties and growing techniques. Despite the promising results recorded by Cameroonian research programs, and despite the desperate need for yield-increasing technologies at that time, funding levels fell significantly. In nominal terms, agricultural research institutes received CFAF 5910 million in 1984/85 (of which 95 percent was from state subventions), whereas between 1992 and 1994 they received only CFAF 5720 million of which only 58 percent was the state subvention, and 42 percent had to be sourced from external resources (IRAD 1996).

The public national system for agricultural education was virtually abandoned, with increasingly degraded facilities and weak staff. Its training programs were unsuitable, current budgets and equipment insignificant, installations and equipment poor, trainers demoralized and

lacking regular training or means of work. Private educational institutions emerged, and were better equipped with human and financial resources, but they covered a limited range of skills and served only some regions of the country (Matiké, Bidja and Kapto 2001).

The national extension system was less affected by the cutbacks, although it did face a slowing down of its activities. The National Agricultural Extension and Research Program (NPARV) launched in 1990 by the government through MINAGRI and with the financial assistance of the World Bank made it possible to reinforce the extension services, but the value of extension to farmers constrained by the limited availability of new technologies from research.

After the liquidation of the Cameroon Agricultural Bank ('Crédit Agricole') in 1997, only a few parastatal or private agro-industrial enterprises were able to offer farm production loans. Smaller and more remote farmers have no access at all to formal credit. The emergence of financial intermediaries has been limited by high risk and limited availability of collateral, so farmers must rely on loans from family members and local informal lenders. There has been some micro-finance available through donor-funded institutions,[3] but these remain poorly distributed in the country and sometimes lack credibility and professionalism, with no linkage between them and commercial banks.

A very important and ambitious area of reform concerns the use of forest land, launched in 1994 with the approval of the new Forestry Law (Law No. 94-01). Reforms in forest use are based on an effort to clarify the rules of the game and enforce them with strong institutions that enjoy high-level political support; to draw a clear separation of functions between public institutions and private entities and collaborative frameworks to enable collaboration among actors; to ensure that conservation of globally relevant biodiversity contributes to, rather than hinders local economies; and to use transparency and public information in the fight against corruption and vested interests. As detailed by Kazianga and Masters (2006), changing property rights can have a powerful influence on the adoption and impacts of new technology in this context, particularly for cocoa which is typically planted in forest areas.

Finally, despite the withdrawal of the government from most agricultural activities, the semi-arid North part of country has continued to benefit ever since independence from special government agricultural policies (food grants, food crops production incentives, cotton extension

[3] The World Bank participated in funding the FIMAC (Investment Fund for Agricultural and Community Micro-Projects) project which comprised 160 branches, 31000 adherents and it funded 3000 projects to the overall amount of CFAF 2 million during the period 1989-1998. Canada and France provided their backing to the Fund for Rural Savings and Self-Managed Credits (CVECA) project.

and marketing services, etc.). These have typically been preserved over time, although with varying effectiveness.

Growth performance and agricultural output

Before and during its oil boom, Cameroon experienced rapid economic expansion. From 1973 to 1986, incomes grew at more than 7 percent per year (Appendix Figure 1). Growth was led by unsustainable expansion of agricultural area, then petroleum exports and government borrowing (Benjamin and Devarajan 1989). Oil revenue shot from zero to 46 percent of exports between 1978 and 1982, and domestic absorption soared to 103 percent of GDP, driven by massive government spending (World Bank 2004). In terms of trade policy, resource abundance allowed the government to pursue an inward looking import-substitution industrialization strategy, supported by a restrictive trade policy and fiscal subsidies. This contributed to higher inflation (10 percent over the period of 1977-1985), primarily due to price increases for non-tradables and higher real wages, as measured by rising unit labor costs and an appreciating real exchange rate. The resulting deterioration in competitiveness led to a sharp decline in non-oil exports (agriculture and manufactured goods) while imports surged with domestic absorption, contributing to the deterioration of the trade balance, which eventually led to the unsustainable indebtedness of the 1980s.

The accumulated consequences of these policy choices were slowly unwound in the long downturn from 1986 to 1993, and the country did not fully recover until after the currency devaluation of 1994 and structural reforms of the second half of the 1990s. During the downturn, GDP contracted by 5 percent per year on average, such that per capita income in 1993 was almost half its 1986 level (Appendix Figure 1). Meanwhile, current public spending evolved from 11 percent to 19 percent of GDP while investment decreased drastically from 12.4 percent of GDP in 1986 to 3.5 percent in 1993. Investment rates were driven down in part by growth in external debt service payments.

The economic recovery started in 1994 and continued through 2005, thanks to the combined efforts of authorities to implement more prudential economic policies aimed at restoring economic stability, trade and fiscal policies undertaken to conform to the Central

African Economic and Monetary Community (CEMAC) provisions and the nominal 50 percent devaluation of the CFAF in January 1994. However, the structural constraints of domestic demand and supply limited response to the devaluation, and its incentive effects were short-lived.

Annual average real GDP growth of about 5 percent between 1995 and 2003 was spurred by the invigorated non-oil private sector, despite problems with the energy sector that inhibited growth in general and that of the manufacturing industry in particular. The spike of inflation that followed the CFAF devaluation gradually subsided during this period, and public finance improved due to prudential budgetary policy and changes in the tax administration. Non-oil government revenue rose by more than 4 percent of GDP, entirely eliminating the budget deficit and generating surpluses from the year 2000. The external debt ratio fell between 2000 and 2003 from 77 to 44 percent of GDP.

Financial and fiscal recovery after 1995 has been reflected in rising living standards. For example, the poverty index decreased by about 13 percent between 1996 and 2001 (World Bank 2005), largely thanks to recovery of the agricultural sector. Agriculture has registered remarkable growth but still has not brought the country's food production per capita back to the level enjoyed in the early years of independence.

On the trade side, Cameroon was a net exporter of agricultural products prior to the crisis period. The 1994 devaluation had a significant but quickly eroded effect, as imports declined but then rose again in 1996 while exports fell due to increased civil service salaries and real appreciation. A further boom in imports was recorded with the launching of the Chad/Cameroon pipeline construction in 1998, while total exports dropped significantly due to the enforcement of the new forestry law forbidding the export of whole logs for most kinds of trees. On average, rice and cereal imports increased sharply in the 1990s despite price hikes due to the devaluation.

Cameroon has been frequently cited as one of the few countries in Sub-Saharan Africa to have achieved satisfactory agricultural development. But past growth was based on an early and unsustainable expansion of cropped area, with very limited growth of land productivity. Area grew sharply in the 1960s and 1970s, particularly for coffee and groundnuts, but growth then slowed markedly, with only cotton and sorghum expanding in the 1980s and only roots and tubers expanding in the 1990s (Appendix Figure 2). Despite the significant growth in fertilizer use, there has been relatively little yield growth for the key crops (Appendix Figures 3 and 4). The net result in terms of per capita production of both food and non-food crops is shown in Figure 1, which suggests Cameroon has done little better than the average for Sub-Saharan Africa

sine the late 1960s. These trends in output are influenced by changes in resources, technology and incomes that shift the domestic supply and demand curves as well as by product pricing, particularly the distortions to agricultural incentives imposed by government policy.

Distortions to agricultural incentives

Farm policies in Cameroon have changed frequently since independence. The resulting distortions are measured and analyzed in this section, for the entire agricultural sector and selected agricultural products, using the methodology presented in detail in Anderson et al. (2008). Our key measure is the Nominal Rate of Assistance (NRA), which compares domestic prices with the border-price equivalents that would prevail in the absence of distortions. The NRA is adjusted to take account of other taxes and subsidies.

Estimated distortions are computed for all main agricultural products. We have data for four major exportable products (cocoa, coffee, cotton and bananas), and six basic food crops (plantains, maize, millet, sorghum, cassava, and other roots and tubers). There is some international trade in the latter group of basic food crops, both formally and informally, but in the Cameroonian context the quantities traded and the distances covered are too small to significantly influence national prices, so in our analysis these are considered nontradables.

Three of our commodities (coffee, cocoa and cotton) are marketed as primary products and also after light processing. In these cases, we compute distortions to incentives for both farm production and off-farm processing. For coffee, the primary product is exportable but the processed item is importable, while cocoa is exportable. For cotton, the primary product is nontradable and only the processed good is exported.

We do not compute distortion estimates for the nontradable basic food crops, since the domestic markets for them are not subject to significant intervention by the government. They play an important role when computing value-weighted averages, though, because they account for the lion's share of primary agricultural production (Figure 2).

Since it is not possible to understand the characteristics of agricultural development with a sectoral view alone, the project's methodology not only estimates the effects of direct agricultural policy measures (including distortions in the foreign exchange market), but it also generates

estimates of distortions in non-agricultural sectors for comparative evaluation. The NRA for nonagricultural tradables is used for comparison with that for agricultural tradables via the calculation of a Relative Rate of Assistance (RRA).

Data sources and assumptions

Our analysis begins with the quantity data needed to compute weighted averages of incentive effects, which themselves are derived from farm-gate agricultural prices, border prices, exchange rates, and fiscal data on taxes and subsidies. Production and trade volumes for cocoa, coffee, bananas, maize, millet, cotton, sorghum, cassava, and other roots and tubers are from FAOSTAT (2006). Prices at the farm gate for most exportable products are from MINAGRI (1980) for 1961 to 1980 and MINEFI/DSCN (2004b and earlier years) for 1981 to 2003, and INS (2005) for 2004. Exceptions are detailed here: prices for bananas are derived from the assumptions used by MINFOF (2006).[4] Wholesale prices for lightly processed cocoa are fob prices minus the 17 percent cost margin estimated by CHOCOCAM, the main cocoa processing enterprise created in 1964. Wholesale prices for coffee are from the 'Brulerie Moderne', created in 1955. Prices for cotton lint and seed cotton are from Baffes (2007), extrapolated back to 1961 from his data for 1970. The wholesale prices of cocoa and coffee are from the National Council of Coffee and Cocoa (CNCC). The farmgate prices, farm-to-market margins, and wholesale prices of importable and non-tradable products are estimated using data from the price-monitoring department of the DSCN, now INS. Additional data on taxes and subsidies includes government payments to parastatal producers from Varlet (2002), and consumer taxes from République du Cameroun (2005 and earlier years). Import and export tariffs are from the sub-regional (CEMAC formally UDEAC) Common External Tariffs (CET).

Except for cotton, all fob (cif) prices are unit values calculated from FAOSTAT (2006), as the total value of the country's exports (imports) divided by the volume of exports (imports). Trade prices for cotton are compiled by Baffes (2007) from the Cotlook A index.

Official exchange rates are from IMF (2006a and earlier years). Distortions to the exchange rate are computed relative to the parallel exchange rate, for which we use black market

[4] Due to the fact that enterprises are exporting directly, MINFOF (2006) is estimating the farm-gate prices as the difference between the wholesale prices for primary products and the cost of transportation, storage, etc. (the mark-up on farm-gate prices). The wholesale prices for primary products are equal to fob prices at local currency.

rates from 1961 to 1993 as reported by Easterly (2006), whose principal source is International Currency Analysis (1993 and earlier years). To complete the series after 1993 we use year-to-year changes based on the changes in real exchange rate misalignment estimated by Elbadawi (2006). Figure 3 shows the evolution of the country's real exchange rate and black market premium after 1980s, to show the Dutch Disease period and subsequent recovery. During the boom period all of the exchange rate indexes appreciated significantly. During the economic decline after 1986, the real effective exchange rate depreciated more slowly than the underlying equilibrium rate, leaving to increasing misalignment and a sustained black market premium until the devaluation of 1994 sharply lowered the real exchange rate. Economic recovery after the devaluation was associated with renewed real appreciation and a return to significant misalignment relative to Elbadawi's estimate of the underlying equilibrium rate.

The influence of exchange rate changes on our distortion estimates is shown in Figure 3(b), for the entire 1961-2004 period. On the left axis are nominal rates, in terms of FCFA per US dollar. All movements are due to fluctuations in the dollar vis-à-vis the French franc and then the Euro, except for the jump in 1994. The official rate shows significant overvaluation, with positive misalignment on the right axis, through the 1960s and episodically in the 1970s. Then, as shown in Figure 3(a), there was some overvaluation until the 1994 devaluation whose effects were then gradually eroded by real appreciation. Following the methology of Anderson et al. (2008), we use an average between the official and parallel rates as our estimate of the undistorted rate.

Results

Overall trends in agricultural distortions are shown in Tables 1 and 2 and Figures 4 and 5. The overall picture is clearly one of worsening price distortions during the 1960s and 1970s, followed by reform then reversal during the oil boom, and ultimately a period of sustained reforms after 1986.

Table 1 presents five-year averages of estimated distortions to farm-level incentives for production of key crops affected by trade policy, along with a value-weighted average of the crops shown. During the 1960s, taxation of key crops was substantial, on the order of 30 to 50 percent. These rates rose above 50 percent in the late 1970s before declining with reforms and fluctuating in the 1980s and 1990s; and they have remained at historically low levels since 2000.

The bottom section of the table presents a weighted average for all products, with taxation worsening to a peak of 25 percent in the late 1970s, then settling to near zero after 2000. Dispersion in tax rates among products also declined, to a standard deviation of less than 10 percentage points.

Figure 4 provides annual value-weighted composite measures aggregated by trading status, for all primary agricultural products. This includes not only the exportable primary products shown earlier (cocoa, coffee, cotton and bananas), but also non-tradable primary products (plantain, maize, millet, sorghum, and cassava plus other roots and tubers). There are no importable primary products included in this study. On average over these crops, the burden of taxation facing production of exportables grew from about 15 percent in the early 1960s to a peak of over 50 percent in the latter 1970s, before shrinking in the late 1980s and remaining well below 15 percent in most years since then. We find no comparable distortion on nontradables, so the result is a significant anti-trade and anti-agricultural bias through the 1960s and 1970s but with both kinds of distortion being much less significant over the past two decades.

The covered products account for half or more of the value of agricultural production (at undistorted prices, and excluding forestry and fisheries). We guesstimate that the NRA for non-covered farm products is zero, but a portion of them are exportable and so are adversely affected by distortions in the exchange rate. Table 2 presents estimated results that account for this effect, showing how the overall total NRA for the agricultural sector is a little less negative than for just covered products (see upper half of Table 2)

Figure 5 and the lower half of Table 2 capture policy effects on incentives for production of tradables in primary agriculture as opposed to those in the nonfarm sector. This is summarized in the relative rate of assistance (RRA). Distortions have strongly favored nonfarm (including agro-processing) activities, with an average rate of subsidy above 20 percent for almost all of the 1960s, 1970s and 1980s, until reforms after 1986 drew protection rates steadily down below their initial 1960s level. Meanwhile, primary agriculture faced worsening average tax rates from the early 1960s to 1977, with brief reforms that were then reversed before sustained reform began in 1985. The net result was a relative disincentive that worsened from about 25 percent in the early 1960s to an RRA of 64 percent in 1977, before moving towards zero in recent decades. Even in 2000-04 it still was non-trivial at -13 percent, but that was a huge improvement for farmers over the pre-1980s rates.

The policy mix of direct and indirect taxes through fiscal policy, marketing boards, trade barriers, foreign exchange restrictions, and other development policies imposed a significant burden on farmers for the benefit of urban industry, particularly in the 1970s. The exchange rate distortions do not appear to have had a very significant effect on the NRAs and RRA though (see final two rows of Table 2). These general results are in line with those of Njinkeu (1996), who concludes that, 'the performance of the exporting sectors (in Cameroon), for example agriculture, may be partly explained by the implicit tax resulting from protection of import-substituting sectors'. Reforms in the 1980s and 1990s relieved that eaerlier burden on farmers and reduced support to processors, with on balance some taxation of processors since the 1990s.

Underneath these aggregates are some pronounced differences in distortions facing producers and consumers of particular products. Perhaps most important are the effects on policy across crops in primary production, influencing the welfare of farmers in different regions and the incentives for them to change cropping patterns. Cameroon's broad pattern of heavy taxation against tree crops was typical of African countries. McMillan and Masters (2003) explain this tendency in terms of the time-consistency of alternative policies: in the absence of commitment mechanisms, governments may have a short-term incentive to set taxes such that farmers earn only the marginal cost of harvesting their tree crops, even at the cost of future productivity by discouraging tree replacement or even maintenance investments. In the Cameroonian context, the government's incentive to tax tree crops could be exacerbated by the relative political influence in general of the forested southern areas as opposed to the drier north of the country. The northern region, in part because it often faced seasonal food insecurity, has benefited from special agricultural policies since independence.

Summarizing our results, the significant increases in the taxation of primary agriculture and the subsidization of non-agriculture from the early 1960s to the late 1970s was successfully reversed during the 1980s. Those reforms are likely to have significantly raised farm incomes and farmer incentives to increase production, relative to a continuation of past policies – accounting for at least some of the upswing in agricultural yields and fertilizer use as well as the economywide growth in per-capita incomes (Appendix Figure 1).

Prospects for continued agricultural policy reforms

Through Cameroon's Poverty Reduction and Growth Facility (PRGF) strategy of 2005-2008, underpinned by the Heavily Indebted Poor Countries (HIPC) Initiative,[5] the government of Cameroon has once more considered agriculture and rural development to be a key means to raise economic growth rates in order to further reduce poverty while maintaining macroeconomic stability and debt sustainability. At the same time, the ongoing multilateral trade negotiations under the Doha Agenda of the World Trade Organization (WTO), with their embedded market access, export subsides, and domestic support challenges, are expected to lead to greater liberalization of agricultural trade worldwide. Improving agricultural performance in such a context requires that more attention be given to programs for enhancing agricultural productivity and competitiveness. Such a program should lift supply constraints on the flow of agricultural products to the external market, build complementarities between formal and informal domestic markets, and continue reform of the institutions needed by an emerging agricultural sector. These goals are central to the long term development of agriculture in Cameroon. Such a development approach depends mainly on improving governance and combatting corruption, strengthening legal security for investment in general and agricultural investment in particular, and raising the quantity and quality of infrastructures as well as key public services such as research and education. Government actions in these areas will then make it more worthwhile for enterprises to invest in productive techniques, and to diversify production in a sustainable manner.

The negative effect of corruption on the development of all sectors, including agriculture, is very well known. According to Transparency International, Cameroon topped the list of the most corrupt countries in the world in 1998 and 1999. The country has done a bit better in recent years. However, it still holds a dishonorable place in this shameful hit parade. One can still consider corruption to be endemic in the country, and reducing corruption remains a very high priority. The government has formed an ad hoc committee to coordinate the work of observers and groups carrying out anti-corruption work in every ministry and public service.

[5] On May 1, 2006 Cameroon reached its completion point under the Enhanced Heavily Indebted Poor Countries (HIPC) Initiative and became the 19th country to reach that point. Debt relief to Cameroon under HIPC is expected to be approximately US$1.267 billion in 1999 Net Present Value (NPV) terms, equivalent to a 27 percent NPV reduction of Cameroon's debt after traditional debt relief. This will reduce Cameroon's future debt service payments by about US$4.9 billion in nominal terms (IMF 2006b).

The development of basic infrastructure, notably inland and cross-border road infrastructure is crucial for the enhancement of the agricultural production and the promotion of agricultural exports. The development of the inland infrastructure is expected to determine the competitiveness of subsistence agriculture, an important source of input for the ago-industrial sector as well as the cross-border infrastructure will enhance the sub-regional agricultural competitiveness which can constitutes platform for the involvement in the global agricultural market.

Improvements in agricultural productivity are needed to raise the payoffs from new investment, and thereby induce farmers to update their production techniques. A number of public goods are involved, calling for government intervention in areas such as quality standards, education and training, access to information and communication technologies, and so forth. These public investments are important not only for the productivity of existing activities, but also for the emergence of new ones. Currently exports are limited to only a few primary products, as shown by the Export Diversification Index (EDI) of UNCTAD (2001) and the primary commodities' share of total of exports calculated by Bonaglia and Fukasaku (2003).[6] Improved incentives as well as appropriate public investments will lead to new exports, but towards which agricultural products should export promotion be directed? Bamou and Bamou (1999) gives an insight to such a question by identifying 19 non-oil non-traditional competitive and profitable exports, of which 4 are primary agriculture. Growth in these sectors has been stifled by prices below world levels, and their emergence in the future could be crucial to help agriculture play the historical role it played elsewhere throughout the world, in inducing food security, increasing the savings rate and funding an emerging manufacturing sector.

The extent to which the agricultural sector is directly affected by developments in world markets for agricultural products, sheds light on a country's interests in the ongoing agricultural multilateral negotiations. Given the fact that those negotiations could provide an opportunity to examine key issues with important implications for developing countries' agricultural sector in general and that of Cameroon in particular, the latter will need to focus its negotiating positions on preference erosion, tariff escalation and tariff peaks, tariff rate quotas, export subsidies,

6 A higher value of the EDI and PCS indicates a greater degree of export concentration. UNCTAD (2001) shows that in 2001 Cameroon is the most concentrated country in its trade with EDI = 0.90, even compared to some poorer countries like Senegal (EDI = 0.77) or Mozambique (EDI = 0.83). In like manner, Bonaglia and Fukasaku (2003) show that in 2000, despite the slight decrease of the PCS of Cameroon (from 0.99 between 1966 and 1970 to 0.97 between 1996 and 2000), it was still higher as compared to that of other middle income countries (0.86 for Botswana and 0.88 for Ghana and Kenya between 1996 and 2000).

domestic subsidies, capacity building, state trading, special and differential treatment, and consideration of multi-functional character of agriculture, especially as it relates to food security.

To improve market access for Cameroon's agricultural products, the negotiations should strive to remove remaining non-tariff barriers and reduce tariff peaks and tariff escalation in developed country markets. The country could offer to reduce the level of its agricultural tariff binding and set it closer to the current applied tariff level by locking in at the current level of commitment within CEMAC. Further liberalization of non-agricultural tariffs could also reduce the bias against agricultural exports. This would improve policy predictability and encourage investment and associated spillover effects on efficiency and market access.

Overall, implementation of the agreement on domestic support to agriculture increased imbalances in the legitimate use of these trade- and incentive-distorting measures. The agreement legalized the use of these measures by developed countries while developing countries were curtailing their use, and it failed to properly define the non-trade concerns that should be taken into account in implementing them (Shirotori 2000). Cameroon should request reform of each of these dimensions, so that there are new incentives for deeper liberalization in the input sectors and for enhanced reliance on market mechanisms to promote crop development.

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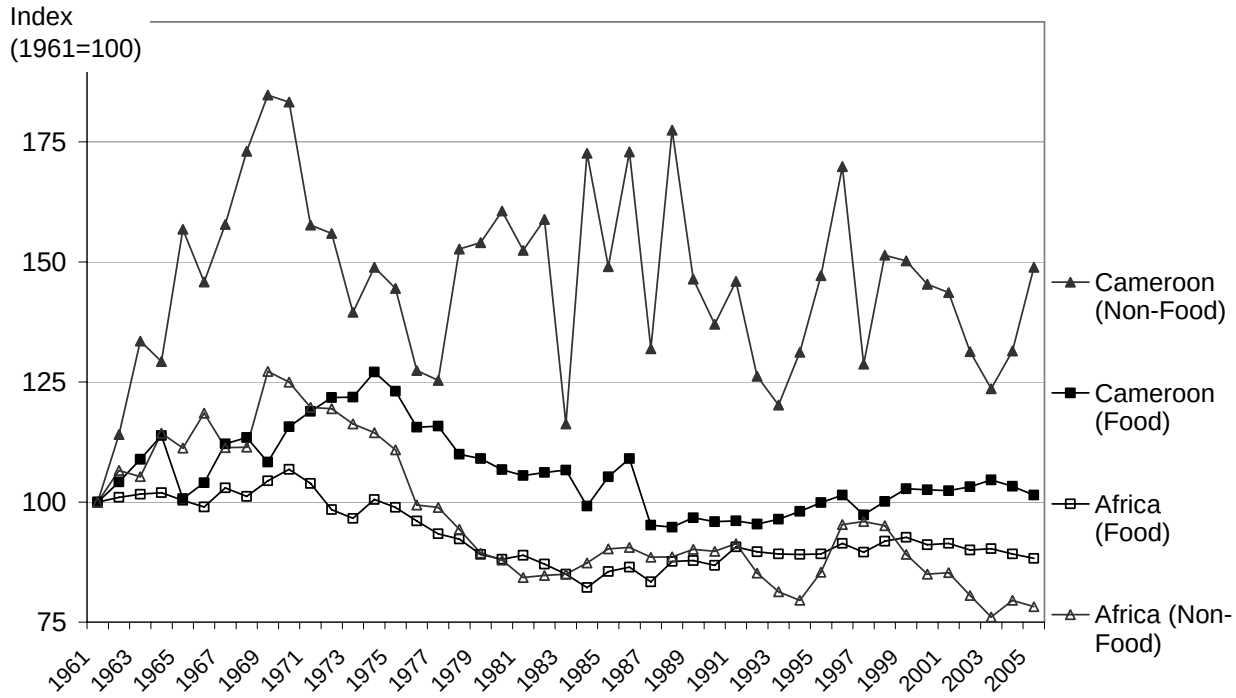
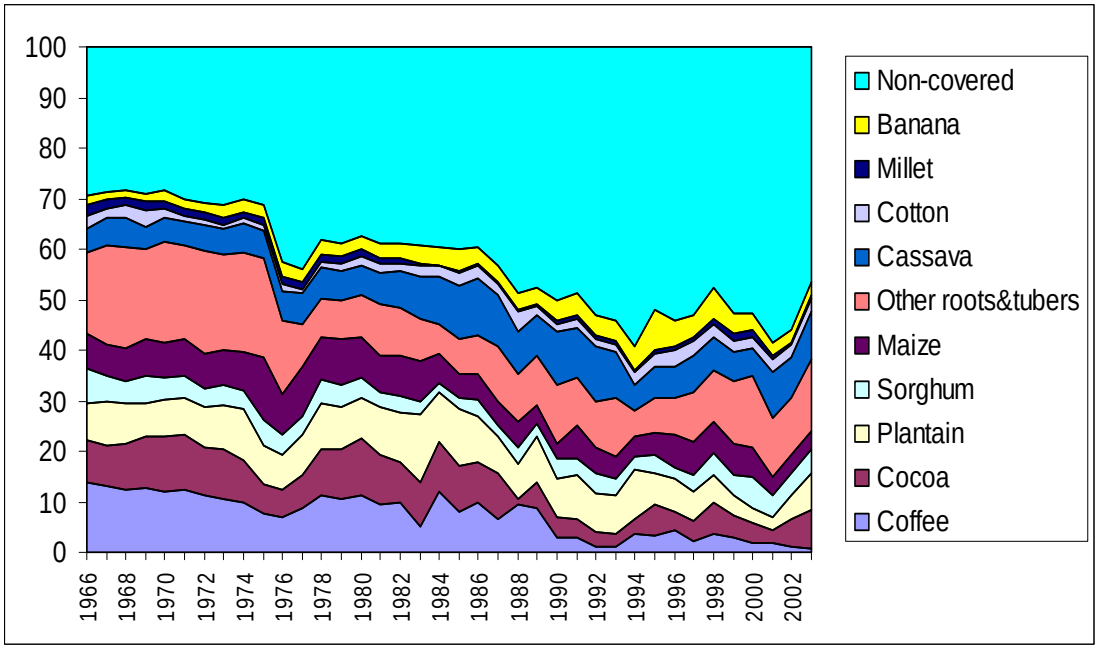
Figure 1: FAO indexes of net farm output per capita of food and nonfood products in Cameroon and in Africa South of the Sahara, 1961-2005



Source: Calculated from indexes of net agricultural output per capita in FAOStat (2006).

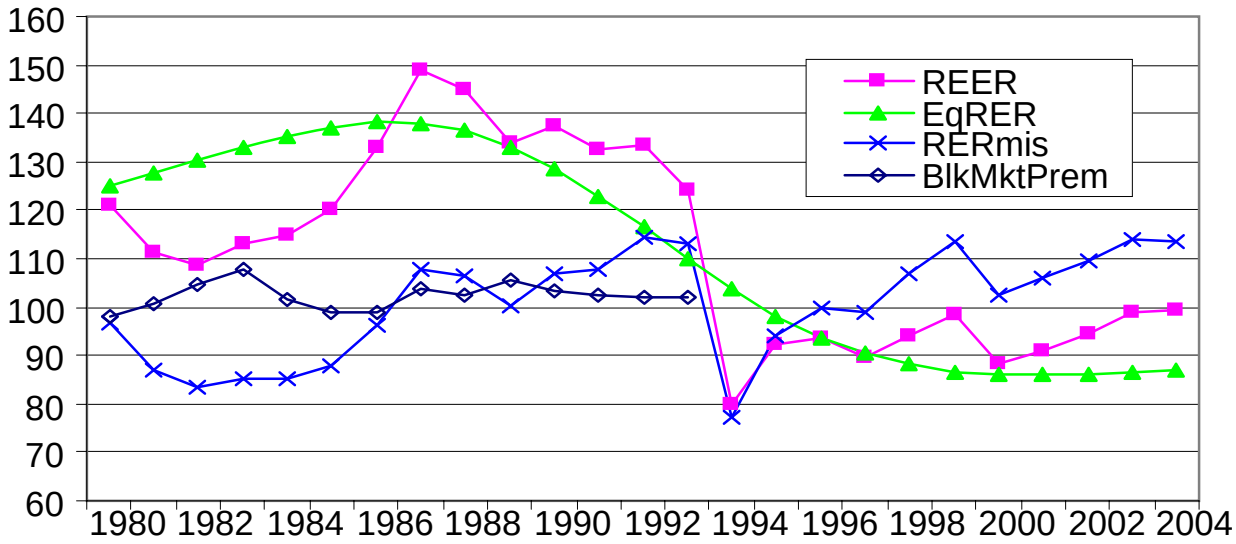
Figure 2: Shares of covered products in the gross value of production, Cameroon, 1966 to 2003 (percent at distorted prices)



Source: Authors' spreadsheet based on FAOSTAT prices

Figure 3: Foreign exchange rates, Cameroon, 1980 to 2004

(a) Real exchange rates, 1980 to 2004 (2004 = 100)



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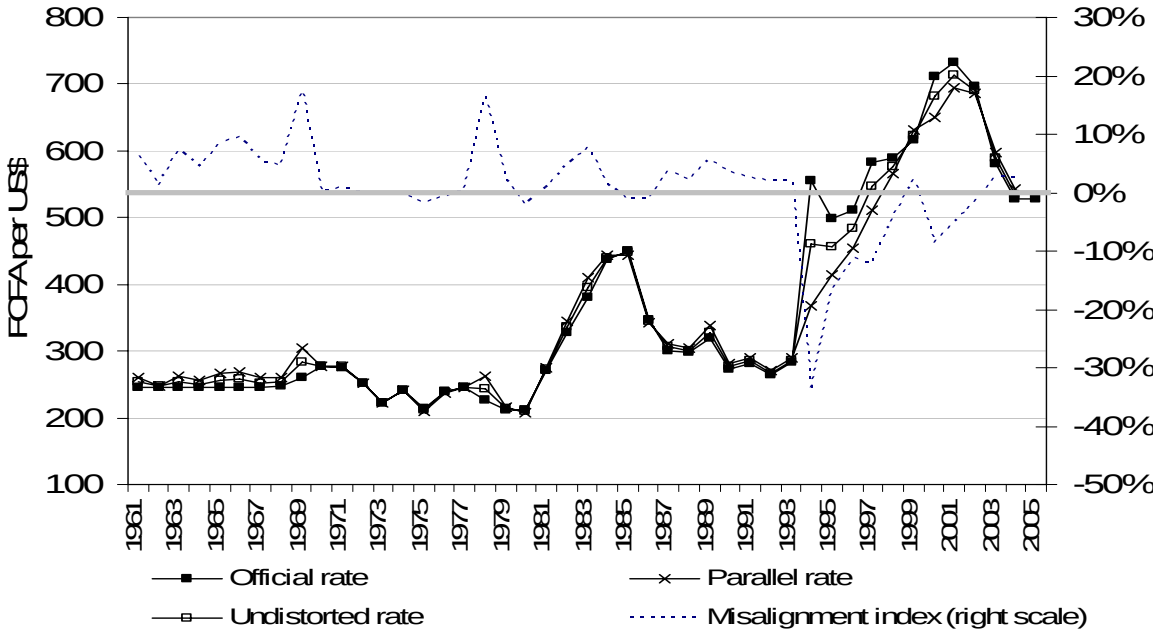
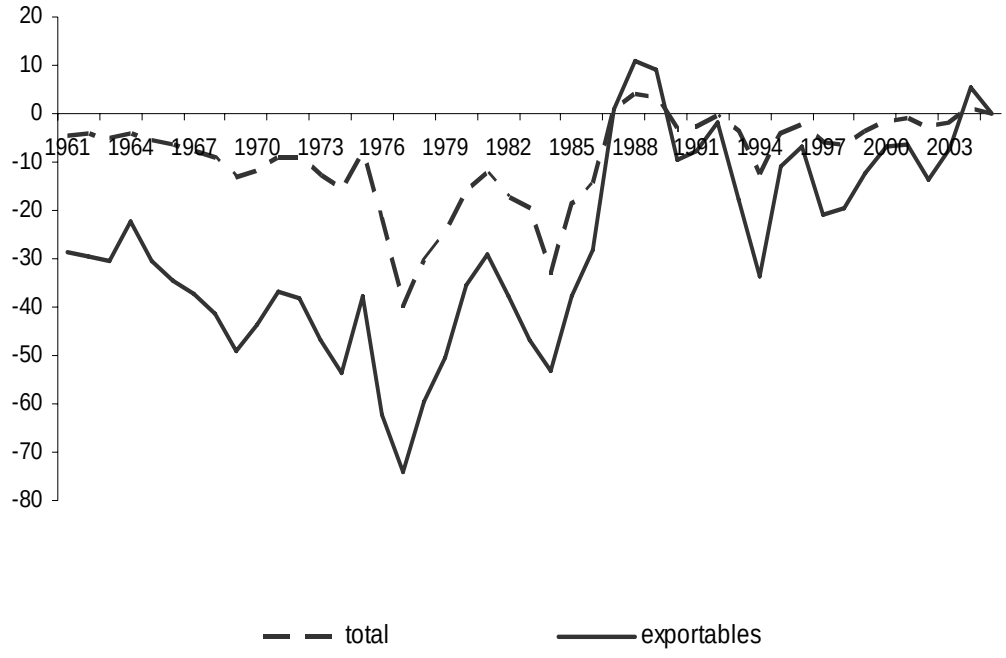
(b) Nominal exchange rates, 1960 to 2005 (CFA per US$)



Note: Author's estimate of undistorted rates based on the methodology of Anderson et al. (2008).
Sources: Official exchange rates from IFS (2006), black market/parallel rates from Easterly (2006), RER indexes from Elbadawi (2006)

Figure 4: Nominal rates of assistance to exportable and all[a] agricultural products, Cameroon, 1961 to 2005

(percent)

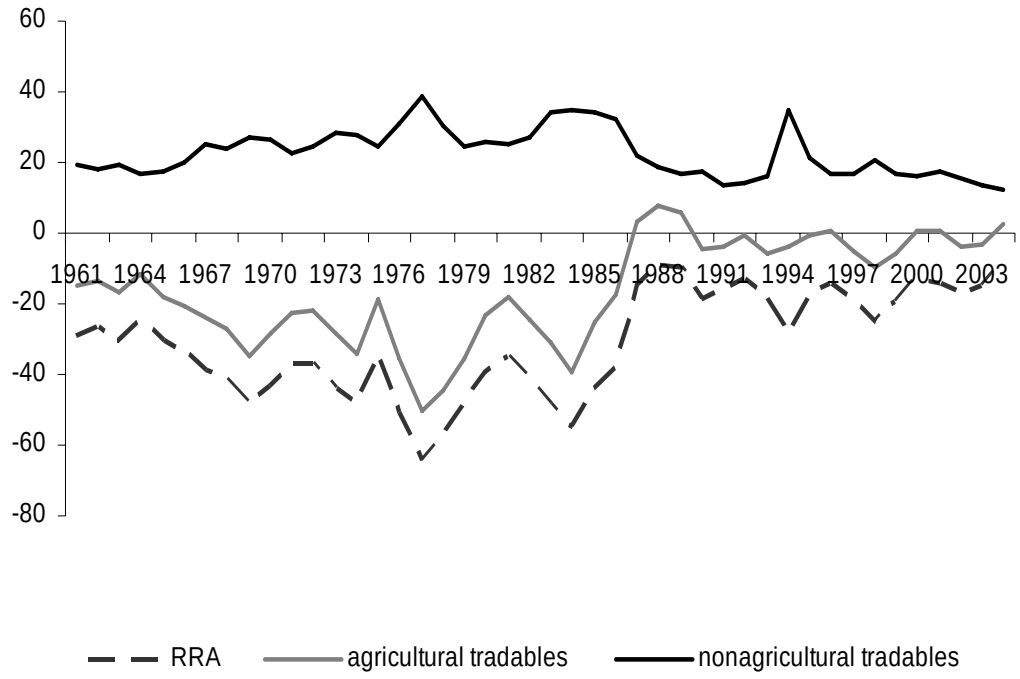


Source: Authors' spreadsheet

a. The total NRA can be above or below the exportables average because assistance to nontradables and non-product specific assistance is also included.

Figure 5: Nominal rates of assistance to all nonagricultural tradables, all agricultural tradable industries, and relative rates of assistance[a], Cameroon, 1961 to 2004

(percent)



Source: Authors' spreadsheet
a. The RRA is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and nonagricultural sectors, respectively.

Table 1: Nominal rates of assistance to covered farm products, Cameroon, 1961 to 2004

(percent)

	1961-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
Exportables [a, b]	**-22.1**	**-38.5**	**-43.7**	**-56.9**	**-40.5**	**-9.1**	**-14.1**	**-14.1**	**-5.7**
Banana	-2.4	-4.3	-0.1	-1.5	-1.2	-0.9	3.1	4.5	1.1
Cocoa	-28.6	-47.8	-44.7	-60.3	-37.7	-1.9	-32.7	-34.1	-12.2
Coffee	-31.2	-31.5	-43.3	-56.2	-43.7	-15.0	-15.8	-8.7	-2.0
Cotton	n.a.	n.a.	-43.9	-41.7	-29.3	18.1	-4.6	-14.1	1.4
Nontradables [a, c]	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Maize	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Millet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sorghum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cassava	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other roots & tubers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plantain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total of covered products [a]	**-3.5**	**-8.3**	**-11.6**	**-25.1**	**-19.7**	**-5.1**	**-4.6**	**-4.5**	**-1.1**
Dispersion of covered products [b]	12.8	17.2	21.0	28.8	20.6	16.7	15.3	12.4	7.1
% coverage (at undistorted prices)	70	71	70	61	61	56	47	48	48

Source: Authors' spreadsheet

a. Weighted averages, with weights based on the unassisted value of production.

b. Dispersion is a simple 5-year average of the annual standard deviation around the weighted mean of NRAs of covered products.

Table 2: Nominal rates of assistance to agricultural relative to nonagricultural industries, Cameroon, 1961 to 2004
(percent)

	1961-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
Covered products	-3.5	-8.3	-11.6	-25.1	-19.7	-5.1	-4.6	-4.5	-1.1
Non-covered products	-0.6	-1.3	0.0	-0.5	-0.4	-0.3	0.9	1.4	0.3
All agricultural products	-3.3	-6.3	-8.1	-15.1	-12.2	-3.3	-1.5	-1.5	-0.3
Non-product specific (NPS) assistance	0.4	0.3	0.6	0.7	0.8	0.9	0.3	0.2	0.2
Total agricultural NRA (incl. NPS)[a]	**-2.3**	**-6.0**	**-7.5**	**-14.4**	**-11.4**	**-2.4**	**-1.1**	**-1.3**	**-0.1**
Assistance to just tradables:									
All agricultural tradables	-11.4	-24.7	-27.0	-36.9	-27.3	-5.2	-3.7	-4.2	-0.5
All non-agricultural tradables	18.3	24.5	25.5	30.0	31.1	21.3	19.9	17.3	11.7
Relative rate of assistance, RRA[b]	**-22.0**	**-38.5**	**-41.9**	**-51.0**	**-43.6**	**-23.1**	**-18.8**	**-19.0**	**-13.4**
MEMO, ignoring exchange rate distortions:									
NRA, all agric. products	-1.9	-5.0	-7.4	-13.9	-10.9	-2.1	-2.1	-2.8	-0.4
RRA (relative rate of assistance)[b]	-20.0	-34.6	-41.9	-50.1	-42.6	-21.7	-21.0	-24.2	-14.7

Source: Authors' spreadsheet

a. NRAs including product-specific input subsidies and non-product-specific (NPS) assistance. Total of assistance to primary factors and intermediate inputs divided to total value of primary agriculture production at undistorted prices (percent).

b. The RRA is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix: Data sources and assumptions

To provide additional detail beyond the main text, a more detailed historical timeline for the creation, evolution and current status of all major parastastals involved in agricultural interventions is provided in Appendix Table 1. The interventions of these various statutory entities, and their subsequent reform, underlie many of our results. During the 1960s and 1970s a bewildering array of agencies with overlapping mandates were created. Almost all have since been liquidated or privatised, but over time these institutions imposed very large costs on the Cameroonian economy.

Appendix Table 2 characterizes the country's food situation through FAO food balance sheets for the first (1961) and last (2003) available years. These data show clearly the country's shift towards consumption of wheat and rice, whose combined total rose from 2.2 to 14.8 percent of calories. Vegetable oil consumption also rose sharply, from 1.3 to 8.7 percent of calories. But overall dietary quality improved little: the combined total of vegetables and fruits stayed roughly constant (although with some shift from plantains to more nutritious fruits and vegetables), and consumption of anumal products rose only slightly.

Appendix Table 3 provides additional characterization of economic and social conditions in the country, through some of the most relevant available development indicators presented at five year intervals. The slightly rising fertility rate from 1960 to 1980 is consistent with the absence of significant real income growth until the late 1970s, and resulted in a rising child dependency ratio for an additional decade to 1990 before that aspect of demographic structure could improve. But continued population growth in a mostly-rural country ensures that rural population density continues to rise, leaving less and less land per rural person. The structure of the economy has fluctuated with oil revenues, and foreign aid per capita declined in the 1990s but has since recovered. Health statistics show a mixed picture, with mortality improving slightly while malnutrition rates worsen; this is consistent with successful disease control in the context of continued poverty. The poverty-gap data, suggest some improvement from the mid-1990s to the the turn of the century, but with only two years of observation no clear conclusion can be reached.

Appendix Table 4 shows each commodity's share of value added in agriculture, forestry and fisheries from national accounts, which was used to select the products for which to compute NRAs. The selected products total just over 50 percent of agricultural value added in recent years. Figure 2 in the main text shows that these products accounted for an even larger share in previous periods.

Exchange rate data and results

Appendix Table 5 presents the exchange-rate data and results from implementation of the Anderson et al. (2008) methodology. As described in the text, official exchange rates are from IMF (2006a and earlier years). Parallel exchange rates are constructed from the black market premiums reported by Easterly (2006) for 1961-1993, extended for 1994-2004 using the year-to-year changes in real exchange rate misalignment estimated by Elbadawi (2006). The black market premium data originate primarily from International Currency Analysis (1993). For later years, we infer changes from 1993 using subsequent year-to-year fluctuations in real exchange rate misaligment. Those fluctuations are estimated econometrically, using the coefficients from a worldwide regression of countries' Real Effective Exchange Rates against various determinants to net out the contribution of each country's unsustainable fiscal and monetary policy changes to

its own REER, so as to compute changes in the marginal opportunity cost of foreign exchange. The last column of Appendix Table 5 shows our estimate of the equilibrium exchange rate that would apply in the absence of distortions. Following the Anderson et al. (2008) methodology, this is intermediate between the official exchange rate and the marginal cost of foreign exchange, which is obtained from either the black market rate (for 1993 and earlier) or econometric estimation (for 1994 and later).

The exchange-rate distortion calculations suggest that there was only a slight overvaluation in Cameroon before the devaluation of 1994, of between 10 and 25 percent in the 1960s, below 5 percent for most of the 1970s, and just above 5 percent in the three years prior to devaluation. This measure deliberately omits all Dutch Disease effects other than those which affect the nominal exchange rate: we consider changes in nontradable goods prices to be a change in fundamental equilibrium conditions, rather than a distortion. By this measure, devaluation in 1994 resulted in very large undervaluation of the currency for several years, until macroeconomic policies in Cameroon caused domestic prices to catch up and ultimately return to earlier levels of overvaluation in 2003 and 2004.

Individual commodity data and results

Annual NRAs are shown in Appendix Table 6 and detailed intermediate results for individual commodities in each year are presented in the Appendix Tables 7-10. The latter show our calculation of a representative wholesale ('domestic') price in nominal CFA Francs, including marketing margins from farms to the principal urban market, and then a free-trade ('border') price in nominal US dollars for that same product. The percentage difference between the two prices after conversion into a common currency at the undistorted exchange rate are also shown. The Consumer Tax Equivalent (CTE) measures the incidence of policy on consumer expenditure, which is the same as the percentage difference between the producer and border prices on output plus or minus any tax or subsidy on transactions between wholesalers and consumers. A more comprehensive measure of distortions to incentives for invidual commodities is then shown, which is the the percentage difference between the producer and border prices on output plus or minus any input price distortions or other taxes and subsidies captured in our data. Each price and level of distortion is shown separately for each primary product and its lightly processed version. It is this final measure incuding the output price equivalent of any input price distortions that subsequently becomes the NRA after adjusting for any exchange rate distortion.

Appendix Table 7 shows our main results for coffee, first in its primary form ("green" or raw coffee beans) and then as its principal lightly processed product (roasted beans). For the primary product, wholesale prices are computed from a farmgate price plus a marketing margin. Farmgate prices are assembled from MINAGRI (the '*Bilan Diagnostique du Secteur Agricole de 1960 à 1980*', INS ('*Le Cameroun en Chiffres, 2005*'), plus file data from MINEFI/DSCN. The marketing margin and wholesale prices are from file data of the National Council of Coffee and Cocoa (CNCC), who estimate a competitive farm-to-market margin of around 20 percent from the 1960s, rising to 27 percent after devaluation. For the processed product, wholesale prices are drawn from file data of the '*Brulerie Moderne*'. Unit values for the export of raw beans and the import of roasted beans are from FAOStat file data. NRAs on output are computed directly from these price data, plus the exchange rates in Appendix Table 5. NRAs on output of primary production include fiscal subsidies to parastatals. These data are due to Varlet (2002), 'Institutions publiques et croissance agricole au Cameroun' (Thèse de Doctorat, Ecole Nationale Supérieure Agronomique de Montpellier, France), who found significant payments from central

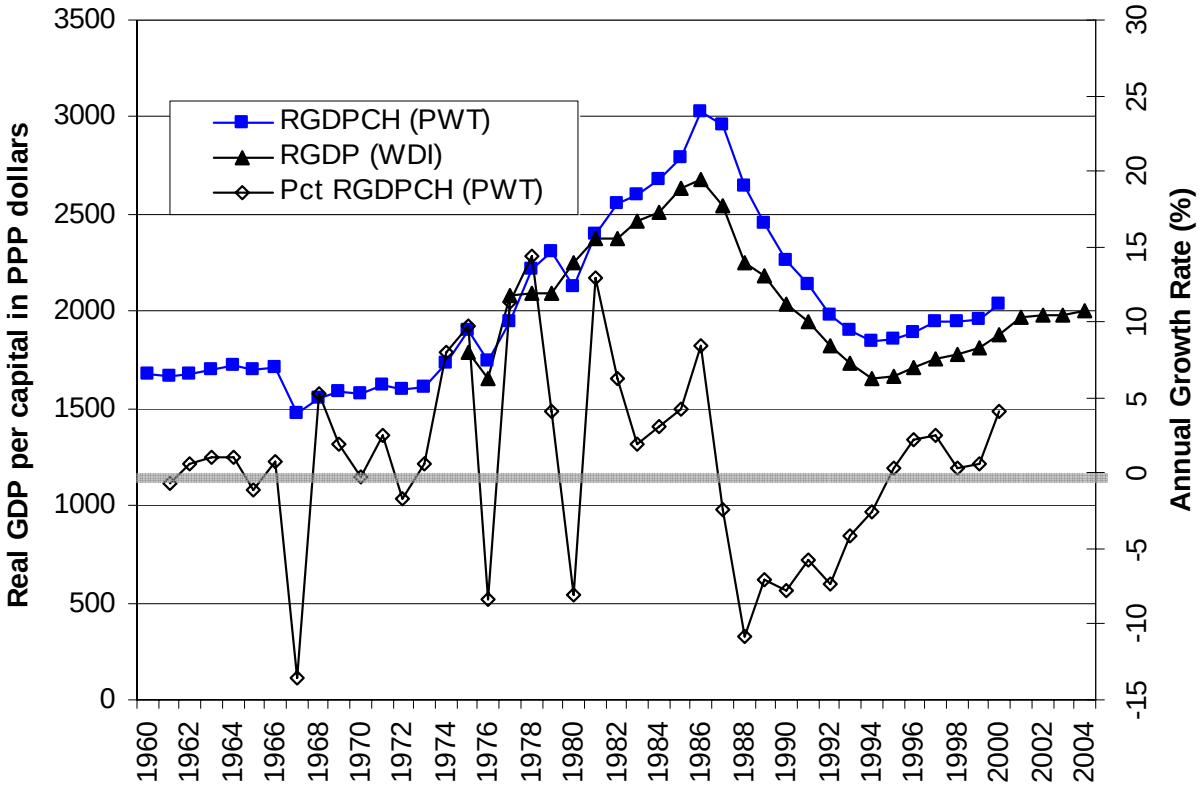
government into various government-owned producers from 1974 through 1988. The NRAs for the processing sector are very large, as processors benefit from both low purchase prices for raw beans and high sale prices for roasted ones.

Appendix Table 8 shows the same data for cocoa, except that in this case both the raw beans and the processed products are exportable. All data sources are the same as for coffee, but the farm-to-market margins are from CIC-CACAO, and are estimated to be somewhat lower than for coffee, with an ad-valorem rate of about 17 percent in the 1960s rising to a peak of 21 percent in 2004. For the processed products, wholesale prices are from CHOCOCAM. Results are broadly similar to coffee, except that the NRA on output against producers is even larger and the NRA on output favoring processors is much smaller. The processors benefitted from the very low purchase price for raw beans, but some of those gains were eroded by the negative NRA on output lowering the sale price of their processed cocoa.

Appendix Table 9 shows the main results for cotton, which is not tradable as a primary product (seed cotton) but exportable once lightly processed (as cotton lint). All domestic price data are from SODECOTON for 1968-2003, and extrapolated back to 1961 due to missing data. The marketing margin for the primary product from farm to market is estimated using actual SODECOTON accounting data for 1990 to 2003 and inferred for previous years: the result is a margin of about 22 percent, with some fluctuation in the 1990s. These margins are used only for constructing our value-weighted averages. The distortion estimates for primary production of cotton come from exchange-rate effects only, because we see limited pass-through to farmers of price changes on the tradable processed product.

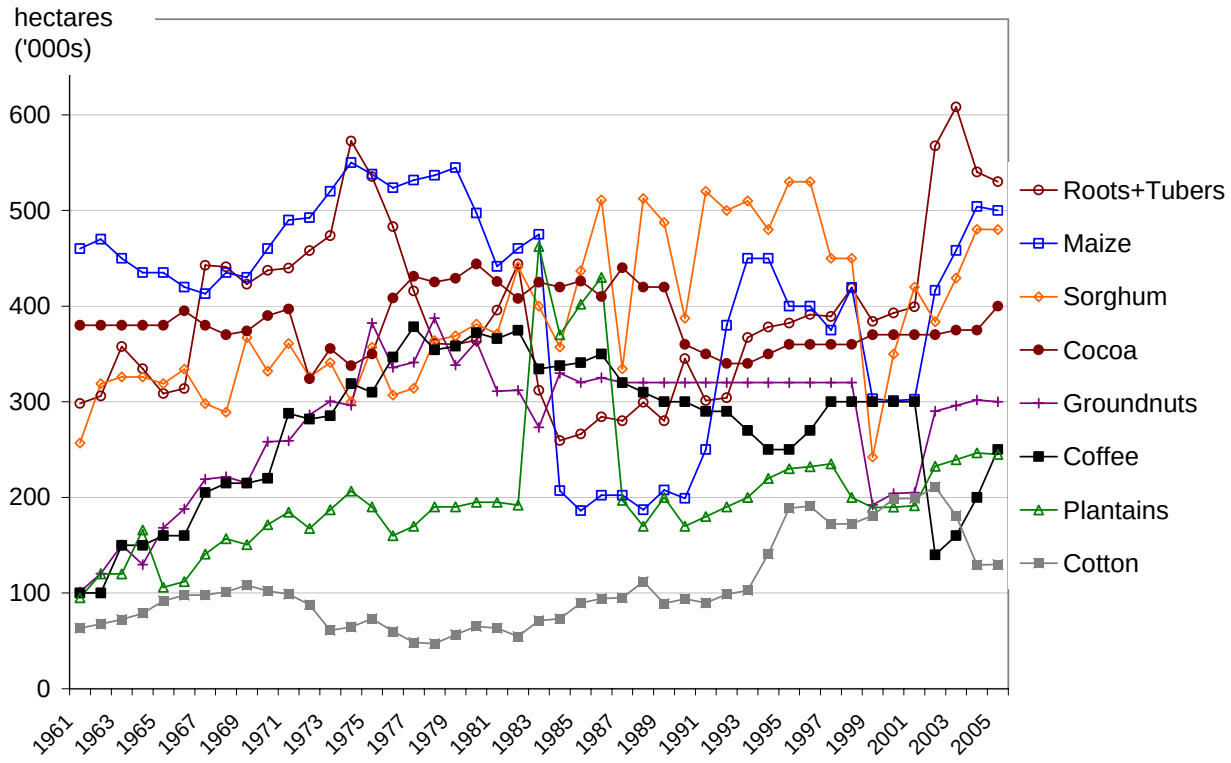
Apendix Table 10 shows our data for seven commodities with no significant processing sector. Bananas are directly exportable as a primary product, and the other six are considered here to be nontradable. (There is some international trade in all of these products, but even without government restrictions the volume of trade would be too small and localized to influence national prices.) For bananas, domestic prices and marketing margins are from the Plantation du Haut Penja (PHP), which estimates a farm-to-port cost of 40 percent for the entire period. For the other food crops, all prices are from the file data of INS. Since we have no price-comparison data with which to infer distortions, we use marketing margins only for the purpose of estimating the value of consumption when constructing weighted averages. These margins are estimated by us to be 35 percent for plantains, from their main production area in Batchanga to the capital Yaoundé, 45 percent for maize from Ngaoundéré to Yaoundé, and 10-20 percent for cassava and other roots and tubers over the short distance from Obala to Yaoundé. For millet, we estimate a small margin of 15 percent from rural to urban Garoua, which is the main area of both production and consumption, and for sorghum we apply no margin at all on the assumption that essentially all consumption occurs locally within rural areas.

Appendix Figure 1: Per capita real GDP and its annual rate of growth, Cameroon, 1960 to 2004



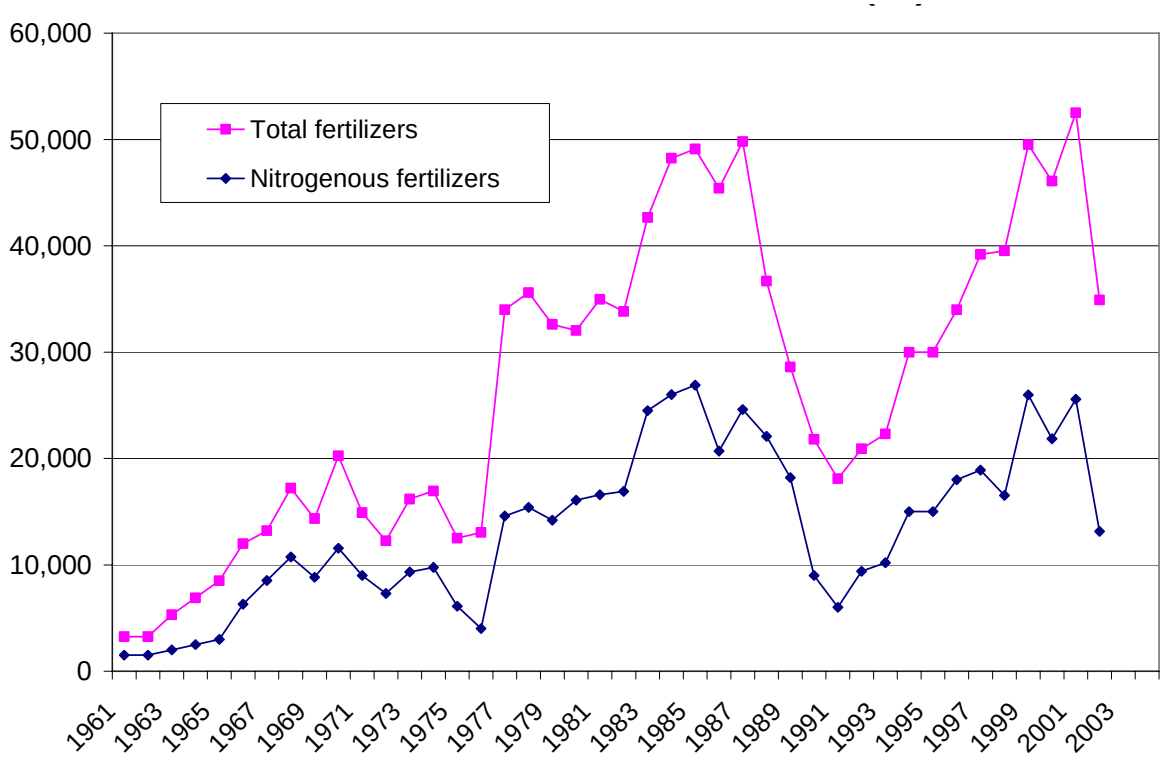
Sources: PWT data (1960-2000) are RGDPCH from Penn World Tables 6.1 (2002);
WDI data (1975-2004) are GDP.PCAP.PP.KD from World Development Indicators (2006).

Appendix Figure 2: Area harvested for major crops, Cameroon, 1961 to 2005



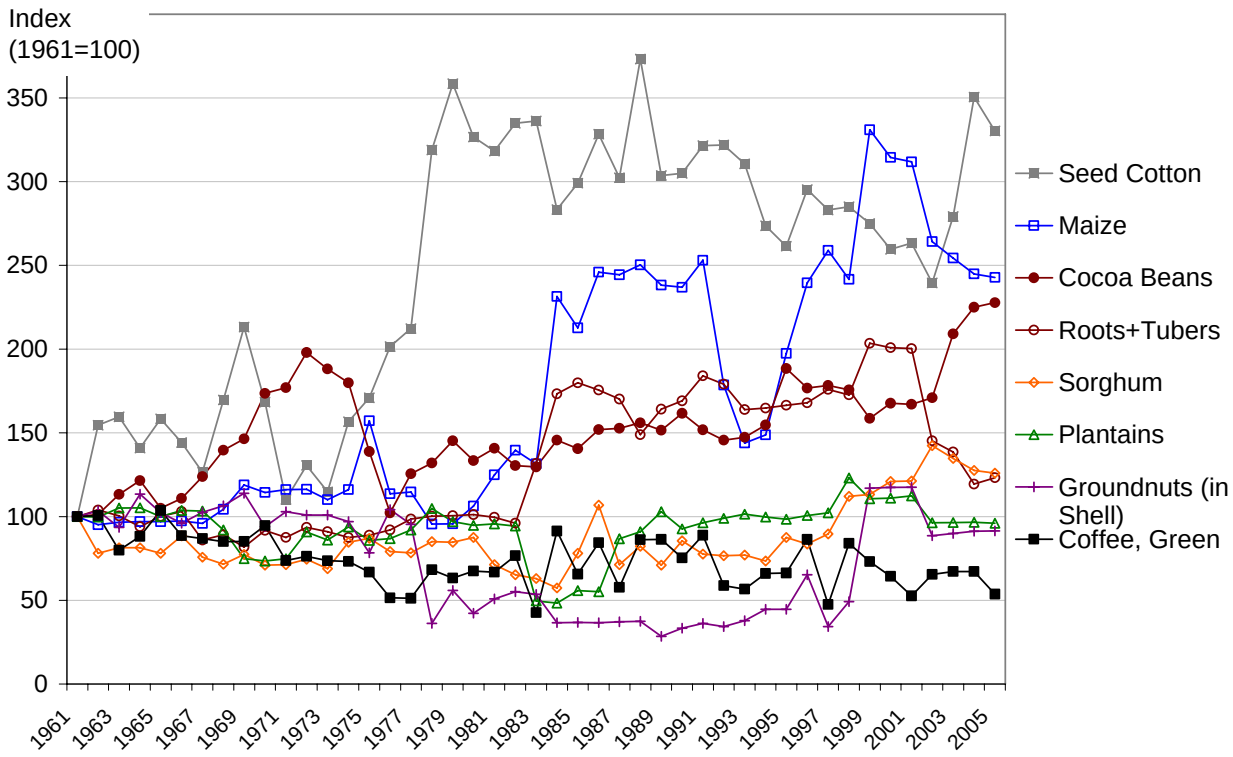
Source: FAOSTAT (2006).

Appendix Figure 3: Fertilizer use, Cameroon, 1961 to 2003
(metric tons)



Source: FAOSTAT (2006).

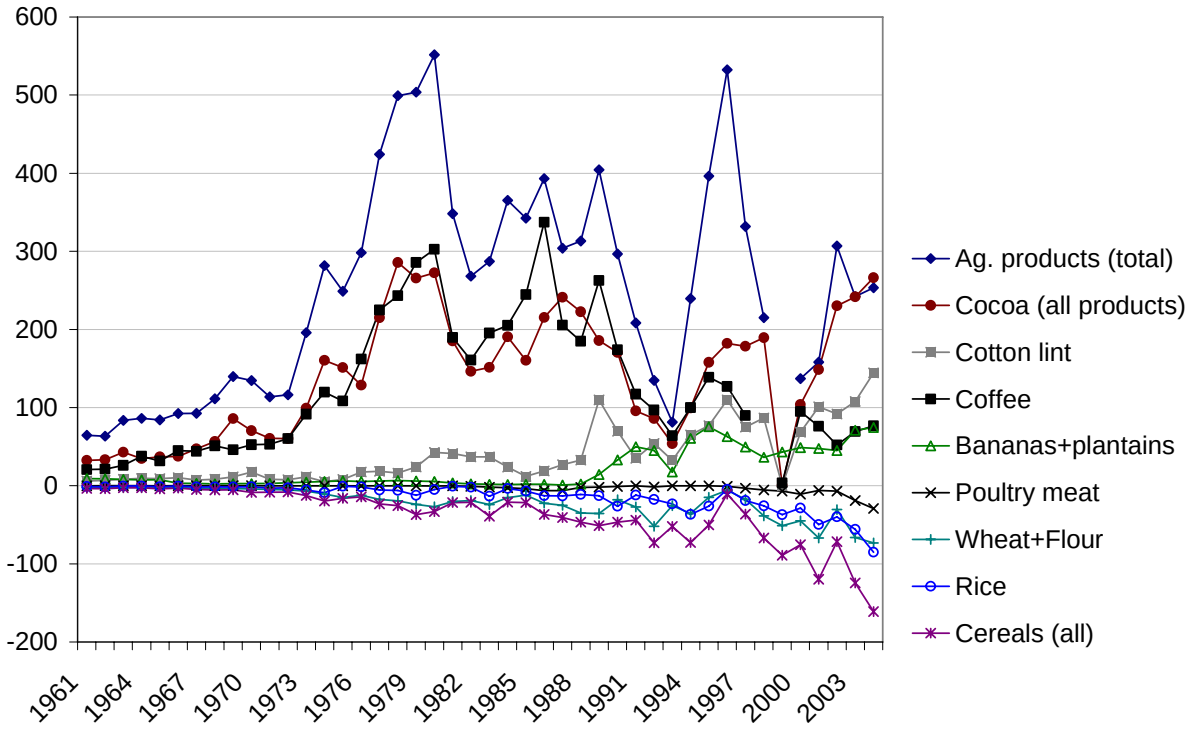
Appendix Figure 4: Yield per hectate, major crops, Cameroon, 1961 to 2005



Source: Calculated from average yield estimates in FAOStat (2006).

Appendix Figure 5: Net exports of key agricultural products, Cameroon, 1961 to 2005

(US$ million)



Source: Calculated from data in FAOSTAT (2006)

Appendix Table 1: Evolution of public agencies and enterprises in Cameroon

Période of creation	Agencies/Enterprises	Activities/Products	Characteristics in 1994	Situation in 2005
1st Economic and Social Plan 1961-65	WADA	Rural development	Liquidated	
	WCMB	West Cameroon Marketting Board	Liquidated in 1976	
	SOSUCAM	Sugar cane	Monopoly	In partnership with private sector
2nd Economic and Social Plan 1966-70	ZAPI-EST & ZAPI CENTRE	Rural development	Liquidated	
	SOCAPALM	Palm oil and Palm nuts	55 percent production of palm oil	Privatised
	CENADEC	Cooperative development	Liquidated	
	SODENKAM	Rural development	Liquidated	
	UNVDA (Rice cultivation in the North West)	Development of farmlands, Hiring of equipment, and Rice hauling	Cartel	Restructured
	OCB	Banana	Privatised in 1990	
3rd Economic and Social Plan 1971-75	SEMRY (Rice cultivation in the North)	Development of farmlands, Hiring of equipment Rice hauling	Cartel	Restructured
	MIDEVIV	Foodstuff trading	Liquidated	
	MIDERIN or SODERIM (Rice cultivation in the West)	Development of farmlands, Hiring of equipment and Rice hauling	Cartel	Activities have slowed down
	MIDO	Agricultural development	Liquidated	
	Nord-Est Benoué	Cotton and food crops	Liquidated	
	SODECAO	Training and supervision of peasants, phytosanitary treatment of plantations	Monopoly of the cocoa zone	Liquidated
	HEVECAM	Rubber development	Undergoing privatisation and reduction of activities	Privatised

Continued…

Appendix Table 1 (cont'd): Evolution of public agencies and enterprises in Cameroon

Période of creation	Agencies/Enterprises	Activities/Products	Characteristics in 1994	Situation in 2005
3rd Economic and Social Plan 1971-75	PMO	Produce Marketting Organization	Liquidated in 1974	
	SODEBLE or SODEMAIS	Wheat or Maize	Monopoly	Liquidated
	SODECOTON*	Training and supervision, credits to production, productions: cotton fibber, oil and cake marketing	Monopoly of the sector	Undergoing privatisation
	CAMSUCO	Sugar	Cartel	Privatized (bought by SOSUCAM)
	CDC*	Banana, palm oil, tea, palm nuts, rubber	Monopoly of tea and rubber	Banana and tea parts privatised
	SCT*	Tobacco development	Liquidated	
	SOCAPALM	Palm oil and Palm nuts	55 percent production of palm oil	Privatised
	FONADER	Supply of inputs	Monopoly of credit to production	Liquidated
	CENEEMA	Supply of agricultural equipment	Privatised	
	MIDIMA	Development of mounts Mandara	Liquidated	
	SODEPA	Cow meat	Monopoly	Restructured and liberalized sector
	'Office Céréalier' Cereals Board	Cereals trading in the North	Liquidated	
4th Economic and Social Plan 1976-80	Agri-Lagdo	Sugar cane, rice and other food crops	Liquidated	
	West Corn	Maize	Liquidated	
	Hauts Plateaux de l'Ouest	Arabica coffee and food crops	Liquidated	
	SOFIBEL	Timber	Liquidated	
	ONCPB (NPMB)	Marketing of export products, financing of subventions	Monopoly	Liquidated

Continued ..

Appendix Table 1 (cont'd): Evolution of public agencies and enterprises in Cameroon

Période of creation	Agencies/Enterprises	Activities/Products	Characteristics in 1994	Situation in 2005
5th Economic and Social Plan 1981-85 and after	MIDENO	All crops	Liquidated	
	MEAVSB	All crops	Liquidated	
	MEAL	All crops (studies and planning)	Liquidated	
	SOMUDER (SOCOOPED)	Saving and Cooperative development	Liquidated	
	ONDAPB	Small livestock	Liquidated	
	ONAREF	Forestry development	Restructured and Liquidated	
	CENADEFOR	Forestry development	Restructured and Liquidated	
	PNVRA	Vulgarisation of interface research results-production	Monopoly	Activities have slowed down
	SNAR	Prevent food insecurity	End of Japanese grants, integration into MINAGRI	Activities have slowed down
	CELLUCAM	Paper pulp	Liquidated	
	COCAM	Veneer Wood	Privatised	
	IRAD	Development of research (selected seedlings of maize, cassava, palm oil…)	Monopoly	Activities have slowed down

Source: Adapted from Bamou, Njinkeu and Douya (2003).

Appendix Table 2: Food balance sheet data, Cameroon, 1961 and 2003

	Self-sufficiency ratio (Production /Utilization)		**Dietary composition** (percent of calories)	
	1961	2003	1961	2003
Total number of calories			2,038	2,286
Cereals - excluding beer	0.95	0.68	45.7 percent	40.7 percent
Wheat		0.00	1.5 percent	5.7 percent
Rice (milled equivalent)	0.05	0.29	0.7 percent	9.1 percent
Maize	1.00	0.97	23.2 percent	14.4 percent
Sorghum	1.00	1.00	14.3 percent	10.0 percent
Starchy Roots	1.00	1.00	24.4 percent	17.5 percent
Cassava	1.00	1.00	11.9 percent	12.0 percent
Roots, Other	1.00	1.00	7.5 percent	2.7 percent
Sugar and sweeteners	0.21	0.76	0.7 percent	4.5 percent
Pulses	1.00	1.01	3.2 percent	5.7 percent
Groundnuts (shelled equiv)	1.18	1.00	4.0 percent	2.4 percent
Vegetable oils	1.33	0.87	1.3 percent	8.7 percent
Groundnut oil	0.98	1.00	0.9 percent	0.5 percent
Soyabean oil				1.0 percent
Cottonseed oil	1.00	1.00	0.3 percent	1.2 percent
Palmkernel oil	1.15	0.99	0.1 percent	0.3 percent
Palm oil	1.33	0.92		5.3 percent
Vegetables	0.99	0.99	1.2 percent	2.0 percent
Fruits - excluding wine	1.23	1.18	7.8 percent	6.7 percent
Bananas	10.63	1.99	0.0 percent	1.2 percent
Plantains	1.00	1.00	7.0 percent	4.8 percent
Meat	1.00	0.90	2.5 percent	3.1 percent
Bovine	1.00	1.00	1.0 percent	1.4 percent
Poultry	0.98	0.56	0.1 percent	0.5 percent
Milk - excluding butter	0.89	0.75	0.7 percent	1.2 percent
Eggs	0.99	1.01	0.0 percent	0.1 percent
Fish, seafood			1.1 percent	1.1 percent

Notes: Self-sufficiency ratio is computed as production plus stock change, divided by total utilization (labeled as "domestic supply" by the FAO).
Source: Author's calculations from FAOStat (2006) Food Balance Sheet data.

Appendix Table 3: Selected development indicators, Cameroon, 1960 to 2004

	1960	1965	1970	1975	1980	1985	1990	1995	2000	2004
Population structure										
Fertility rate, total (births per woman)	5.8	..	6.2	..	6.4	6.2	5.9	5.3	4.8	4.8
Age dependency ratio (dependents to working-age population)	0.77	0.80	0.84	0.89	0.92	0.94	0.94	0.92	0.87	0.83
Rural population density (rural population per sq. km of arable land)	92.6	94.7	97.9	99.7	101.6	109.5	117.1	123.4	127.2	128.5
Economic structure										
Fuel exports (% of merchandise exports)	..	-	-	0.3	30.7	..	49.9	29.2	54.2	46.7
Agriculture, value added (% of GDP)	..	32.7	31.4	29.1	31.3	21.6	24.6	40.2	38.5	41.1
Aid per capita current US$)	0.1	5.3	8.9	14.7	30.3	15.2	38.3	33.4	25.6	47.5
Health and nutrition										
Life expectancy at birth, total (years)	39.5	..	44.6	..	49.8	52.1	52.4	50.1	47.0	46.0
Malnutrition prevalence, height for age (% of children under 5)	..	..	..	..	35.6	..	26.0	..	..	31.7
Malnutrition prevalence, weight for age (% of children under 5)	..	..	..	..	17.3	..	15.1	..	..	18.1
Mortality rate, infant (per 1,000 live births)	151	139	127	117	105	91	85	89	88	87.2
Mortality rate, under-5 (per 1,000)	255	234	215	197	173	147	139	151	151	149.4
Poverty										
Poverty gap at $1 a day (PPP) (%)	..	..	..	..	..	..	..	9.05	4.1	..
Poverty gap at $2 a day (PPP) (%)	..	..	..	..	..	..	..	31.16	19.35	..
Poverty headcount ratio at $1 a day (PPP) (% of population)	..	..	..	..	..	..	..	32.45	17.11	..
Poverty headcount ratio at $2 a day (PPP) (% of population)	..	..	..	..	..	..	..	69.04	50.64	..

Source: World Bank, World Development Indicators 2006.

Notes: All data are for years shown, except where closest possible year is used instead: Rural population density for 1960 is actually 1961 data. Malnutrition for 1980 is actually 1978 data, and for 1990 is actually 1991 data. Poverty gaps and ratios for 1995 are actually 1996 data, and for 2000 are actually 2001 data. Rural population density for 2004 is actually 2003 data.

Appendix Table 4: National accounts data for agriculture, Cameroon, 2000 and 2002
(percent)

Product Id	Product name	Value added share*		Selected products		Share of exports**	
		2000	2002	2000	2002	2000	2002
001	***Subsistence agricultural products***	***45.2***	***47.1***				
001001002	Rice paddy	1.1	1.0				
001001003	Other Cereals (Wheat, Maize, Millet, Sorghum, etc.)	8.4	9.0	8.4	9.0		
001002001	Cassava	6.5	6.8	6.5	6.8		
001002002	Other tubers (Cocoyam, Yam, etc.)	16.4	17.3	16.4	17.3		
001003000	Oleaginous plants (palm excluded)	3.0	3.3				
001004000	Fruits and vegetables (Bananas, Plantain, etc.)	9.8	9.8	9.8	9.8		
002	***Perennial products (cash crops)***	***15.8***	***14.8***				
002001000	Dry cocoa beans	3.9	4.2	3.9	4.2	19.6	43.6
002002001	Arabica coffee	0.8	0.6	0.8	0.6	4.6	2.6
002002002	Robusta coffee	0.3	0.3	0.3	0.3	20.8	9.6
002003000	Seed cotton	2.7	2.6	2.7	2.6	18.4	21.4
002004000	Bananas	4.7	4.0	4.7	4.0	13.1	10.5
002005000	Palm nuts	1.0	1.0				
002006000	Other export products	2.4	2.1				
003	***Breeding and Hunting products***	***14.9***	***14.5***				
003001000	Cattle	4.2	4.1				
003002000	Cheep, goat, pig, etc.	8.1	7.8				
003003000	Other animal products	2.6	2.6				
004	***Forestry products***	***16.6***	***16.3***				
004000001	Logs	12.1	11.8				
004000002	Other forestry products	4.5	4.5				
005	***Fishery products***	***7.5***	***7.4***				
005001000	Marin fish	5.9	5.7				
005002000	Farming and river fish	1.7	1.7				
	Total primary agriculture	**100.0**	**100.0**	**53.5**	**54.6**	**76.5**	**87.6**

Notes: *: Percentage of total agricultural value added;
**: Percentage of total agricultural exports.
Source: National Institute of Statistics (INS)

Appendix Table 5: Exchange rates, Cameroon, 1961 to 2004

	Official rate	Secondary/ parallel market	Discount to Secondary market rate	Estimated equilibrium exchange rate
1961	245.3	261.2	15.9	253.2
1962	245.0	248.2	3.2	246.6
1963	245.0	262.9	17.9	254.0
1964	245.0	256.0	11.0	250.5
1965	245.1	266.1	21.0	255.6
1966	245.7	268.8	23.1	257.2
1967	246.0	259.2	13.2	252.6
1968	247.6	259.2	11.7	253.4
1969	260.0	305.1	45.2	282.5
1970	276.4	276.7	0.3	276.5
1971	275.4	278.0	2.6	276.7
1972	252.0	252.0	0.0	252.0
1973	222.9	222.9	0.0	222.9
1974	240.7	240.5	-0.2	240.6
1975	214.3	210.2	-4.1	212.3
1976	239.0	237.5	-1.4	238.2
1977	245.7	246.5	0.8	246.1
1978	225.7	262.9	37.3	244.3
1979	212.7	217.0	4.2	214.8
1980	211.3	206.8	-4.5	209.0
1981	271.7	274.2	2.4	273.0
1982	328.6	344.0	15.4	336.3
1983	381.1	410.9	29.8	396.0
1984	437.0	443.2	6.3	440.1
1985	449.3	444.5	-4.7	446.9
1986	346.3	342.3	-4.0	344.3
1987	300.5	311.8	11.3	306.2
1988	297.8	304.8	6.9	301.3
1989	319.0	337.3	18.3	328.2
1990	272.3	281.8	9.5	277.0
1991	282.1	289.0	6.9	285.5
1992	264.7	270.1	5.4	267.4
1993	283.2	288.8	5.6	286.0
1994	555.2	367.0	-188.2	461.1
1995	499.1	414.2	-85.0	456.7
1996	511.6	454.5	-57.1	483.0
1997	583.7	512.2	-71.5	547.9
1998	590.0	565.1	-24.9	577.5
1999	615.7	630.4	14.7	623.0
2000	712.0	650.3	-61.7	681.1
2001	733.0	694.9	-38.1	714.0
2002	697.0	685.6	-11.4	691.3
2003	581.2	597.6	16.4	589.4
2004	528.3	542.0	13.7	535.1

Note: Methodology used for estimated equilibrium exchange rate follows Anderson et al. (2008).

Appendix Table 6: Annual distortion estimates, Cameroon, 1961 to 2004
(a) Nominal rates of assistance to covered products
(percent)

	Banana	Cassava	Cocoa	Coffee	Cotton	Maize	Millet	Other roots & tubers	Plantain	Sorghum	Wood (logs)	All covered
1961	-3	0	-29	-35	na	0	0	0	0	0	-3	-4
1962	-1	0	-28	-38	na	0	0	0	0	0	-1	-4
1963	-4	0	-37	-26	na	0	0	0	0	0	-4	-5
1964	-2	0	-21	-26	na	0	0	0	0	0	-2	-4
1965	-4	0	-31	-34	na	0	0	0	0	0	-4	-5
1966	-4	0	-43	-30	na	0	0	0	0	0	-4	-6
1967	-3	0	-50	-29	na	0	0	0	0	0	-3	-8
1968	-2	0	-55	-30	na	0	0	0	0	0	-2	-9
1969	-8	0	-61	-35	na	0	0	0	0	0	-8	-13
1970	0	0	-46	-43	-34	0	0	0	0	0	0	-12
1971	0	0	-29	-44	-46	0	0	0	0	0	0	-9
1972	0	0	-35	-43	-37	0	0	0	0	0	0	-9
1973	0	0	-53	-39	-64	0	0	0	0	0	0	-13
1974	0	0	-61	-48	-39	0	0	0	0	0	0	-16
1975	1	0	-42	-37	-46	0	0	0	0	0	1	-8
1976	0	0	-64	-63	-57	0	0	0	0	0	0	-22
1977	0	0	-78	-74	-30	0	0	0	0	0	0	-40
1978	-8	0	-66	-56	-43	0	0	0	0	0	-8	-31
1979	-1	0	-52	-51	-33	0	0	0	0	0	-1	-25
1980	1	0	-31	-41	-28	0	0	0	0	0	1	-16
1981	0	0	-31	-30	-17	0	0	0	0	0	0	-12
1982	-2	0	-30	-44	-31	0	0	0	0	0	-2	-17
1983	-4	0	-44	-49	-45	0	0	0	0	0	-4	-20
1984	-1	0	-53	-55	-25	0	0	0	0	0	-1	-33
1985	1	0	-37	-44	35	0	0	0	0	0	1	-19
1986	1	0	-16	-39	45	0	0	0	0	0	1	-15
1987	-2	0	-1	1	20	0	0	0	0	0	-2	0
1988	-1	0	17	3	32	0	0	0	0	0	-1	4
1989	-3	0	27	4	-41	0	0	0	0	0	-3	3
1990	-2	0	-15	-10	-28	0	0	0	0	0	-2	-3
1991	-1	0	-23	-4	-11	0	0	0	0	0	-1	-3
1992	-1	0	-19	17	14	0	0	0	0	0	-1	-1
1993	-1	0	-44	-11	46	0	0	0	0	0	-1	-4
1994	20	0	-63	-70	-44	0	0	0	0	0	20	-13
1995	9	0	-18	-27	-25	0	0	0	0	0	9	-4
1996	6	0	-32	6	-22	0	0	0	0	0	6	-2
1997	7	0	-46	-4	-21	0	0	0	0	0	7	-6
1998	2	0	-51	-8	4	0	0	0	0	0	2	-7
1999	-1	0	-24	-10	-6	0	0	0	0	0	-1	-4
2000	5	0	-20	-5	0	0	0	0	0	0	5	-1
2001	3	0	-15	-8	8	0	0	0	0	0	3	-1
2002	1	0	-20	-9	-11	0	0	0	0	0	1	-3
2003	-1	0	-9	0	-21	0	0	0	0	0	-1	-2
2004	-1	0	2	12	30	0	0	0	0	0	-1	1

Appendix Table 6 (continued): Annual distortion estimates, Cameroon, 1961 to 2004
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing[b] agricultural industries, and relative[c] to non-agricultural industries (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1961	0	-3	-1	-3	-17	na	-15	18	-29
1962	0	-3	0	-3	-16	na	-14	19	-27
1963	0	-4	-1	-3	-19	na	-17	17	-30
1964	0	-3	-1	-2	-14	na	-12	18	-24
1965	0	-4	-1	-4	-20	na	-18	20	-30
1966	0	-5	-1	-4	-22	na	-21	25	-34
1967	0	-6	-1	-5	-24	na	-24	24	-39
1968	0	-7	-1	-7	-28	na	-27	27	-41
1969	0	-10	-2	-10	-36	na	-35	26	-49
1970	0	-8	0	-8	-30	na	-28	23	-43
1971	0	-6	0	-6	-24	na	-23	24	-37
1972	0	-6	0	-5	-24	na	-22	29	-37
1973	0	-9	0	-8	-31	na	-28	28	-44
1974	0	-11	0	-10	-37	na	-34	24	-48
1975	0	-5	0	-4	-23	na	-18	31	-34
1976	0	-12	0	-12	-38	na	-36	38	-51
1977	0	-22	0	-22	-52	na	-51	30	-64
1978	0	-20	-2	-19	-46	na	-44	24	-57
1979	0	-16	0	-15	-37	na	-35	26	-48
1980	0	-10	0	-9	-25	na	-23	25	-39
1981	0	-8	0	-7	-20	na	-18	27	-35
1982	0	-11	-1	-10	-27	na	-25	34	-41
1983	0	-12	-1	-12	-33	na	-31	35	-48
1984	0	-20	0	-19	-41	na	-39	34	-55
1985	0	-11	0	-10	-27	na	-25	32	-44
1986	0	-9	0	-8	-20	na	-18	22	-38
1987	0	0	-1	1	0	na	3	18	-15
1988	0	2	0	3	6	na	8	17	-9
1989	0	1	-1	2	4	na	6	17	-9
1990	0	-2	-1	-1	-6	na	-5	13	-19
1991	0	-2	0	-1	-5	na	-4	14	-15
1992	0	0	0	0	-1	na	0	16	-13
1993	0	-2	0	-2	-7	na	-6	35	-19
1994	0	-2	6	-1	-5	na	-4	21	-29
1995	0	-1	3	0	-2	na	-1	17	-18
1996	0	0	2	0	-1	na	0	17	-14
1997	0	-2	2	-2	-6	na	-5	21	-19
1998	0	-3	1	-3	-10	na	-9	16	-25
1999	0	-2	0	-2	-6	na	-6	16	-19
2000	0	0	1	0	0	na	1	17	-13
2001	0	0	1	0	0	na	1	16	-14
2002	0	-1	0	-1	-4	na	-4	13	-17
2003	0	-1	0	-1	-4	na	-3	12	-15
2004	0	1	0	1	2	na	3	0	-9

Appendix Table 6 (continued): Annual distortion estimates, Cameroon, 1961 to 2004
(c) Value shares of primary production of covered[a] and non-covered products, (percent)

	Banana	Cassava	Cocoa	Coffee	Cotton	Maize	Millet	Other roots & tubers	Plantain	Sorghum	Non-covered
1961	1	5	5	na.	18	2	12	3	17	7	30
1962	1	5	4	na.	16	2	11	3	18	9	30
1963	1	6	4	na.	14	2	11	3	20	9	30
1964	1	6	6	na.	13	2	11	3	15	13	30
1965	1	4	7	na.	15	2	11	4	17	9	30
1966	1	6	6	na.	13	2	12	4	16	9	30
1967	1	7	7	na.	11	2	9	4	20	11	29
1968	1	8	7	na.	12	1	7	4	20	11	28
1969	1	11	7	na.	12	2	9	3	18	8	29
1970	1	9	9	0	11	1	7	3	20	8	28
1971	1	8	9	0	12	2	8	3	19	9	30
1972	1	7	8	0	11	1	7	4	20	10	31
1973	1	10	7	0	10	1	6	3	19	10	31
1974	1	11	8	0	9	1	5	3	20	10	30
1975	1	6	7	1	12	1	7	4	20	10	31
1976	1	8	11	1	7	1	4	3	15	7	42
1977	1	14	16	0	5	1	3	3	9	6	44
1978	1	15	15	1	5	1	5	3	8	9	38
1979	1	15	14	1	5	1	5	3	8	9	39
1980	1	12	15	1	5	1	6	4	9	10	37
1981	1	12	12	1	5	1	4	4	10	10	39
1982	1	10	17	1	5	1	4	4	9	9	39
1983	1	14	10	2	5	1	4	5	9	12	39
1984	1	15	21	1	3	0	2	4	6	7	39
1985	1	14	14	1	3	0	4	6	7	10	40
1986	1	11	19	1	3	1	6	1	8	11	39
1987	1	12	9	1	4	0	3	6	11	10	43
1988	1	9	10	1	3	0	5	5	10	8	48
1989	4	7	9	1	3	0	4	5	10	10	47
1990	8	5	4	1	3	0	4	6	12	8	50
1991	9	5	5	1	3	0	4	7	10	8	48
1992	8	4	2	1	3	0	4	7	9	9	53
1993	3	4	3	1	3	0	4	7	12	10	54
1994	6	4	5	1	3	0	3	5	5	8	59
1995	8	5	5	1	5	1	4	5	7	8	51
1996	7	5	5	1	4	1	4	5	7	7	54
1997	4	6	3	1	5	1	4	6	10	8	53
1998	4	6	8	1	5	1	6	5	10	8	47
1999	4	4	6	1	6	1	3	5	13	6	52
2000	3	3	3	1	5	0	3	7	14	8	52
2001	2	3	1	1	4	0	5	7	12	7	58
2002	2	5	2	1	4	1	6	7	11	7	55
2003	3	6	2	1	5	1	6	7	14	8	46
2004	3	7	2	1	5	1	5	5	15	10	46

Source: Authors' spreadsheet
a. NRAs including assistance to nontradables and non-product-specific assistance.
b. NRAs including products specific input subsidies.

c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.
d. At farmgate undistorted prices, US$

Appendix Table 7: Prices and distortions to incentives for coffee, Cameroon, 1961 to 2004

	Coffee (primary) - exportable				Coffee (processed) - importable			
	Domest.	Border	DP-BP / BP	DP-BP * / BP	Domest.	Border	DP-BP / BP	DP-BP * / BP
1961	110055	668	-0.349	-0.349	164900	513	0.268	1.567
1962	103845	681	-0.382	-0.382	156220	525	0.206	1.619
1963	117300	622	-0.258	-0.258	167035	582	0.130	0.917
1964	146050	785	-0.258	-0.258	212155	611	0.385	1.331
1965	115000	677	-0.335	-0.335	185450	515	0.410	1.670
1966	132250	738	-0.303	-0.303	186760	490	0.481	1.784
1967	132250	738	-0.290	-0.290	196400	495	0.569	1.804
1968	132250	745	-0.299	-0.299	197780	700	0.114	1.024
1969	134550	728	-0.346	-0.346	200190	872	-0.188	0.637
1970	143750	912	-0.430	-0.430	266385	657	0.466	2.170
1971	143750	930	-0.441	-0.441	286100	560	0.847	2.939
1972	143750	994	-0.426	-0.426	246200	549	0.778	2.981
1973	149500	1098	-0.389	-0.389	285950	949	0.352	1.637
1974	155250	1291	-0.500	-0.479	328980	1554	-0.120	1.067
1975	166750	1343	-0.415	-0.370	284850	1542	-0.130	0.903
1976	224250	2808	-0.665	-0.632	452360	1494	0.271	3.839
1977	287500	4923	-0.763	-0.739	892180	3395	0.068	3.228
1978	322000	3244	-0.594	-0.561	801770	3658	-0.103	1.402
1979	356500	3640	-0.544	-0.508	711980	3703	-0.105	1.423
1980	368000	3237	-0.456	-0.408	803080	3062	0.255	1.632
1981	396000	2264	-0.359	-0.300	640630	2038	0.152	1.292
1982	420000	2443	-0.489	-0.438	793520	2093	0.127	1.757
1983	468000	2731	-0.567	-0.491	914880	1718	0.345	2.921
1984	540000	3040	-0.596	-0.550	1005900	1959	0.167	2.812
1985	552000	2667	-0.537	-0.439	1258900	1773	0.588	2.896
1986	624000	3263	-0.445	-0.390	1101070	1879	0.702	2.909
1987	624000	2251	-0.095	0.010	724740	1694	0.397	0.757
1988	624000	2092	-0.010	0.028	667025	1515	0.461	0.501
1989	570000	1665	0.043	0.043	633690	1497	0.290	0.153
1990	300000	1210	-0.105	-0.105	346340	1608	-0.222	0.003
1991	300000	1096	-0.042	-0.042	336770	1901	-0.379	-0.311
1992	300000	960	0.169	0.169	383360	1746	-0.179	-0.444
1993	300000	1177	-0.109	-0.109	310580	1320	-0.177	0.099
1994	360000	2636	-0.704	-0.704	1173795	1353	0.881	4.797
1995	930000	2790	-0.270	-0.270	1269765	1866	0.490	1.644
1996	930000	1823	0.056	0.056	1008100	1583	0.319	0.133
1997	936000	1775	-0.038	-0.038	1024000	2125	-0.121	-0.030
1998	985000	1846	-0.076	-0.076	1650500	2018	0.416	0.616
1999	830000	1488	-0.105	-0.105	1092040	2485	-0.295	-0.115
2000	600000	927	-0.050	-0.050	873470	1295	-0.010	0.093
2001	395000	601	-0.080	-0.080	907095	1212	0.048	0.161
2002	425000	678	-0.093	-0.093	870280	1918	-0.343	-0.249
2003	500000	844	0.005	0.005	866000	2783	-0.472	-0.476
2004	490000	820	0.117	0.117	425893	4203	-0.811	-0.876

Note: Domestic prices are wholesale at Douala or closest major market, in CFAF/mt. Border prices are unit values at Douala, fob (exports) or cif (imports), in US$/mt. * includes output price equivalent of input distortions in numerator. Sources and assumptions are as detailed in the text.

Appendix Table 8: Prices and distortions to incentives for cocoa, Cameroon, 1961 to 2004

	Cocoa (primary) - exportable				Cocoa (processed) - exportable			
	Domest.	Border	DP-BP / BP	DP-BP * / BP	Domest.	Border	DP-BP / BP	DP-BP * / BP
1961	87750	485	-0.286	-0.286	104757	513	-0.194	0.144
1962	81970	459	-0.276	-0.276	104503	525	-0.193	0.109
1963	87865	552	-0.374	-0.374	109950	582	-0.256	0.188
1964	99625	504	-0.211	-0.211	113932	611	-0.256	-0.039
1965	64494	365	-0.309	-0.309	91719	515	-0.303	-0.027
1966	76257	518	-0.427	-0.427	94187	490	-0.253	0.313
1967	76295	598	-0.495	-0.495	132908	495	0.062	0.811
1968	82205	721	-0.550	-0.550	161122	700	-0.092	0.617
1969	99872	903	-0.609	-0.609	218032	872	-0.116	0.674
1970	99925	674	-0.464	-0.464	207597	657	0.142	0.739
1971	105860	539	-0.290	-0.290	161448	560	0.042	0.391
1972	105920	643	-0.346	-0.346	142349	549	0.028	0.535
1973	117755	1131	-0.533	-0.533	208119	949	-0.016	0.779
1974	141389	1560	-0.623	-0.605	336895	1554	-0.099	0.685
1975	141474	1246	-0.465	-0.415	330994	1542	0.011	0.482
1976	153357	2046	-0.685	-0.639	350749	1494	-0.015	1.161
1977	177062	3791	-0.810	-0.779	679646	3395	-0.186	0.948
1978	259860	3405	-0.688	-0.655	685647	3658	-0.233	0.569
1979	307308	3293	-0.566	-0.525	636074	3703	-0.200	0.430
1980	342998	2603	-0.370	-0.308	529087	3062	-0.173	0.220
1981	355072	2077	-0.374	-0.309	471460	2038	-0.152	0.324
1982	367167	1742	-0.373	-0.303	581916	2093	-0.173	0.216
1983	391140	2119	-0.534	-0.437	617669	1718	-0.092	0.733
1984	438877	2396	-0.584	-0.526	766780	1959	-0.110	0.784
1985	522305	2255	-0.482	-0.367	727215	1773	-0.082	0.685
1986	534592	2068	-0.249	-0.164	672610	1879	0.040	0.384
1987	535020	1998	-0.125	-0.008	532805	1694	0.027	0.212
1988	535460	1584	0.122	0.172	466531	1515	0.022	-0.138
1989	518043	1242	0.271	0.271	518927	1497	0.056	-0.226
1990	297980	1268	-0.152	-0.152	364951	1608	-0.181	-0.031
1991	262316	1193	-0.230	-0.230	243327	1901	-0.552	-0.371
1992	238554	1099	-0.189	-0.189	318962	1746	-0.317	-0.168
1993	178980	1111	-0.437	-0.437	109501	1320	-0.710	-0.249
1994	238725	1396	-0.629	-0.629	654894	1353	0.049	0.862
1995	537329	1433	-0.179	-0.179	608103	1866	-0.286	-0.115
1996	477802	1455	-0.320	-0.320	622604	1583	-0.186	0.183
1997	477980	1619	-0.461	-0.461	877476	2125	-0.246	0.194
1998	478160	1676	-0.506	-0.506	882336	2018	-0.243	0.284
1999	538135	1135	-0.239	-0.239	771853	1656	-0.252	-0.047
2000	495000	904	-0.196	-0.196	661370	1295	-0.250	-0.079
2001	657500	1088	-0.154	-0.154	765574	1212	-0.115	0.058
2002	985000	1779	-0.199	-0.199	991625	1918	-0.252	-0.021
2003	945000	1753	-0.085	-0.085	804778	2783	-0.509	-0.442
2004	850000	1551	0.024	0.024	805306	2226	-0.324	-0.345

Note: Domestic prices are wholesale at Douala or closest major market, in CFAF/mt. Border prices are unit values at Douala, fob (exports) or cif (imports), in US$/mt. * includes output price equivalent of input distortions in numerator. Sources and assumptions are as detailed in the text.

Appendix Table 9: Prices and distortions to incentives for cotton, Cameroon, 1961 to 2004

	Cotton (primary) - nontradable				Cotton (processed) - exportable			
			DP-BP	DP-BP *			DP-BP	DP-BP *
	Dom.	Bor.	BP	BP	Dom.	Bor.	BP	BP
1961	30000	n.a.	-0.239	-0.239	132717	686	-0.168	-0.009
1962	30000	n.a.	-0.207	-0.207	132717	686	-0.146	-0.009
1963	30000	n.a.	-0.242	-0.242	132717	686	-0.171	-0.008
1964	30000	n.a.	-0.226	-0.226	132717	686	-0.159	-0.009
1965	30000	n.a.	-0.250	-0.250	132717	686	-0.176	-0.008
1966	30000	n.a.	-0.257	-0.257	132717	686	-0.181	-0.008
1967	30000	n.a.	-0.236	-0.236	132717	686	-0.166	-0.009
1968	30000	n.a.	-0.240	-0.240	132717	686	-0.169	-0.009
1969	30000	n.a.	-0.361	-0.361	132717	686	-0.254	0.004
1970	30000	n.a.	-0.338	-0.338	132717	686	-0.238	0.000
1971	31000	n.a.	-0.463	-0.463	137216	819	-0.348	0.000
1972	38000	n.a.	-0.369	-0.369	155096	919	-0.279	0.000
1973	40000	n.a.	-0.637	-0.637	164542	1686	-0.534	0.000
1974	45000	n.a.	-0.386	-0.386	182294	1158	-0.291	0.000
1975	45000	n.a.	-0.457	-0.457	184510	1439	-0.348	0.000
1976	55000	n.a.	-0.568	-0.568	221796	1843	-0.461	0.000
1977	65000	n.a.	-0.298	-0.298	254101	1434	-0.223	0.000
1978	65000	n.a.	-0.426	-0.426	257369	1677	-0.324	0.000
1979	70000	n.a.	-0.334	-0.334	284503	1883	-0.243	0.000
1980	80000	n.a.	-0.278	-0.278	321725	2076	-0.200	0.000
1981	90000	n.a.	-0.171	-0.171	356959	1627	-0.119	0.000
1982	105000	n.a.	-0.306	-0.306	401577	1690	-0.226	0.000
1983	117000	n.a.	-0.454	-0.454	446774	1933	-0.358	0.000
1984	130000	n.a.	-0.254	-0.254	488095	1525	-0.187	0.000
1985	140000	n.a.	0.355	0.355	515452	1080	0.218	0.000
1986	150000	n.a.	0.453	0.453	542469	1368	0.279	0.000
1987	140000	n.a.	0.199	0.199	504980	1602	0.131	0.000
1988	140000	n.a.	0.316	0.316	477882	1459	0.204	0.000
1989	95000	n.a.	-0.414	-0.414	371723	1767	-0.305	0.000
1990	95000	n.a.	-0.284	-0.284	369134	1811	-0.199	0.000
1991	95000	n.a.	-0.109	-0.109	361981	1496	-0.072	0.000
1992	85000	n.a.	0.140	0.140	337965	1305	0.079	0.000
1993	130000	n.a.	0.460	0.460	480111	1495	0.264	0.000
1994	155000	n.a.	-0.436	-0.436	573385	2022	-0.337	0.000
1995	180000	n.a.	-0.246	-0.246	659534	1912	-0.181	0.000
1996	180000	n.a.	-0.221	-0.221	660556	1764	-0.158	0.000
1997	190000	n.a.	-0.211	-0.211	705640	1641	-0.151	0.000
1998	195000	n.a.	0.036	0.036	728444	1345	0.024	0.000
1999	165000	n.a.	-0.062	-0.062	653451	1199	-0.040	0.000
2000	225000	n.a.	0.005	0.005	803871	1275	0.003	0.000
2001	175000	n.a.	0.085	0.085	670582	975	0.052	0.000
2002	180000	n.a.	-0.109	-0.109	687040	1160	-0.073	0.000
2003	185000	n.a.	-0.206	-0.206	695430	1469	-0.144	0.000
2004	190000	n.a.	0.297	0.297	717686	1229	0.174	0.000

Note: Domestic prices are wholesale at Douala or closest major market, in CFAF/mt. Border prices are unit values at Douala, fob (exports) or cif (imports), in US$/mt. * includes output price equivalent of input distortions in numerator. Sources and assumptions are as detailed in the text.

Appendix Table 10: Prices and distortions to incentives for staples, Cameroon, 1961 to 2004

	Bananas (primary) - exportable				Plant.	Maize	Millet	Sorgh.	Cassav.	Oth.Rts.
			DP-BP	DP-BP *						
	Domest.	Border	BP	BP	(Nontradable and not processed - domestic prices only)					
1961	15906	65	-0.031	-0.031	26520	131680	47330	70000	8640	40160
1962	15872	65	-0.007	-0.007	27480	129595	47550	70000	9000	41135
1963	15927	65	-0.035	-0.035	28480	127540	47775	70000	9400	42145
1964	15766	64	-0.022	-0.022	29510	125520	48000	70000	9800	43190
1965	15758	64	-0.041	-0.041	30585	123535	48225	70000	10200	44280
1966	15933	65	-0.045	-0.045	31695	121575	48460	70000	10700	45400
1967	14704	60	-0.026	-0.026	32845	119650	48680	70000	11100	46575
1968	15094	61	-0.023	-0.023	34040	117755	48910	70000	11580	47790
1969	14982	58	-0.080	-0.080	35275	115890	49140	70000	12100	49050
1970	14683	53	0.000	0.000	36550	114055	49370	70000	12600	50355
1971	15259	55	-0.005	-0.005	37880	112250	49600	70000	13200	51715
1972	15374	61	0.000	0.000	39255	110470	49840	70000	13695	53130
1973	16047	72	0.000	0.000	40680	108720	50070	70000	14280	54600
1974	17600	73	0.000	0.000	42160	107000	50310	70000	14900	56125
1975	17785	83	0.010	0.010	43685	105300	50550	70000	15550	57715
1976	17174	72	0.003	0.003	45275	103635	50780	70000	16190	59370
1977	17372	71	-0.002	-0.002	46915	101995	51030	70000	16885	61090
1978	17544	78	-0.076	-0.076	48620	100380	51260	70000	17600	62880
1979	17655	83	-0.010	-0.010	50385	98790	51510	70000	18360	64745
1980	17723	84	0.011	0.011	52215	97225	51745	70000	19150	66670
1981	17326	64	-0.004	-0.004	54110	95685	51990	70000	20000	68715
1982	18135	55	-0.023	-0.023	56070	94170	52230	70000	20800	70820
1983	14819	39	-0.038	-0.038	58105	92675	52480	70000	21710	73020
1984	15142	35	-0.007	-0.007	60220	91210	52730	70000	22650	75315
1985	15132	34	0.005	0.005	62400	89765	52970	70000	23600	77700
1986	15016	43	0.006	0.006	64670	88340	53230	70000	2460	80200
1987	15108	50	-0.018	-0.018	67015	86945	53475	70000	25650	82800
1988	15051	51	-0.012	-0.012	69445	85565	53725	70000	26765	85510
1989	55743	175	-0.028	-0.028	71970	84210	53980	70000	27910	88350
1990	115189	423	-0.017	-0.017	74580	82875	54230	70000	29100	91310
1991	121598	431	-0.012	-0.012	77290	81565	54485	70000	30350	94400
1992	106349	402	-0.010	-0.010	80095	80270	54745	70000	31650	97630
1993	37836	134	-0.010	-0.010	83000	79000	55000	70000	33000	101000
1994	203206	366	0.204	0.204	127335	175085	150900	143340	56500	88875
1995	201478	404	0.093	0.093	115225	194250	190260	131700	55400	114860
1996	200722	392	0.059	0.059	108705	169165	175940	141200	51900	131920
1997	160756	275	0.065	0.065	128950	208030	191280	159150	63800	180380
1998	160696	272	0.022	0.022	129460	199780	292865	200600	57770	173040
1999	160455	261	-0.012	-0.012	121625	214150	266150	202700	52500	162130
2000	145737	205	0.045	0.045	145705	208890	174170	118200	70800	185375
2001	137744	188	0.027	0.027	161990	192765	243170	201500	91020	192970
2002	132208	190	0.008	0.008	168445	183165	300640	229550	92270	181340
2003	131501	226	-0.014	-0.014	148225	180515	217120	164300	72960	163325
2004	107177	203	-0.013	-0.013	164585	165585	199400	131255	84240	172300

Note: Domestic prices are wholesale at Douala or closest major market, in CFAF/mt. Border prices are unit values at Douala, fob (exports) or cif (imports), in US$/mt. * includes output price equivalent of input distortions in numerator. Sources and assumptions are as detailed in the text.