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FOOD IMPORTS, AGRICULTURAL POLICIES AND AGRICULTURAL
DEVELOPMENT IN EL SALVADOR, 1960-1987

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FOOD IMPORTS, AGRICULTURAL POLICIES AND AGRICULTURAL DEVELOPMENT
IN EL SALVADOR, 1960-1987

Executive Summary

1. The Macroeconomic Context

In the decades of the 1960s and 1970s, El Salvador's overall economic growth rates were among the highest in Latin America, but then with the outbreak of the social and political crisis from 1979-80 onward, the economy went into a steep decline. From 1978 to 1982, real private consumption per capita dropped by 34 percent. That was an extraordinarily severe decline, and undoubtedly for some groups in the society it was even more severe. Subsequently, the decline was arrested and there was a slight tendency toward recovery of income and consumption levels per capita, but as of 1987 living standards were still at their levels of the 1960s.

As a consequence of these developments, total food supplies per capita, and nutrient availability per capita, have dropped since the end of the 1970s. In terms of output growth, the agricultural sector has fared slightly better than the rest of the economy since the end of the past decade, but the economic problem in rural areas has been exacerbated by the fact that real producer prices have dropped by a third since the late 1970s. *Major finding*

Massive external assistance has prevented the crisis from being even more severe. The ratio to commodity exports of international grants plus gross disbursements of new official international loans rose from 7 percent in 1971 to 82 percent in 1987. As a result, the decline in imports has been halted since 1982, but they have not been able to increase consistently since that year owing to declining export earnings and increasing amortization requirements for the external debt. *Major finding*

Unfortunately, at the time of the internal conflicts, El Salvador's external terms of trade turned quite unfavorable. During the 1983-87 period, the external terms of trade were only two-thirds of their average level during the period 1960-75.

The combination of these pressures led to a phased devaluation of the Salvadorean currency during the years 1983 to 1986. Nevertheless, inflation, which is a new phenomenon in El Salvador, has exceeded the rate of devaluation, so that as of 1987 the currency remained substantially overvalued.

The social consequences of these economic developments have been severe; some of them are sketched out in section 4 of chapter 1. Nevertheless, at the end of chapter 1 some positive indicators are cited that suggest the possibility of at least a limited economic recovery, even under the present conditions of social conflict. However, as discussed subsequently, some important economic policy reforms appear to be essential to make that recovery possible.

2. The Patterns of Agricultural Development

During the period 1960-78, agricultural output expanded very rapidly in El Salvador, registering an annual growth rate of 4.1 percent. In addition, the prices of agricultural goods rose considerably more rapidly than the non-agricultural prices, within the economy. Therefore on average Salvadorean farmers' standard of living increased quite rapidly.

However, the distributional issues were not resolved, and the rate of landlessness in rural areas increased substantially over that period. *Sign*
The social pressures became explosive. A land reform was undertaken but nevertheless civil war broke out. Both these events contributed to a sharp drop in the sector's growth rate after 1979.

Salvadorean agriculture has been dominated historically by a few export crops, and it continues to be. More than half the value of output derives from coffee, cotton and sugar. Livestock accounts for 22 percent of output, and the staple crops (corn, beans, rice and sorghum), only 13 percent.

In per capita terms, in the two-year period 1985-86 agricultural production, including livestock, was only 71 percent of its level in

1978-79. Export crop production dropped the most in that interval, with cotton production effectively collapsing. The staple crops had dropped to 82 percent of their 1978-79 level.

The decline has affected both the total area planted in the sector and the average yields. More disturbing for the long-run prospect is the fact that in 1985-86 real capital formation in the was only about 40 percent of its 1978-79 level.

The social unrest was not the only factor behind the slump in agriculture. Real producer prices have dropped sharply since the late 1970s, after increasing for more than a decade before that. By 1985-86, they had declined to 62 percent of their 1978-79 level. (And they were much higher in 1976-77 than they were in 1978-79.)

These price trends have contributed to lower production in agriculture, lower agricultural earnings of foreign exchange, lower average purchasing power in rural households, and, because of the latter, lower nutrition levels in rural areas. The role of economic policy in influencing those price trends is examined, along with other issues, in chapter 3 of the report.

3. The Role of Food Imports

In El Salvador, agricultural exports have been much larger than agricultural imports for as long as statistics have been collected. The net trade balance of the sector was approximately 1.4 billion colones in each of 1984 and 1985 (the latest years for which complete trade statistics were available when this report was written).

But since the late 1970s, the trends have been unfavorable. Exports have dropped—coffee production in 1986 was only 73 percent of its 1979 level—and agricultural imports have been increasing rather rapidly. The most rapidly increasing products in the import list have been wheat, yellow corn, vegetable oil and meal, animal fats, live animals and meat products. Except for wheat, these items largely are livestock products or feed inputs into the livestock sector.

Major finding

However, the growth of imports has not been sufficient to fully offset the diminishing levels of production, and therefore total food supplies per capita dropped approximately 20 percent between 1978-79 and 1985-86.

Econometric analysis presented in chapter 3 tests a number of hypotheses about the trends in imports, prices and production. The main conclusions of the analysis are as follows:

--In the aggregate, agricultural imports have responded to the expected kinds of economic influences: domestic purchasing power, domestic agricultural production, and the exchange rate. Food import policy has not brought in agricultural commodities in excess of the amounts indicated by the economic circumstances of the country. However, exchange rate policy is the major determinant of those imports. In particular, the overvaluation of the exchange rate in recent years has encouraged more reliance on imported agricultural goods.

X --The overvalued exchange rate also has been the major cause of the decline in real farmgate prices, although international price movements and declining domestic demand also have had an effect in this regard. In effect, the exchange rate has emerged in recent years as the main instrument of agricultural pricing policy in El Salvador. Another implication is that it is not the amount of agricultural imports in recent years that is depressing domestic farm production, but rather their prices, and the exchange rate has been the principal factor in making those prices low relative to domestic farm prices. Even though the latter have declined considerably in real terms, food import prices in colones have declined even more, because of exchange rate policy. *Major finding*

—domestic food production shows a statistically significant responsiveness to real farmgate prices, with a short-run price elasticity of about 0.37.

In other words, imports are not depressing domestic production, but rather both of them are jointly determined by a "third force," and that third force is exchange rate policy. It is strong enough to swamp the effect of other domestic policies oriented at influencing agricultural prices.

Thus the appropriate level of food imports is not independent of the macroeconomic policy framework adopted by the Government, in particular policies affecting the growth of aggregate demand and the exchange rate. In recent years, the Salvadorean Government has pursued macroeconomic policies that are not particularly favorable to expansion of agricultural output and are conducive to relying more on food imports. At the level of sector aggregates, a change in macro policies would be the key to a program designed to i) increase agricultural production and incomes, ii) increase agricultural exports and net foreign exchange earnings, iii) decrease the need for agricultural imports.

The report also suggests that approximate magnitudes for the appropriate increases in agricultural imports each year can be calculated from the import equation that was estimated as the basis for the above conclusions. Another one of the estimated equations in the report can be used to calculate the likely effect on real farmgate prices of alternative policy changes at the macroeconomic level.

*Maja
Jerdin*

Chapter 1. THE MACROECONOMIC CONTEXT

1.1. Introduction

After two decades of relatively successful economic performance, the economy of El Salvador went into a steep decline in 1979 and the immediately following years. As measured from 1978 to the year 1982, real GDP per capita declined by 28%. More importantly from a viewpoint of living standards and the demand for agricultural products, real private consumption per capita declined by 34% during that period.

Subsequently the decline was arrested, and there even was a very slight upward trend in these indicators from 1982 to 1987, but Salvadorean living standards still are back to their levels of the early 1960s. And the dependence on foreign economic assistance to maintain those standards is proportionately much greater than it was in the 1960s. *major funding*

To put these trends in perspective, it is important to recall that the El Salvador's economic successes of an earlier era were widely heralded in economic development circles. El Salvador's growth rate in per capita GDP had been the highest in Central America, in spite of the fact that the country has the thinnest base of natural resources in the region, relative to its population. But since 1978 the internal conflict, plus some unfavorable external economic trends, have contributed to a general deterioration of production levels and living standards.

Agriculture's economic performance is intimately linked to the general conditions in the economy, and so it too has declined in recent years, after a long period of very respectable growth rates. As is discussed in this report, in some respects agriculture has been part of the problem while in other respects it has been adversely affected by the macroeconomic situation. However, as the report shows, the basis exists for a recovery of at least some of its earlier dynamism.

The most pressing concern for food policy in the short run is how to improve food consumption per capita and ameliorate the existing malnutrition, which is much worse than in the 1970s.

Food supplies per capita have dropped markedly in this decade. Food imports have tended to represent an increasing share of total imports, but in real terms they have fluctuated in the 1980s, first increasing and then decreasing in response to a growing scarcity of foreign exchange. Overall, the total supply of food, domestic and imported, has declined in per capita terms.

The other side of the food consumption issue is the need to improve the real purchasing power of the population, especially in rural areas. In this regard an important fact is that real producer prices in agriculture have declined by 33% since 1978 (ch. 2). Here the concern is the extent to which food imports, along with international price trends for agriculture, may have been putting downward pressure on domestic agricultural prices.

Finding

Major finding

An alternative hypothesis is that domestic economic policies have influenced the trends in real agricultural prices.

These and other issues are reviewed in this report. As the foregoing comments suggest, the state of the food and agriculture sector is closely linked to the performance of the macroeconomy, and also to trade policies and trends in international agricultural markets. Hence the report begins with a macroeconomic overview and then moves on to successively more specific issues within the agricultural sector. The link between macroeconomic policies, including fiscal and trade policies, and the performance of the sector is brought out again in chapters 4, 5, and 6 and in the concluding chapter.

1.2. Longer-Term Macroeconomic Trends

The year 1960 is a convenient point of departure for analyzing the economy's performance in recent decades. It was the year of initiation of the Central American Common Market, which became the main stimulus for the subsequent and rapid development of El Salvador's manufacturing sector. By the same token, the Common Market provided a strong impulse for growth and diversification of the exports of its member countries, and also for substitution for imports from outside of the region. From that year onward, and practically for the entire decade of the 1960s, El Salvador's GDP increased at rates far above the population growth rate. This performance permitted a sustained

improvement in production and real incomes per capita at the same time that exportable production grew very rapidly. In real terms, GDP expanded at an average annual rate of 5.6% during the decade of the 1960s.

The industrial sector was the main source of growth during that decade, as a result of the fiscal and trade benefits offered to that sector through the treaty agreements of the Common Market. Real GDP in manufacturing grew at an annual rate of 8.1% from 1960 to 1970, raising the share of manufacturing in GDP from 14.5% to 18.3%. Nevertheless, agriculture also made unusually strong contributions to aggregate performance, growing at a rate of 3.9% during the decade and generating most of the country's foreign exchange via its exports.

In these circumstances, with a steadily expanding world market and El Salvador's ability to take quick advantage of the opportunities offered by the Common Market, total exports grew at an unprecedented rate of 6.9% during the decade, practically doubling from 292.0 million colones in 1960 to 570.8 million colones in 1970. The export sector was truly the engine of growth during the decade, with an especially strong performance in the area of sales of manufactures to the Common Market. While exports to the rest of the world were increasing at an annual rate of 4% (increasing from 261.3 million colones to 386.3 million colones during the decade), exports to the Common Market were growing at an annual rate of 19.6% (increasing from 30.8

million colones to 184.5 million colones). The latter increased their share of total exports from 10.5% in 1960 to 32.3% in 1970.

Since 90% of the exports to the Common Market were manufactured goods, El Salvador's dependence on traditional agricultural exports (coffee, sugar, cotton) was reduced by an appreciable amount during the 1960s. The importance of the Common Market for the country was even greater when the fact is taken into account that El Salvador consistently ran a significant trade surplus with the other members in that decade.

These developments contributed to an orderly and rapid expansion of the Salvadorean economy in the 1960s, in a framework of a stable balance of payments and relatively low rates of inflation. However, those circumstances began to change at the beginning of the following decade.

The Common Market, which had constituted the source of dynamism par excellence in the external sector, showed its first indications of weakening, primarily owing to Honduras's withdrawal from the multilateral free trade arrangements. As a consequence, El Salvador's exports to the rest of Central America declined by more than 13% in 1969 and 1970. And although they resumed their pattern of growth in succeeding years, their annual rate of expansion was significantly lower in the 1970s, at 15%, vs. 20% for the decade of the 1960s.

In addition, the country was affected adversely by the rupture of the International Monetary System in 1971. The

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abandonment of the international scheme of fixed exchange rates and the devaluation of the dollar made El Salvador's imports more expensive on average, as it had maintained close trading relationships with Western Europe.

A still greater shock to the economy was caused by the spectacular rise in the price of hydrocarbons at the end of 1973. This development put strong pressure on El Salvador's balance of payments. The new situation was managed through recourse to international borrowing, from both official and private sources, which in turn was made possible by the sharp increase in international liquidity that arose out of the recycling of the petrodollars.

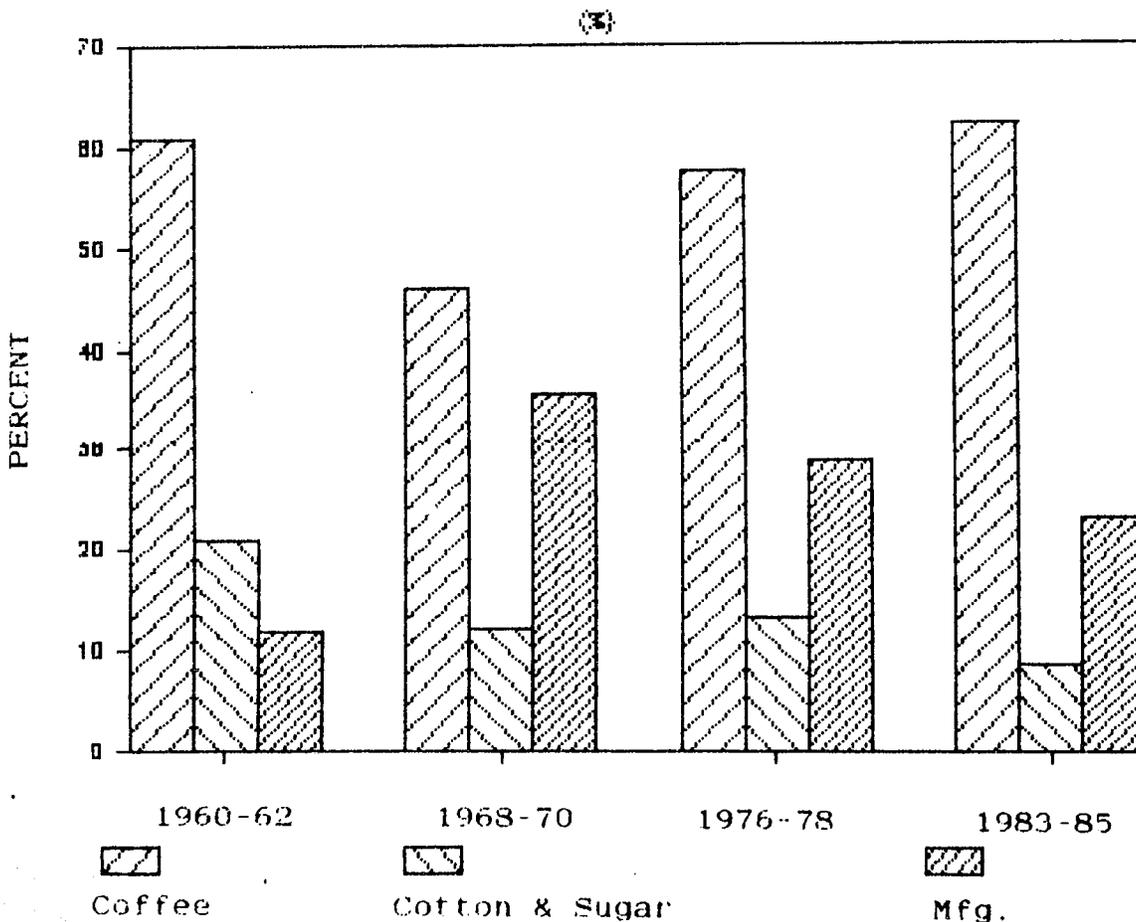
In spite of these circumstances, from 1970 to 1978 the economy expanded at a rate very similar to that of the previous decade (5.5% on average). But that growth was achieved only through dependence on external and unstable factors that eventually led to the emergence of external and internal disequilibria. The external sector continued to be the decisive sector for growth. There were some shifts in the composition of domestic demand, notably a much more rapid growth of fixed capital formation and public consumption than of private consumption (from 1970 to 1979), but those changes did not alter the fact that El Salvador still was fundamentally an agro-exporting country. The decline of the Common Market only reinforced this characteristic of the country's economy.

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Thus the level of agricultural exports became once again the critical growth variable. Real export levels (in constant domestic prices) expanded by 92% between 1970 and 1979 (7.5% per year), in part because the external terms of trade shifted in El Salvador's favor in that period.

The international price of coffee was the chief determinant of these trends, rising by over 300% between 1970 and 1977. Even after declines in 1978 and 1979, it remained at more than three times its 1970 level. As a consequence, coffee's share in El Salvador's total commodity export earnings rose from 51% in 1970 to 69% in 1979, and the share represented by all agricultural exports rose from 71% to 84%.

AVERAGE SHARE OF COMMODITY EXPORTS



Unable to influence the world demand and prices of its primary export products, and saddled with a rigid structure of imports, El Salvador was becoming increasingly exposed to fluctuations in the world economy. It was becoming equally dependent on the availability of international financial flows, no longer just to complement the scarcity of domestic savings, but now simply to sustain its productive apparatus at their reduced levels of operation. These developments, together with the political and military events that severely afflicted the country from 1979 onward, imposed tight limits on growth possibilities and pushed the country into the worst crisis in its history, worst from a viewpoint of both its duration and the magnitude of decline in the living standards of the population.

1.3. Recent Behavior of the Economy: 1979-87

As noted, aggregate production levels in El Salvador increased consistently until 1978. After that year, several key factors turned negative: the slowing of aggregate demand in the world economy, the decline in El Salvador's external terms of trade, the second oil crisis (1979), the intensification of the problems in the Central American Common Market, and the outbreak of the domestic conflict. These factors plunged the economy in a steep recession and it was only in 1984 that the decline began to be arrested. The magnitude of the decline was remarked in the introduction; in terms of private consumption per capita, it has

meant a drop from 5,721 colones in 1978 to 3,727 colones in 1983, and then a slight rise to 3,812 colones in 1987, at constant prices of 1987. It is noteworthy that the population growth

ANNUAL ECONOMIC GROWTH RATES
(%)

	Real GDP	Real Agric. GDP	Real Mfg. GDP	Real GDP per Capita	Real Private Consump. per Capita
1950-60					
1960-70	5.6	3.9	8.1	2.6	3.1
1970-78	5.5	4.0	5.9	2.5	2.6
1978-87	-1.9	-1.7	-2.6	-3.4	-4.4

(Source: Tables 1.2., 1.4.)

rate dropped sharply in the 1980s, as a result of massive emigration. Had the population growth rate remained at its higher historical levels, per capita private consumption in 1987 would have been about 3,404 colones (\$681 at the official exchange rate) instead of 3,812 colones.

In the period 1978 to 1987, the agriculture and livestock sector fared slightly better than the rest of the economy, but it too declined substantially. In 1987, real GDP in agriculture and livestock was 14% lower than in 1978, vs. a drop of 16% in aggregate real GDP. However, an index of gross output in the sector, based on the 22 most important products, declined by 21% in the same period. (For purposes of approximate conversion to per capita figures, it can be noted that the total population increase for that period was 16%.)

An indication of the effects on material welfare of the population of this crisis is indicated by the fact that the rates of open and disguised unemployment together are equivalent to 50% of the work force. Another aspect of the crisis is that for the first time in its modern economic history El Salvador is struggling

with significant rates of inflation. As seen

ANNUAL RATES OF
INCREASE IN
CONSUMER PRICES

below the concern over inflation imposes limits

1960-70	0.7%
1970-80	10.8%
1980-84	12.8%
1985	22.3%
1986	32.0%
1987	25.0%

on policy flexibility, limits which impede initiatives toward improving farmers' incentives.

At the same time that inflation has been acceler-

ating, agricultural producer prices have been

lagging behind other prices, so that real agricultural prices have declined significantly (ch. 2).

On the side of the external accounts, it is striking that during the years 1979 to 1981, in spite of the substantial bilateral assistance and increasing amounts of remittances from abroad, there were continuing losses of international reserves. The losses amounted to so much (\$291.2 million) that during the years 1980, 1981, and 1982 the country actually was in a situation of negative levels of international reserves.

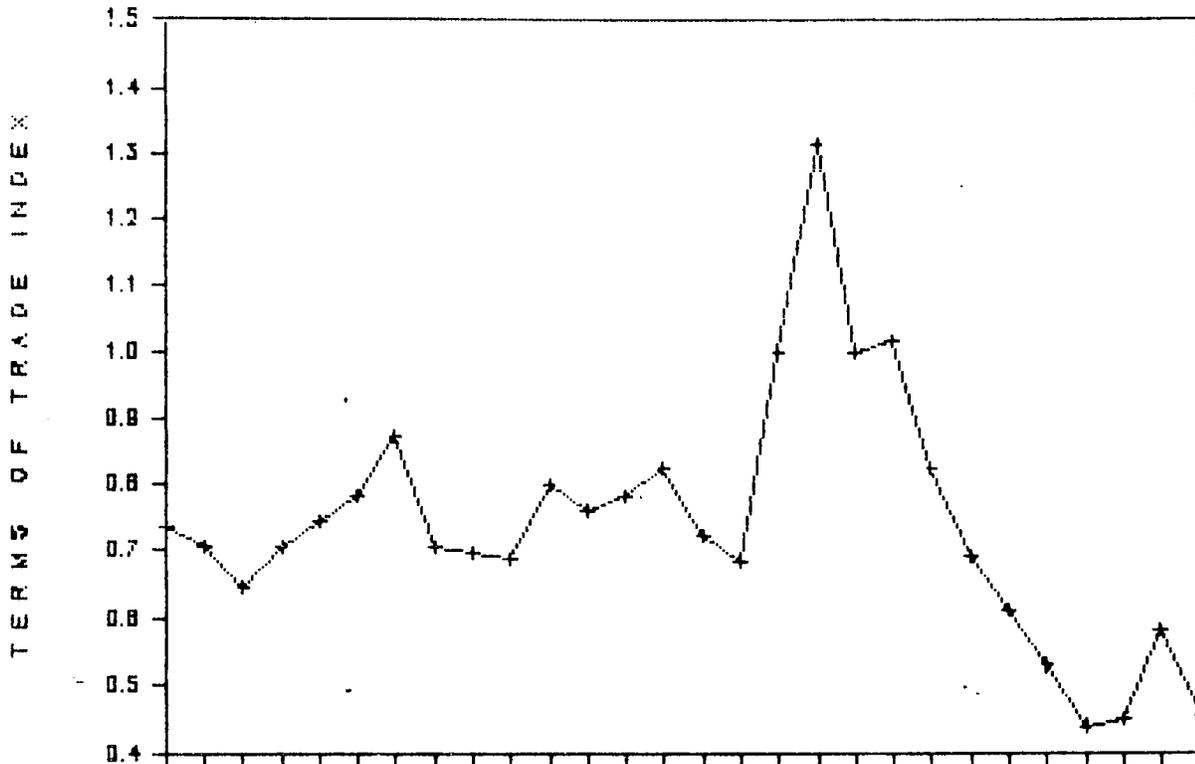
Gross disbursements of official loans increased from an average of \$19.6 million in 1971-72 (World Bank, 1983) to \$152.7 in 1980-81 (ibid.) to \$279.0 million in 1983-84 (IMF, 1987). In recent years, grants (from AID) have been even larger than new official lending. The dependence on external assistance has

risen sharply by any measure. The ratio of grants plus gross disbursements of new official loans to commodity exports rose from 7% in 1971 to 55% in 1986 and 82% in 1987.

This increase in the inflow of economic assistance has served to halt the decline in imports---since 1982 they have fluctuated but the trend has been more or less constant. But it has not led to an increase in imports because the trend in export earnings has been downward and debt amortizations have increased sharply. The amortizations were \$11.9 million in 1971 and \$213.0 million in 1986. For this reason, an increasing proportion of the economic assistance has been in the form of grants. As regards exports, the level of commodity export earnings dropped from a peak of \$1,132.4 million in 1979 to \$727.1 million in 1986. Proportionately, the largest decreases were registered in the sales to the rest of the Central American Common Market.

The balance of trade problem has two dimensions: sluggish behavior of the quantities of goods exported, and an important decline in export prices vs. import prices (the external terms of trade). In the 1983-87 period, the external terms of trade were less than 40% of their peak level in 1977. But as 1977 was the peak year of the coffee boom, it is more significant that in these last five years the terms of trade were only about two thirds of their average level from 1960 to 1975.

EXTERNAL TERMS OF TRADE, 1980-87



The fiscal sector also has been under great pressure in recent years. The government has struggled to promote economic growth in the face of a faltering role of exports, and also to meet the demands placed on it by the military conflict and the attendant social dislocation, at the same time that some traditional sources of revenue have been declining. It has been necessary to dedicate around a third of the government budget to the military effort in recent years.

In the consolidated accounts of the nonfinancial public sector, the overall deficit, expressed as a share of GDP, was only 0.1% in 1977 and 1.4% in 1978. By 1981, it had risen to 7.4% and in 1983 it was 9.4%. The government succeeded in reducing it in subsequent years, mainly by widening the tax base

in 1985 and 1986, but according to preliminary IMF estimates it jumped sharply again in 1987, owing mainly to a weakening of tax collections in real terms.

The area of fiscal finances is another macroeconomic constraint that places restrictions on the options available to sector policy makers. The existing structure of revenue collections has distorted the pattern of producer incentives over crops, but efforts to remove the distortions will have to address the very real need for greater fiscal revenue collections.

Another macroeconomic problem that has emerged in recent years has concerned exchange rate policies. For decades, until 1983, El Salvador had maintained a fixed parity between its colon and the dollar, a policy made possible by the pattern of successful economic growth in the context of a stable environment in the external sector. With the severe deterioration of the balance of payments, the real devaluation of other Central American currencies, and capital flight as well, the fixed dollar exchange rate became increasingly unrealistic.

As a result, a multiple exchange rate system was established in 1983 and a black market in foreign exchange also emerged. In 1984 and 1985, increasing proportions of foreign transactions were passed to the higher exchange rate of the parallel market, and then in 1986 a unification of the exchange markets was effected at the higher rate. The unification represented a

nominal devaluation of 100% with respect to the fixed rate of 1982 and a devaluation of 38% with respect to the weighted

average rate of 1985. Yet the inflation rates of recent years have been sufficiently high that the currency has become increasingly overvalued.

This finding, which is not original with this study (see Loehr, 1988; and FUSADES, 1988), has especially important implications for the agricultural sector, as it is highly exposed to the pressures of competition from world markets, in export products and also in products that compete with imports, directly or indirectly. The exchange rate policies have meant that El Salvador has become a relatively high-cost economy in dollar terms, and, as shown statistically below, this has reduced the sector's ability to compete against the products of other countries. It has contributed correspondingly to the decline in domestic agricultural prices vs. other domestic

	Exchange Rate	Parity Exchange Rate	Percent of Overvaluation
1970	2.50	2.50	0
1971	2.50	2.41	-4.7
1972	2.50	2.37	-5.4
1973	2.50	2.37	-5.3
1974	2.50	2.50	-0.2
1975	2.50	2.72	8.6
1976	2.50	2.69	7.6
1977	2.50	2.76	10.5
1978	2.50	2.89	15.5
1979	2.50	3.00	20.0
1980	2.50	3.21	28.2
1981	2.50	3.39	35.4
1982	2.50	3.35	34.1
1983	2.82	4.05	43.7
1984	2.87	4.31	50.1
1985	3.60	5.44	51.2
1986	4.96	7.09	42.9
1987	5.00	8.33	66.5

Notes: a) For 1983-85, the exchange rate is the weighted average of the rates on the parallel and official markets.

b) The parity rate is the rate that would have been consistent with the difference between the Salvadorean inflation rate and the weighted-average inflation rate of its trading partners.

Sources: Loehr (1988); Banco Central de Reservas; authors' calculations.

prices, leading to the paradoxical situation that for many products domestic farm-gate prices are too low for farmers to make a profit and yet too high for them to compete on world markets.

The World Bank (1986a) has emphasized the importance of maintaining a realistic exchange rate policy, but with the current concern for reining the inflationary forces the Government's stated policy is to allow the overvaluation to continue. As this report shows, this policy orientation will make it difficult for agriculture to recapture its growth momentum. If Salvadorean inflation rates continue to be well above those of the U.S. and Europe, the Government will of course eventually be forced to devalue further. But agricultural policy may have to consider the possibility that such an eventuality may not occur soon. The report discusses the implications for agriculture of alternative exchange rate policies, including some options that could partially compensate for the continuing overvaluation, in the absence of any movements in the exchange rate in the short run.

1.4. Socioeconomic Conditions in El Salvador

According to the official estimates and projections, the population of El Salvador increased from 2.5 million in 1960 to 4.9 million in 1987, practically doubling even though the rate of growth of the population has dropped markedly in recent years (Table 1.2). Owing to the crisis of the 1980s, emigration

patterns have become as important as fertility and mortality rates in determining population growth. Before 1980, the net rate of emigration was 3 or 4 emigrants for each thousand persons in the population, and by 1985 it had risen to 17 emigrants per thousand, another indicator of the gravity of the internal crisis.

The war has, among other things, led to destruction of significant amounts of economic infrastructure (documented in Massy et al., 1986). As a consequence, some regions of the country have become more isolated and deprived of essential services. This situation, as well as the direct threat to life and limb, has led to large-scale displacements of populations. The movements of refugees, in search of physical and economic survival, have in turn aggravated the scarcities of essential services in the communities that have received them.

It is estimated that approximately 10% of the population, some 500,000 persons, is in refugee status. One result of this circumstance has been an intensified urbanization process, to such an extent that it is estimated that half the population now resides in urban areas.

The war and the economic crisis have interrupted the progress toward improved socioeconomic conditions and in many respects have led to a worsening of those conditions. According to socioeconomic surveys, the current housing deficit is about 600,000 units; the illiteracy rate is 51%; there are less than 12

hospital beds per 10,000 inhabitants (vs. an optimum of 500 beds per 10,000); and only 55% of the population has reasonable access to water and sanitary services. For the year 1985 the FAO (1986) estimated that 60% of the rural population did not have potable water in their houses and 70% did not have adequate sanitary services.

It is indicative that the proportion of children of primary school age who are actually enrolled in school declined significantly between the 1960s and 1980s (World Bank, 1986).

On the basis of food balance sheet analysis, Osegueda Jimenez (1987) estimates that between 1978 and 1982 the daily consumption of calories per capita dropped 24%, and the corresponding drop in protein consumption was 36%. MIPLAN has published very similar estimates (see Table 1.7).

According to estimates of the Government and international organizations, 75% of the population less than 5 years old now suffers some degree of malnutrition (FUSADES, 1986). In 1985, 38% of the children of all ages treated in medical facilities showed some signs of malnutrition. The Ministry of Health has found that the principal causes of illness among children less than five years old are gastro-intestinal infections, severe respiratory infections, and deficiencies of vitamins and other nutrients. According to the Interamerican Development Bank, the rural population has a morbidity rate of 44%, and the urban, 40%.

A recent study of the FAO (1986) calculates that the average

daily calorie intake per person in rural areas is 1,806, which is one of the lowest in Latin America. (The minimum acceptable level is estimated at 2,189 calories for the conditions of El Salvador.) The Interamerican Development Bank has estimated that 60% of rural families are experiencing a caloric deficit of more than 10% and that 25% of them have a deficit of 40% or more. The principal source of dietary energy is cereals, and since 1979 the average consumption of cereals has declined.

1.5. Perspective and Prospect

This rather sombre recital of statistics is another way of saying that El Salvador is in a deep crisis, that there is a good deal of human suffering. Clearly an end to the armed conflict would make an enormous difference in human welfare. To put it in another language, in aggregate economic terms, it has been estimated that between 1979 and 1987 the war has caused a loss of production of 1.58 billion dollars (Semana, 1988), or almost half of one year's gross domestic product.

Nevertheless, there are a number of positive indicators that suggest that, although the Salvadorean economy cannot yet be said to be recovering, there are very real possibilities of at least a limited recovery. First, although the country's external indebtedness has increased substantially, its debt payments-to-export ratio still is not nearly as high as that of many other developing countries. Second, the continuing willingness of external donors, especially AID, to provide grants as well as

loans provides a degree of reassurance regarding the balance of payments. Third, inflation rates, though high by Salvadorean standards, are not high by Latin American standards, and they have dropped in 1987. In 1988 they probably will not increase and may even drop further. Fourth, per capita incomes and consumption have actually increased slightly since the bottom was reached in 1983.

Fifth, in agriculture the main source of production decline has been the collapse of cotton, and now that crop has a very low weight in the total production for the sector, and the other products appear to be performing better, so total agricultural production levels may fare better in the future. And sixth, in the economy as a whole, real private fixed capital formation was 75% higher in the years 1986 and 1987 than in 1982 and 1983 (see Table 1.2.). This last factor is especially significant.

Other indicators could be cited. Some prefer to cite the fact that a high proportion of the population chose to vote in two successive national elections, in spite of guerrilla threats to those who voted and a guerrilla-imposed paralysis of the transport system on voting days. Those demonstrations of popular will were indeed evidence of the resilience of the Salvadorean population.

For these and other reasons, economic improvement appears to be feasible. However, one of the conclusions of this study, based on many interviews, and review and analysis of many other

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studies and data sources, is that significant policy reform is needed in some areas in order for the development possibilities to be realized. A finding of the study is that the war is not the only cause of economic problems; that at least in agriculture some policy orientations have affected production and incomes adversely. The study tries to identify these problems as fully as possible and then to outline principal options for addressing the problems, giving special emphasis to questions of food policy and agricultural trade policy. A corollary implication of the study is that the removal of these policy bottlenecks could, in itself, generate significant growth in the sector.

As always, those who are charged with the implementation of policy will be aware of considerations that a research study does not take into account. Therefore the study confines itself to the economic logic of the issues and the options, and tries to suggest multiple options whenever possible.

It is evident that agriculture needs a re-thinking of its policy orientations---and in fact to some extent that process is already underway in the Government. This study provides only one perspective, but it is hoped that it will stimulate others, inside and outside the Government, to think creatively about the future of Salvadorean agriculture.

Table 1.1. AGGREGATE EXPENDITURE IN EL SALVADOR, 1960-1987
(million colones at current prices)

Category of Expenditure	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
CONSUMPTION	1107.2	1121.5	1492.6	1509.5	1615.6	1732.4	1858.7	1958.8	2076.4	2140.5	2223.3	2335.8	2445.9	2823.2
Private	967.0	976.7	1342.8	1350.3	1453.0	1559.8	1674.9	1756.1	1860.6	1891.7	1947.6	2060.9	2138.4	2474.2
Public	140.2	144.8	149.8	159.2	162.6	172.6	183.8	202.7	215.8	248.8	275.7	274.9	307.5	349.0
GROSS DOMESTIC INVESTMENT	181.7	156.3	159.0	214.5	317.3	307.7	361.2	326.8	255.4	303.2	340.6	421.7	408.2	609.1
Fixed Capital Formation	181.7	156.3	159.0	202.5	262.7	296.4	325.5	323.7	248.1	273.6	308.0	359.3	474.2	521.1
Private	134.6	102.3	109.6	158.5	214.3	215.6	226.7	254.9	189.3	208.6	235.7	263.6	346.0	377.0
Public	47.1	54.0	49.4	44.0	48.4	80.8	98.8	68.8	58.8	65.0	72.3	95.7	128.2	144.1
Inventory change	0.0	0.0	0.0	12.0	54.6	11.3	35.7	3.1	7.3	29.6	32.6	62.4	66.0	88.0
EXPORTS	294.0	323.9	374.6	409.7	476.6	528.9	520.6	567.3	584.5	555.6	638.6	666.1	838.4	998.1
IMPORTS	355.8	322.6	366.6	440.1	542.8	576.9	630.8	637.3	624.4	677.5	631.2	719.7	810.6	1098.8
GROSS DOMESTIC PRODUCT	1227.1	1279.1	1659.6	1693.6	1866.7	1992.1	2109.7	2215.6	2291.9	2381.8	2571.3	2703.9	2881.9	3331.6

(cont.)

Source: Banco Central de Reserva

Table 1.1. AGGREGATE EXPENDITURE IN EL SALVADOR, 1960-1987
(million colones at current prices)

(Continuation)

Category of Expenditure	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986(P)	1987(P)
CONSUMPTION	3383.1	3718.7	4159.0	5438.7	6570.4	7065.7	7651.9	8012.8	8291.3	9478.4	11053.5	13860.2	17897.3	22043.6
Private	2954.3	3217.5	3473.2	4633.9	5574.4	5932.7	6404.5	6644.2	6876.6	7871.4	9184.1	11640.3	15094.7	18809.4
Public	428.8	501.2	685.8	904.8	996.0	1133.0	1247.4	1368.6	1414.7	1607.0	1869.4	2219.9	2802.6	3234.2
GROSS DOMESTIC INVESTMENT	892.1	990.5	1119.6	1678.8	1834.4	1556.2	1183.0	1231.1	1185.3	1223.7	1394.4	1554.4	2619.2	3002.7
Fixed Capital Formation	718.4	1030.6	1145.4	1520.6	1651.9	1511.7	1210.1	1173.0	1129.5	1179.8	1335.9	1723.3	2593.5	3225.5
Private	508.4	673.6	791.4	995.5	1202.5	989.6	574.6	539.2	585.0	715.7	880.6	1250.7	2091.1	2560.8
Public	210.0	357.0	354.0	525.1	449.4	522.1	635.5	633.8	544.5	464.1	455.3	472.6	502.4	664.7
Inventory change	173.7	-40.1	-25.8	158.22	182.5	44.5	-27.1	58.1	55.8	43.9	58.5	-168.9	25.7	-222.8
EXPORTS	1278.5	1479.7	2028.0	2735.3	2328.2	3182.2	3046.1	2306.7	2042.3	2486.0	2535.9	3199.2	4896.1	4404.9
IMPORTS	1610.2	1711.2	2100.7	2685.7	3040.8	3196.9	2964.4	2904.1	2552.7	3036.3	3326.6	4283.0	5649.7	5907.4
GROSS DOMESTIC PRODUCT	3943.5	4477.7	5205.9	7167.1	7692.2	8607.2	8916.6	8646.5	8966.2	10151.8	11657.2	14330.8	19762.9	23543.8

(P) Preliminary figures

Source: Banco Central de Reserva

Table 1.2. AGGREGATE EXPENDITURE IN EL SALVADOR, 1960-1987
(million 1962 colones)

Category of Expenditure	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
CONSUMPTION	1197.4	1191.7	1400.1	1481.4	1601.2	1622.8	1866.9	1958.9	2060.8	2103.0	2155.0	2217.3	2331.5	2513.2	2566.5
Private	1046.7	1024.1	1238.8	1316.0	1436.8	1449.4	1687.6	1764.9	1848.1	1872.1	1903.7	1980.7	2053.9	2203.6	2268.9
Public	150.7	167.6	161.3	165.4	164.4	173.4	179.3	194.0	212.7	230.9	251.3	236.6	277.6	309.6	297.6
GROSS DOMESTIC INVESTMENT	204.6	189.8	194.5	210.7	299.2	281.4	332.3	291.5	226.8	254.0	288.1	350.1	327.6	424.9	535.3
Fixed Capital Formation	187.3	166.1	173.2	199.0	245.6	268.2	298.8	289.2	219.7	225.9	259.1	293.6	385.8	351.0	401.5
Private	148.1	121.2	135.0	155.6	199.3	193.9	206.2	223.0	162.9	166.5	195.6	209.3	272.0	245.7	281.0
Public	39.2	44.9	38.2	43.4	46.3	74.3	92.6	66.2	56.8	59.4	63.5	84.3	113.8	105.3	120.5
Inventory change	17.3	23.7	21.3	11.7	53.6	13.2	33.5	2.3	7.1	28.1	29.0	56.5	-58.2	73.9	133.8
EXPORTS	340.4	376.2	374.6	408.1	440.6	456.1	452.8	524.2	538.8	524.1	510.1	554.3	649.8	625.0	666.6
IMPORTS	359.7	326.2	366.6	428.6	513.5	534.7	588.5	598.9	580.3	556.8	559.6	612.9	663.0	783.2	810.0
GROSS DOMESTIC PRODUCT	1382.7	1431.5	1602.6	1671.6	1827.5	1825.6	2063.5	2175.7	2246.1	2324.3	2393.6	2508.8	2645.9	2779.9	2958.4
POPULATION (thousands)	2542	2617	2695	2775	2857	2942	3028	3117	3208	3301	3398	3497	3599	3704	3813
Per capita GDP	543.9	547.0	594.7	602.4	639.7	620.5	681.5	698.0	700.2	704.1	704.4	717.4	735.2	750.5	775.9
Per capita private consumption	411.8	391.3	459.7	474.2	502.9	492.7	557.3	566.2	576.1	567.1	560.2	566.4	570.7	594.9	595.0

Sources: Banco Central de Reserva and study team estimates;
Population--Asociacion Demografica Salvadorena

(cont.)

Table 1.2. AGGREGATE EXPENDITURE IN EL SALVADOR, 1960-1987
(million 1962 colones)

(Continuation)

Category of Expenditure	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Growth Rates (%)		
														1960-78	1978-87	1960-87
CONSUMPTION	2664.4	2948.2	3271.3	3379.8	3161.5	2918.0	2716.1	2520.1	2535.6	2636.3	2742.8	2755.5	2785.0	5.94	-2.13	3.17
Private	2340.7	2573.6	2878.0	2943.3	2714.2	2495.7	2278.8	2084.6	2095.7	2175.3	2250.6	2244.9	2267.3	5.92	-2.86	2.90
Public	323.7	374.6	393.3	436.5	447.3	422.4	437.3	435.5	439.9	461.0	492.2	510.6	517.7	6.09	1.91	4.67
GROSS DOMESTIC INVESTMENT	480.7	532.0	763.7	786.0	606.0	412.1	396.2	355.8	325.6	335.3	316.6	384.6	376.4	7.77	-7.85	2.28
Fixed Capital Formation	519.1	535.0	677.4	695.5	586.6	422.3	376.7	338.7	313.5	320.8	353.6	380.1	411.0	7.57	-5.68	2.95
Private	320.3	355.1	430.8	495.3	371.2	189.4	161.3	163.7	178.0	199.4	241.9	285.8	310.5	6.94	-5.06	2.78
Public	198.8	179.9	246.6	200.2	215.4	232.9	215.4	175.0	135.5	121.4	111.7	94.3	100.5	9.49	-7.37	3.54
Inventory change	-38.4	-3.0	86.3	90.5	19.4	-10.2	19.5	17.1	12.1	14.5	-37.0	4.5	-34.6			
EXPORTS	747.1	676.5	597.2	719.7	979.9	837.6	690.4	588.4	705.0	674.4	648.1	566.4	621.3	4.25	-1.62	2.25
IMPORTS	769.4	909.8	1188.4	1220.7	1145.8	878.5	785.8	616.6	695.8	710.4	713.9	694.0	690.4	7.03	-6.14	2.44
GROSS DOMESTIC PRODUCT	3122.8	3246.9	3443.8	3664.8	3601.6	3289.2	3016.9	2847.7	2870.4	2935.6	2993.6	3012.5	3092.3	5.57	-1.87	3.02
POPULATION (thousands)	3924	4035	4150	4268	4389	4514	4564	4614	4665	4716	4768	4850	4934	2.92	1.62	2.48
Per capita GDP	795.8	804.7	829.8	858.7	820.6	728.7	661.0	617.2	615.3	622.5	627.9	621.1	626.7	2.57	-3.44	0.53
Per capita private consumption	596.5	637.8	693.5	689.6	618.4	552.9	499.3	451.8	449.2	461.3	472.0	462.9	459.5	2.91	-4.41	0.41

Source: Banco Central de Reserva and study team estimates;
Population--Asociacion Demografica Salvadorena

Table 1.3. GROSS DOMESTIC PRODUCT BY SECTOR OF ORIGIN
(million colones at current prices)

SECTOR	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
1. Agriculture and livestock	426.3	464.2	530.0	522.8	569.7	579.6	573.9	599.9	602.7	607.1	731.2	729.0	728.0	922.4
2. Mining and quarries	5.0	8.0	12.0	2.7	2.4	2.8	3.0	3.4	3.1	3.5	4.2	4.3	4.4	5.6
3. Manufacturing	133.2	140.8	264.8	267.7	306.1	352.2	396.6	422.3	448.0	466.2	484.7	519.2	562.6	610.5
4. Construction	38.0	43.8	41.4	48.2	57.0	62.0	74.7	68.2	56.8	67.5	72.3	80.1	102.1	104.0
5. Electricity, water, sewage services	12.7	13.1	14.3	21.4	24.2	26.4	29.8	31.5	35.1	36.0	38.8	40.3	43.1	48.5
6. Transport, storage, communications	48.5	49.5	54.7	77.2	85.6	89.4	91.2	97.8	113.7	123.0	128.3	131.6	139.6	146.4
7. Commerce	241.8	237.3	385.5	402.3	449.7	482.3	511.3	527.9	539.8	541.7	543.6	587.1	643.8	742.0
8. Finance	29.4	31.3	35.9	25.7	31.3	33.4	38.2	42.2	46.0	51.3	57.5	62.1	65.5	85.1
9. Ownership of real estate	87.2	75.0	96.1	71.4	72.9	78.1	81.4	85.8	90.2	93.3	94.9	100.3	107.0	118.0
10. Government services	109.4	113.4	117.7	133.1	134.9	142.3	155.2	167.4	170.1	190.6	200.2	219.0	238.6	278.6
11. Personal services	95.6	102.6	107.2	121.1	132.8	143.6	154.4	169.3	186.4	201.4	215.6	230.8	247.2	270.5
GROSS DOMESTIC PRODUCT AT MARKET PRICES	1227.1	1279.0	1659.6	1693.6	1866.6	1992.1	2109.7	2215.7	2291.9	2381.6	2571.3	2703.8	2881.9	3331.6

(cont.)

Source: Banco Central de Reserva (revised as of January, 1988)

Table 1.3. GROSS DOMESTIC PRODUCT BY SECTOR OF ORIGIN
(million colones at current prices)

(Continuation)

SECTOR	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1. Agriculture and livestock	999.0	1028.2	1614.4	2347.1	2048.9	2508.2	2480.2	2106.0	2075.4	2160.5	2354.9	2610.6	728.0	922.4
2. Mining and quarries	7.3	7.4	7.8	8.1	8.5	9.5	11.3	12.5	13.6	15.2	17.7	20.7	4.4	5.6
3. Manufacturing	706.6	831.3	932.6	1046.6	1204.7	1337.6	1339.4	1359.1	1381.8	1572.1	1767.5	2345.7	562.6	610.5
4. Construction	146.4	219.4	216.3	327.3	319.8	336.8	305.9	284.2	300.6	343.4	365.8	437.0	102.1	104.0
5. Electricity, water, sewage services	54.3	56.6	89.5	106.5	131.5	167.2	189.1	191.6	199.7	243.9	281.9	335.3	43.1	48.5
6. Transport, storage, communications	173.4	187.6	211.1	242.9	291.0	291.9	313.5	328.2	346.7	411.5	482.0	613.6	139.6	146.4
7. Commerce	964.6	1112.1	1411.7	1600.9	1935.6	2005.5	2037.7	2027.6	2088.8	2513.1	2924.4	3897.8	643.8	742.0
8. Finance	103.9	128.2	156.9	234.4	259.5	286.2	301.9	295.2	330.8	357.8	392.1	442.0	65.5	85.1
9. Ownership of real estate	142.2	171.9	192.2	227.0	284.8	318.3	383.9	411.8	471.0	537.9	613.9	747.4	107.0	118.0
10. Government services	338.1	383.8	485.7	570.7	718.5	783.7	916.5	943.6	1049.8	1113.2	1261.9	1602.8	238.6	278.6
11. Personal services	307.7	351.2	387.7	4328.5	489.4	562.3	637.2	686.7	708.0	823.1	947.7	1278.2	247.2	270.5
GROSS DOMESTIC PRODUCT AT MARKET PRICES	3943.5	4477.7	5705.9	11040.0	7692.2	8607.2	8916.6	8646.5	8966.2	10091.7	11409.8	14331.1	2881.9	3331.6

Source: Banco Central de Reserva (data revised as of January, 1988)

Table 1.4. GROSS DOMESTIC PRODUCT BY SECTOR OF ORIGIN
(million 1962 colones)

SECTOR	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
1. Agriculture and livestock	426.2	451.1	537.0	518.5	540.0	517.2	527.3	557.7	567.7	588.6	627.2	650.7	660.3	672.1	740.8
2. Mining and quarries	2.7	2.4	2.3	2.3	2.4	2.9	3.1	3.4	2.9	3.2	3.6	3.5	3.9	4.2	4.9
3. Manufacturing	200.5	218.7	241.4	262.4	295.6	332.9	370.7	401.7	419.4	422.5	438.3	468.9	486.9	521.8	552.2
4. Construction	40.5	43.4	39.7	48.5	55.2	60.2	73.1	67.6	56.7	64.1	63.8	72.2	93.9	80.9	85.7
5. Electricity, water, sewage services	15.6	16.7	18.4	21.3	24.6	27.8	32.1	35.6	40.3	41.5	45.0	48.9	54.4	61.1	64.2
6. Transport, storage, communications	62.9	66.9	75.1	77.5	83.6	90.7	95.6	102.6	115.9	119.1	127.9	129.5	136.0	141.9	164.1
7. Commerce	334.6	313.5	349.2	391.7	462.1	511.5	544.3	563.2	582.0	582.1	565.6	576.1	613.5	658.0	681.9
8. Finance	22	23.8	26.3	27.5	31.2	32.4	36.6	40.5	43.9	49.1	51.0	54.9	59.8	68.5	75.7
9. Ownership of real estate	65.5	67.6	69.7	71.9	74.2	75.4	78.9	81.4	84.3	87.3	90.4	93.1	99.4	102.9	106.6
10. Government services	111.8	121.3	131.8	131.1	130.7	137.0	151.3	160.8	159.4	178.9	182.9	199.5	213.7	234.3	243.4
11. Personal services	100.4	106.1	111.7	118.9	127.9	137.6	150.5	161.2	173.5	188.0	197.9	211.5	224.3	234.1	238.9
GROSS DOMESTIC PRODUCT AT MARKET PRICES	1382.7	1431.5	1602.6	1671.6	1827.5	1925.6	2063.5	2175.7	2246.0	2324.4	2393.6	2508.8	2646.1	2779.8	2958.4

(cont.)

Source: Banco Central de Reserva (revised as of January, 1988)

Table 1.4. GROSS DOMESTIC PRODUCT BY SECTOR OF ORIGIN
(million 1962 colones)

(Continuation)

S E C T O R	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Growth Rates (%)		
														1960-78	1978-87	1960-87
1. Agriculture and livestock	787.3	725.2	751.3	856.6	887.3	841.1	787.5	750.6	726.8	750.9	742.8	719.7	737.8	3.96	-1.65	2.05
2. Mining and quarries	4.5	4.0	3.7	3.8	3.8	3.9	3.8	3.8	3.7	3.8	3.8	3.9	4.4	1.92	1.64	1.82
3. Manufacturing	578.0	628.6	661.5	691.5	656.8	586.2	525.0	480.9	490.5	496.9	515.4	528.3	544.1	7.13	-2.63	3.76
4. Construction	128.0	115.9	157.2	147.0	143.9	111.4	94.4	90.4	92.2	86.9	90.9	93.3	106.4	7.43	-3.53	3.64
5. Electricity, water, sewage services	70.5	77.9	87.8	96.6	107.7	105.7	102.4	99.8	104.8	107.6	113.0	115.8	118.1	10.67	2.26	7.78
6. Transport, storage, communications	172.9	195.6	214.3	223.3	208.8	193.7	172.5	161.3	170.9	175.6	178.8	179.7	183.0	7.30	-2.19	4.03
7. Commerce	709.2	770.0	803.4	828.5	759.7	625.0	531.9	468.3	481.3	487.1	489.5	491.0	501.3	5.17	-5.43	1.51
8. Finance	77.7	88.3	101.5	103.9	106.1	102.6	93.1	98.5	98.7	99.7	102.7	104.2	106.7	9.01	0.30	6.02
9. Ownership of real estate	110.4	114.3	118.3	122.5	126.9	130.0	133.8	137.3	140.1	142.3	144.4	144.8	147.1	3.54	2.05	3.04
10. Government services	243.9	274.3	288.2	320.3	332.2	341.9	346.0	356.3	359.9	384.5	411.6	430.1	438.7	6.03	3.56	5.19
11. Personal services	240.4	252.9	256.7	270.7	268.4	247.9	226.5	200.5	201.5	200.3	200.7	201.7	204.7	5.67	-3.06	2.67
GROSS DOMESTIC PRODUCT AT MARKET PRICES	3122.8	3247.0	3443.9	3664.7	3601.6	3289.4	3016.9	2847.7	2870.4	2935.6	2993.6	3012.5	3092.3	5.57	-1.87	3.02

Source: Banco Central de Reserva

Table 1.5. AGRICULTURAL AND TOTAL COMMODITY EXPORTS, 1970-1985
(million colones and thousand mt)

PRODUCTS	1970		1971		1972		1973		1974		1975		1976		1977	
	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume
AGRICULTURAL EXPORTS	416.8		414.3		534.8		604.9		775.5		903.2		1330.5		1896.3	
Fresh shrimp	13.1	3.9	14.9	3.6	17.0	3.4	22.4	3.9	20.3	3.4	26.0	4.2	29.6	3.2	26.2	3.4
Unrefined sugar	17.4	54.5	23.5	72.8	44.9	145.4	44.5	99.4	98.9	132.4	205.2	136.2	101.2	129.8	66.0	133.2
Sugar products	1.2	0.9	2.2	0.3	2.2	0.2	3.3	2.3	4.8	2.9	5.1	2.9	5.7	3.2	5.9	3.0
Coffee	301.9	120	268.9	116.2	328.6	157.5	398.5	122.8	486.8	144.9	429.9	143.4	960.5	153.7	1531.3	134.3
Cotton seed oil, cake and meal	5.3	27.9	6.2	27.9	7.8	34.3	8.7	32.7	9.5	22.5	3.6	12.4	3.7	11.0	2.6	6.2
Sesame seed	0.7	1.1	0.9	1.4	0.7	1.1	1.3	1.7	1.4	1.2	3.7	2.6	2.7	2.3	2.6	1.5
Cotton fibre	57.9	50.1	72.5	56.4	96.5	68.4	90.9	62.6	120.3	53.1	190.8	88.7	160.3	62.3	202.6	63.1
Natural balsams	1.1	0.1	1.3	0.1	1.7	0.1	2.0	0.1	5.2	0.1	2.7	0.1	3.6	0.1	3.9	0.1
Fresh fruit	0.5	6.8	0.5	7.4	0.6	7.2	0.9	9.3	0.6	9.6	0.6	5.3	1.3	2.6	2.0	6.8
Vegetables	0.6	6.3	0.6	6.4	0.6	5.9	0.9	9.2	0.7	7.3	1.1	6.4	0.2	1.9	0.4	7.7
Margarine, other oils and fats	4.1	3.3	5.2	4.2	4.6	3.6	4.0	2.8	3.7	1.8	4.3	2.3	4.5	2.3	5.8	2.6
Other food products	13.0	44.5	17.6	86.6	29.6	78.4	27.5	41.6	23.3	37.4	30.2	40.8	57.2	57.9	47.0	52.5
I. TOTAL COMMODITY EXPORTS	590.5		608.0		754.3		895.7		1152.2		1283.4		1801.8		2430.9	
II. RATIO I/II	0.706		0.681		0.709		0.675		0.673		0.704		0.738		0.780	

(cont.)

Source: Revistas del Banco Central de Reserva, except for the series on vegetables, which was provided by the
Direccion General de Economia Agropecuaria of the Ministerio de Agricultura y Ganaderia.

Table 1.5. AGRICULTURAL AND TOTAL COMMODITY EXPORTS, 1970-1985
(million colones and thousand mt)

(Continuation)

PRODUCTS	1978		1979		1980		1981		1982		1983		1984 (P)		1985 (P)	
	Value	Volume	Value	Volume	Value	Volume										
I. AGRICULTURAL EXPORTS	1533.3		2378.4		1941.1		1448.1		1284.7		1437.8		1321.6		1371.3	
Fresh shrimp	26.6	3.1	31.4	3.1	36.6	3.2	57.4	3.9	53.2	3.7	32.1	2.3	58.3	5.7	31.4	3.1
Unrefined sugar	47.2	113.9	67.0	151.1	33.4	34.5	37.0	44.7	39.7	54.1	100.2	89.2	64.7	75.3	57.9	111.4
Sugar products	7.4	3.2	6.3	2.8	4.6	1.9	3.6	1.4	5.0	1.8	3.9	1.3	4.3	1.3	3.0	1.4
Coffee	1100.6	124.4	1949	229	1560.3	186.9	1144.9	167.8	1014.1	142.9	1107.0	184.5	1106.9	165.1	1131.4	161.2
Cotton seed oil, cake and meal	0.3	1.0	0.7	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sesame seed	7.8	4.3	7.9	3.7	10.0	5.5	9.0	6.5	2.0	1.1	2.9	1.2	11.8	6.1	18.2	9.4
Cotton fibre	251.1	88.8	217.5	66.5	217.8	62.2	138.0	36.3	115.7	37.0	140.7	40.2	25.9	8.3	76.9	28.1
Natural balsams	4.3	0.1	5.6	0.1	6.2	0.1	5.5	0.1	7.0	0.1	3.2	0.1	3.6	0.2	2.6	0.1
Fresh fruit	3.4	7.6	5.8	12.0	6.5	9.6	3.3	5.9	1.6	0.7	2.6	4.0	2.9	4.5	4.1	5.0
Vegetables	1.2	8.4	0.8	12.6	2.0	7.3	1.9	5.4	4.6	7.5	6.4	5.1	4.2	5.5	6.3	5.2
Margarine, other oils and fats	4.7	2.0	2.8	1.1	2.0	0.7	2.6	0.9	2.6	1.0	1.4	0.5	0.7	0.2	7.4	2.9
Other food products	78.7	77.5	83.6	43.6	61.7	29.6	44.9	36.7	39.2	31.2	37.4	30.8	38.3	7.6	32.1	25.4
II. TOTAL COMMODITY EXPORTS	2002.4		2828.3		2684.0		1991.9		1748.6		1894.6		1793.4		1697.4	
III. RATIO I/II	0.766		0.841		0.723		0.727		0.735		0.759		0.737		0.808	

(P) Preliminary figures

Source: Revistas del Banco Central de Reserva, except for the series on vegetables, which was provided by the
Direccion General de Economia Agropecuaria of the Ministerio de Agricultura y Ganaderia.

Table 1.6. BASIC PRICE SERIES, 1960-1987
(1978 = 100)

	Consumer Price Index	Wholesale Price Index	GDP Deflator	External Terms of Trade	Exchange Rate
1960	45.78	35.03	0.479	0.738	2.50
1961	44.53	34.08	0.470	0.707	2.50
1962	44.60	33.92	0.466	0.648	2.50
1963	45.26	34.45	0.472	0.705	2.50
1964	46.00	36.79	0.476	0.744	2.50
1965	46.25	36.14	0.482	0.784	2.50
1966	45.74	33.71	0.476	0.873	2.50
1967	46.42	36.09	0.475	0.707	2.50
1968	47.59	36.18	0.476	0.697	2.50
1969	47.48	36.05	0.478	0.689	2.50
1970	48.83	39.22	0.501	0.800	2.50
1971	49.02	37.08	0.503	0.762	2.50
1972	49.80	39.22	0.519	0.784	2.50
1973	52.98	47.51	0.571	0.827	2.50
1974	61.93	52.48	0.635	0.724	2.50
1975	71.74	60.60	0.683	0.686	2.50
1976	78.97	81.63	0.837	1.002	2.50
1977	88.31	120.27	0.991	1.314	2.50
1978	100.00	100.00	1.000	1.000	2.50
1979	115.87	111.68	1.139	1.019	2.50
1980	135.98	137.93	1.292	0.827	2.50
1981	156.12	163.21	1.365	0.693	2.50
1982	174.40	175.37	1.500	0.612	2.50
1983	197.30	193.75	1.685	0.529	2.82
1984	220.41	206.77	1.892	0.439	2.87
1985	269.57	224.41	2.281	0.450 (p)	3.60
1986	355.84	n.a.	3.146	0.581 (p)	4.96
1987	444.80	n.a.	3.651	0.453 (p)	5.00

- Notes: a) The external terms of trade are defined as the ratio of the export unit value index to the import unit value index (both taken from the International Monetary Fund's INTERNATIONAL FINANCIAL STATISTICS).
- b) For the years 1983 to 1986, the exchange rate is a weighted average of the official and parallel market rates (weighted averages compiled by the Banco Central de Reserva). The 1986 rate is less than 5.00 because the unification of the exchange rates occurred on January 21 of that year.

Source: Banco Central de Reserva and International Monetary Fund.

Table 1.7. DAILY AVAILABILITY OF NUTRIENTS PER CAPITA, 1975-1982

Nutrient and Source	1975	1976	1977	1978	1979	1980	1981	1982
PROTEINS (grams/day)	68.86	55.61	60.34	66.60	51.56	50.76	47.61	43.36
Vegetal	53.39	40.19	43.47	48.88	37.11	37.68	35.20	32.25
Animal	15.47	15.42	16.87	17.72	14.45	13.08	12.41	11.11
CALORIES (per day)	2688.04	2229.16	2428.21	2644.38	2295.15	2263.12	2235.84	2056.79
Vegetal	2478.70	2011.55	2186.94	2389.09	2090.88	2080.61	2054.38	1897.37
Animal	209.34	217.61	241.27	255.29	204.27	182.51	181.46	159.42
FATS (grams per day)	57.39	52.30	54.51	58.25	43.77	47.50	48.53	42.74
Vegetal	44.76	39.05	39.75	42.71	31.87	36.95	38.11	33.67
Animal	12.63	13.25	14.76	15.54	11.90	10.55	10.42	9.07

Source: MIPLAN, Indicadores Economicos y Sociales, junio a diciembre, 1983;
 MIPLAN, Indicadores Economicos y Sociales, 1979.

Chapter 2. The Patterns of Agricultural Development

2.1. A Historical Note

The economy of El Salvador has been dominated by agriculture throughout its history, and its basic structure has evolved only very slowly. The predominant crops during the pre-Colombian era were corn and beans, the basic food crops, balsam, coveted for its medicinal qualities, and cocoa. The latter was widely used as a medium of exchange. All four of these crops still have considerable economic importance today.

In the colonial period, which extended from the middle of the sixteenth century to the beginning of the nineteenth century, farmers began to develop cash crops for sale to urban centers and for export. Indigo was perhaps the most noteworthy example, followed by sugar. With the later development of synthetic coloring agents, indigo lost its importance, but sugar continues to be a major crop.

Beginning in 1856 a series of special incentives were extended to the cultivation of coffee, and that crop began to dominate the agricultural sector. In 1901 coffee was responsible for 76% of commodity export earnings; in 1921, 80%; and in 1931, 95.5%. In 1985, it still accounted for 67% of commodity export earnings.

The provision of 1856 imposed the condition on the communal (ejidal) lands that at least two-thirds of the land be

planted in coffee or ownership would revert to the state. The legacy of special provisions for the cultivation of coffee still exists. As of 1986, anyone who plants 5,000 coffee bushes is exempt from all types of taxes for ten years, and workers on coffee farms are exempt from military service.

The worldwide economic collapse of 1929 had severe effects on Salvadorean agriculture and on the Salvadorean economy in general, as coffee prices dropped sharply. In many countries the Great Depression brought about a diversification of the structure of the economy. In the case of El Salvador only the more commercial agriculture diversified, and the change was slight at first, marked by the introduction of cotton. That crop eventually developed into the second-largest earner of foreign exchange, as well as providing the raw material for the budding domestic textile industry.

Around 1960, sugar began to grow in importance, stimulated by the export possibilities opened by the vacating of the Cuban sugar quota in the United States. In due course it became the third most important export product, and its sales to the domestic market also have been significant.

While export agriculture was being developed and diversified somewhat, the staples for domestic consumption and animal feed continued to expand in production, particularly corn, rice, beans, and sorghum, and several other crops and livestock

products grew rapidly, especially tobacco, henequen, sesame, olives, bananas, milk, and poultry products.

In general, the period 1960-78 was characterized by rapid expansion of agricultural output. The real annual growth rate for the sector over that period (of gross output), calculated on the basis of an index for 21 products was 4.1% (see below).

PERCENTAGE GROWTH
OF OUTPUT, 1960-78

Corn	116%
Beans	114%
Tobacco	287%
Henequen	256%
	(1960-80)
Sesame	639%
	(1960-80)
Olives	169%
Milk	253%
Eggs	409%

Both crop agriculture and livestock expanded apace, with livestock growing slightly more rapidly. This period also was marked by favorable movements in agricultural prices, from the farmers' viewpoint. The real purchasing power of agricultural and livestock output rose by 5.6% per year during those eighteen years. In other words, in terms of the goods and services they could purchase with the sales of a unit of their harvests, farmers' living standards rose by 166% in the period.

By any standard this would have been considered an agricultural success story, except that distributional concerns were not dealt with. The festering issue of land distribution was not addressed. It had been an explosive social problem since the 1930s, and root causes were intensifying. A United Nations study found that between 1960 and 1975 the share of the rural population without access to land increased from 12% to 40% (Wise, 1986). Sixty percent of the land was owned by two percent

of the population.

Throughout the decade of the 1970s there was growing concern and polarization over the issue of land distribution, and the Governments of that time took the first halting steps toward design and implementation of a land reform. But those movements were successfully resisted by the dominant economic groups. In an atmosphere in which a guerrilla war had begun and the land issue divided almost the entire society, a military coup in 1979 installed a Government with a reformist ideology.

Lightning expropriations of haciendas were made by the armed forces and a major land reform was underway. The basic decrees institutionalizing the reform were issued in February and March of 1980.

As discussed later in this chapter and further on in the report, the principal institutional form in which the land was chosen to be redistributed has not proven to be efficient in economic terms, although a subsidiary form has in fact performed very well. The Government has begun to recognize the institutional problems and is moving toward improvements, but in the meantime the agrarian reform sector has contributed to the general decline in production growth rates in the sector.

In the context of this study, it is important to review the factual evidence in this area in order to understand the origins of the sector's decline and the role of foreign trade in the evolution of the sector. Later in the report, quantitative

results are presented regarding production performance in the agrarian reform entities, and a statistical analysis is carried out to be able to quantify the roles of the reform, of the war, of the drop in international agricultural prices, and of policy-related factors in bringing about the reversal of agriculture's fortunes that has occurred in the 1980s.

2.2. The Structure of Agricultural Output

Until 1978, trends in land use in Salvadorean agriculture had been characterized by an increasing allocation of area to crops, especially permanent and semi-permanent crops, and to improved pastures, mainly at the expense of natural pastures (Table 2.3). This trend reflects the high degree of population pressure on the available land.

After 1978, the trends were modified somewhat. The most striking change was a sharp drop in land used for annual crops and an increase (of 36,000 hectares) in the amount of land lying uncultivated. These changes were a product of the combination of reduced producer incentives, increased violence in the countryside, and the inability of the agrarian reform cooperatives to function as effectively as planned.

The sector continues to be dominated by the traditional export crops in terms of value of output, although coffee has dropped considerably in physical output since 1979-1980. More than half of the value of output derives from coffee, cotton and

sugar. The staple crops (corn, beans, rice, sorghum), which receive so much policy

emphasis, account for

only about 13% of the

value of sector output;

livestock accounts for

substantially more.

SHARES OF OUTPUT VALUE (%)
AT CURRENT PRICES

	1967-70	1983-86
Trad. exports	51.3	52.8
Staple crops	14.2	13.4
Fruit, vegetables	9.6	8.7
Livestock	20.9	22.2

(Source: Table 2.4.)

Thus, on the surface there is an apparent stability in the patterns of production in the sector. However, these figures combine price effects and quantity effects, and it is shown below that in fact there are significant differences among the sector's products in their production behavior in recent years. What the above figures do show clearly is that in terms of sources of gross current income for agriculturalists, the traditional exports continue their dominance.

Among other things, this makes farmers all the more vulnerable to price changes in export products, including the downward pressure on those prices (in colones) brought about by the exchange rate overvaluation. Often discussions of consequences of moves in the exchange rate are conducted purely in terms of potential supply response. That response is of course is important for projections of foreign exchange earnings, but sometimes the more important result of the exchange rate adjustment is the effect on real purchasing power in trade

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-oriented sectors such as agriculture. This theme is developed further later in the report.

As a methodological note, the above figures on growth rates of production and the percentage composition of production refer to gross output, and not to GDP by crop. The latter concept, although it contains the words "gross" and "product," is value added: gross output minus the cost of non-primary inputs. Table 2.1 reports GDP by crop in constant prices, but throughout this report the main concept used is gross output. The reason is that the focus of the report concerns food supplies, domestic and imported. Value added generated via the production of a crop tells us about income in agriculture, which is an important concept, but it is not the same as the availability of foods for consumption. To be able to compare the availability of imported goods and domestically produced goods, it is necessary to use the gross output concept.

Interestingly, Table 2.1 suggests that the importance of staple crops is higher than that derived from the gross output data. For the 1983-86 period, according to Table 2.1, staples accounted for 21.6% of the value added in the sector, vs. 13.4% of the gross output. Likewise, it suggests that the relative contribution of the livestock subsector is 17.1% for that period, vs. 22.2% by the gross output tabulation. However, not only do the two measures differ in concept, but also the value added data in that table are in constant prices of a not-very-recent year,

1962. The gross output data in current prices provide a more accurate reflection of the relative economic importance of the different crops and livestock products to agriculturalists.

2.3. Production, Productivity and Sources of Growth

Trends in Production

As noted in chapter 1, the chief characteristics of the trends in production have been a relatively rapid rate of increase until about 1978 and then a marked decline until the present. For staple crops, the low point was reached in 1982; for livestock, in 1983; but for the sector as a whole, 1986 was the worst year since the crisis began, owing primarily to the continuing decline of the traditional exports (Table 2.9). In 1986, the per capita output of the three traditional export crops was 32% lower than it was in 1979 (based on a calculation with an up-to-date index expressed in 1985-86 constant prices).

INDEXES OF AGRICULTURAL PRODUCTION PER CAPITA
(computed at constant 1985-86 prices)

	Staple Crops	Tradit. Exports	All Crops	Live- stock	Crops + Livestk.	Food Prods.
1960-61	0.79	0.83	0.83	0.86	0.83	0.79
1978-79	1.00	1.00	1.00	1.00	1.00	1.00
1982-83	0.77	0.82	0.81	0.71	0.79	0.71
1985-86	0.82	0.68	0.70	0.78	0.71	0.78

Note: These are two-year averages of calendar year data.
Source: Tables 2.9 and 1.2.

The decline in the output of export crops aggravates the nutritional situation of the population in two ways: by reducing the foreign exchange available for importing foods, and by reducing farm incomes and therefore farm purchasing power. Sugarcane production (for the domestic market as well as for export) increased slightly in the interval from 1978-79 to 1985-86, but coffee production dropped in physical units by 18% and cotton by 74% (Table 2.5).

The case of cotton is special, for it has suffered from three major problems: lack of competitiveness on world markets of most domestic producers, at the prevailing exchange rates; management and financial problems in the processing cooperative (COPAL) which have led unit processing costs to rise to several times their equivalent in Guatemala, for example; and persistent attacks by the guerrillas--shooting down crop dusting planes, attacking cotton trucks, burning cotton warehouses, etc.

The case of coffee is different, for there the main problems appear to derive from the structure of economic policy. As discussed in more detail in chapter 4, the combination of the coffee export tax and the overvaluation of the exchange rate was equivalent to a tax on coffee producers of 67% in 1987 (FUSADES, 1988), and that effective tax is almost certainly higher in 1988. When the additional fact is taken into account that coffee producers are paid with a delay of as much as six months by INCAFE, it is clear that the disincentives imposed on this crop

are much greater than the legislated incentives mentioned in chapter 1.

In spite of these problems and negative trends, there have been some encouraging developments in very recent years. From 1982-83 to 1985-86 (two-year averages), the production of staple crops per capita actually increased slightly, and livestock production increased more. As a result, food production per capita expanded by seven percent in that period (but it still achieved only the level that it recorded in 1960-61).

In the livestock subsector, eggs and poultry have increased the most rapidly in output. Egg production more than doubled from 1974 to 1986, and poultry meat production increased by 55% during that interval, while beef and milk production actually declined--in absolute terms as well as per capita terms.

Expansion in Cropped Area and Increases in Productivity

In the aggregate, there are only three sources of agricultural growth: expansion of cropped area, increases in yields, and changes in the aggregate crop composition in favor of higher-valued crops. For any group of crops or for the sector as a whole, the last two factors can be combined in the concept of the economic productivity of agricultural land. This concept is measured as the change in the constant-price value of output divided by the corresponding cropped area. Thus the sources of growth can be subsumed under two headings: area expansion and

changes in economic productivity.

When viewed in this way, the striking fact about the last two decades of experience in Salvadorean agriculture is that in the aggregate almost all of the change has come from changes in the total area cultivated, and very little from changes in productivity. Over the 1967-86 period, the area planted increased at an annual average rate of 0.9 percent (Table 2.12), and the constant-price value of production increased at a rate of 0.5 percent (Table 2.9). In

other words, the overall economic productivity per ha. actually declined, by an amount of 0.4 percent per year over a 19-year period.

ECONOMIC PRODUCTIVITY OF EL SALVADOR'S AGRICULTURAL LAND
(% change per year)

		Staples	Trad. Exports	All Crops
	1967-78	3.2	-1.0	0.1
	1978-86	-0.7	1.1	-1.1
	1967-86	1.6	-0.1	-0.4

Productivity changes were very slightly positive from 1967 to 1978, and more strongly negative thereafter. (Note: These results are based on data for the ten main crops only; consistent area and production data for a large number of crops are not available for the years prior to 1967.)

The trends by subperiod were opposite for staples and for traditional exports. Until 1978, the productivity of staples increased rapidly by international standards, while that of the traditional exports was declining. The area under cultivation of both kinds of crops expanded (Table 2.12), but the area in

traditional exports expanded so much (by 53 percent from 1967 to 1978) that it is likely that the expansion included lands which were marginal for those crops, especially for cotton, whose area planted grew by 121 percent in that period. Also, within the category of traditional exports, the weight of cotton increased relative to coffee, but coffee has a much higher economic productivity per hectare. Hence the declining average productivity for traditional exports in that period.

The reverse effect occurred after 1978, as the weight of cotton in traditionals dropped sharply, and coffee acreage shrunk somewhat as well. So, while the constant-price value of production in those crops decreased from 1978 to 1986, their productivity per hectare increased.

In staple crops, the decline in productivity after 1978 is no doubt due to the weaker economic position of many farmers, and hence their inability to purchase crop inputs in the same amounts, and also to the unsettled social conditions in the countryside. The negative aggregate trend after 1978 arises partly from the fact that staple crops have occupied an increasing share of the cropped area in recent years, and their economic productivity per hectare is much lower than that of traditional exports and other crops. (It is not much more than a tenth of that of traditional exports.) Thus, the relative shift away from export crops and into import-substitution crops has carried with it the implication of lower overall productivity of

agricultural land.

The difference in productivity between staples and export crops is not so large in magnitude when measured in terms of net income per hectare rather than gross income per hectare, but still it is significant. The same results regarding the time trends would hold in qualitative terms if net income were used.

Another fact that emerges from this review is that the problems of recent years have affected the area planted as well as productivity. The area planted in 1986 was 16 percent lower than it was in 1978 for the 10 principal crops (counting sugar and loaf sugar, panela, as one crop, and also cotton fibre and cottonseed as one). This indicates that there is scope for rapid expansion of output, without relying on major field-level technological breakthroughs, if some of the constraints to the sector's development can be removed.

Sources of Growth by Crop Group

Just as the sector's growth can be decomposed into its constituent components of area expansion and improvement in economic productivity, alternatively it can be decomposed into the contributions by each product or product group. An analysis of this kind shows that the sector's growth performance has been dominated by the traditional exports, even more so than would be indicated by their share in the value of sectoral output. The text figures on page 2-6 above show that those crops have

accounted for slightly over fifty percent of the sector's output in recent years, but they accounted for 79 percent of the sector's increase in output (in constant prices) in the decade of the 1960s, and they were responsible for 85 percent of the decline in sectoral output in the recent period 1978-86.

In the intervening period of 1970-78, the livestock sector boomed (especially poultry) and provided about 36 percent of the increase in real sector output.

Recently, livestock has accounted for slightly over 20 per-

cent of sectoral output, so its growth contribution was disproportionately high in the 1970s, and by the same token it was responsible for relatively little of the more recent decline. Since 1970, it has been one of the most dynamic subsectors.

At the individual product level, fully 40 percent of the decline in sectoral output from 1978 to 1986 was attributable to cotton, and another 35 percent to coffee (Table 2.14). The only other products to account for more than 10 percent of the growth or the decline were milk (13 percent of the growth, 1970-78; 13 percent of the decline, 1978-86) and poultry meat (12 percent of

SOURCES OF SECTOR GROWTH

	Trad. Exports	Staple Crops	Livestock
1960-70	79.3%	10.5%	9.6%
1970-78	52.1%	10.7%	35.6%

SOURCES OF SECTOR DECLINE

1978-86	85.5%	5.1%	12.4%
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[Note: In the last period, the other crops increased in output, so the sum of the negative contributions shown above is more than 100 percent.]

the growth, 1970-78).

The fact that cotton, coffee and milk accounted for so much of the decrease in output in recent years, and so much of the increase in earlier years, suggests that if cotton reaches a new, low-level equilibrium and if appropriate incentives can be extended to coffee producers and the dairy industry, then a negative growth performance could be turned into a strongly positive performance. The staple crops (grains and beans) have been more stable in their performance from period to period, and thus are less susceptible to a major turnaround.

As a final note on the sources of growth, the role of fixed capital formation in agriculture needs to be underscored. It is a source of both expansion in the cultivated area and of increases in productivity. Table 2.2 shows heretofore unpublished time series on capital formation in Salvadorean agriculture. It is clear that new agricultural investment has dropped sharply, a fact that was corroborated independently in interviews with machinery suppliers. In real terms, capital formation declined by 69 percent from its peak in the biennium 1977-78 to the biennium 1986-87. The most disturbing fact is that real capital formation was considerably lower in 1986-87 than it was in each of the years 1981 to 1985. Even after the lowest point of production was reached, investment continued to decline. This trend will weaken the sector's potential for recovery.

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Obviously, this trend has been influenced by the war, the lack of security of land tenure, the financial limitations of the new cooperatives, and the worsening real incentives for producers. The first of these problems may be beyond the government's ability to remedy in the short run, but the other problems can be ameliorated through appropriate policy actions.

2.4. Trends in Relative Prices

Agriculture in any country is noted for the instability of its prices at the producer level, and El Salvador is no exception. On the basis of price indexes constructed for this study, it can be said that real producer prices, defined as nominal producer prices, have shown two principal trends in the last two decades: first, from the late 1960s until 1977 they tended to improve from the viewpoint of producers, and then from 1977 to 1985 they worsened. There was a slight recovery of real prices in 1986, but it was not clear it was sustained in 1987.

The trend in the 1970s was a continuation of the trend, remarked in chapter 1, that began in the early 1960s. As Table 2.10 shows, for all crops plus livestock, real producer prices increased by 84 percent in the eight years 1969 to 1977. Then they decreased to only 69 percent of the 1969 level in 1985.

As shown later in the report, international price movements were important determinants of these trends, but other factors contributed as well. Coffee prices were the most unstable,

rising by 221 percent in real terms from 1969 to 1977. (However, not all of that increase was passed on to producers, as the coffee tax is scaled according to the export price.) By 1985, real coffee prices had dropped back to 26 percent of their 1977 level.

Staple crops' prices also were quite unstable, rising by 173 percent between 1969 and 1977 and then falling by 71 percent to 1985. In general, crops other than coffee, sugar and staples have been much more stable in their real price behavior. Real livestock prices have not tended to fluctuate much but rather have shown a consistent downward trend throughout the entire 1967-86 period. Their real prices in 1986 were less than half their level of 1967.

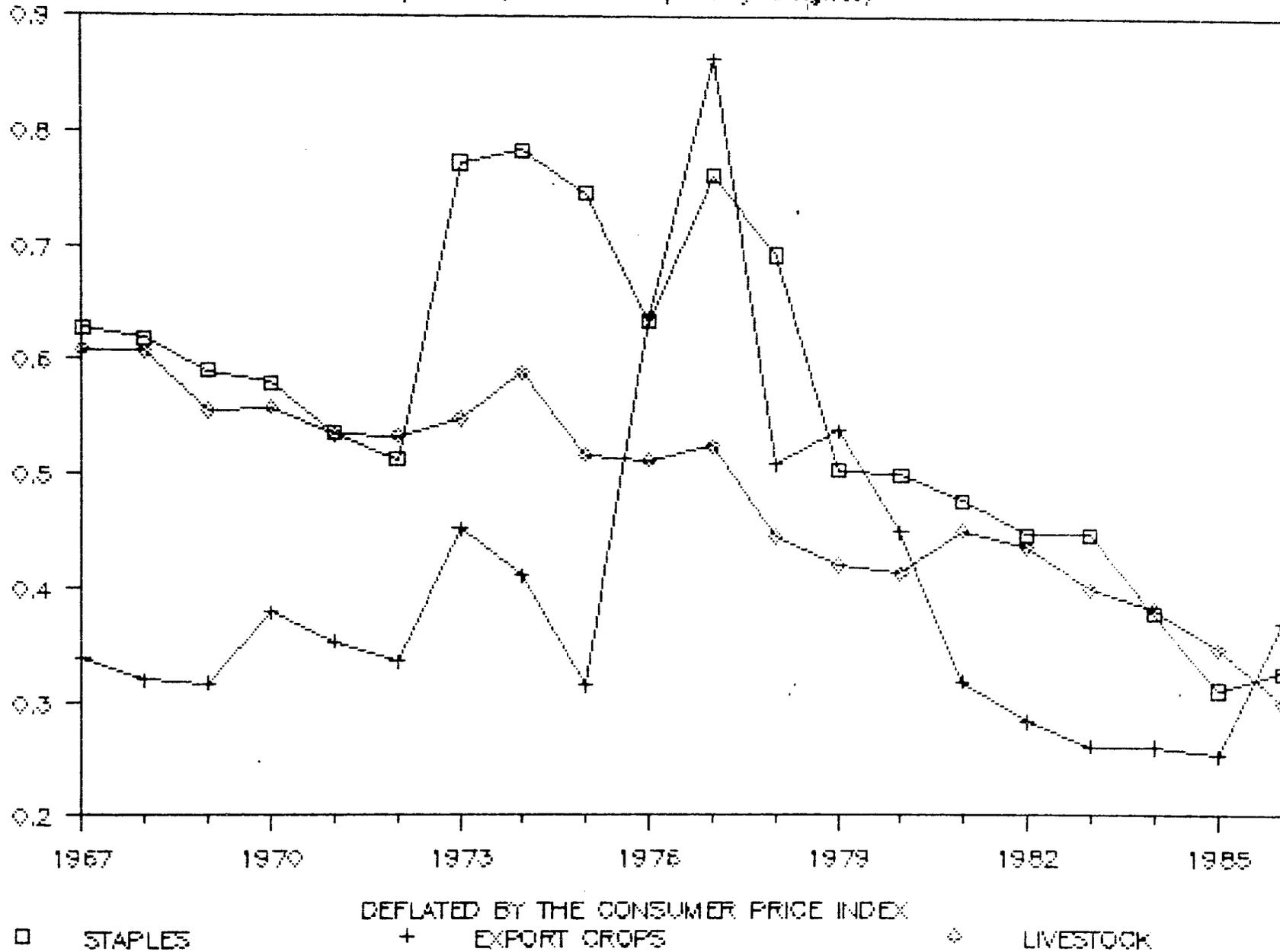
In general, the recent declines in real prices have been stronger than the increases of the 1970s, so that today producers are facing real prices that, in overall terms, are lower than at any time since the 1950s. Figure 2.1 shows the trends graphically.

As noted earlier in the report, there are four important implications of these trends. One is that agriculture's supply response is dampened relative to what it would be under more favorable price trends. Observers will continue to debate the strength of the supply response to price change, but in light of studies in scores of countries it is now clear that it exists in all crops.

Figure 2.1.

REAL AGRICULTURAL PRICES, 1967-1986

(indexes, 1985-86 quantity weights)



A second implication is that agriculture's net foreign exchange earnings are less than they otherwise would be. A third implication is that producers' real incomes, or more precisely, their real levels of purchasing power, are much lower than they would be had the relative prices of the 1960s or 1970s prevailed today. And, therefore, the fourth implication is the rural nutrition levels are lower than they otherwise would be (see chapter 1 on this point).

The effects of prices thus are truly pervasive. Given their importance, a key question for policy is the extent to which the price trends may have been determined by imports or by domestic economic policy, as opposed to the purely exogenous effects of international prices. This question is explored in the next two chapters.

Table 2.1. VALUE ADDED IN AGRICULTURE AND LIVESTOCK, 1970-1985
(in millions of 1962 colones)

SECTOR/PRODUCT	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986 (P)	1987 (P)
CROP AGRICULTURE	454.9	479.0	472.0	475.5	521.6	561.9	489.4	509.2	577.7	602.7	580.4	537.8	510.4	491.0	496.3	481.7	447.2	469.3
Trad. exports	285.8	302.2	322.9	293.7	353.2	333.0	316.6	333.3	367.1	392.9	381.1	339.5	334.5	312.0	294.8	288.7	259.8	269.9
Coffee	212.4	224.6	229.0	196.5	247.6	256.2	220.1	227.6	251.6	294.7	292.4	273.2	271.1	242.3	231.8	231.0	214.6	228.6
Cotton	59.8	60.6	74.1	76.4	80.4	80.0	69.4	75.3	84.8	69.8	66.8	46.9	43.1	43.9	33.9	28.2	14.0	13.4
Sugarcane	13.6	17.0	19.8	20.8	25.2	27.0	27.1	30.3	30.7	28.4	21.9	19.3	20.3	25.8	29.1	29.5	31.2	27.9
Basic grains	96.4	102.9	72.8	104.4	90.8	118.2	94.4	96.8	126.7	132.0	128.3	120.7	101.6	109.6	132.5	122.7	115.4	128.0
Corn	56.7	58.5	37.1	63.6	54.7	68.5	53.0	58.8	79.5	81.6	82.2	78.2	64.5	69.0	82.2	77.1	68.1	76.5
Beans	10.8	12.6	10.2	13.8	13.1	14.3	14.8	12.7	16.0	17.2	14.5	14.2	14.1	15.6	18.0	12.7	18.4	20.2
Rice	12.8	14.7	9.5	9.9	8.6	16.2	9.5	8.7	13.6	15.6	16.2	13.4	9.4	11.6	16.9	18.4	14.2	15.7
Sorghum	16.1	17.1	16.0	17.1	14.4	19.3	17.1	16.6	17.7	17.6	15.5	14.9	13.6	13.4	15.4	14.5	14.7	15.6
Lesser products	18.2	18.7	21.5	22.3	23.3	24.6	23.1	24.1	27.1	23.1	19.9	21.1	21.5	22.3	20.5	20.2	18.0	17.0
Loaf sugar	1.2	1.0	1.2	1.1	1.1	1.1	1.3	1.3	2.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Tobacco	2.7	3.0	2.8	3.2	3.7	4.0	4.6	4.5	4.3	5.1	6.4	7.0	7.0	7.7	7.4	7.8	7.2	7.0
Cottonseed	10.7	11.0	13.5	13.9	14.6	24.3	12.4	14.0	15.5	12.7	8.1	7.7	7.1	7.1	5.4	4.1	2.2	2.2
Henequen	1.2	1.1	1.8	1.7	2.1	2.1	2.1	1.6	2.3	4.1	4.2	5.1	6.1	6.2	6.3	6.9	7.2	6.1
Kenaf	2.4	2.6	2.2	2.4	1.8	3.1	2.7	2.7	2.8	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.9
Other crops (1)	54.6	55.1	54.8	55.1	54.3	86.1	55.3	55.0	56.7	54.8	50.9	56.5	52.6	47.1	48.5	50.1	54.0	54.4
LIVESTOCK	81.2	79.0	82.9	84.4	105.1	99.8	102.9	102.1	127.8	132.0	110.5	100.6	88.0	79.8	91.4	100.9	102.0	104.6
T O T A L	536.1	558.0	554.9	559.9	626.7	661.7	592.3	611.3	705.5	734.7	690.9	638.4	598.4	570.8	587.7	582.6	549.2	573.9

1) Preliminary figures

Includes: sesame seeds, balsam, copra, olives, fruits and vegetables.

Source: Ministerio de Planificación, INDICADORES ECONÓMICOS Y SOCIALES, July-December 1985

Banco Central de Reserva's journals: November/December 1980, page 849

October, November, December 1984, page 97

April, May, June 1987, page 103

Worksheets from the Central Bank, dated March 1988.

Table 2.2. FIXED CAPITAL FORMATION IN AGRICULTURE AND LIVESTOCK, 1970-1987
(in million colones)

	AT CURRENT PRICES			AT CONSTANT 1962 PRICES		
	Reproducible Capital Goods	Construction	Total	Reproducible Capital Goods	Construction	Total
1970	18.0	3.8	21.8	15.0	3.3	18.3
1971	21.0	6.5	27.5	16.8	5.7	22.5
1972	26.3	6.4	32.7	20.9	5.7	26.6
1973	37.2	6.7	43.9	24.6	4.9	29.5
1974	37.7	3.3	41.0	21.0	1.9	22.9
1975	64.5	8.7	73.2	31.2	4.8	36.0
1976	49.5	16.2	65.7	22.6	8.2	30.8
1977	89.1	25.3	114.4	37.5	12.1	49.6
1978	88.1	19.2	107.3	35.1	8.8	43.9
1979	65.2	10.9	76.1	23.1	4.7	27.8
1980	36.7	36.6	73.3	11.8	13.9	25.7
1981	39.7	84.4	124.1	11.9	29.3	41.2
1982	34.3	68.9	103.2	9.7	22.5	32.2
1983	44.9	49.5	94.4	10.7	14.4	25.1
1984	60.4	30.0	90.4	13.4	7.9	21.3
1985	70.4	29.0	99.4	13.6	6.6	20.2
1986	69.8	30.0	99.8	9.3	5.6	14.9
1987	71.3	32.5	103.8	9.0	4.7	13.7

Source: Seccion de Cuentas Nacionales, Banco Central de Reserva

Table 2.3. PATTERNS OF LAND USE
(thousands of hectares)

	1970	1977/78	1978/79	1987/88
1. CROP AGRICULTURE	631.9	656.1	668.4	592.9
Annual crops	428.7	385.9	407.5	343.6
Semi-permanent crops	38.7	52.2	42.4	44.9
Permanent crops	164.5	218.0	218.5	204.4
2. LIVESTOCK	664.9	522.4	522.4	573.8
Improved pastures	114.6	129.8	131.8	160.7
Natural pastures	550.4	393.6	390.6	413.1
3. FORESTLAND	250.3	250.0	260.9	249.1
4. NON-AGRICULTURAL LANDS	552.9	666.6	652.4	688.1
5. TOTAL	2100.0	2095.1	2104.1	2103.9

Note: The non-agricultural lands include lands with agricultural potential that are abandoned or never were used, as well as lands with no agricultural potential. In 1987/88, it was estimated that only 14.4% of the non-agricultural lands had no agricultural potential.

Source: Ministerio de Agricultura; Direccion General de Economia Agropecuaria; Oficina Sectorial de Planificacion Agropecuaria; y el Centro de Recursos Naturales.

Table 2.4. SHARES OF OUTPUT VALUE IN THE SECTOR (%)
(at current prices)

	1967-70	1975-78	1983-86
Coffee	38.52	45.11	43.87
Cotton fibre	9.19	9.76	3.99
Sugarcane	3.56	4.64	4.89
Corn	6.83	6.43	8.15
Beans	1.96	2.00	2.06
Rice (milled)	2.44	1.27	1.13
Sorghum	3.01	2.47	2.02
Loaf sugar	0.84	0.50	0.45
Tobacco	0.42	0.38	0.86
Cottonseed	1.76	1.36	0.54
Henequen	0.18	0.17	0.58
Kenaf	0.29	0.19	0.05
Sesame	0.20	0.20	0.24
Balsam	0.14	0.11	0.13
Copra	0.12	0.05	0.03
Olives	0.05	0.03	0.04
Fruit, vegetables	9.58	9.85	8.72
SUBTOTAL: CROPS	79.07	84.52	77.78
Beef	4.22	3.38	6.34
Milk	7.85	6.28	6.49
Poultry	3.46	1.39	2.34
Eggs	3.88	3.66	5.97
Pork	1.52	0.76	1.09
SUBTOTAL: LIVESTOCK	20.93	15.48	22.22
TOTAL	100.00	100.00	100.00

Sources: Banco Central de Reserva; authors' estimates.

Table 2.5. AGRICULTURAL PRODUCTION LEVELS, 1960-1986
(in million hundredweight)

	Coffee	Cotton fibre	Sugarcane	Corn	Beans	Rice	Sorghum	Loaf sugar	Tobacco	Cottonseed	Henequen	Kenaf	Sesame	Balsam	Copra	Olives	Beef	Milk	Poultry	Eggs	Pork
1960	1.773	0.767	0.973	5.142	0.438	0.637	2.735	0.581	0.015	1.388	0.045	NA	0.033	0.002	0.039	0.013	0.162	65.716	18.894	163.763	0.140
1961	2.059	0.920	0.877	3.891	0.386	0.535	2.593	0.379	0.018	1.623	0.047	NA	0.038	0.002	0.046	0.022	0.180	104.408	19.494	170.930	0.119
1962	2.520	1.474	0.901	5.556	0.587	0.728	3.171	0.441	0.025	2.509	0.048	NA	0.031	0.002	0.048	0.023	0.162	107.818	20.060	176.320	0.113
1963	2.223	1.663	1.014	5.124	0.475	0.596	2.631	0.528	0.032	2.725	0.044	NA	0.019	0.002	0.044	0.024	0.146	107.466	20.799	199.317	0.144
1964	2.496	1.804	1.020	4.540	0.324	0.852	2.163	0.403	0.031	2.916	0.052	NA	0.017	0.002	0.049	0.031	0.127	107.454	21.479	207.469	0.160
1965	2.361	1.532	1.468	4.606	0.395	0.858	2.440	0.570	0.029	2.499	0.055	NA	0.028	0.003	0.053	0.030	0.144	105.603	22.154	215.625	0.158
1966	2.405	1.039	1.626	4.780	0.341	1.188	2.493	0.548	0.028	1.726	0.064	0.117	0.047	0.003	0.052	0.031	0.147	109.152	22.869	279.505	0.132
1967	2.851	0.846	1.675	4.505	0.393	1.833	2.350	0.605	0.033	1.407	0.044	0.066	0.047	0.003	0.040	0.018	0.156	127.698	23.630	271.646	0.142
1968	2.801	0.824	1.812	5.560	0.458	1.875	2.700	0.512	0.024	1.367	0.059	0.093	0.112	0.003	0.059	0.022	0.128	126.425	24.362	291.606	0.137
1969	2.821	1.033	1.469	6.056	0.569	0.840	2.784	0.511	0.025	1.705	0.049	0.104	0.036	0.003	0.039	0.023	0.150	132.912	25.252	395.702	0.159
1970	2.973	1.207	1.587	7.912	0.636	1.042	3.200	0.497	0.036	1.958	0.039	0.077	0.032	0.003	0.047	0.017	0.134	134.242	26.089	340.738	0.158
1971	3.144	1.224	1.992	8.162	0.739	1.192	3.400	0.428	0.041	2.023	0.035	0.085	0.037	0.003	0.056	0.028	0.134	135.584	26.552	352.472	0.151
1972	3.206	1.497	2.312	5.181	0.597	0.775	3.170	0.488	0.038	2.483	0.058	0.070	0.025	0.004	0.053	0.021	0.157	136.940	27.396	459.884	0.152
1973	2.750	1.543	2.440	8.878	0.814	0.810	3.400	0.467	0.043	2.546	0.053	0.078	0.046	0.004	0.043	0.029	0.146	138.310	28.262	501.628	0.177
1974	3.466	1.624	2.953	7.634	0.767	0.698	2.850	0.452	0.049	2.677	0.065	0.057	0.033	0.003	0.029	0.021	0.169	194.328	29.156	521.481	0.161
1975	3.587	1.617	3.166	9.565	0.838	1.320	3.800	0.462	0.055	2.632	0.067	0.102	0.070	0.003	0.042	0.034	0.187	196.271	30.078	598.902	0.115
1976	3.082	1.402	3.177	7.390	0.870	0.776	3.399	0.527	0.062	2.268	0.067	0.087	0.059	0.004	0.027	0.035	0.160	198.234	31.029	694.713	0.117
1977	3.187	1.522	3.550	8.210	0.744	0.713	3.285	0.527	0.060	2.562	0.050	0.089	0.041	0.003	0.035	0.035	0.136	200.217	32.010	752.950	0.158
1978	3.522	1.713	3.596	11.088	0.939	1.105	3.518	0.912	0.058	2.849	0.074	0.091	0.091	0.003	0.031	0.035	0.228	231.890	33.023	833.827	0.167
1979	4.125	1.410	3.321	11.392	1.139	1.010	3.485	0.342	0.069	2.332	0.129	0.014	0.082	0.003	0.028	0.036	0.214	252.437	34.068	835.829	0.147
1980	4.094	1.350	2.564	11.473	0.852	1.320	3.041	0.333	0.088	1.487	0.160	0.016	0.244	0.004	0.030	0.038	0.185	203.605	35.145	818.563	0.127
1981	3.825	0.948	2.263	10.919	0.834	1.090	2.950	0.332	0.095	1.416	0.166	0.017	0.210	0.004	0.025	0.035	0.148	197.821	36.247	800.499	0.125
1982	3.796	0.870	2.372	8.999	0.828	0.770	2.700	0.333	0.095	1.301	0.195	0.018	0.180	0.003	0.025	0.030	0.149	164.267	37.405	844.136	0.147
1983	3.360	0.886	3.016	9.630	0.914	0.940	2.677	0.333	0.104	1.215	0.196	0.018	0.081	0.003	0.015	0.032	0.147	128.331	38.589	849.118	0.154
1984	3.246	0.684	3.402	11.464	1.055	1.377	3.054	0.343	0.096	0.985	0.190	0.018	0.075	0.003	0.015	0.032	0.148	169.400	39.811	853.303	0.140
1985	3.235	0.542	3.455	10.764	0.744	1.498	2.883	0.346	0.105	0.808	0.217	0.019	0.082	0.003	0.015	0.032	0.140	191.781	46.308	950.879	0.146
1986	3.004	0.283	3.647	9.500	1.000	1.155	2.924	0.336	0.097	0.396	0.227	0.021	0.091	0.003	0.018	0.032	0.155	184.923	45.290	1049.549	0.164

NOTES: Coffee is "cafe oro"; rice is "arroz oro" (milled); sugarcane is reported in million short tons; milk is reported in million liters; poultry is in million pounds; eggs are in millions; beef and pork are in head of livestock.

SOURCE: Banco Central de Reserva.

Table 2.6. VALUE OF AGRICULTURAL OUTPUT, 1960-1986
(million colones at current prices)

	Coffee	Cotton fibre	Sugarcane	Corn	Beans	Rice	Sorghum	Loaf sugar	Tobacco	Cottonseed	Henequen	Kenaf	Sesame	Balsam	Copra	Olives	Beef	Milk	Poultry	Eggs	Pork
1960	172.614	50.862	11.322	33.527	8.287	6.908	12.173	5.612	1.431	7.901	1.564	NA	0.558	0.549	0.763	0.227	NA	NA	NA	NA	NA
1961	185.537	61.880	10.930	28.169	6.528	5.822	14.363	3.419	1.818	8.690	1.824	NA	0.711	0.408	0.907	0.395	NA	NA	NA	NA	NA
1962	203.457	99.211	11.562	44.392	11.462	9.467	17.028	3.833	2.354	13.684	1.532	NA	0.610	0.335	0.949	0.424	NA	NA	NA	NA	NA
1963	186.445	110.250	13.631	39.397	9.508	7.602	17.631	4.083	2.825	13.861	1.788	NA	0.421	0.415	0.876	0.447	NA	NA	NA	NA	NA
1964	237.255	116.330	16.203	38.013	6.016	10.124	16.393	4.027	3.020	15.160	2.293	NA	0.392	0.476	0.936	0.525	NA	NA	NA	NA	NA
1965	251.688	95.720	21.801	38.572	7.328	10.153	19.665	6.094	3.088	13.574	2.006	NA	0.592	1.668	0.945	0.576	NA	NA	NA	NA	NA
1966	244.631	64.247	23.916	38.549	7.365	15.973	15.183	6.011	3.319	10.789	1.862	4.103	1.113	1.156	0.874	0.565	NA	NA	NA	NA	NA
1967	260.798	57.300	24.884	38.037	9.724	23.283	16.944	6.005	3.552	11.696	1.300	1.972	1.104	1.008	0.734	0.332	27.586	52.862	25.993	24.448	10.376
1968	245.475	56.983	26.225	48.225	10.554	22.219	21.224	5.618	1.963	9.826	1.516	1.930	2.708	0.985	0.949	0.404	28.611	54.661	24.362	26.245	10.032
1969	242.618	67.594	22.131	49.472	13.497	9.731	19.711	6.397	2.197	13.003	1.121	2.176	0.853	0.793	0.726	0.457	30.301	54.661	24.746	29.796	11.623
1970	329.188	75.410	26.334	55.471	20.985	12.979	26.430	5.441	3.910	14.692	1.011	1.906	0.928	1.052	0.948	0.334	31.517	57.532	21.654	28.213	10.543
1971	312.326	83.049	35.813	53.815	21.247	15.500	24.718	4.659	3.483	17.307	1.064	2.139	1.156	1.240	1.071	0.514	29.793	55.983	21.507	27.740	10.252
1972	304.769	110.924	39.823	33.183	16.954	9.380	22.729	6.399	4.203	21.230	1.915	1.915	0.695	1.636	0.991	0.381	35.475	60.319	21.643	35.457	10.431
1973	402.265	125.320	45.711	96.600	32.576	11.948	45.152	6.144	4.320	18.455	2.075	2.240	1.658	3.475	0.813	0.419	48.647	62.268	23.740	44.093	12.489
1974	519.637	185.637	63.909	95.015	44.441	15.583	33.716	6.070	4.817	24.145	3.770	1.999	1.806	4.038	0.760	0.414	65.194	100.397	30.030	60.127	14.367
1975	390.509	180.978	123.323	132.703	39.623	37.422	60.724	9.242	6.073	31.581	3.898	4.299	4.239	1.756	0.967	0.618	53.777	109.925	32.006	73.066	12.791
1976	989.430	200.512	97.646	98.395	44.024	19.837	41.358	11.186	8.050	27.756	4.009	3.634	3.335	2.734	0.824	0.836	50.531	149.193	31.035	78.155	14.704
1977	1637.179	250.283	102.753	147.499	45.772	22.426	64.452	7.860	8.851	31.390	3.149	4.469	3.084	2.784	1.214	0.863	95.969	145.550	32.330	84.556	20.639
1978	1146.931	269.592	104.481	215.049	55.542	37.674	61.525	17.420	11.681	34.905	4.441	5.474	7.622	2.752	1.222	0.862	112.017	175.295	33.023	101.977	22.151
1979	1677.230	253.212	101.771	172.338	53.174	35.947	58.548	8.617	14.187	37.308	7.729	0.861	7.989	4.035	1.285	1.073	153.808	193.264	38.837	96.037	22.287
1980	1575.633	258.537	103.566	199.728	62.499	39.811	59.784	10.008	18.037	26.016	9.169	0.936	19.485	5.172	1.500	1.316	134.942	174.689	44.635	123.521	25.309
1981	1118.008	188.859	104.455	201.920	74.204	34.492	63.106	11.652	21.558	24.787	10.356	0.990	11.075	8.078	1.375	1.400	170.783	212.593	58.357	127.199	26.110
1982	1100.239	146.670	116.726	192.126	61.353	25.410	58.266	12.152	22.612	22.772	12.474	1.073	10.800	3.849	1.423	1.350	211.959	190.171	59.848	130.419	30.811
1983	1011.739	175.566	150.820	253.556	55.164	34.263	65.589	14.316	27.808	24.905	15.651	1.400	5.267	3.086	1.152	1.440	174.079	147.913	65.987	176.277	33.813
1984	1109.750	150.670	170.097	286.599	67.204	45.438	64.131	14.757	27.105	20.195	13.628	1.295	8.159	5.159	0.900	1.445	207.242	209.000	69.669	177.658	32.132
1985	1329.552	163.300	172.764	252.514	58.150	50.170	65.468	14.896	29.400	16.570	20.308	1.782	8.862	4.444	0.900	1.445	253.912	249.067	85.666	199.685	36.441
1986	2678.421	68.259	189.660	346.750	107.960	28.644	87.705	18.499	35.235	14.027	31.964	2.904	11.856	5.818	1.440	1.920	250.215	300.200	105.073	280.754	49.279

Source: Banco Central de Reserva

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Table 2.7. AGRICULTURAL PRODUCER PRICES, 1960-1986
(colones per unit)

	Coffee	Cotton fibre	Sugarcane	Corn	Beans	Rice	Sorghum	Loaf sugar	Tobacco	Cottonseed	Hennequen	Kenaf	Sesame	Balsam	Copra	Olives	Beef	Milk	Poultry	Eggs	Port
1960	97.34	66.31	11.64	6.52	18.92	10.84	4.45	9.66	95.40	5.69	34.76	NA	17.04	229.04	19.75	17.02	NA	NA	NA	NA	NA
1961	90.10	67.26	12.46	7.24	16.91	10.88	5.54	9.02	100.00	5.35	38.81	NA	18.90	197.77	19.75	17.67	NA	NA	NA	NA	NA
1962	80.74	67.31	12.83	7.99	19.53	13.00	5.37	8.70	94.16	5.45	31.92	NA	19.59	168.77	19.75	18.17	NA	NA	NA	NA	NA
1963	83.87	66.30	13.44	7.69	20.02	12.76	6.70	7.73	88.28	5.09	40.27	NA	21.62	194.93	19.75	18.55	NA	NA	NA	NA	NA
1964	95.05	64.48	15.89	8.37	18.57	11.88	7.58	9.99	97.42	5.20	44.10	NA	22.68	211.65	19.27	16.94	NA	NA	NA	NA	NA
1965	106.60	62.48	14.85	8.37	18.55	11.83	8.06	10.68	107.23	5.43	36.47	NA	21.23	600.00	17.97	19.15	NA	NA	NA	NA	NA
1966	101.72	61.84	14.71	8.06	21.60	13.45	6.09	10.97	118.54	6.25	29.09	35.07	23.75	415.83	16.95	18.37	NA	NA	NA	NA	NA
1967	91.48	67.73	14.86	8.44	24.74	12.70	7.21	9.93	107.64	8.31	29.55	29.88	23.56	333.00	18.28	18.34	177.06	0.41	1.10	0.09	73.08
1968	87.64	69.15	14.47	8.67	23.04	11.85	7.86	10.98	81.79	7.19	25.69	20.75	24.25	335.60	16.13	18.20	223.38	0.43	1.00	0.09	73.08
1969	86.00	65.43	15.07	8.17	23.72	11.58	7.88	12.53	87.88	7.63	22.88	20.92	23.83	286.80	18.44	19.99	201.48	0.41	0.98	0.08	73.25
1970	110.73	62.48	16.59	7.81	33.00	12.46	8.26	10.95	107.15	7.50	25.92	24.78	29.41	370.03	20.23	19.98	235.30	0.43	0.83	0.08	66.93
1971	99.34	67.85	17.98	6.59	28.75	13.00	7.27	10.88	84.95	8.56	30.40	25.16	31.11	418.07	18.98	18.40	222.43	0.41	0.81	0.08	67.99
1972	95.06	74.10	17.22	6.40	28.40	12.10	7.17	13.11	110.61	8.55	33.02	27.36	27.71	460.07	18.81	17.98	226.61	0.44	0.79	0.08	68.52
1973	146.28	81.22	18.73	10.88	40.02	14.75	13.28	13.15	100.47	7.25	39.15	28.72	36.34	949.97	18.86	14.47	278.05	0.45	0.84	0.09	70.64
1974	149.92	114.31	21.64	12.45	57.94	22.21	11.83	13.42	98.31	9.02	58.00	35.07	54.49	1,250.15	25.97	19.99	385.01	0.52	1.03	0.12	89.23
1975	108.87	111.92	38.95	13.87	47.28	28.35	15.98	20.00	110.42	12.00	58.18	42.15	60.57	655.96	22.91	18.31	287.06	0.56	1.06	0.12	111.54
1976	321.04	143.02	30.74	13.31	50.60	25.56	12.17	21.24	129.84	12.24	59.84	42.01	56.44	735.34	30.46	24.01	316.53	0.75	1.00	0.11	125.37
1977	513.71	164.44	28.94	17.97	61.52	31.45	19.62	14.93	147.52	12.25	62.98	50.21	74.87	832.29	35.16	24.78	705.67	0.73	1.01	0.11	130.64
1978	325.65	157.38	29.05	19.39	59.15	34.11	17.49	19.10	201.48	12.25	60.01	60.15	84.15	902.59	39.68	24.30	490.55	0.76	1.00	0.12	132.77
1979	406.60	179.58	30.64	15.13	46.68	35.58	16.80	25.20	285.61	16.00	60.01	61.50	97.71	1,262.52	45.13	30.00	720.34	0.77	1.14	0.11	151.36
1980	384.86	191.51	48.39	17.41	73.36	30.16	19.66	30.06	206.14	17.50	57.31	58.50	80.00	1,174.92	50.00	34.99	727.72	0.86	1.27	0.15	199.69
1981	292.29	198.37	46.16	18.49	88.97	31.64	21.39	35.10	226.93	17.50	62.39	58.24	57.50	2,019.50	55.00	40.00	1,154.36	1.07	1.61	0.16	208.20
1982	289.84	168.59	49.21	21.35	74.10	33.00	21.58	36.50	238.40	17.50	64.00	59.61	60.00	1,285.57	56.92	45.00	1,423.84	1.16	1.60	0.15	209.80
1983	301.11	198.16	50.01	26.33	68.35	36.45	24.50	43.00	268.68	20.50	80.00	80.00	65.31	1,028.67	76.80	45.00	1,186.61	1.15	1.71	0.21	220.00
1984	341.93	220.28	50.00	25.00	63.70	33.00	21.00	43.00	281.76	20.50	71.80	74.00	108.21	1,761.95	60.00	45.16	1,404.67	1.23	1.75	0.21	230.00
1985	410.99	301.44	50.00	23.46	78.16	33.50	22.71	43.00	280.00	20.50	93.80	93.79	108.21	1,633.22	60.00	45.16	1,810.02	1.30	1.85	0.21	250.00
1986	891.59	241.20	52.00	36.50	100.00	24.80	30.00	55.00	364.00	35.42	141.00	140.97	131.01	2,059.47	80.00	60.00	1,618.58	1.62	2.32	0.27	300.00

NOTE: The physical units are as noted in Table 2.5.

SOURCE: Banco Central de Reserva

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Table 2.8. INDEXES OF REAL AGRICULTURAL PRODUCER PRICES, 1960-1986
(1978 = 1.000)

	Coffee	Cotton fibre	Sugarcane	Corn	Beans	Rice	Sorghum	Loaf sugar	Tobacco	Cottonseed	Henequen	Kenaf	Sesame	Balsam	Copra	Olives	Beef	Milk	Poultry	Eggs	Pork
1960	0.653	0.920	0.875	0.734	0.480	0.694	0.556	1.105	1.035	1.015	1.265	NA	0.442	0.554	1.087	1.530	NA	NA	NA	NA	NA
1961	0.621	0.960	0.963	0.858	0.463	0.716	0.711	1.060	1.115	0.981	1.452	NA	0.504	0.492	1.118	1.633	NA	NA	NA	NA	NA
1962	0.556	0.959	0.990	0.924	0.597	0.855	0.688	1.021	1.048	0.998	1.192	NA	0.522	0.419	1.116	1.677	NA	NA	NA	NA	NA
1963	0.569	0.931	1.022	0.876	0.596	0.826	0.847	0.894	0.969	0.917	1.483	NA	0.568	0.477	1.100	1.687	NA	NA	NA	NA	NA
1964	0.635	0.891	1.189	0.938	0.260	0.757	0.942	1.137	1.052	0.922	1.597	NA	0.586	0.510	1.056	1.515	NA	NA	NA	NA	NA
1965	0.708	0.858	1.105	0.934	0.312	0.750	0.996	1.210	1.151	0.959	1.314	NA	0.546	1.437	0.979	1.705	NA	NA	NA	NA	NA
1966	0.683	0.859	1.107	0.909	0.229	0.862	0.761	1.256	1.287	1.115	1.060	1.275	0.617	1.007	0.934	1.653	NA	NA	NA	NA	NA
1967	0.605	0.927	1.101	0.938	0.193	0.802	0.888	1.120	1.151	1.462	1.061	1.070	0.603	0.795	0.992	1.627	0.778	1.180	2.370	1.585	1.186
1968	0.565	0.923	1.047	0.940	0.200	0.730	0.944	1.208	0.853	1.233	0.900	0.725	0.605	0.781	0.854	1.574	0.957	1.202	2.101	1.546	1.157
1969	0.556	0.876	1.092	0.887	0.572	0.715	0.853	1.382	0.919	1.311	0.803	0.733	0.596	0.669	0.979	1.733	0.865	1.146	2.064	1.297	1.162
1970	0.696	0.813	1.170	0.740	0.697	0.748	0.967	1.174	1.090	1.254	0.885	0.844	0.716	0.840	1.044	1.684	0.982	1.161	1.700	1.386	1.032
1971	0.622	0.879	1.262	0.694	0.615	0.778	0.848	1.162	0.860	1.424	1.033	0.853	0.754	0.945	0.975	1.544	0.925	1.114	1.652	1.313	1.045
1972	0.586	0.945	1.190	0.663	0.743	0.713	0.823	1.379	1.103	1.401	1.105	0.913	0.661	1.024	0.952	1.486	0.928	1.170	1.586	1.266	1.036
1973	0.848	0.974	1.217	1.059	1.283	0.816	1.433	1.299	0.942	1.117	1.231	0.901	0.815	1.987	0.897	1.124	1.070	1.124	1.585	1.357	1.004
1974	0.743	1.173	1.203	1.036	1.738	1.051	1.092	1.135	0.788	1.189	1.561	0.941	1.046	2.237	1.057	1.329	1.267	1.104	1.663	1.522	1.085
1975	0.466	0.991	1.869	0.997	0.707	1.159	1.274	1.460	0.764	1.365	1.351	0.977	1.003	1.013	0.805	1.050	0.816	1.033	1.483	1.391	1.171
1976	1.248	1.151	1.340	0.869	1.215	0.949	0.881	1.408	0.816	1.265	1.263	0.884	0.849	1.032	0.972	1.251	0.817	1.261	1.267	1.165	1.196
1977	1.786	1.183	1.128	1.049	1.229	1.044	1.270	0.885	0.829	1.132	1.188	0.945	1.007	1.044	1.003	1.155	1.629	1.089	1.144	1.040	1.114
1978	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1979	1.078	0.985	0.910	0.673	0.768	0.900	0.829	1.138	0.881	1.127	0.863	0.882	1.002	1.207	0.981	1.066	1.267	0.874	0.984	0.811	0.984
1980	0.869	0.895	1.022	0.660	0.912	0.650	0.827	1.157	0.753	1.050	0.702	0.715	0.699	0.957	0.927	1.059	1.091	0.835	0.934	0.907	1.106
1981	0.575	0.807	1.018	0.611	0.963	0.594	0.783	1.177	0.722	0.915	0.666	0.620	0.438	1.433	0.888	1.055	1.507	0.911	1.031	0.832	1.004
1982	0.510	0.614	0.971	0.631	0.718	0.555	0.708	1.096	0.679	0.819	0.612	0.568	0.409	0.817	0.822	1.062	1.664	0.878	0.917	0.724	0.906
1983	0.469	0.638	0.872	0.688	0.517	0.542	0.710	1.141	0.676	0.848	0.676	0.674	0.393	0.578	0.981	0.939	1.226	0.773	0.867	0.860	0.840
1984	0.476	0.635	0.781	0.585	0.489	0.439	0.545	1.021	0.635	0.759	0.543	0.558	0.583	0.886	0.686	0.843	1.299	0.740	0.794	0.772	0.786
1985	0.468	0.711	0.638	0.449	0.490	0.364	0.482	0.835	0.516	0.621	0.580	0.578	0.477	0.671	0.561	0.689	1.369	0.637	0.686	0.637	0.699
1986	0.769	0.431	0.503	0.529	0.475	0.204	0.482	0.809	0.508	0.812	0.660	0.659	0.437	0.641	0.567	0.694	0.927	0.603	0.652	0.615	0.635

NOTE: The real prices are nominal prices deflated by the consumer price index, converted to a 1978 base.

SOURCE: Tables 1.9 and 2.7.

Table 2.9. INDEXES OF AGRICULTURAL PRODUCTION, 1960-1986
(at constant 1985-86 prices)

	Staple Crops	Trad. Exports	Other Crops	All Crops	Livestock Products	Crops + Livestock	Food Products	Crops + Livestock Exc. Coffee	Crops + Livestock Exc. Coffee & Cotton
1960	0.567	0.608	0.808	0.608	0.543	0.593	0.531	0.620	0.538
1961	0.470	0.704	0.798	0.667	0.635	0.660	0.551	0.658	0.555
1962	0.647	0.898	1.064	0.861	0.608	0.802	0.601	0.794	0.611
1963	0.565	0.839	1.162	0.805	0.595	0.755	0.587	0.808	0.596
1964	0.493	0.932	1.166	0.866	0.567	0.796	0.556	0.816	0.582
1965	0.525	0.872	1.154	0.824	0.599	0.771	0.592	0.808	0.617
1966	0.548	0.831	0.975	0.788	0.622	0.749	0.602	0.765	0.649
1967	0.571	0.934	0.904	0.871	0.671	0.824	0.638	0.793	0.710
1968	0.666	0.921	0.925	0.877	0.622	0.817	0.635	0.795	0.716
1969	0.660	0.943	0.905	0.893	0.710	0.850	0.679	0.802	0.690
1970	0.817	1.009	0.984	0.975	0.668	0.903	0.706	0.865	0.729
1971	0.869	1.067	0.999	1.031	0.673	0.947	0.734	0.899	0.763
1972	0.629	1.124	1.149	1.040	0.748	0.972	0.725	0.916	0.737
1973	0.903	1.004	1.186	0.994	0.751	0.937	0.817	0.997	0.816
1974	0.785	1.225	1.210	1.150	0.888	1.088	0.887	1.058	0.868
1975	1.000	1.263	1.268	1.218	0.934	1.151	0.974	1.175	0.994
1976	0.822	1.097	1.221	1.055	0.913	1.021	0.907	1.053	0.898
1977	0.839	1.148	1.251	1.100	0.901	1.053	0.925	1.085	0.913
1978	1.082	1.266	1.561	1.245	1.154	1.224	1.166	1.328	1.142
1979	1.128	1.393	1.258	1.343	1.156	1.299	1.147	1.264	1.123
1980	1.077	1.361	1.325	1.311	1.016	1.241	1.015	1.160	1.021
1981	1.022	1.232	1.287	1.198	0.933	1.136	0.939	1.033	0.949
1982	0.874	1.217	1.237	1.159	0.901	1.098	0.878	0.964	0.889
1983	0.936	1.111	1.128	1.082	0.845	1.026	0.885	0.967	0.889
1984	1.116	1.064	1.040	1.072	0.912	1.034	0.986	1.026	0.984
1985	1.017	1.045	1.055	1.041	0.977	1.026	0.993	1.012	0.992
1986	0.983	0.955	0.945	0.959	1.023	0.974	1.007	0.985	1.005
Annual Growth Rates:									
1960-78	0.036	0.041	0.037	0.040	0.042	0.040	0.044	0.042	0.042
1978-86	-0.012	-0.035	-0.063	-0.033	-0.015	-0.029	-0.018	-0.037	-0.016
1960-86	0.021	0.017	0.006	0.018	0.024	0.019	0.025	0.017	0.023

Notes: The indexes are based on the products listed in Table 2.5, with the exception of kenaf.

Food products (for the domestic market) are defined to include sugarcane, corn, beans, rice, loaf sugar, cottonseed, olives, beef, milk, poultry, eggs, and pork.

Sources: Tables 2.5 and 2.7

Table 2.10. INDEXES OF REAL AGRICULTURAL PRICES, 1967-1986

	Staple Crops	Trad. Exports	Other Crops	All Crops	Livestock Products	Crops + Livestock	Food Products	Crops + Livestock Exc. Coffee	Crops + Livestock Exc. Coffee & Cotton
1967	0.741	0.339	0.578	0.398	0.609	0.447	0.617	0.609	0.614
1968	0.698	0.319	0.491	0.378	0.607	0.431	0.607	0.597	0.601
1969	0.690	0.316	0.505	0.371	0.556	0.414	0.575	0.565	0.569
1970	0.828	0.379	0.542	0.420	0.558	0.452	0.573	0.568	0.574
1971	0.770	0.353	0.533	0.391	0.534	0.424	0.555	0.551	0.554
1972	0.733	0.335	0.592	0.376	0.533	0.413	0.544	0.546	0.546
1973	0.987	0.452	0.583	0.512	0.549	0.520	0.617	0.628	0.632
1974	0.898	0.411	0.612	0.483	0.590	0.507	0.655	0.659	0.658
1975	0.686	0.314	0.581	0.399	0.517	0.426	0.641	0.642	0.647
1976	1.392	0.637	0.562	0.635	0.512	0.605	0.578	0.583	0.578
1977	1.887	0.864	0.527	0.835	0.525	0.761	0.598	0.612	0.607
1978	1.112	0.509	0.532	0.542	0.446	0.519	0.529	0.539	0.537
1979	1.177	0.539	0.514	0.533	0.421	0.506	0.454	0.468	0.461
1980	0.983	0.450	0.441	0.459	0.414	0.448	0.456	0.462	0.458
1981	0.697	0.319	0.416	0.350	0.451	0.374	0.471	0.470	0.470
1982	0.619	0.283	0.374	0.315	0.436	0.343	0.451	0.442	0.447
1983	0.571	0.261	0.381	0.298	0.399	0.321	0.423	0.419	0.422
1984	0.569	0.261	0.360	0.285	0.383	0.307	0.389	0.385	0.386
1985	0.552	0.253	0.310	0.265	0.346	0.284	0.337	0.340	0.335
1986	0.809	0.371	0.327	0.362	0.300	0.347	0.307	0.304	0.307
Annual Rates of Change:									
1967-69 to 1977-79	0.070	0.070	0.000	0.052	-0.024	0.033	-0.013	-0.009	-0.011
1977-79 to 1984-86	-0.104	-0.104	-0.063	-0.100	-0.042	-0.088	-0.059	-0.063	-0.062
1967-69 to 1984-86	-0.044	-0.044	-0.026	-0.043	-0.018	-0.037	-0.025	-0.026	-0.026

NOTE: The real product prices (from Table 2.8) are weighted with 1985-86 quantity weights to form these indexes. See the notes to Table 2.9 for a definition of the groups.

Table 2.11. AREA PLANTED FOR SOME PRINCIPAL CROPS, 1967-1986
(thousand manzanas)

	Coffee	Cotton	Sugarcane	Corn	Beans	Rice	Sorghum	Sesame	Tobacco	Kenaf
1967	206.0	67.8	37.1	270.9	42.9	40.0	148.4	2.9	1.2	2.3
1968	206.0	75.0	37.4	285.4	45.3	39.0	162.5	7.4	0.9	3.3
1969	206.0	81.6	34.8	276.8	45.9	15.3	162.6	2.1	1.1	3.7
1970	207.0	92.8	35.0	298.2	51.2	17.0	177.4	1.9	1.6	2.7
1971	209.0	88.3	41.4	298.9	56.4	20.9	180.0	2.2	1.8	3.0
1972	212.0	111.9	47.7	298.8	56.9	15.7	186.4	1.5	1.7	2.5
1973	217.0	127.3	49.5	289.4	64.2	13.6	170.0	2.7	1.5	2.8
1974	217.0	130.7	46.6	302.9	76.0	15.9	182.0	2.0	2.4	2.0
1975	220.0	128.2	56.6	351.2	78.5	24.2	189.1	4.1	2.6	3.6
1976	224.0	115.9	50.1	334.5	75.5	19.7	178.5	3.5	2.8	3.1
1977	239.0	122.8	50.8	349.8	75.1	17.8	188.8	2.4	2.8	3.2
1978	265.8	150.1	60.4	379.9	74.8	19.9	195.4	5.3	3.4	4.0
1979	265.8	127.8	50.7	394.1	79.0	21.1	205.0	4.8	3.7	0.9
1980	265.8	112.9	45.0	417.3	73.6	24.0	170.7	18.7	3.4	0.6
1981	265.8	78.6	41.0	396.6	71.3	19.8	165.0	17.5	3.4	0.9
1982	265.8	70.7	45.3	341.0	79.4	16.0	170.0	15.0	3.5	0.7
1983	251.0	70.2	48.0	344.9	80.4	18.0	158.0	5.8	3.7	0.7
1984	246.1	55.0	58.4	347.8	82.5	21.9	166.0	5.8	3.7	0.7
1985	239.1	49.5	56.3	361.9	82.8	24.7	163.4	5.8	3.9	0.8
1986	234.2	25.6	59.1	368.0	87.0	17.2	171.5	6.7	3.9	0.8

Source: Banco Central de Reserva.

Table 2.12. Area Planted and Economic Productivity of Agricultural Land, by Crop Group

	Area in Thousand Manzanas				Economic Productivity per Manzana			
	Staple Crops	Trad. Exports	Other Crops	Total	Staple Crops	Trad. Exports	Other Crops	Total
1967	502.2	310.9	6.4	819.5	0.568	7.207	4.804	3.120
1968	532.2	318.4	11.6	862.2	0.626	6.921	3.338	2.987
1969	500.6	322.4	6.9	829.9	0.659	7.026	3.934	3.160
1970	543.8	334.8	6.2	884.8	0.751	7.240	4.760	3.234
1971	556.2	338.7	7.0	901.9	0.782	7.555	4.664	3.356
1972	557.8	371.6	5.7	935.1	0.564	7.281	5.862	3.265
1973	537.2	393.8	7.0	938.0	0.841	6.166	5.260	3.110
1974	576.8	394.3	6.4	977.5	0.681	7.470	5.699	3.452
1975	643.0	404.8	10.3	1058.1	0.778	7.492	4.235	3.380
1976	608.2	390.0	9.4	1007.6	0.676	6.766	4.839	3.072
1977	631.5	412.6	8.4	1052.5	0.665	6.707	4.826	3.066
1978	670.0	476.3	12.7	1159.0	0.807	6.438	3.767	3.154
1979	699.2	444.3	9.4	1152.9	0.807	7.473	6.052	3.419
1980	685.6	423.7	22.7	1132.0	0.785	7.603	3.890	3.399
1981	652.7	385.4	21.8	1059.9	0.783	7.576	3.953	3.318
1982	606.4	381.8	19.2	1007.4	0.721	7.548	4.365	3.378
1983	601.3	369.2	10.2	980.7	0.778	7.131	7.276	3.238
1984	618.2	359.5	10.2	987.9	0.903	7.002	6.903	3.184
1985	632.8	344.9	10.5	988.2	0.804	7.161	7.312	3.092
1986	643.7	318.9	11.4	974.0	0.764	7.046	6.734	2.891

Notes: The areas refer to areas planted. The economic productivity is gross output, in thousand colones at 1985-86 constant prices, per manzana.

Sources: Tables 2.11 and 2.14.

Table 2.13.
SHARE OF AREA PLANTED BY CROP GROUP

	Staple Crops	Trad. Exports	Other Crops
1967	0.6128	0.3794	0.0078
1968	0.6173	0.3693	0.0135
1969	0.6032	0.3885	0.0083
1970	0.6146	0.3784	0.0070
1971	0.6167	0.3755	0.0078
1972	0.5965	0.3974	0.0061
1973	0.5727	0.4198	0.0075
1974	0.5901	0.4034	0.0065
1975	0.6077	0.3826	0.0097
1976	0.6036	0.3871	0.0093
1977	0.6000	0.3920	0.0080
1978	0.5781	0.4110	0.0110
1979	0.6065	0.3854	0.0082
1980	0.6057	0.3743	0.0201
1981	0.6158	0.3636	0.0206
1982	0.6019	0.3790	0.0191
1983	0.6131	0.3765	0.0104
1984	0.6258	0.3639	0.0103
1985	0.6404	0.3490	0.0106
1986	0.6609	0.3274	0.0117

Note: Shares sum to 1.0 in each year.
Source: Table 2.12.

Table 2.14.
 CONSTANT-PRICE VALUE OF PRODUCTION
 BY CROP GROUP, 1967-1986

	Staple Crops	Trad. Exports	Other Crops	All Crops
1967	285.43	2240.77	30.75	2556.95
1968	333.30	2203.54	38.72	2575.55
1969	330.10	2265.17	27.15	2622.42
1970	408.56	2423.79	29.51	2861.86
1971	434.87	2558.89	32.65	3026.41
1972	314.64	2705.45	33.41	3053.50
1973	451.88	2428.22	36.82	2916.92
1974	392.64	2945.61	36.47	3374.72
1975	500.03	3032.60	43.62	3576.25
1976	411.25	2638.92	45.49	3095.65
1977	419.76	2767.12	40.54	3227.42
1978	540.97	3066.36	47.85	3655.18
1979	564.28	3320.47	56.89	3941.64
1980	538.47	3221.31	88.30	3848.07
1981	511.16	2919.67	86.17	3517.00
1982	437.14	2882.02	83.81	3402.97
1983	468.07	2632.82	74.21	3175.11
1984	558.29	2517.21	70.42	3145.91
1985	508.61	2469.76	76.78	3055.15
1986	491.69	2246.89	76.77	2815.35

Note: The crops included in these groups are those of Table 2.11; these groupings are used for the purpose of establishing the productivity calculations in Table 2.12.

Chapter 3. THE ROLE OF FOOD IMPORTS

3.1. Trends in Food Imports

Agriculture is a large net earner of foreign exchange for the Salvadorean economy. During the period 1980-86, agricultural exports constituted, on average, 75 percent of total commodity exports (Table 1.5), while imports of agricultural products constituted 17 percent of total commodity imports (Table 3.1). The additional imports of agricultural inputs were small relative to these magnitudes. The difference between the value of agricultural exports and imports, in current colones, was 1371 million in 1984 and 1361 million in 1985.

Since 1970, agricultural exports have tended to increase in real value, although they have slipped a little in recent years, but agricultural imports have increased more rapidly. Thus, while agriculture's status as a significant net earner of foreign exchange is not in jeopardy in the near future, the trends have become less favorable than they were in earlier years. One indication is that agriculture's average share of total commodity imports was 11 percent in the six-year period 1974-79, vs. 17 percent in the more recent six-year period. Preliminary data show a further large increase in agricultural imports in 1986.

The most rapidly increasing items in the agricultural import bill have been vegetable oils and meal and animal fats, live animals and meat products, and wheat and corn. These three categories accounted for 47 percent of agricultural imports by value in 1985, vs. only 31 percent in 1970. Except for wheat,

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they are largely livestock products or feed products for the livestock industry.

Imports of milk products grew very rapidly until the 1980-83 period, but since then they have decreased substantially in both absolute and relative amounts.

Less extensive time series are available on the imports of fruit and vegetables, but it is apparent that they also are increasing more rapidly than agricultural imports as a whole. From 1975 to 1986, tomato imports expanded by 19 percent per year (in volume), lettuce imports by 14 percent, imports of oranges by 18 percent, of pineapples by 25 percent, and of bananas by 7 percent (Tables 3.6 and 3.8). According to preliminary data, in 1987 the imports of tomatoes and lettuce declined somewhat, but imports of the other three items increased sharply.

In the area of fruits and vegetables, El Salvador now imports much more than it exports (see also Tables 3.10 and 3.11), which is unusual for the Central American region.

Perhaps the most indicative statistic is that from 1970 to 1986, a quantum index of all agricultural imports increased by 6.8 percent per year, while the same index for domestic food production increased by only 1.9 percent per year (i.e., it declined in per capita terms). See Table 3.13. In other words, over that period, the cumulative increase in agricultural imports was 185 percent, while for domestic food production it was only 35 percent. Clearly, El Salvador's dependence on imported food

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supplies is growing at a substantial rate.

Some of the more rapidly growing import items have been supported through concessional foreign loans and grants. These include vegetable oil and meal, animal fats, wheat and corn (Tables 3.3 and 3.4). The most important of the food aid programs has been PL 480 Title I, although a number of other food aid programs are active in El Salvador, including Title III, the FAO's World Food Program, and the bilateral programs of Japan and several European countries.

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3.2. Food Imports and Policy Questions

To a large extent, the food aid programs, and the general rise in imports of food products, represent a response to the economic and social crisis in El Salvador. The large number of displaced persons and the generally worsening levels of nutrition, together with declining or stagnant domestic food supplies per capita, make an increase in food imports imperative.

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However, a question has arisen whether, in meeting the short-term needs, this upsurge in food imports may be aggravating the problem in the long run, by discouraging domestic food production. There is an issue of causality: a) are food imports simply a response to a weakened performance of the domestic agricultural sector, or b) is that performance in part attributable to the trends in food imports?

The second hypothesis has two variants: b.i) that the volume

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of food imports has been greater than warranted by the economic needs of the country, and b.ii) that the prevailing relative prices have encouraged imports, at the same time that they have discouraged domestic production. The first variant effectively postulates that the food aid programs have brought in more food than would be indicated by demand and prices. The second variant says that the volume of imports is not necessarily inconsistent with demand and prices, but those prices have been distorted in a way that favors imports over domestic production.

If the first variant were confirmed, it would suggest that import policy is responsible in part for the problems of production in the sector. If the second variant were true, it would suggest that the production problems and the increases in imports are jointly determined by pricing policy, at least in part. If neither is confirmed, then support would be given to the hypothesis that the existing volumes of food imports are simply a response to the production problems, and that (implicitly) those problems have other causes, such as the war and perhaps the disruption brought about by the agrarian reform.

In the remainder of this chapter, these alternative possibilities are tested via statistical analysis. Hypothesis (b.i) is tested by fitting an import demand function to the time series of data, with the usual kind of economic explanatory variables. If an import demand function explains successfully the historical movements in food imports, then it is not true

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that those imports have been larger in volume than is indicated by prevailing economic conditions.

Hypothesis (b.ii) is tested by fitting functions that indicate the role of relative prices in determining imports and domestic production.

ALTERNATIVE HYPOTHESES ABOUT FOOD IMPORTS AND DOMESTIC PRODUCTION

(a) Imports respond to problems in production; they do not affect production negatively.

Hypothesis (a) is dealt with implicitly here: if both (b.i) and (b.ii) are rejected, then (a) is lent support.

(b.i) Import volumes are higher than warranted by demand conditions and prices, and thus they depress domestic production.

(b.ii) The trends in both imports and production are significantly affected by pricing policy.

However, in the next chapter, hypothesis (a) is treated more directly.

Before proceeding to the statistical tests, the way is prepared with some brief observations on the trends in relative international and domestic prices, and with a somewhat more detailed review of the trends in food imports and domestic production.

3.3. International and Domestic Food Prices

In international markets agricultural prices generally have been declining in the 1980s, both in absolute terms and relative to the prices of manufactured goods. To verify this trend for El Salvador, the import data in Table 3.2 were used to construct a

price index for the 32 principal agricultural goods that El Salvador has imported. First a dollar price index was constructed, and then by applying the exchange rate it was converted to a price index in colones (reported in Table 3.13).

The dollar price index for Salvadorean agricultural imports is consistent with international trends. From 1980 to 1986 it declined by 30 percent. Of course, because of the devaluations from 1983 onward, when expressed in current colones it increased substantially over that period.

The decline in real domestic agricultural prices started two years earlier, but in magnitude it was similar to the fall in the dollar prices of agricultural imports. From 1980 to 1986, real domestic food prices fell by 33 percent at the producer level. Real producer prices of food declined by much more when the measurement is made from 1978 to 1980 (Table 3.13).

To appreciate the role of agricultural import prices, it is helpful to compare the behavior of the index of those prices in current colones with the overall rate of inflation in El Salvador. From 1980 to 1986, the agricultural import price index in current colones increased by 39 percent, while over the same period the consumer price index increased by 162 percent (and the GDP deflator increased by 144 percent). In other words, agricultural imports became much cheaper relative to goods and services produced within the country.

During the same period, the index of current producer prices

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of foods increased by 74 percent. As noted in chapter 2, it increased less than other prices in the Salvadorean economy, but it is noteworthy that agricultural imports experienced an even lower price increase in current colones. Thus by any standard, imported foods have become more attractive to the importer and the consumer.

The statistical analyses presented below show that this relative cheapening of imported foods has had a bearing on their expanding role in the economy.

3.4. Trends in Total Food Supplies

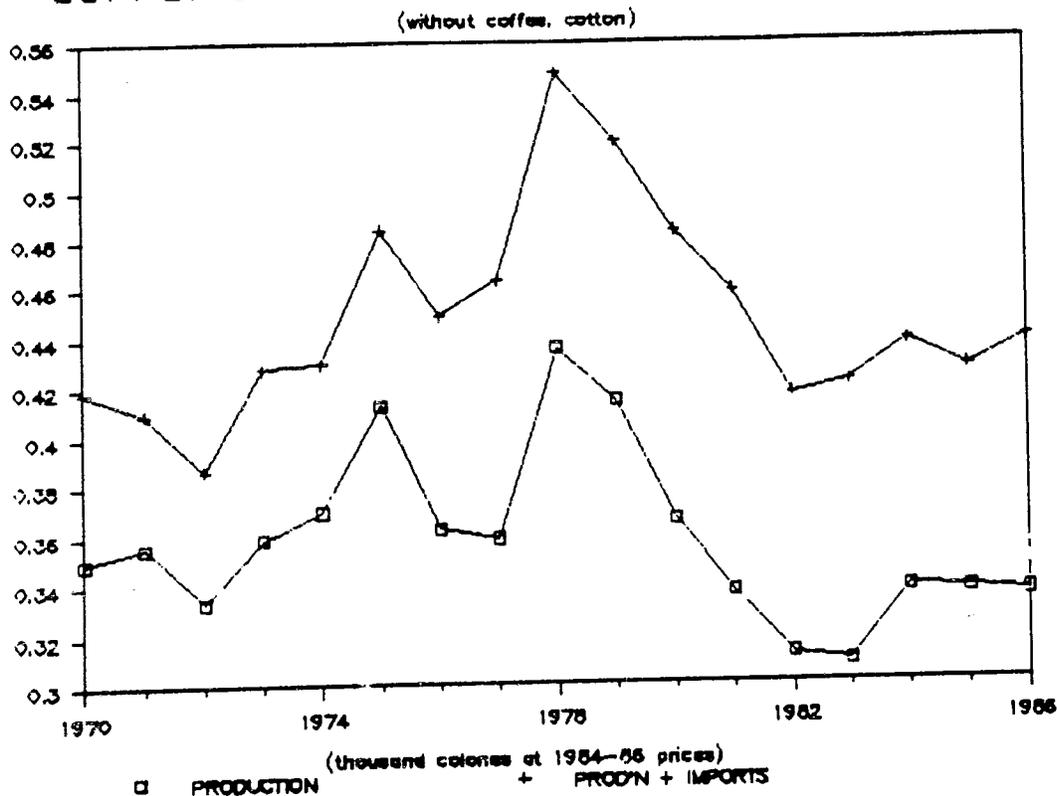
Table 3.12 shows imports, production and total supplies of agricultural products for different groupings of products. Total agricultural production is defined to consist of the production of the 21 products listed in Table 2.5, and the estimates of total agricultural imports are based on the 32 products in Table 3.2. (Some partial data from El Salvador's Central Bank were used to extrapolate the estimates of agricultural imports back from 1975 to 1970, for in those years the FAO data used in Table 3.2 were not available for many crops.)

From a viewpoint of material welfare of the population, total food supplies are of more interest than total agricultural production plus agricultural imports. The latter include cotton and other non-food products. As the coverage of products is rather incomplete, especially on the side of domestic production,

a simple and broad definition of food has been used, which includes feed products as well. (There is double counting here, but no more so than including both iron and steel in a measure of industrial production.) In domestic production, "food" is defined approximately to include all products except cotton, coffee, henequen, kenaf, tobacco and copra. Correspondingly, all agricultural imports are defined to be "food."

Refinements of the definitions could be made, but still many food products would be missing because of lack of data series, and it is doubtful that the refinements would make a material difference in the analysis that follows.

SUPPLY OF AGRICULTURAL GOODS PER CAPITA



By a variety of measures, the important point to emerge from Table 3.12 is that the total per capita supply of agricultural goods, and of food, has declined sharply since 1978. This result is consistent with the findings regarding the trends in nutrient availability per capita (ch. 1), but the steepness of the decline from 1978 to 1982 is perhaps unexpected. After 1982, a slight recovery has been in evidence, but it has not compensated for the earlier decline.

The graph above displays this finding, on the basis of the data in column (17) of Table 3.12.

3.5. The Determinants of Agricultural Imports

Economic theory and practical insight both suggest that agricultural imports behave as a residual variable in supply-demand balances: they are the "gap fillers" to make up for unexpected shortfalls of domestic production. There also may be a component which doesn't fluctuate as sharply and simply provides those products that cannot be produced domestically.

In general, imports of consumer goods are gap fillers, more so than, say, imports of capital goods. And the more basic the consumer good, the more likely this statement is to be true.

Therefore, some of the main determinants of agricultural imports could be expected to be the behavior of domestic demand and domestic supply. In this case, the relevant supply variable is lagged one year, because bulk of consumption of domestic foods

comes from the harvests that occurred late in the previous calendar year. To represent the non-price part of demand, aggregate real private consumption (from the national accounts) has been selected. This demand variable includes both population and per capita consumption.

Demand for particular products or groups of products is sensitive to movements in relative prices as well as to the income available for expenditure. As the discussion above indicated, imported agricultural goods have become less expensive relative to domestically produced goods. One of the reasons this has occurred is that the exchange rate movements have not kept up with the internal rate of inflation in El Salvador, vis-a-vis inflation in its main trading partners. The growing overvaluation of the exchange rate has made imports cheaper compared to domestic products, by definition.

For this reason, and to give more policy content to the equation, the price variable selected has been the degree of overvaluation of the exchange rate, as defined in section 1.3.

The dependent variable in the import equation is the quantum index of agricultural imports, based on the 32 products in Table 3.2. All variables in the equation have been converted to index form, and they are listed in Table 3.13.

Thus the estimated equation for agricultural imports is as follows:

$$\text{IMP} = -1.4333 + 0.8838 \text{ PC} - 0.3563 \text{ LDQ} + 1.5588 \text{ OVV}$$

$$(-6.5236) \quad (2.9427) \quad (-1.0939) \quad (10.591)$$

$$R^2 = 0.9333, \quad F = 60.644, \quad \text{D.W.} = 2.0096$$

period: 1970-86

here the figures in parentheses are T-ratios and the variables are:

IMP = quantum index of agricultural imports
 PC = real aggregate private consumption expenditure
 LDQ = lagged domestic quantity of food produced
 OVV = degree of overvaluation of the exchange rate

The explanatory variables all have the correct sign and an acceptable degree of statistical significance. Thus it appears safe to say that hypothesis (b.i) can be rejected: it is not true in general that agricultural import volumes are higher than warranted by demand and prices, though that might have happened in occasional years. Note that in equation (1) imports respond with a lag to shortfalls in domestic food production, and hence on the supply side the causality in this equation run from production problems to greater imports, and not vice-versa.

However, equation (1) is conditional on exchange rate policy, and the statistical results suggest a very strong link between exchange rate policy and import behavior.

As all the variables are indexes, their coefficients are directly interpretable as elasticities. Thus the last term in the equation appears to indicate tentatively that if the exchange

rate had not been overvalued in 1986, agricultural imports would have been 67 percent lower. The overvaluation was 43 percent (ch. 1), the elasticity of imports with respect to the overvaluation is 1.559 (and that is a highly significant coefficient, statistically), and $0.43 \times 1.559 = 0.67$. That would have put agricultural imports back at their level of 1972.

Of course, had exchange rate policy been different, other variables in equation (1) would have been different also. Real private consumption might have been higher under a policy of an equilibrium exchange rate, and that would have encouraged agricultural imports somewhat. The effects of the exchange rate policy on domestic farm production also must be taken into account; they are explored below.

Hence, looking at all relevant variables, it is not correct to infer that fully 67 percent of the agricultural imports are attributable to the disequilibrium in the exchange rate. However, it is possible to say that the exchange rate effect is significant and that, everything else equal, the elasticity of agricultural imports with respect to the exchange rate is well over 1.0.

The aggregate expenditure elasticity for agricultural imports turns out to be fairly high, at 0.88. This reflects the fact that most of the products imported have relatively high income elasticities of demand: wheat, fruit and vegetables, meat and milk products, and the various feed inputs into livestock.

By the same token, equation (1) indicates that a 10 percent increase in domestic production causes only a 35.6 percent decrease in agricultural imports. This result arises because many of the products imported are not produced domestically (wheat, yellow corn, for example), or they are products that do not increase in output when the sector's output rises (vegetable oils, tallow). Hence imports and domestically produced agricultural goods are imperfect substitutes. Without a radical restructuring of consumption habits, many categories of those imports always will be needed.

Although generally import volumes seem to have coincided with the country's needs, there have been some years in which that may not have been the case. Inspection of the residuals from equation (1)--shown in Table 3.14--reveals that 1985 and 1986 were by far the most erratic years for agricultural imports, the years in which the import volumes were least related to the relevant economic determinants. In 1985, import volumes were unexpectedly low and in 1986 they were unexpectedly high.

In 1985, the deviation was not attributable to the management of concessional food aid. The only large drop in concessional imports in that year occurred in the case of corn (Table 3.3), but the late 1984 corn harvest was unusually good; it was 19 percent higher than the 1983 harvest (Table 2.5). Hence it was reasonable to import less corn. Significantly fewer live cattle were brought in during 1985 (Table 3.2), but for the

most part the unexpectedly low level of agricultural imports may have been attributable to the growing scarcity of foreign exchange that led to a unification of the exchange rate early in 1986.

The case of 1986 was different. Sharp increases in PL 480 imports were recorded for vegetable oil, wheat and tallow (Table 3.4) and in rice (under the Italian food aid program). Evidently, the food aid programs were not yet responding to the new structure of incentives created by the unification of the exchange rate. But then again, domestic food production declined in both 1985 and 1986 (Table 2.9), and the food aid imports did drop significantly in 1987 in wheat, vegetable oil and tallow.

These considerations suggest that: i) an equation like (1) could be used to program the year-to-year changes in aggregate amount of food aid (allowing for contrary and compensating changes at the level of individual commodities), and ii) perhaps for this purpose a better equation would replace the overvaluation variable with its lagged value.

When this last step was taken, a similar equation resulted in terms of the coefficients: equation (2) below. It has a slightly lower level of statistical confidence but probably it is preferable from a viewpoint of economic logic, for the new relative price structure brought about by an exchange rate change should affect imports with a time lag. The residuals from equation (2) now indicate agricultural imports in 1986 were right

on target, although they remained low in 1985 (Table 3.15).

The estimated coefficients of equation (2) are as follows, where LOVV now signifies the lagged value of OVV, the degree of overvaluation of the exchange rate:

$$(2) \quad \text{IMP} = -1.5812 + 1.0276 \text{ PC} - 0.2711 \text{ LDQ} + 1.5653 \text{ LOVV}$$

$$\quad \quad \quad (-5.9402) \quad (3.1275) \quad (-0.8002) \quad (9.9977)$$

$$\quad \quad \quad \text{R}^2 = 0.9251, \quad \text{F} = 49.384, \quad \text{D.W.} = 2.0408$$

$$\quad \quad \quad \text{period: 1971-1986}$$

The main findings of this section regarding the behavior of imports are summarized in a qualitative sense at the end of this chapter. But first some other issues are explored quantitatively.

3.6. The Determinants of the Intersectoral Terms of Trade

There is an increasing consensus on the part of specialists in agricultural development that the exchange rate influences the intersectoral terms of trade in a country: when it is overvalued it tends to depress agricultural prices relative to non-agricultural prices (see World Bank, 1986; Schuh, 1987; Valdez, 1987; Norton, 1987). But at the same time it is clear that there are other influences at work, particularly the movements in international agricultural prices and the rate of expansion of domestic demand.

These variables are included in the equation (3) below which

was fitted to data on the intersectoral terms of trade. In this case, those terms of trade were measured by the real farmgate price index for food products, that is, the index of nominal farmgate prices for those products deflated by the consumer price index. (This real index, denoted RPPI--for real producer price index--is reported in Tables 2.10 and 3.13.)

The estimated equation is then

$$(3) \quad \text{RPPI} = 0.8582 - 0.6198 \text{ OVV} + 0.3726 \text{ IMPP} + 0.8094 \text{ DPC}$$

$$\quad \quad \quad (15.602) \quad (-13.320) \quad (6.5306) \quad (5.1836)$$

$$\quad \quad \quad R^2 = 0.9495, \quad F = 75.266, \quad \text{D.W.} = 2.345$$

$$\quad \quad \quad \text{period: 1971-1986}$$

where the explanatory variables are:

OVV = degree of overvaluation of the exchange rate
 IMPP = price index for imported agricultural goods, in \$
 DPC = percentage annual change in real private consumption

It is evident that the exchange rate is the statistically most powerful variable in determining the index of real agricultural prices. And the import price index and the demand variable also exert a significant influence, in the expected directions.

The coefficients of OVV and IMPP are elasticities. Thus, if there had been no exchange rate distortion in 1986 and if international prices and the growth of real private consumption were unchanged, then real farm gate prices would have been 27 percent higher in that year, i. e., approximately at their 1984 level (but still well below their levels of the 1970s).

Higher dollar prices of imported foods tend to translate into higher real farmgate prices, though not proportionately, as might be expected from the earlier finding that the imported agricultural products and the domestic ones are not perfect substitutes. The elasticity in this relationship is 37 percent, very similar to the one that characterizes the response of import demand to a change in domestic food production in equation (1).

Equation (3) provides confirmation for El Salvador of the general thesis that exchange rate policy is an important arm of agricultural pricing policy. Given the statistical strength of equation (3), and the theory behind it, plus the weight of similar findings for other countries, there seems to be little doubt that exchange rate policy has been prejudicial to the interests of Salvadorean farmers.

In terms of food import policy, the findings of equations (1) and (3) suggest that it is not the amount of food imports that is depressing domestic agricultural production, but rather how those imports are priced. And the exchange rate policy has been one of the prime factors in making those imports relatively cheap in recent years. In other words, it is not a question of imports displacing domestic production, or vice-versa, but rather both are determined by a third force: macroeconomic policy, in particular exchange rate policy and growth policy.

A slight improvement in the quality of equation (3) can be obtained by including a term representing the lagged percentage

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change in domestic food production, so that both domestic demand and domestic supply are incorporated. The new variable is designated DLDQ, where the first "D" signifies percentage change, the "L" signifies a one-year lag, and "DQ" is the domestic quantity produced (of food). With this addition, the fitted equation becomes

$$(4) \quad \begin{aligned} \text{RPPI} = & 0.8826 - 0.6374 \text{ OVV} + 0.3734 \text{ IMPP} + 0.8039 \text{ DPC} \\ & (19.056) \quad (-16.362) \quad (7.9404) \quad (6.2448) \\ & - 0.1568 \text{ DLDQ} \\ & \quad (-2.5811) \end{aligned}$$

R2 = 0.9686, F = 84.751, D.W. = 2.401
period: 1971-1986

Notice that the statistical significance of each of the original explanatory variables in equation (3) has improved with the addition of the new variable (a somewhat unusual occurrence in estimation work). Also, the previously estimated coefficients have not changed materially. Their values appear fairly stable.

Equation (4) says that, as expected, farmers' real prices decline with good harvests. But it also says that, in proportionate terms, that effect is much smaller than the effect on their prices brought about by an overvalued exchange rate, by changes in international prices, and by changes in domestic demand (income).

Equation (4) is robust enough statistically, in spite of a slight degree of bias indicated by the D.W. statistic, that it is usable for forecasting real farmgate prices, as a function of

exchange rate policy and the other variables in the equation. Its quality as a forecasting equation is indicated by the following table of predicted and actual values of the intersectoral terms of trade (RPPI), the predicted values coming out of the estimated equation:

ACTUAL AND PREDICTED VALUES OF REAL FARMGATE PRICES,
FROM EQUATION (4)

Year	Actual	Predicted	Error
1971	0.543	0.545	-0.002
1972	0.537	0.544	-0.007
1973	0.633	0.622	0.011
1974	0.663	0.645	0.018
1975	0.637	0.603	0.034
1976	0.583	0.609	-0.026
1977	0.611	0.629	-0.018
1978	0.535	0.535	0.000
1979	0.461	0.458	0.003
1980	0.460	0.496	-0.036
1981	0.473	0.450	0.023
1982	0.452	0.470	-0.018
1983	0.425	0.410	0.015
1984	0.388	0.370	0.018
1985	0.336	0.344	-0.008
1986	0.307	0.313	-0.006

The standard error of estimate of the equation is 0.022, that is, 4 percent of the mean value of the predicted variable (RPPI).

Another application of equation (4) is to quantify the contributions of different variables to the recent decline in real farmgate prices. From 1977 to 1986, the index of those real prices (RPPI) declined by 50 percent. Application of equation (5), plus some normalizations, shows that 53 percent of that

decline (26.5 percentage points out of the 50 percentage point decline) was attributable to the increasing overvaluation of the exchange rate, and 45 percent was attributable to the drop in demand (in real private consumption). Dollar import prices of agricultural goods actually increased very slightly over that period (they increased, then decreased by slightly less), so they did not contribute to that particular decline. These results are a reminder of the importance of demand growth, and not only pricing policy, for agricultural prosperity in the long run.

3.7. The Determinants of Domestic Food Production

In this section the principal questions to be investigated are the following: i) Does food production in El Salvador respond significantly to changes in incentive structures, and hence to changes in pricing policy? ii) What other variables are important in determining production in the short run? and iii) What is the role of import volumes in determining production?

The last question is added to the list to check the earlier result on causality of the import-production relation: the result that shortfalls of production cause increases in imports, with a one-year lag, and not vice-versa. That earlier result came out of an import equation; here it will be tested with a production (supply) equation.

A number of different variants of a food supply function were tested statistically, following the general specification of

Nerlove (see Askari and Cummings, 1977). With minor variations, the most successful functional form was the following:

$$(5) \quad DQ = 0.0274 + 0.3716 \text{ LRPPI} - 0.1113 \text{ DUM} + 0.3263 \text{ IMP} \\ (0.1352) (1.2222) \quad (-1.8755) \quad (3.7098) \\ + 0.4442 \text{ LDQ} \\ (2.8511)$$

$$R^2 = 0.7870, \quad F = 10.160, \quad D.W. = 1.9622 \\ \text{period: 1971-1986}$$

where

DQ = index of domestic quantity of food produced
 LRPPI = lagged (1 year) real producer price index, for foods
 DUM = dummy variable to represent the social turmoil of the 1980s; its value is 0 for 1970-79 and 1.0 for 1980-86
 IMP = quantity index for agricultural imports
 LDQ = lagged value of DQ (1-year lag)

The statistical quality of (5) is acceptable but not outstanding. It leaves more than 20 percent of the annual variations in production unexplained. Nevertheless, it provides some interesting results:

- Domestic food production does respond to relative price changes; its short-run price elasticity (with respect to real farmgate prices) is 0.37, and its long-run elasticity is 0.67.
- The social situation of the 1980s did indeed affect food production negatively; on average, food production was 11 percent lower in the 1980s than it would have been without the turmoil. (Cotton is not included here and it was affected more.)
- Agricultural imports do not depress domestic food production, but on the contrary, they tend to increase it!

These results call for some comment, especially the last one. Tests of several functional forms confirmed the positive relationship between agricultural imports and food production, with or without a lag in the import variable. Moreover, when the import variable was removed from the equation, some of the other coefficients lost statistical significance. One plausible explanation for this result is that agricultural imports include livestock feed products, and therefore through the livestock component they raise domestic production.

Another explanation is that imports of agricultural inputs respond to the same conditions that imports of agricultural commodities do (including the availability of foreign exchange), so that to some extent the IMP variable is representing the availability of inputs. Unfortunately, a time series on agricultural inputs is not available to confirm this hypothesis directly.

On the whole, the import coefficient in (5) has to be regarded with a degree of scepticism, but nevertheless it is another piece of evidence to support the earlier result that the volumes of agricultural imports do not cause declines in domestic production.

Also, as shown later in this report, there is evidence that the effect of the social conditions of the 1980s may have been stronger than indicated by (5). The dummy variable is a crude measure for, among other things, the impact of the social

conditions was not uniform in each of the years 1980-86. The usable result here is the qualitative one that in fact those conditions did have a negative effect on production, even when the declines in incentives are taken into account. (In addition, it was important to include that dummy variable in the equation in order to have a more complete specification, and thus obtain a less biased estimate of the price parameter.)

Above all, the significance of equation (5) lies in its confirmation of the price responsiveness of the food production sector in the aggregate. Together with equations (1) and (2), it supports the earlier suggestion that a "third force," relative prices, exerts a strong joint influence on production and imports. And equations (3) and (4), as well as (1) and (2), suggest that the most important determinant of that third force is the exchange rate.

3.8. Conclusions on the Role of Food Imports

Returning to the alternative hypotheses summarized on page 3-5, it now appears that both (a) and (b.ii) receive statistical support.

Hypothesis (a) says that imports respond to inadequate levels of domestic production, and that receives some support from the next-to-last term in equation (1). Hypothesis (a) also says imports do not have a negative effect on production levels, and that proposition receives some support from equation (5). In

neither case is the statistical evidence overwhelming, but there is strong evidence for the general proposition that agricultural imports have been very largely determined by demand and supply variables, and hence import policy has not been distortive in the sense of introducing unduly large volumes of imported commodities.

Hypothesis (b.ii), that both imports and production are significantly influenced by pricing policy, receives quite strong statistical support in the form of equations (1), (2) and (5). And equations (3) and (4) establish the crucial link between exchange rate policy and growth policy, on the one hand, and real farmgate prices on the other hand. In other words, the terms of trade between agriculture and non-agriculture are not just economic happenstances that are independent of policy, but rather they are very much influenced by policy (and by external price movements as well).

Hypothesis (b.i), that agricultural import volumes have been too high and have depressed production, can be confidently rejected at the level of the entire sector. Nevertheless, that effect may have occurred for particular commodities in particular periods, e. g. milk until recently. This analysis does not explore the commodity-level questions, except in a descriptive sense in the earlier chapters, but the same techniques of analysis could be applied at that level.

The most general conclusion is that the appropriate level of

agricultural imports, and therefore of concessional imports, is not independent of the policy framework pursued by the Salvadorean Government. In recent years, the Government has opted for a policy framework that is not particularly favorable to farmers' incentives and is favorable to relying more on imported food products. The consequences are evident in the performance of domestic production and in the trends in imports.

The investigations of this report lead to the conclusion that the levels of food imports have been by-and-large appropriate, given the policy framework. If a lower level of food imports, or a lower rate of growth of those imports, is desired, then the policy framework must be changed. It must be changed in a way that production is encouraged at the same time imports are discouraged. And the exchange rate is the key to effecting that kind of change.

As a by-product, the statistical work appears to have produced an equation which can be useful in the future in programming the aggregate amounts of agricultural imports, or in checking whether the proposed volumes of food aid are warranted by economic conditions. Similar equations could be developed for individual major commodities that are imported.

Another result along these lines is an equation that appears to have good predictive qualities as regards the real farmgate price level (equation (4)). This equation can be used in policy studies, to ascertain the impact on farmers of proposed policy

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scenarios and to determine whether further attempts to improve farm incentives may be needed.

Table 3.1. VALUE OF TOTAL AND AGRICULTURAL IMPORTS, 1970-1985
(thousand colones at current prices)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984(p)	1985(p)
I. AGRICULTURAL PRODUCTS	70,121	73,859	70,645	109,265	140,938	176,706	193,634	234,654	285,582	322,609	425,361	424,472	372,522	402,344	422,689	334,208
1. Live animals	2,502	2,073	1,417	3,021	4,363	3,401	3,383	3,028	3,183	2,926	2,585	1,696	1,979	17,688	29,213	14,948
2. Meat, meat preparations	2,016	2,075	2,642	3,321	5,194	7,154	7,372	8,733	9,905	11,564	16,438	13,178	13,890	10,516	17,148	12,475
3. Milk products	11,834	13,606	13,748	11,508	19,750	26,368	30,046	36,110	49,728	49,302	53,570	83,963	47,431	53,065	18,949	21,588
4. Seafood	916	1,319	1,169	1,880	2,458	3,935	3,634	5,944	5,816	4,829	6,277	6,053	2,413	1,947	7,093	3,571
5. Wheat	9,306	11,326	11,448	24,983	34,272	38,309	45,396	35,952	44,066	48,055	65,462	24,267	77,837	50,350	65,942	61,006
6. Wheat flour	335	381	402	275	261	229	880	1,031	144	7,445	1,157	1,501	502	1,288	621	13
7. Corn	22	32	44	20,025	4,778	11,011	527	4,994	34,555	4,137	328	5,688	10,681	38,381	40,500	9,343
8. Other cereals, cereal preparations	4,663	6,945	5,678	5,601	11,218	15,879	9,341	21,464	13,392	12,712	26,061	16,706	25,957	23,312	17,319	20,491
Sub-total cereals	14,326	18,684	17,572	50,884	50,529	65,428	56,144	63,441	92,157	72,349	93,008	48,162	114,977	113,331	124,382	90,853
9. Fruit, fruit preparations	5,893	4,553	5,304	5,688	7,162	10,136	14,561	24,861	27,693	34,074	52,177	56,786	4,843	33,329	27,366	22,266
0. Potatoes and legumes	9,642	4,748	4,379	6,948	11,736	22,974	21,694	18,347	24,889	38,080	85,266	91,579	75,093	45,496	37,567	36,382
1. Sugar, sugar products	4,108	3,619	3,715	3,964	4,596	5,708	6,353	9,313	10,281	13,705	11,539	9,313	14,620	8,770	9,281	9,041
2. Vegetable oils, animal fats	7,815	9,132	7,014	5,423	13,800	13,418	24,508	29,364	20,399	49,485	46,319	56,136	48,075	59,410	80,558	58,713
3. Raw tobacco	1,048	330	356	544	270	340	449	547	1,070	2,731	4,763	3,785	1,662	1,645	992	595
4. Others	10,021	13,720	13,329	16,084	21,080	17,844	25,490	34,966	40,461	43,564	48,419	53,821	47,539	57,747	70,140	63,776
I. TOTAL IMPORTS	533,953	618,551	691,418	934,422	1,408,548	1,495,093	1,794,659	2,322,658	2,568,446	2,597,666	2,404,269	2,461,458	2,141,852	2,231,971	2,443,575	2,403,444
II. RATIO I/II	0.131	0.119	0.102	0.117	0.100	0.118	0.108	0.101	0.111	0.124	0.177	0.172	0.174	0.180	0.173	0.139

Source: Banco Central de Reserva

Note: Figures for wheat in 1984 and 1985, as well as those for corn in 1985, are estimates made by the study team.

Table 3.2. VOLUME AND DOLLAR VALUE OF PRINCIPAL AGRICULTURAL IMPORTS, 1970-1986
(metric tons and thousand dollars)

	volume	value	price	volume	value	price	volume	value	price	volume	value	price
	---wheat and flour---			---rice---			---corn---			---malt---		
1970	57,823	3,722	64.37	n.a.	n.a.	n.a.	34	9	264.71	n.a.	n.a.	n.a.
1971	62,304	4,530	72.71	n.a.	n.a.	n.a.	38	13	342.11	n.a.	n.a.	n.a.
1972	62,916	4,580	72.80	n.a.	n.a.	n.a.	60	18	300.00	n.a.	n.a.	n.a.
1973	71,314	9,993	140.13	n.a.	n.a.	n.a.	62,849	8,010	127.45	n.a.	n.a.	n.a.
1974	60,301	13,709	227.34	n.a.	n.a.	n.a.	11,989	1,911	159.40	n.a.	n.a.	n.a.
1975	73,707	15,415	209.14	6,193	2,597	419.34	27,028	4,404	162.94	4,179	1,644	393.40
1976	100,700	18,511	183.82	0	0	n.a.	727	211	290.23	3,000	1,150	383.33
1977	104,689	15,551	148.54	0	0	n.a.	66,600	5,800	87.09	5,863	2,300	392.29
1978	116,148	17,684	152.25	724	269	371.55	108,092	13,822	127.87	7,439	1,773	238.34
1979	105,181	19,520	185.58	5,325	2,000	375.59	12,169	1,655	136.00	3,248	856	263.55
1980	116,479	26,650	228.80	4,510	1,622	359.65	14,046	2,195	156.27	3,427	1,439	419.90
1981	106,440	24,202	227.38	2,396	1,000	417.36	11,147	1,375	123.35	3,152	1,232	390.86
1982	135,700	31,340	230.95	2,950	940	318.64	26,868	4,273	159.04	4,009	1,690	421.55
1983	122,730	20,660	168.34	8,300	2,500	301.20	102,206	15,352	150.21	4,615	1,933	397.18
1984	148,000	30,380	205.27	11,940	2,350	196.82	86,500	12,680	146.59	1,056	403	381.63
1985	150,900	30,800	204.11	18,300	3,300	180.33	55,000	7,400	134.55	4,512	1,442	319.59
1986	174,800	26,300	150.46	11,000	1,800	163.64	26,000	2,500	96.15	3,975	1,526	383.90
	-----potatoes-----			-----pulses-----			-----tomatoes-----			-----onions-----		
1970	8,024	655	81.63	6,237	1,504	241.14	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1971	8,891	353	39.70	1,986	354	178.25	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1972	7,766	289	37.21	333	57	171.17	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1973	6,216	345	55.50	3,780	178	47.09	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1974	9,470	899	94.93	3,076	1,374	446.68	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1975	14,295	1,234	86.32	7,442	4,697	631.15	2,812	151	53.70	2,088	266	127.39
1976	11,975	824	68.81	5,437	3,400	625.34	4,340	187	43.09	2,349	181	77.05
1977	12,865	1,364	106.02	1,027	500	486.85	4,283	416	97.13	4,068	460	113.08
1978	14,334	1,223	85.32	1,268	745	587.54	5,276	466	88.32	4,956	643	129.74
1979	17,685	2,864	161.95	597	106	177.55	5,976	972	162.65	5,959	1,620	271.86
1980	22,202	7,736	348.44	885	323	364.97	8,244	2,120	257.16	8,482	3,205	377.86
1981	14,357	4,767	332.03	3,000	1,200	400.00	7,839	1,611	205.51	9,563	3,027	316.53
1982	26,973	5,465	202.61	602	368	611.30	12,315	3,898	316.52	12,622	5,192	411.35
1983	19,375	3,213	165.83	793	540	680.96	10,518	2,142	203.65	10,112	2,730	269.98
1984	12,893	1,944	150.78	547	133	243.14	9,730	1,618	166.29	8,001	1,680	209.97
1985	16,392	2,321	141.59	633	289	456.56	16,337	1,599	97.88	7,964	973	122.17
1986	16,599	2,285	137.66	400	200	500.00	18,806	1,889	100.45	8,000	1,100	137.50

(cont.)

Table 3.2. VOLUME AND DOLLAR VALUE OF PRINCIPAL AGRICULTURAL IMPORTS, 1970-1986 (cont.)
(metric tons and thousand dollars)

	volume	value	price	volume	value	price	volume	value	price	volume	value	price
	-----cabbage-----			-----oranges-----			---bananas, plantains---			-----apples-----		
1970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1971	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1972	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1973	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1974	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1975	8,889	543	61.09	1,307	36	27.54	24,782	504	20.24	1,117	153	136.97
1976	8,815	330	37.44	3,229	139	43.05	31,284	882	28.19	1,314	217	165.14
1977	12,615	636	50.42	3,258	189	58.01	44,160	3,216	72.83	1,829	352	192.45
1978	14,319	683	47.70	5,701	294	51.57	46,918	2,969	63.28	2,033	400	196.75
1979	18,100	1,744	96.35	11,141	1,476	132.48	56,236	4,817	85.66	2,553	895	350.57
1980	24,111	4,485	186.01	16,033	1,930	120.38	75,968	7,631	100.45	1,285	852	663.04
1981	26,693	4,946	185.29	13,361	2,356	176.33	65,632	8,384	127.74	1,491	595	399.06
1982	23,668	2,587	109.30	10,341	1,335	129.10	59,955	8,559	142.76	2,148	528	245.81
1983	13,678	1,411	103.16	7,066	530	75.01	47,745	4,997	104.66	2,434	674	276.91
1984	14,521	1,177	81.06	6,350	330	51.97	51,022	2,453	48.08	2,400	680	283.33
1985	17,758	1,242	69.94	6,626	335	50.56	48,510	2,069	42.65	5,261	910	172.97
1986	16,825	1,400	83.21	7,000	380	54.29	50,108	1,384	27.62	4,000	800	200.00
	-----cocoa beans-----			---oilseed cake, meal---			-----meat meal-----			-----soybean oil-----		
1970	n.a.	n.a.	n.a.	4,118	343	83.29	n.a.	n.a.	n.a.	2,047	828	404.49
1971	n.a.	n.a.	n.a.	10,211	1,204	117.91	n.a.	n.a.	n.a.	899	419	466.07
1972	n.a.	n.a.	n.a.	10,932	1,211	110.78	n.a.	n.a.	n.a.	993	459	462.24
1973	n.a.	n.a.	n.a.	5,462	1,392	254.85	n.a.	n.a.	n.a.	2,011	840	417.70
1974	n.a.	n.a.	n.a.	10,077	2,764	274.29	n.a.	n.a.	n.a.	1,233	922	747.77
1975	333	182	546.55	5,064	1,110	219.19	4,815	1,307	271.44	50	65	1300.00
1976	414	286	690.82	11,000	2,500	227.27	3,941	664	168.49	2,243	1,600	713.33
1977	176	416	2363.64	22,000	5,900	268.18	5,553	1,531	275.71	1,840	916	497.83
1978	260	622	2392.31	17,013	3,893	228.83	5,940	1,645	276.94	195	114	584.62
1979	295	782	2650.85	13,136	4,305	327.73	5,800	2,011	346.72	2,145	1,538	717.02
1980	265	719	2713.21	19,004	5,194	273.31	3,253	1,395	428.83	554	501	904.33
1981	64	150	2343.75	22,684	7,442	328.07	432	88	203.70	2,573	1,605	623.79
1982	410	848	2068.29	31,429	8,542	271.79	3,040	1,153	379.28	795	585	735.85
1983	343	614	1790.09	19,271	5,810	301.49	10,141	3,308	326.20	2,172	1,850	851.75
1984	601	1,279	2128.12	29,290	7,990	272.79	4,767	1,662	348.65	1,272	1,320	1037.74
1985	258	493	1910.85	41,970	11,240	267.81	5,089	1,274	250.34	600	128	213.33
1986	250	480	1920.00	15,420	3,000	194.55	1,687	449	266.15	1,673	2,029	1212.79

(cont.)

Table 3.2. VOLUME AND DOLLAR VALUE OF PRINCIPAL AGRICULTURAL IMPORTS, 1970-1986 (cont.)
(metric tons and thousand dollars)

	volume --animal	value oils and fats--	price	volume ----cottonseed oil----	value	price	volume -----powdered milk-----	value	price	volume -----eggs in shell-----	value	price
1970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5,523	3,683	666.85	n.a.	n.a.	n.a.
1971	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5,722	4,421	772.63	n.a.	n.a.	n.a.
1972	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4,657	4,233	908.95	n.a.	n.a.	n.a.
1973	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3,010	3,061	1016.94	n.a.	n.a.	n.a.
1974	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4,021	4,830	1201.19	n.a.	n.a.	n.a.
1975	12,984	5,092	392.17	9	5	555.56	5,153	7,121	1381.91	196	157	801.02
1976	9,793	3,990	407.43	0	0	n.a.	5,922	6,637	1120.74	214	420	1962.62
1977	24,115	10,825	448.89	230	144	626.09	8,600	10,597	1232.21	177	358	2022.60
1978	13,900	6,424	462.16	760	481	632.89	11,100	14,198	1279.10	39	96	2461.54
1979	27,821	16,260	584.45	43	31	720.93	10,526	11,491	1091.68	26	52	2000.00
1980	22,236	12,022	540.65	6,759	4,258	629.97	12,269	17,921	1460.67	99	221	2232.32
1981	29,000	14,000	482.76	7,800	4,700	602.56	11,636	20,458	1758.16	120	240	2000.00
1982	25,656	11,776	459.00	8,529	4,611	540.63	8,271	15,085	1823.84	141	315	2234.04
1983	27,703	11,732	423.49	3,007	1,778	591.29	10,633	16,977	1596.63	128	386	3015.63
1984	37,300	17,100	458.45	1,305	505	386.97	4,408	7,388	1676.04	30	75	2500.00
1985	35,000	16,000	457.14	6,626	4,744	715.97	4,486	7,668	1709.32	10	30	3000.00
1986	42,000	18,000	428.57	28,000	14,000	500.00	9,169	9,520	1038.28	20	60	3000.00
	-----cattle (head)-----			--dried and salted meat-			-----canned meat-----			----cheese and curd-----		
1970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	555	946	1704.50	n.a.	n.a.	n.a.
1971	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	235	419	1782.98	n.a.	n.a.	n.a.
1972	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	551	890	1615.25	n.a.	n.a.	n.a.
1973	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	443	803	1812.64	n.a.	n.a.	n.a.
1974	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	421	941	2235.15	n.a.	n.a.	n.a.
1975	725	695	958.62	23	56	2434.78	888	2,023	2278.15	387	579	1496.12
1976	523	500	956.02	50	125	2500.00	943	2,402	2547.19	360	620	1722.22
1977	670	317	473.13	70	175	2500.00	990	2,340	2363.64	376	758	2015.96
1978	570	478	838.60	173	451	2606.94	1,547	3,779	2442.79	524	995	1898.85
1979	169	79	467.46	246	662	2691.06	1,386	3,688	2660.89	798	1,771	2219.30
1980	0	0	n.a.	263	508	1931.56	1,910	5,603	2933.51	807	2,539	3146.22
1981	0	0	n.a.	50	130	2600.00	480	1,510	3145.83	922	3,000	3253.80
1982	100	90	900.00	113	234	2070.80	1,253	4,459	3558.66	468	1,354	2893.16
1983	6,990	5,938	849.50	282	533	1890.07	1,267	3,993	3151.54	418	1,324	3167.46
1984	15,480	7,946	513.31	200	460	2300.00	1,346	4,434	3294.21	700	1,400	2000.00
1985	2,196	1,698	773.22	200	470	2350.00	1,362	4,076	2992.66	8	26	3250.00
1986	800	700	875.00	210	500	2380.95	1,970	6,380	3238.58	70	210	3000.00

NOTES TO TABLE 3.2.

1. The following sources were used in the construction of this table: series from 1975 to 1986 were taken from the FAO's Trade Yearbooks, except for the series on vegetables and fruits, which were taken from AID data; for the years 1970 to 1974, data from the Banco Central de Reserva were used for the following products: wheat, corn, pulses, potatoes, oilseed cake and meal, soybean oil, canned meat and powdered milk.
2. Adjustments have been made to the BCR series on canned meats, to make them compatible with the FAO data.
3. The BCR series for soybean oil includes other vegetable oils, but virtually all of that category is soybean oil, so it was treated as if it referred only to that product.
4. The data in this table are not necessarily consistent with the trade data in other tables in this report, owing to differences in the accounting conventions, such as recording an import when it is landed or when the letter of credit is opened, or on some other basis. In particular, the wheat series differs from those in Table 3.5. However, all the data in Table 3.2 have been developed on a consistent basis, and for that reason they are used in constructing the indexes of import quantities and prices.

Table 3.3. TOTAL CONCESSIONAL FOOD IMPORTS, 1980-1987
(mt)

PRODUCTS	1980	1981	1982	1983	1984	1985	1986	1987	TOTAL
Oil	618.0	9681.0	10192.9	15654.9	17607.9	22197.0	30173.7	21216.3	127341.7
Olive oil	0.0	0.0	0.0	0.0	0.0	0.0	3800.0	0.0	3800.0
Rice	1537.0	3366.0	2813.0	4808.0	8922.0	6528.7	10914.4	22865.0	(A) 61754.1
Bulgur	226.0	680.0	797.0	1417.0	707.0	1910.0	0.0	0.0	5737.0
Meat	0.0	0.0	0.0	0.0	0.0	40.0	224.0	815.6	1079.6
C.S.M.	0.0	276.7	167.2	225.9	266.1	0.0	269.3	0.0	1205.2
Soybeans	0.0	0.0	0.0	0.0	0.0	0.0	11100.0	8500.0	19600.0
Corn gluten	0.0	0.0	0.0	0.0	0.0	8790.0	5850.0	2500.0	17140.0
Meat and bones meal	0.0	0.0	0.0	0.0	0.0	5345.0	4000.0	0.0	9345.0
Corn meal	0.0	1640.0	4982.0	1992.0	4651.0	2759.0	5844.0	5562.0	27430.0
Soybean meal	0.0	0.0	0.0	0.0	0.0	59786.0	24310.0	63066.0	147162.0
Wheat flour	0.0	1621.8	1506.8	1766.7	1686.6	0.0	1677.5	0.0	8259.4
Milk	1231.0	2515.6	4675.9	12078.7	4036.2	10144.8	7386.5	5682.9	47751.6
Dry leguminous	11.4	122.8	587.2	189.2	373.4	375.3	719.1	972.8	3351.2
Corn	92.0	3638.1	28561.5	96431.8	95914.0	30014.5	32783.7	83226.5	370662.1
Liofilized oranges	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	20.0
Pasta	0.0	0.0	0.0	0.0	0.0	0.0	2311.0	1000.0	3311.0
Canned fish	0.0	274.3	135.9	0.0	468.7	92.2	273.3	0.0	1244.4
Canned chicken	0.0	0.0	0.0	0.0	226.0	176.0	639.2	320.4	1361.6
Tallow	0.0	0.0	0.0	0.0	0.0	33288.0	42030.0	32006.0	107324.0
Sardines	0.0	0.0	0.0	0.0	0.0	300.0	0.0	0.0	300.0
Soups	0.0	0.0	0.0	0.0	19.9	340.0	70.0	0.0	429.9
Substitutes of milk fats	0.0	0.0	0.0	0.0	0.0	572.0	0.0	0.0	572.0
Wheat	16365.0	108753.0	90354.0	115510.0	145683.0	150882.0	168154.0	122987.0	918688.0
W.S.B.	2153.0	2150.0	1879.0	0.0	0.0	0.0	0.0	0.0	6182.0

Note: These imports include foods arriving under PL480 (Title I, Title II, and the CCC), the World Food Program, and donations from several programs.

A) Does not include imports of this product in 1987 under the CCC.

Table 3.4. IMPORTS UNDER THE PL 480 TITLE I PROGRAM
(tm and US\$)

	WHEAT		VEGETABLE OIL		YELLOW CORN		RICE		TALLOW		SOYBEAN MEAL		TOTAL US\$
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	
1980	16365	3568.61	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3568.6
1981	108753	25393.7	7865	4198.6	0	0.0	0	0.0	0	0.0	0	0.0	29592.3
1982	90354	16888.1	7612	4198.6	18000	2152.9	0	0.0	0	0.0	0	0.0	23239.6
1983	115510	20822.2	13808	7889.2	82993	13552.1	4808	2071.9	0	0.0	0	0.0	44335.5
1984	145683	22993.8	15936	11387.8	86508	12684.7	6227	1699.8	0	0.0	0	0.0	48766.2
1985	150882	21941.6	15794	11941.1	0	0.0	0	0.0	33288	14597.5	0	0.0	48480.1
1986	168154	19489.0	25688	11449.8	0	0.0	0	0.0	42030	12312.8	0	0.0	43251.6
1987	99219	12031.2	17939	7797.1	23436	1911.8	0	0.0	29682	10511.8	20187	4961.4	37213.3

Source: Ministerio de Planificacion y Coordinacion del Desarrollo Economico y Social,
Secretaria Tecnica del Financiamiento Externo

Table 3.5. TOTAL WHEAT IMPORTS BY VARIETY, 1970-1987
(mt)

	Dark Northern Spring	Western White	Hard Winter	Soft Red Winter	Amber Durum	Soft White	Argentine	French	TOTAL
1970	32,796	18,425					3,385		54,606
1971	43,416	26,717	5,213						75,346
1972	31,370	18,515	3,183						53,068
1973	39,134	23,912		5,813					68,859
1974	32,779		988		491	22,877			57,135
1975	43,955	2,237	3,661	20,037	462	8,896			79,248
1976	49,993	4,703	4,851	31,669	2,025				93,241
1977	59,973	8,114	3,040	30,524	3,179				104,830
1978	63,027		3,200	44,606		2,998			113,831
1979	65,989		4,747	29,691	2,146	11,500			114,073
1980	56,172	3,362	5,028	29,088	500				94,150
1981	63,593		989	37,886	1,039				103,507
1982	68,377		2,501	39,472	1,051				111,401
1983	66,089		2,535	45,316	2,050				115,990
1984	85,541	23,781	2,076	33,674	3,038				148,110
1985	94,772	20,583	1,993	32,033	1,999				151,380
1986	89,157	23,029	918	52,950	2,614				168,668
1987	65,124	8,058		38,588	3,927		2,480	4,048	122,225
TOTAL	1,051,257	181,436	44,923	471,347	24,521	46,271	5,865	4,048	1,829,668

Source: ALCASA

Table 3.6. IMPORTS OF VEGETABLES, 1975-1987
(mt)

PRODUCT	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 1/
Chard	0.4	0.7	0.0	*	16.3	5.0	5.8	7.8	16.0	*	2.1	0.9	0.2
Garlic	368.9	323.1	333.7	368.0	545.0	791.1	665.6	678.1	747.4	494.3	346.5	263.9	199.5
Celery	80.7	91.4	101.5	133.3	185.4	240.2	206.8	339.2	326.2	373.9	496.3	222.5	200.5
Green peas	n.a.	n.a.	n.a.	0.7	1.2	5.8	11.5	9.3	12.8	238.9	277.1	203.0	3.0
Eggplant	n.a.	n.a.	n.a.	0.0	4.6	0.0	0.0	0.1	0.1	0.0	0.0	*	0.0
Broccoli	n.a.	n.a.	n.a.	3.5	4.9	2.1	2.3	3.0	2.8	0.4	587.9	1115.6	798.8
Sweet potatoes	3.3	34.1	17.8	1.7	9.7	40.5	59.7	140.5	206.1	51.4	16.8	47.0	30.9
Onions	2087.7	2348.9	4068.2	4955.7	5958.9	8482.6	9563.8	12622.4	10112.0	8001.0	7964.2	4033.8	4423.8
Cauliflower	1041.6	2351.7	1485.1	1401.5	1536.5	2387.8	2123.0	3714.6	2630.7	2516.5	2899.2	2501.1	2077.3
Red cabbage	n.a.	n.a.	n.a.	0.5	0.0	0.0	0.0	1.5	8.4	0.0	0.0	0.0	0.0
Chilacayote	8.8	17.2	15.4	21.0	29.5	87.0	55.0	45.2	28.4	38.4	22.0	32.5	18.8
Green pepper	100.9	218.9	141.8	135.6	174.4	299.2	297.1	325.8	258.4	72.8	347.2	319.0	206.3
Jalapeno chile	n.a.	n.a.	n.a.	6.2	81.8	63.4	70.3	55.9	37.1	9.0	10.3	2.6	1.9
Hot pepper	21.4	3.1	54.4	6.8	11.7	60.3	52.3	86.5	30.2	4.5	1.1	0.8	0.5
Dry pepper	n.a.	n.a.	n.a.	0.0	2.7	50.0	0.0	17.3	2.6	1.0	2.9	0.0	0.0
String beans	480.8	809.9	1074.6	563.0	571.2	864.0	926.0	1281.4	1215.7	497.1	306.2	326.1	450.3
Spinach	n.a.	n.a.	n.a.	0.0	0.0	0.0	0.0	2.2	4.6	0.0	0.1	0.0	0.0
Asparagus	n.a.	n.a.	n.a.	0.0	3.5	1.0	0.4	0.0	0.3	0.0	0.2	2.3	3.5
Chickpeas	11.2	22.7	16.3	28.0	25.7	21.8	16.4	25.6	42.5	8.3	4.2	3.6	1.4
Guicoy	0.9	2.1	0.5	2.8	14.0	31.4	20.2	42.5	20.6	1.2	0.7	1.4	0.3
Chayote	1324.0	900.8	1180.8	1301.5	1594.0	1563.3	1587.4	1291.7	1232.0	574.3	371.1	283.1	319.6
Lettuce	781.4	1288.5	1752.2	2165.6	2069.7	2014.3	2333.4	2452.3	2410.9	1955.3	3229.5	3182.8	2796.0
Melon	8.0	16.8	27.4	32.9	9.3	135.1	29.8	117.7	112.6	51.0	34.0	127.5	796.3
Pacaya	76.9	144.4	140.8	150.9	151.9	430.5	263.9	252.1	298.0	163.7	95.8	193.9	125.7
Potatoes	12162.3	11975.3	12864.7	14333.9	17684.7	13506.4	14357.2	20457.5	13619.3	12893.4	16392.4	16598.6	13306.6
Cucumber	145.1	166.5	248.7	326.2	199.5	316.3	274.7	277.4	66.8	12.3	80.1	68.2	45.8
Parsley	n.a.	n.a.	n.a.	0.3	3.5	19.2	12.2	11.6	1.3	0.0	2.4	0.2	4.9
Leek	n.a.	n.a.	n.a.	2.2	4.1	17.6	5.3	18.1	17.8	5.5	1.5	0.1	3.9
Radishes	8.8	23.2	122.7	84.1	332.5	366.5	351.5	517.3	306.7	77.0	141.0	61.4	78.7
Beets	801.2	702.2	794.3	759.4	1148.4	1095.7	1430.1	1799.0	1408.8	1178.6	1349.0	1014.9	794.1
Cabbage	8889.1	8814.6	12665.2	14319.2	18099.6	24111.2	26693.2	23667.6	13678.0	14521.2	17758.0	16824.8	17198.1
Watermelon	59.3	38.9	39.5	44.5	41.9	3390.0	180.7	73.9	217.8	449.2	717.4	461.1	172.3
Tomatoes	2811.7	4340.3	4283.2	5276.1	5975.6	8244.3	7838.5	12314.9	10517.8	9730.2	16337.0	18805.7	12445.6
Cassava	61.4	130.8	50.2	38.9	47.6	19.0	91.2	216.8	75.7	1.1	0.0	22.3	0.5
Carrots	2917.3	3664.1	3977.3	4352.8	7181.5	5824.2	6376.5	8416.9	6416.5	5410.0	6320.2	6026.6	5971.4
Other vegetables	4.5	13.1	2.8	0.0	0.9	0.9	0.1	0.0	*	5.2	18.4	0.1	0.9
T O T A L	34257.6	38443.3	45459.1	50816.7	63721.5	74487.7	75902.1	91283.9	66083.0	59336.7	76132.9	72797.6	62477.4

1/ Preliminary figures

*Less than 100 kgs.

Note: The 1975-1977 figures for "Other vegetables" include more items than those of the remaining years.

Source: ANUARIOS ESTADISTICOS, Direccion General de Economia Agropecuaria, Ministerio de Agricultura y Ganaderia, several issues, San Salvador.

Table 3.7. VALUE OF VEGETABLE IMPORTS, 1975-1987
(thousand current colones)

PRODUCT	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 1/
Chard	*	*	*	*	12.0	5.7	3.6	4.6	8.4	*	0.4	0.7	0.5
Garlic	73.0	86.7	121.4	147.5	501.0	1064.2	1435.4	1754.3	1275.4	652.8	409.5	245.7	257.3
Celery	10.7	11.9	17.0	37.2	137.8	222.0	231.2	290.3	292.9	172.7	234.8	101.9	107.8
Green peas	n.a	n.a	n.a	0.5	2.6	6.1	12.0	7.3	7.9	4.3	240.8	11.6	1.4
Eggplant	n.a	n.a	n.a	0.0	0.2	0.0	*	0.1	0.1	0.0	0.0	*	0.0
Broccoli	n.a	n.a	n.a	6.7	3.5	2.9	2.2	2.4	2.1	0.4	513.3	982.8	1438.5
Sweet potatoes	*	4.6	2.3	0.2	4.3	26.0	33.6	128.9	99.1	15.6	7.8	19.6	17.1
Onions	265.5	453.7	1152.5	1607.1	4049.6	8013.2	7568.6	12979.2	6826.5	4200.6	2432.7	3342.1	3878.3
Cauliflower	95.4	168.8	189.2	245.2	529.8	1892.1	1264.1	1902.2	895.1	673.6	720.2	689.4	744.9
Red cabbage	n.a	n.a	n.a	*	0.0	0.0	0.0	1.4	5.0	0.0	0.0	0.0	0.0
Chilacayote	*	1.5	5.6	2.5	5.2	43.0	39.1	14.4	12.6	2.3	8.4	6.8	9.1
Green pepper	22.1	48.5	33.6	52.1	118.7	196.9	308.4	321.6	182.4	39.7	74.1	139.8	106.1
Jalapeno chile	n.a	n.a	n.a	7.5	159.5	154.0	155.1	74.3	82.6	25.9	6.4	1.7	1.2
Hot pepper	33.5	4.1	70.5	8.9	11.6	585.7	55.0	105.0	47.7	6.9	0.6	0.8	0.2
Dry pepper	n.a	n.a	n.a	0.0	9.5	60.9	0.0	28.6	23.7	3.2	13.3	0.0	0.0
String beans	117.2	81.0	145.4	146.9	193.7	742.5	688.9	638.4	335.0	118.5	127.3	132.0	171.3
Spinach	n.a	n.a	n.a	0.0	0.0	0.0	0.0	1.3	2.2	0.0	0.1	0.0	0.0
Asparagus	n.a	n.a	n.a	0.0	11.3	1.7	1.5	0.1	0.4	0.0	0.6	3.1	7.8
Chickpeas	4.8	7.3	13.9	17.6	72.4	65.2	48.2	64.0	83.0	9.8	3.1	3.1	1.3
Guicoy	*	*	*	0.6	5.7	25.1	15.7	28.8	12.1	0.5	0.5	1.3	0.2
Chayote	109.5	96.7	168.9	184.2	379.7	947.0	984.5	685.5	594.1	160.0	127.6	135.0	153.6
Lettuce	87.4	136.3	301.5	408.3	737.0	1499.3	1919.9	1785.8	1455.0	713.6	1139.3	820.5	956.6
Melon	1.6	3.9	8.0	9.5	2.7	103.6	34.8	31.9	23.3	18.1	5.8	13.5	159.1
Pacaya	12.9	22.8	38.8	43.2	83.4	468.2	362.1	287.4	254.3	79.1	61.9	104.7	79.3
Potatoes	1419.9	2058.9	3408.7	3056.9	7160.8	11471.6	11918.1	10733.8	5696.4	4859.0	5802.5	5712.5	5273.0
Cucumber	10.7	27.9	31.1	44.2	84.8	218.8	162.2	113.5	26.2	5.6	19.2	24.7	26.2
Parsley	n.a	n.a	n.a	0.1	1.9	28.9	11.5	12.3	0.9	0.0	1.6	0.2	3.0
Leek	n.a	n.a	n.a	0.7	2.0	18.1	6.8	19.1	15.0	2.1	0.5	0.2	3.5
Radishes	*	2.3	21.4	11.4	93.8	458.0	245.0	356.6	201.7	21.8	40.2	23.6	26.6
Beets	59.7	78.4	118.0	117.6	321.5	573.8	900.7	1369.2	653.1	335.7	430.7	296.9	240.4
Cabbages	1358.6	824.1	1588.8	1708.2	4360.8	11211.9	12365.5	6468.1	3528.1	2941.5	3106.0	3500.3	5027.0
Watermelon	3.4	11.7	6.2	8.7	7.6	1495.2	69.8	16.5	31.0	92.6	59.7	42.1	27.5
Tomatoes	376.9	468.4	1041.1	1164.9	2428.7	5300.6	4027.8	9742.4	5356.4	4045.0	3998.7	9039.8	9182.7
Cassava	4.3	11.2	4.0	3.5	8.4	8.3	40.4	91.6	46.0	0.2	0.0	7.3	0.1
Carrots	804.2	411.2	545.5	688.9	1458.1	3751.2	4409.1	4092.4	2948.2	1795.6	2025.3	1490.1	1605.8
Other vegetables	5.7	3.6	1.3	0.0	1.3	3.0	0.5	0.0	*	0.7	2.0	0.1	0.8
T O T A L	4877.0	5025.5	9034.7	9730.5	22960.9	50664.5	49321.4	54153.3	31023.9	20997.5	21614.7	26892.8	29508.3

1/Preliminary figures

*Less than 100 colones

Note: The 1975-1977 figures for "Other vegetables" include more items than those of the remaining years.

Source: ANUARIOS ESTADISTICOS, Direccion General de Economia Agropecuaria, Ministerio de Agricultura y Ganaderia, several issues, San Salvador.

Table 3.8. IMPORTS OF FRUIT, 1975-1987
(mt)

PRODUCT	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 1/
Avocado	829.1	1101.5	1428.2	1785.5	1918.9	3733.6	2729.5	4768.4	2200.6	3065.3	3547.2	3418.6	2771.3
Annona				5.6	0.2	12.1	1.0	0.6	1.5	1.3	0.3	0.1	0.0
Banana	11042.6	14515.0	21461.0	22112.2	30233.4	49577.7	36898.2	29164.3	25595.4	29878.1	27992.4	23796.3	27011.4
Plums	108.6	181.7	156.4	309.9	225.3	253.5	501.5	149.8	184.5	267.4	489.3	583.5	477.4
Coconut	0.0	2.1	52.4	344.6	40.3	518.4	228.6	144.7	133.4	1044.9	3950.2	5302.2	8811.9
Peach (durazno)	1082.4	945.7	1524.8	642.2	674.5	238.4	2389.2	384.1	398.3	250.9	530.9	1005.9	304.9
Strawberries	45.6	67.1	72.4	135.4	118.9	153.9	170.1	180.9	127.9	177.1	117.7	138.6	158.7
Passionfruit	292.9	575.7	1094.9	1023.3	1645.6	1630.1	2329.3	1557.7	888.3	1497.2	1807.0	1605.1	930.5
Figs	4.3	12.1	0.0	3.5	7.8	13.6	23.3	15.4	10.8	2.8	3.9	0.1	2.0
Hog plum	278.6	116.1	289.1	223.3	463.3	436.3	605.2	368.0	229.9	256.2	210.9	233.6	218.0
Lime	0.0	0.7	0.7	0.0	3.5	29.0	12.4	29.4	2.3	1.5	8.7	0.0	0.0
Lesson	68.4	150.1	138.6	137.0	214.3	590.0	242.3	500.5	312.8	544.4	462.2	493.8	420.6
Majoncho	3.4	49.9	155.5	279.6	108.4	855.2	905.5	526.3	196.9	189.4	168.6	3.2	6.3
Mandarin oranges	0.8	34.0	8.4	51.9	53.2	107.5	184.7	252.4	55.8	63.2	106.2	113.0	73.5
Mangoes	15.1	49.2	14.7	8.3	55.1	25.0	5.1	7.1	6.0	0.0	0.7	52.3	11.5
Apples	1117.3	1314.1	1828.5	2032.9	2552.8	1285.4	1490.5	2148.0	2433.7	2400.3	5261.3	3774.7	2650.6
Camomile	114.5	131.4	176.6	136.4	130.4	0.0	0.0	216.5	197.1	119.9	117.5	96.0	62.0
Peach (melocoton)	45.8	106.1	80.2	143.0	182.5	282.3	308.8	270.5	86.1	135.3	231.0	33.3	39.6
Blackberries	3.6	32.7	660.4	23.1	43.2	107.7	121.6	130.2	70.9	90.7	81.4	115.6	58.3
Oranges	1306.5	3229.1	3257.9	5506.7	11141.0	15925.3	13177.0	10089.4	7010.0	6286.7	6519.7	7708.5	11406.2
Medlar	38.4	44.3	39.6	55.1	97.9	159.7	55.7	90.3	24.1	10.8	9.8	16.6	14.4
Papaya	63.7	99.8	38.1	38.0	30.0	9.6	64.1	166.2	173.0	109.1	13.4	2.8	0.0
Plantain	13739.4	16768.6	22698.5	24806.2	26003.0	26390.7	28733.8	30792.4	22150.2	21143.6	21217.6	26312.1	27531.0
Pear	83.4	43.2	51.6	32.6	88.3	59.9	48.0	114.8	72.5	90.0	189.6	176.5	139.2
Perote	405.8	998.6	577.2	1182.9	1400.6	966.0	2023.2	670.7	1080.0	618.0	949.8	747.1	335.2
Pineapple	143.8	51.7	540.3	834.5	905.1	2017.6	2373.8	2462.6	2118.0	2758.9	3313.4	3660.2	4495.3
Tamarind	196.2	45.4	92.8	63.6	128.0	250.6	307.2	127.3	202.6	61.3	84.4	172.4	60.4
Grapefruit	5.8	0.0	0.0	4.6	0.2	7.5	9.3	5.5	0.1	*	0.0	0.0	0.0
Grapes	132.6	203.2	528.5	780.1	540.3	206.9	107.2	458.8	121.1	321.0	286.7	146.2	246.4
Sapodilla	59.6	49.0	81.9	38.6	78.2	230.2	225.7	114.8	87.5	41.7	105.9	80.2	140.8
Other fruits	3.1	2.1	5.1	0.3	0.0	0.0	0.0	0.0	0.0	0.9	19.1	0.2	2.1
T O T A L	31231.3	40920.2	57054.3	62740.9	79084.0	106073.5	96271.8	85907.8	66171.2	71427.9	77796.8	79788.7	88379.5

1/ Preliminary figures

*Less than 100 kgs.

Note: The 1975-1977 figures for "Other Fruits", include more products than those in the remaining years.

Source: ANUARIO ESTADISTICO, Direccion General de Economia Agropecuaria, Ministerio de Agricultura y Ganaderia, several issues, San Salvador.

Table 3.9. VALUE OF FRUIT IMPORTS, 1975-1987
(thousand current colones)

PRODUCT	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987 1/
Avocado	80.0	156.6	312.9	353.8	893.0	3191.0	3055.0	2729.4	998.1	1295.1	1160.0	956.7	1117.7
Annona				0.6	0.1	3.9	1.1	0.6	2.3	0.2	*	*	0.0
Banana	442.2	722.9	1411.4	1954.2	4366.3	8792.1	7020.1	7178.5	4844.6	2490.4	1922.1	1871.2	3286.8
Plum	21.5	31.4	63.9	75.8	105.0	459.2	731.5	186.1	152.9	151.5	197.5	241.3	211.9
Coconut	*	*	3.1	17.8	1.9	153.8	41.7	7.6	5.4	99.7	242.5	449.5	690.2
Peach (durazno)	502.7	153.4	576.5	205.9	311.6	497.8	1666.6	293.9	250.3	126.6	207.9	409.2	142.8
Strawberries	75.3	61.0	72.7	126.8	194.2	357.0	354.4	289.5	183.2	193.8	108.0	155.3	124.1
Passionfruit	58.0	111.6	403.5	310.2	1112.0	547.4	2897.8	1219.6	589.7	638.2	582.4	736.4	463.6
Figs	*	2.1	*	0.9	5.2	34.4	25.4	8.6	15.7	2.1	2.5	0.1	1.3
Hog plum	21.6	16.5	60.5	44.3	303.6	601.4	490.4	174.1	97.8	159.7	54.4	68.8	66.4
Lime	0.0	*	*	0.0	2.7	59.1	20.9	33.4	0.7	0.7	1.0	0.0	0.0
Lemon	6.4	20.9	35.8	35.7	95.9	593.9	245.8	349.6	114.5	99.0	89.6	150.2	156.3
Majoncho	*	3.0	17.1	29.6	24.2	282.3	373.9	274.7	82.5	51.3	41.4	0.7	0.6
Mandarin oranges	*	2.5	3.6	13.0	38.8	145.3	193.7	235.5	24.4	26.3	46.7	44.1	52.3
Mangoes	1.4	4.8	3.6	1.2	55.0	37.7	5.3	5.3	1.3	0.0	0.1	12.2	6.7
Apples	382.8	543.7	880.2	999.9	2237.4	2130.7	1487.5	1320.7	1684.8	1700.3	2274.2	1237.6	922.0
Camonile	10.0	23.6	32.3	26.0	96.5	0.0	0.0	85.2	89.2	53.2	25.5	43.3	23.4
Peach (melocoton)	11.7	28.6	62.5	46.2	221.5	811.8	276.8	228.2	114.6	93.2	174.4	21.5	18.2
Blackberries	*	2.4	23.6	7.2	16.4	115.8	156.3	88.1	52.4	29.6	36.5	98.6	29.4
Oranges	90.4	347.4	473.3	685.5	3689.4	4679.5	5697.2	3102.6	1303.1	802.4	799.0	1416.6	2360.9
Medlar	3.9	5.9	8.7	11.9	32.3	175.0	93.8	83.5	13.7	8.4	5.3	8.3	4.5
Papaya	9.5	20.5	10.0	6.2	25.5	14.0	85.3	147.7	72.7	37.2	4.0	1.7	0.0
Plantain	818.3	1483.3	6629.3	5470.5	7678.2	10287.8	13939.2	14221.3	7647.7	3642.5	3250.5	4748.5	5344.3
Pear	22.8	11.6	24.2	13.7	70.1	110.1	50.8	48.5	62.6	52.9	64.1	90.5	60.6
Perote	25.7	109.3	133.9	235.0	570.7	651.9	1017.1	117.5	464.5	196.9	111.0	308.9	105.6
Pineapple	16.9	5.2	77.3	98.1	322.2	952.7	1355.3	1176.6	678.1	511.7	573.9	911.5	1223.0
Tamarind	47.1	9.1	22.6	31.7	104.1	279.3	423.8	114.3	161.5	37.1	63.3	94.5	46.9
Grapefruit	*	0.0	0.0	0.4	0.1	6.0	17.6	3.8	0.1	*	0.0	0.0	0.0
Grapes	185.3	528.9	839.6	747.1	1035.7	527.3	246.0	750.6	402.0	830.2	1329.6	640.4	1006.6
Sapodilla	9.1	9.8	18.2	9.9	31.4	225.8	189.9	99.4	43.3	23.2	47.7	37.1	60.9
Other fruits	2.0	1.7	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.4	30.5	*	1.8
TOTAL	2844.6	4417.7	12200.7	11559.0	23641.2	36724.2	42160.2	34574.5	20153.7	13358.8	13435.9	14759.7	17528.6

1/ Preliminary figures

*Less than 100 colones

Note: The 1975-1977 figures for "Other Fruits", include more products than those in the remaining years.

Source: ANUARIO ESTADISTICO, Direccion General de Economia Agropecuaria, Ministerio de Agricultura y Ganaderia, several issues, San Salvador.

Table 3.10. EXPORTS OF VEGETABLES, 1982-1987
(mt and thousand colones)

PRODUCTS	1982		1983		1984		1985		1986		1987 1/	
	Volume	Value	Volume	Value								
Broccoli	0.0	0.0	0.0	0.0	0.0	0.0	132.0	223.7	682.3	2441.3	598.7	1835.1
Green pepper	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	2.0
Hot pepper	0.4	0.7	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.5
Chipilin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*	0.1
Chayote	0.0	0.0	0.0	0.0	0.0	0.0	*	w.c.v.	0.0	0.0	0.0	0.0
Chufle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.8
Melon	1912.7	219.2	3488.8	2121.1	2987.4	1453.2	1831.8	1160.8	4287.6	5361.6	7299.0	7772.4
String beans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Okra	3082.9	3911.8	2035.3	2841.0	1766.7	2892.1	3139.3	4899.1	2653.1	7359.8	2813.6	8420.7
Cucumber	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	209.1	311.0
Cabbage	0.0	0.0	0.0	0.0	0.0	0.0	15.2	1.5	0.0	0.0	0.0	0.0
Watermelon	2531.9	498.6	864.3	153.3	702.4	89.3	110.7	24.3	1664.9	634.3	1196.6	396.9
Other vegetables	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5

1/ Preliminary figures

*Less than 100 kgs.

W.C.V. = Without commercial value

Source: ANUARIO ESTADISTICO, Direccion General de Economia Agropecuaria, Ministerio de Agricultura y Ganaderia, several issues, San Salvador

Table 3.11. EXPORTS OF FRUIT, 1982-1987
(mt and thousand colones)

PRODUCTS	1982		1983		1984		1985		1986		1987 1/	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value	Volume	Value
Annona	0.0	0.0	0.0	0.0	0.2	9.2	0.0	0.0	0.0	0.0	0.0	0.0
Arrayan	0.0	0.0	0.0	0.0	0.5	0.7	0.0	0.0	0.0	0.0	2.2	6.4
Coconut	2.0	0.2	2.3	0.2	4.6	0.5	7.3	0.9	0.0	0.0	18.0	1.5
Cherries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4
Hog plums	0.0	0.0	0.0	0.0	3.0	4.1	0.0	0.0	0.0	0.0	1.2	3.3
Lemon	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.3	0.0	0.0	1.3	2.0
Mangoes	23.1	3.0	45.3	9.4	83.1	8.2	10.1	1.7	45.3	4.7	76.1	10.3
Oranges	0.0	0.0	0.0	0.0	0.0	0.0	*	W.C.V.	0.0	0.0	0.0	0.0
Nance	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Pineapple	0.0	0.0	0.0	0.0	0.0	0.0	*	W.C.V.	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	0.0	10.5	11.5
Sapodilla	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.2	0.0	0.0
Other fruits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6
TOTAL	25.1	3.2	47.6	9.6	91.7	13.8	18.6	3.1	45.4	4.9	111.4	37.0

1/ Preliminary figures

*Less than 100 kgs.

W.C.V. = Without commercial value

Source: ANUARIO ESTADISTICO, Direccion General de Economia Agropecuaria, Ministerio de Agricultura y Ganaderia, and Customs reports, several issues, San Salvador.

Table 3.12. ANALYSIS OF THE AGGREGATE AVAILABILITY OF FOOD SUPPLIES, 1970-1986
(in million colones at constant 1984-86 prices)

-----AGRICULTURAL PRODUCTION-----					RATIO OF IMPORTS TO DOM. PRODUCTION					TOTAL AGRICULTURAL PRODUCT SUPPLIES				TOTAL SUPPLIES PER CAPITA				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	POPULATION	(14)	(15)	(16)	(17)	
food	total	w/o coffee	w/o coffee, cotton	AGRIC. IMPORTS	(5)/(1)	(5)/(2)	(5)/(3)	(5)/(4)	imports + food production	imports + total production	imports + prod'n w/o coffee	imports + prod'n w/o coffee, cotton		(10)/pop	(11)/pop	(12)/pop	(13)/po	
1970	1097.037	3136.115	1496.824	1186.965	234.042	0.213	0.075	0.156	0.197	1331.079	3370.157	1730.866	1421.007	3398	0.392	0.992	0.509	0.418
1971	1146.048	3291.094	1555.894	1241.710	190.017	0.166	0.058	0.122	0.153	1336.065	3481.111	1745.911	1431.727	3497	0.382	0.995	0.499	0.409
1972	1105.769	3353.036	1583.427	1198.832	191.612	0.173	0.057	0.121	0.160	1297.381	3544.648	1775.039	1390.444	3599	0.360	0.965	0.493	0.386
1973	1224.939	3219.906	1723.939	1327.623	256.105	0.209	0.080	0.149	0.193	1481.044	3476.011	1980.044	1583.728	3704	0.400	0.938	0.535	0.428
1974	1304.151	3731.885	1825.591	1408.482	227.648	0.175	0.061	0.125	0.162	1531.799	3959.533	2053.239	1636.130	3813	0.402	1.038	0.538	0.429
1975	1493.222	3997.344	2033.128	1618.043	279.350	0.187	0.070	0.137	0.173	1772.572	4276.694	2312.478	1897.393	3924	0.452	1.090	0.569	0.484
1976	1343.206	3503.722	1820.455	1460.621	346.341	0.258	0.099	0.190	0.237	1689.547	3850.063	2166.796	1806.962	4035	0.419	0.954	0.537	0.448
1977	1371.207	3617.300	1876.316	1485.578	432.838	0.316	0.120	0.231	0.291	1804.045	4050.138	2309.154	1918.416	4150	0.435	0.976	0.556	0.462
1978	1717.134	4205.966	2295.284	1855.705	480.220	0.280	0.114	0.209	0.259	2197.354	4686.186	2775.504	2335.925	4268	0.515	1.098	0.650	0.547
1979	1678.427	4445.113	2176.604	1815.081	464.234	0.277	0.104	0.213	0.256	2142.661	4909.347	2640.838	2279.315	4389	0.488	1.119	0.602	0.513
1980	1493.605	4258.603	1997.369	1651.140	526.095	0.352	0.124	0.263	0.319	2019.700	4784.698	2523.464	2177.235	4514	0.447	1.060	0.559	0.462
1981	1384.926	3895.999	1778.058	1535.323	553.621	0.400	0.142	0.311	0.361	1938.547	4449.620	2331.679	2088.944	4564	0.425	0.975	0.511	0.453
1982	1293.756	3768.631	1660.503	1437.770	482.739	0.373	0.128	0.291	0.336	1776.495	4211.370	2143.242	1920.509	4614	0.385	0.921	0.465	0.416
1983	1303.535	3519.850	1665.606	1438.750	522.484	0.401	0.148	0.314	0.363	1826.019	4047.334	2188.090	1961.234	4665	0.391	0.867	0.469	0.420
1984	1453.176	3548.369	1766.789	1592.161	468.702	0.323	0.132	0.265	0.294	1921.878	4017.071	2235.491	2060.863	4716	0.408	0.852	0.474	0.437
1985	1459.530	3519.957	1743.061	1605.047	428.445	0.294	0.122	0.246	0.267	1887.975	3940.402	2171.506	2033.492	4768	0.396	0.828	0.455	0.426
1986	1479.379	3342.628	1697.276	1626.042	497.898	0.337	0.149	0.293	0.306	1977.277	3840.526	2195.174	2123.940	4850	0.408	0.792	0.453	0.438

Table 3.13. DATA USED IN THE REGRESSION EQUATIONS

	IMP	PC	DQ	LDQ	OVV
1970	0.471	0.647	0.639	0.605	1.000
1971	0.455	0.673	0.667	0.639	0.963
1972	0.437	0.698	0.644	0.667	0.946
1973	0.565	0.749	0.713	0.644	0.947
1974	0.455	0.771	0.760	0.713	0.998
1975	0.596	0.795	0.869	0.760	1.086
1976	0.627	0.874	0.782	0.869	1.076
1977	0.902	0.978	0.798	0.782	1.105
1978	1.000	1.000	1.000	0.798	1.155
1979	0.909	0.922	0.977	1.000	1.200
1980	1.027	0.848	0.869	0.977	1.282
1981	0.980	0.774	0.806	0.869	1.354
1982	1.062	0.708	0.753	0.806	1.341
1983	1.208	0.712	0.759	0.753	1.437
1984	1.236	0.739	0.846	0.759	1.501
1985	1.158	0.765	0.849	0.846	1.512
1986	1.343	0.763	0.861	0.849	1.429
	RPPI	LRPPI	IMPP	DPC	DUM
1970	0.561	n.a.	0.570	n.a.	0.000
1971	0.543	0.561	0.678	0.040	0.000
1972	0.537	0.543	0.646	0.037	0.000
1973	0.633	0.537	0.746	0.073	0.000
1974	0.663	0.633	1.049	0.029	0.000
1975	0.637	0.663	1.066	0.031	0.000
1976	0.583	0.637	0.951	0.099	0.000
1977	0.611	0.583	0.909	0.119	0.000
1978	0.535	0.611	1.000	0.022	0.000
1979	0.461	0.535	1.185	-0.078	0.000
1980	0.460	0.461	1.316	-0.080	1.000
1981	0.473	0.460	1.294	-0.087	1.000
1982	0.452	0.473	1.338	-0.085	1.000
1983	0.425	0.452	1.148	0.006	1.000
1984	0.388	0.425	1.110	0.038	1.000
1985	0.336	0.388	1.111	0.035	1.000
1986	0.307	0.336	0.922	-0.003	1.000

List of variables (all are indexes save DPC):

- IMP = quantum index of agricultural imports
- PC = real aggregate private consumption expenditure
- DQ = domestic production of food
- LDQ = DQ lagged one year
- OVV = degree of overvaluation of the exchange rate
- RPPI = real farmgate price index (deflated by CPI)
- LRPPI = RPPI lagged one year
- IMPP = agricultural import price index (in \$)
- DPC = percentage annual change in PC
- DUM = dummy variable for the years of conflict

Table 3.14. PREDICTED VALUES AND RESIDUALS FROM EQUATION (1)

Residual Plot				obs	RESIDUAL	ACTUAL	FITTED	
	:	*	:		1971	0.01689	0.45500	0.43811
	:	*	:		1972	0.01360	0.43700	0.42340
	:		* :		1973	0.08706	0.56500	0.47794
	*		:		1974	-0.09657	0.45500	0.55157
	*		:		1975	-0.09650	0.59600	0.69250
	: *		:		1976	-0.07962	0.62700	0.70662
	:	*	:		1977	0.02770	0.90200	0.87430
	:	*	:		1978	0.03442	1.00000	0.96558
	:	*	:		1979	0.01484	0.90900	0.89416
	:		* :		1980	0.06168	1.02700	0.96532
	: *		:		1981	-0.07170	0.98000	1.05170
	:		* :		1982	0.06550	1.06200	0.99650
	:	*	:		1983	0.03941	1.20800	1.16859
	: *		:		1984	-0.05365	1.23600	1.28965
	: *		:		1985	-0.14002	1.15800	1.29802
	:		:	*	1986	0.17698	1.34300	1.16602

Table 3.15. PREDICTED VALUES AND RESIDUALS FROM EQUATION (2)

Residual Plot				obs	RESIDUAL	ACTUAL	FITTED		
¶	:	*	¶	¶	1971	-0.04746	0.45500	0.50246	
¶	:		* ¶	¶	1972	-0.02564	0.43700	0.46264	
¶	:		¶ *	¶	1973	0.07032	0.56500	0.49468	
¶	:	*	¶	¶	1974	-0.04514	0.45500	0.50014	
¶	:		*	¶	1975	0.00411	0.59600	0.59189	
¶	*	:	¶	¶	1976	-0.15427	0.62700	0.78127	
¶	:		¶ *	¶	1977	0.00593	0.90200	0.89607	
¶	:		¶ *	¶	1978	0.04027	1.00000	0.95973	
¶	:		¶ *	¶	1979	0.00591	0.90900	0.90309	
¶	:		¶	¶	1980	0.12328	1.02700	0.90372	
¶	:		*	¶	1981	-0.00531	0.98000	0.98531	
¶	:		¶ *	¶	1982	0.01473	1.06200	1.04727	
¶	:		¶	*	¶	1983	0.16260	1.20800	1.04540
¶	:		¶ *	¶	1984	0.01421	1.23600	1.22179	
¶	*	:	¶	¶	1985	-0.16710	1.15800	1.32510	
¶	:		*	¶	1986	0.00355	1.34300	1.33945	