AGRICULTURE'S ROLE IN THE EXTERNAL BALANCE AND INTERNAL GROWTH OF THE COSTA RICAN ECONOMY

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Rodolfo E. Quiros

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Carl K. Eicher
Major professor

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ABSTRACT

AGRICULTURE'S ROLE IN THE EXTERNAL BALANCE
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COSTA RICAN ECONOMY

By Rodolfo E. Quiros

One of the striking changes in development patterns and policies in underdeveloped nations in postwar years is the attempt to shift away from export agriculture. In fact, when emerging nations have invested in agriculture, the emphasis has been on self-sufficiency, import substitution, and insulation from world markets. This is a sharp break with the past. The economic history of the United States, Japan, Canada, Russia, Argentina, and Brazil, has been marked by development through world trade.

Latin American development patterns reflect this drive for import substitution and the expansion of industry. The ECLA doctrine (also known as the Prebisch-Singer Thesis) has been instrumental in encouraging an increasing number of Latin American countries to concentrate their financial and human resources on import replacing industries at the expense of export agriculture.

In the late 1950's, Costa Rica enacted three laws which sheltered industries producing for the local market. In essence, Costa Rica is moving along the line advocated by ECLA.

Costa Rica is a small agricultural nation of 1.1 million people and has an annual rate of population growth of 3.87 per cent. Bananas and coffee are the main crops and the main exports.

Since agriculture is the major sector in the terms of employment and almost the sole earner of foreign exchange (95%), the purpose of this thesis is to appraise agriculture's role in the external balance and internal growth of the Costa Rican economy during the 1950-1959 period.

Modern economic statistics for the Costa Rican economy were not available until 1956 when national income accounts were first published starting with 1950. Seven methods of computing growth rates which have been recently examined by Professor Boris P. Pesek were discussed. Six of these were used to compute the growth rates of gross national product, net national product, and net income, and the major sectors of the Costa Rican economy over the 1950-1959 period. Costa Rica's gross national product in constant prices grew at a

rate of 8.00 per cent annually during the 1950-1959 period while national income and domestic product grew at 7.53 and 7.06 per cent respectively. The agricultural sector of the gross domestic product grew at 4.55 per cent--the slowest annual rate of growth of any sector. The cost of living index rose from 100.0 in 1952 to 113.4 in 1959 or a rise of 1.42 per cent per year. The food component of the cost of living index rose from 100.0 in 1952 to 114.9 in 1959 or a rise of 1.47 per cent per year. These figures indicate that, unlike other Latin American countries, Costa Rica has not experienced sharp price increases caused by unsatisfied demand for food products.

Rising food imports are sometimes viewed with unwarranted alarm. Costa Rica, for example, has a comparative advantage in producing crops such as coffee and bananas and importing certain food such as cereals and cereal products. In order to satisfy the rising incomes and population growth during the 1950's, Costa Rica expanded coffee exports and increased food imports. All food imports, however, increased by only $7 million over the 1950-1959 period while coffee exports were $23 million higher at the end of the period than in the beginning.

In Costa Rica's dualistic economy, productivity gains have been centered in the coffee sector and not in crops produced for the domestic market. Coffee exports increased 138 per cent while coffee acreage increased 49 per cent in the ten-year period.

Costa Rica has relied on a moderate rise in food imports and effective stabilization policies of the National Production Council to stabilize food prices over the ten-year period.

In general, the 1950-1959 decade was a period of overall high rates of growth--8 per cent per annum--a 3.66 per cent rise in real per capita income per annum, political harmony and a stable general price level including stable food prices.

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By

Rodolfo E. Quiros

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

PRIMARY PRODUCING COUNTRIES: PROBLEMS AND POLICIES

General Characteristics of Small Nations

A nation is an important and relevant unit for economic analysis because it is the basic unit of economic authority and government action.[1] Within the boundaries of a nation, a modern government uses its budgetary system as an instrument of economic policy; within the national boundaries, a government with the aid of a central bank promotes economic development, attempts to provide a high rate of employment and keep the balance of payments under control. Individuals living within national boundaries are affected and influenced by the decisions and actions of economic authorities.

The boundaries of a nation, by enclosing a unit of government and economic policies, represent a point of

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[1] E. A. G. Robinson (ed.), Economic Consequences of the Size of Nations (New York: Saint Martin's Press, Inc., 1960), XIV.

discontinuity. National boundaries not only represent a change in the degree of mobility of the factors of production and goods, but also represent other discontinuities which are inherent to boundaries of nations such as language, education, skills, and community interest and outlook.[1]

These characteristics and discontinuities are common to all nations in varying degrees. There are, however, other characteristics which seem to be related to the size of nations. Professor Kuznets, for instance, has depicted a number of economic traits which are characteristic of small nations.[2] To Kuznets, a small nation is "a sovereign state with a population of ten million or less."[3] Although the correlation between population

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[1] Ibid., I. Svennilson, "The Nation in Economic Analysis," 1-13.

[2] Ibid., Simon Kuznets, "Economic Growth of Small Nations," 13-32.

[3] A number of other economists feel that the 10 million population limit is rather low and suggest that a 15 million population limit is better for economic purposes when considering small nations. (Ibid., discussion of Kuznets' paper, 348-350.)

and area is not perfect, most of the nations that are small in population are also small in size.[1]

Thus, the first characteristic of small nations is a small population. The second characteristic of small nations is that their economy is less diversified than that of larger nations, even when the two nations have achieved the same level of economic development. In other words, the proportional distribution of total output and factors of production are concentrated in a few industrial[2] sectors. This is principally the result of three factors.[3] The first is the limiting effect of the size of nations on the supply of natural, non-reproducible resources. In general, larger countries have a greater variety of natural resources (minerals, climates, land, water, etc.) which are available or could be available at any given level of technology. The second factor affecting the relative lack of diversification of small countries is

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[1] Op. cit., 16.

[2] Industrial in an economic sense.

[3] Ibid., 16-81.

the minimum economic scale of some industries and the limited domestic market of small nations.[1] Some industries (mainly heavy capital producing industries) require a minimum scale of plant which would be very uneconomical for the extent of the market of the economic system of a small nation unless it can rely on a substantial foreign market. The third and last reason is, in a sense, complementary of the two named above. On one hand, although small nations may lack many natural resources, the supply of a few may provide a comparative advantage to concentrate in their exploitation. Larger countries may have a wider variety of natural resources and a larger absolute supply but a less favorable endowment on a per capita basis. On the other hand, although small nations may not afford large-scale industries, they may have a comparative advantage with respect to some production processes. In other words, the existence of these nuclei of comparative advantage may lead to a concentration of economic activity in small nations.

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[1] This limitation of the market in small nations, is further accentuated in small underdeveloped nations by low levels of income.

Professor Kuznets generalizes from empirical data on the concentration of exports and suggests that foreign trade plays a larger role in smaller nations than in larger nations. This generalization forms the second general characteristic of small nations. Patinkin, however, rejects this generalization by referring to a recent study of M. Michaely.[1] Patinkin concludes that

> . . . if one took all the large countries together and all the small countries together, there was not much difference between the concentration of exports in large and in small countries. The classification meant that one was taking underdeveloped and developed countries together in each group, and their characteristics canceled out.[2]

In summary, Patinkin points out that the concentration of exports in large or small nations ". . . was only economically significant if one also distinguishes developed from underdeveloped nations."[3] According to the same author, smaller developed nations have a higher index of dependence on foreign trade than larger

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[1] M. Michaely, study carried out at the Hebrew University.

[2] Op. cit., Don Patinkin, "Discussion: Economic Growth of Small Nations," 352.

[3] Ibid., 353.

developed nations. However, there was no significant difference in the index of concentration of foreign trade in small and large underdeveloped nations.[1] Therefore, qualifying Professor Kuznets' statement, it could be said that foreign trade has important weight both in the economic activity of small developed nations and large and small underdeveloped nations.[2]

To summarize, the general characteristics of small nations are: a) concentration of production in a small number of economic activities, and b) high concentration of production for international trade.

These two characteristics have economic implications for small countries. In the first place, the limited size of their domestic market compels small nations to sell a larger share of their production abroad, therefore making their economies vulnerable to economic fluctuations originating abroad. Secondly, given the limited size of the domestic market small nations may not

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[1] Ibid.

[2] Empirical data show that both exports and imports of underdeveloped nations are exchanged for goods in a small number of other nations. This pattern is in market contrast to the dispersion of international trade of larger developed countries. Ibid., Simon Kuznets, 21.

take full advantage of the economies of scale of mass production. Thirdly, by virtue of the geographical size and economic and political power, small nations cannot exercise as much effect on international markets as compared to larger nations.

This greater dependence on international trade on the part of underdeveloped nations (whether large or small as pointed out earlier), poses two additional problems which have important implications for their economic development efforts and policies: a) the extent of deteriorating terms of trade for underdeveloped countries and b) instability of international markets and export proceeds of underdeveloped countries. These two problems will be explored individually in the remaining parts of this chapter.

Instability of International Markets and Stabilization Policies for Primary Producing Countries

The purpose of this section is to review the nature, extent and causes of the instability of export prices and proceeds of primary producing nations and the common policy prescriptions to reduce price and income instability.

The Nature of the Instability

Instability of export markets for primary commodities is of extreme importance to underdeveloped nations for they are usually the main source of foreign exchange. The relative importance of exports to underdeveloped nations is brought out by the fact that exports of these nations to the industrial world accounted for twenty-five per cent of the total trade of the world; in addition, their exports to the industrial world are two and a half times as large as their exports to each other.[1] This asymmetry in the trade relations between industrial and underdeveloped nations as compared to the intra-trade among the latter is of great importance since a fluctuation that can be a mere ripple to industrial nations, may have the effect of a disastrous fluctuation in underdeveloped nations.

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[1]Ragnar Nurkse, "Trade Fluctuations and Buffer Policies of Low Income Countries," Kyklos, Vol. XI, 1958, Fasc. 2, 142.

The Extent of Instability of Primary Producers

Two United Nations studies, published in 1951 and 1952[1] respectively, explore the relationship between export quantities and export proceeds for a number of selected commodities produced by underdeveloped nations. The data presented here provide ample indication of: first, the wide price fluctuations which afflict export prices of the main commodities produced by underdeveloped countries; second, the great variations in export quantities both in terms of world market and export quantities to particular markets; and third, the tendency of price and quantity fluctuations to interact so as to reinforce each other rather than compensating each other's fluctuations. The result of this process is violent variations in export proceeds which then represent an unreliable source of foreign exchange to pay for a steady inflow of capital goods and other goods required for economic development. The 1951 study explores year to year variations in prices, quantities and proceeds for thirteen selected commodities for the period 1901 to 1950.

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[1] United Nations, World Economic Situation: Economic Development of Underdeveloped Countries, 1951; United Nations, Instability in Export Markets of Underdeveloped Countries, 1952.

The results of this study show that these thirteen commodities underwent an average fluctuation per year of eighteen per cent with respect to prices, twenty-five per cent with respect to volume and thirty-five per cent with respect to export proceeds.[1] The results of the 1952 study which analyses the same three variables for cyclical, long-term and year to year variations, can be more efficiently summarized in tabular form.

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[1] 25 commodities considered.

TABLE 1.1

YEAR TO YEAR, CYCLICAL AND LONG-TERM FLUCTUATIONS IN PRICES, VOLUME AND PROCEEDS OF SELECTED PRIMARY COMMODITIES, 1901-50

PER CENT AVERAGE ANNUAL FLUCTUATION

	Year to Year	Cyclical		Long-term		Within Year
		Up-swing	Down-swing	Phase: Rising	Falling	
Prices[a]	13.7	12.8	-13.0	4.7	-4.3	26.7
Volume[b]	18.7	17.6	-16.8	4.0	-4.1	
Proceeds[b]	22.6	22.0	-22.1	5.8	-6.1	

Source: United Nations, Instability in Export Markets of Underdeveloped Countries, New York, 1952, Tables 1-3, 4-6.

[a] 25 commodities considered.

[b] 18 commodities considered.

Year to year fluctuations in volume were frequently twice as high as fluctuations in price and thus resulted in greater instability of proceeds, even when the fluctuations were in the opposite direction. Price and volume fluctuations tended to be in the same direction in the

case of industrial raw materials while fluctuation in volume and in prices tended to move in opposite directions in the case of food commodities. A further conclusion from the two reports is that no relief from these extreme variations is afforded underdeveloped countries through corresponding variations in the prices of their imports; on the contrary, when proceeds are computed in terms of buying power over imported manufactured goods, yearly variations are, if anything, intensified rather than moderated. It can be noted that the 13 commodities in the 1951 report experienced more violent price fluctuations than the 25 commodities in the 1952 report. It is observed from the preceding table that fluctuations in export proceeds, whether measured year to year, cyclical or long-term, were in each case higher than fluctuations in volume or prices alone. The study also points out that this was true even when fluctuations in proceeds were measured and compared in different periods within the time period considered. Furthermore, the reports show that if specific commodities from specific exporting countries in the U. S. market alone are considered, the average yearly variation in export proceeds

is even greater; namely forty-nine per cent according to the 1951 report and thirty-seven per cent according to the 1952 report (seventeen per cent with respect to prices). The above mentioned observations indicate that changes in prices and in quantities had destabilizing effects on each other. Analysis of the years for falling proceeds in which declines averaged twenty-five per cent, show that two-fifths of the decrease was accounted for by a decline in price; the rest by a decline in volume.

Substantial differences were found in both reports with respect to the relative importance of fluctuations in price and in volume, so far as a particular group of commodities or selected countries were concerned. In general, however, neither price stabilization alone (at the existing level of instability in export volume), nor volume stabilization alone (at the existing level of price instability), was sufficiently great to result in any substantial stability of proceeds. Commodities which were found particularly liable to year to year fluctuations in price were also liable to wide year to year fluctuations in volume and proceeds, and vice versa.

Causes of Instability

There is a general consensus of opinion among economists that demand conditions play a dominant role in the instability of export markets for primary products, and that export fluctuations of primary producers originate in the cyclical swings of investment in fixed capital. Professor Nurkse, for instance, states that the effects of the industrial investment cycle on the demand for primary products is magnified by inventory changes arising from speculative activities or simply by the normal desire to keep stocks adjusted to the volume of trade and production;[1] hence the cyclical variability of demand for primary products. Other factors in the demand side that may have an important bearing on the prices of primary commodities are the major irreversible shifts of demand caused by technological advances such as the electrolytic tinning in the 1940's.

Let us turn to the supply side. Price induced changes in output may be caused, in the first instance, by changes in the supply, demand schedules remaining unchanged. The

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[1] Op. cit., p. 142.

extent to which total supply responds to price changes depends on many factors and varies greatly from commodity to commodity. Most economists seem to agree that the short-run supply elasticity of most primary commodities is low and even zero for some,[1] e.g., most food crops and minerals produced with capital intensive methods. For some other commodities price elasticity of supply is considerably greater than zero, even in the short-run, e.g., palm products and rubber. It is generally agreed that long-run elasticity is greater than the short-run one, but this division of the two elasticities is not as important as the time period required to change fixed-factor inputs. This depends in part on the organization and the physical characteristics of production; for instance, the production of tree crops, obviously will expand more slowly than the production of field crops. Two additional factors also enter in the determination of the long-run supply elasticity; these are, first, the

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[1] However, inelasticity of supply seems to be more pronounced in the event of falling prices than at times of rising prices. Henry Wallich, "Stabilization of Export Proceeds," Economic Development for Latin America, Howard S. Ellis (ed.)(New York: Saint Martin's Press, 1961), 346-347.

psychological responsiveness of producers to price changes, in particular--peasant producers, and second, the physical possibility and the economic attractiveness of producing alternative crops.

From the preceding comments two conclusions can be drawn. One is that the reduction of price fluctuations would reduce or mitigate the fluctuation in output of primary commodities. The second conclusion is that supply conditions differ so much from commodity to commodity that price stabilization schemes must also vary according to the commodity in question.

Some Common Solutions to the Problem

Based on previously stated observations, it could be said that industrial countries have tended to impede progress in primary producing countries through the instability of the trade cycle.[1] There are, however, three solutions to this problem. The first solution is to exercise greater control over the business cycle in industrial nations through appropriate monetary and fiscal policies. Although some progress has been made in this direction,

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[1] Op. cit., Nurkse, 143.

it is unlikely that upswings and setbacks strong enough to cause serious trouble in international markets can be avoided altogether. The second solution is to make structural changes in primary producing economies which will make them less vulnerable to instabilities in international commodity markets; in one word, industrialization. However, industrialization, though possible, is a long-term process and does not effect an immediate solution to a short-run problem. The third solution is to establish international and national agencies which, through the use of stabilizing measures, try to counteract wide fluctuations in export prices and proceeds.

The Rationale of Price Stabilization

As pointed out earlier on page 16, more stable prices will tend to curtail the expansion of output at times when prices have fallen from a level at which expansion appeared profitable. But this does not mean that given more stable prices, output of primary commodities will not expand. Output is not determined by market price alone, but determined by the market price in relation to cost of production (including opportunity cost). Output

may expand, and expand even too much despite stable prices if the costs of production decline through the use of improved production techniques. Conversely, output may decline despite stable prices if production costs (including opportunity costs) increase. But the extra inducement of temporary high or low prices (or the extra deterrent of temporary low prices) would not add to or subtract from output induced by changes in the price-cost relationship. Thus, price stabilization would contribute a more stable volume of output and fewer and smaller deviations of market prices from long-term price trends.[1] Nevertheless, the risk and uncertainty of price instability represents in itself a cost which is partially born by consumers (industrial countries) but mostly borne by producers. The stabilization of export prices would therefore, bring a reduction in costs of production (proportional to the risk premium borne by producers) and at any given price, output will ultimately be expanded due to the more

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[1] Ibid., J. D. Adler, "Government: Trade Fluctuations and Buffer Policies in Low Income Countries," 159.

favorable price-cost relationship. Lower production costs are to the advantage of primary producers because it means an increase in real income, but given demand elasticities of less than one for primary commodities, the export earnings will be smaller. This conclusion seems to defeat the case for international stabilization schemes since more stable prices mean lower costs to producers, lower prices and reduced export earning. The answer to this apparent paradox can be divided in two parts.[1] First, this would be the case if on the one hand, the resources set free as a result of cost saving (due to stable prices) become technologically unemployed or if there is no possibility of replacing the loss of foreign exchange earnings by domestic production or increased production of other commodities. Resources released from the export sector are usually more efficient than other factors in the economy and therefore could be easily transferred. On the other hand, if the cost reduction is gradual, the transfer is likely to be small or even unnecessary if the gradual upward movement of the demand schedules, together with the

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[1] Ibid., 160-61.

increase in quantities demanded (on account of lower prices), bring about an increase in the volume of commodity demanded at the market. Second, most proposals for international schemes have been limited to short-run effects in which the impact on cost is minor, and the main objective has been the protection of producers against permanent losses of foreign exchange. It can be concluded then, that price stabilization is advantageous to primary producers even if it means a decline in export earning in the long run.

Stabilization schemes also have some benefits to industrial countries. More stable prices bring about cost savings which partially accrue to the industrial countries as consumers and also provide a more stable supply of primary commodities. Furthermore, violent changes in the price of raw materials and foodstuffs make it difficult for industrial countries to maintain internal stability. However, industrial countries may still lose in the aggregate sense through price stabilization.

Stabilization Schemes

Given the advantage of long-term price stability, the question of the most suitable stabilization scheme arises. Since the supply conditions (including organization of production) are so different for each primary commodity (p. 16), there is no ideal scheme. However, irrespective of details, whatever scheme may be advocated, it should interfere as little as possible with the dynamic changes in the supply conditions. This will eliminate from consideration the allocation of maximum production or export quotas to exporting countries or individual producers, since fixed quotas would prevent those shifts in output which would result from falling (or rising) production costs. However, since quantity fluctuations and price fluctuations are not independent from one another, most practical forms of price stabilization imply some controls of quantities.[1]

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[1]The United Nations report mentioned previously states that if price fluctuations could be eliminated altogether, only 17 per cent of export proceeds fluctuations will be eliminated. Similarly, elimination of quantity fluctuations will only eliminate 39 per cent of instability of proceeds. (U. N., op. cit., 57). Wallich has commented however, that past fluctuation in export proceeds of a few

Some of the stabilization schemes suggested in the literature are the following:

International Measures

The export markets of primary products could be stabilized by means of, first, long-term agreements on prices and/or quantities, either bilateral or multilateral, and second, buffer stocks schemes.

A fundamental principle of all these schemes should be that they do not attempt to make average prices over a period of years higher or lower than they would otherwise have been. Their objectives should be merely to reduce fluctuations around the long-term trend.

Long-term agreements on prices and quantities may be bilateral or multilateral. Bilateral agreements may be convenient or even desirable when one country takes a high proportion of the world exports of a commodity and where exporting countries do not feel the need for concerted negotiation with the importing country to avoid exploitation. Since contracts will be made with suppliers

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major commodities are analyzed on the basis of quantities absorbed and not quantities traded. Price fluctuations have accounted for well over 50 per cent of total instabilities (Wallich, op. cit., 345).

at different times, it is probable that, at any one time, different prices will be paid to each but as long as one supplier is not consistently favored over another, the agreement need not be considered discriminatory. Multilateral long-term agreements, such as the International Wheat Agreement, could also be feasible for a large number of commodities. The margin between minimum and maximum prices, and the provisions for changes from year to year, can insure a measure of stability for both exporting and importing countries while avoiding undue rigidity. The International Coffee Agreement is another instance of multilateral agreements based on quantity. Under this agreement, member countries agree to withhold from the market a certain percentage of their annual production. Individual producers can still expand production if it is to their advantage to do so, as long as the percentage quota is maintained. The "Buffer Stock" schemes provide for the selling or buying commodities as soon as the world market price falls to a predetermined level or rises to a certain maximum level. Between these official buying and selling points, prices would be allowed to fluctuate. Both the support and the ceiling prices would

be adjusted from time to time in the light of experience, to take account on long-term changes in demand and supply conditions. Difficulties are bound to rise on account of the natural interest of producers to set buying and selling prices at too high a level. However, the main practical objection is that of finance. The costs of storage are manageable but substantial; nevertheless, the more serious problem is that of providing capital finance required given the volume of trade and surpluses at any given time of most commodities. Furthermore, the buffer stock idea can only be started in periods of recession, not in boom periods.

Buffer stock schemes can do a great deal to reduce not only price fluctuations but also fluctuations in foreign exchange receipts due to swings of demand in importing countries. On the other hand, it would not stabilize either producer's incomes or exporting countries foreign exchange against fluctuations in the supply of the commodity. Furthermore, since it is never possible to distinguish between a temporary fluctuation and a

major change of trend, the setting-up of a buffer stock is necessarily a speculation that may fail.[1]

Both of the international stabilization measures mentioned here have the disadvantage that if they are applied only to a few exportable products, they would create privileges for some countries. They would also create, within any one country, privileges for certain producers. Thus they would be liable to attract, especially in times of depression, the available entrepreneurs, labor and capital, to the protected branches. Even if the measures were applied to all exportable commodities, there is a risk of the price stability to discourage expansion of the cultivation of food crops for internal markets.[2]

National Measures

National stabilization schemes are in most cases preferable to international arrangements, not only because of the administrative and political difficulties

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[1] Op. cit., P. T. Bauer, F. W. Parish, "Comment: Trade Fluctuations and Buffer Policies in Low Income Countries," 169.

[2] Ibid., Maurice Bye, "Comment: Trade Fluctuations and Buffer Policies in Low Income Countries," 180.

unavoidable in the latter, but also because of the static character of such arrangements as the allocation of quotas, which are determined based on the bargaining power of the individual country and past performance rather than on dynamic economic considerations. There are, however, instances where some form of international arrangement is preferable, or even essential if stabilization is to be successful; and there are advantages to international arrangements which cannot be obtained through national stabilization schemes.

Buffer funds as well as buffer stocks national or international are alternative methods of stabilization available to primary producing countries. They are however, substitutes for each other. The existence of buffer stocks would make foreign exchange reserves less necessary and vice versa. Buffer stock's main problem is again that of financing; nevertheless, it has to be remembered that buffer funds have to be "financed" through abstinence in boom periods. This could be a real burden in view of the pressing needs for imports of equipment as well as consumer goods. It will be assumed that primary producing countries are willing to carry

the burden in operating a buffer fund of foreign exchange, rather than operating a buffer stock.

The purpose of the following alternatives using buffer funds is not to reduce variations in the world market prices, but to reduce their impact on the domestic economy by stabilizing the disposable income realized by primary producers. This can be done in three ways: 1) The establishment of a central marketing agency which guarantees a certain price to domestic producers and sells the products in the export markets for whatever price they may fetch. The domestic price paid to producers can be determined in such a way that it amounts to a tax in good years and a subsidy in bad years, 2) A scheme of essentially the same kind which would operate expressly in the form of variable export taxes and subsidies, 3) The establishment of an exchange control agency which takes over the foreign exchange proceeds of exporters at lower or higher rates of exchange. If its selling rates of foreign exchange remain constant, the agency can operate to make a profit in periods of high export prices and a loss at other times.

All the three alternative methods have in common that they do not interfere with the prices paid by importers or consumers. In contrast to buffer stocks of commodities, buffer funds obtained through the schemes mentioned can be best started when the world demand is booming.

The argument in favor of stabilization through marketing boards is that they are an effective device for serving the interest of producers and that it is much easier in periods of low prices to subsidize producers from the general funds accumulated by the marketing board than to subsidize them from the general tax revenues or reserves of the government. However, this system may be a less satisfactory device than the other two proposed (variable export taxes alone or variable export taxes and fixed prices paid to producers). This is particularly so in the case of countries where there is a great deal of economic interaction between the export sector and the rest of the economy, and where the level of imports (for the entire economy) and the rate of capital formation depend very much on the performance of the producers of export commodities. In this case, the general welfare of the country (guided by the

government) and the welfare of producers (guided by the marketing board) is practically undistinguishable.

Differential exchange rates and export tax policies are two different methods of achieving the same end. In other words, differential exchange rate arrangements can be used instead of export taxes.

The system of taxing primary producers when their products command a high price abroad and to subsidize them when product prices are low is subject to objections. The effects of this scheme will depend on the elasticity and production conditions of the supply of the commodity considered. If the supply of the commodity is quite elastic, then by stabilizing prices received by producers, this policy interferes with the incentive to produce more when prices are high, and serves to keep production up when export prices are low. It is for this reason that is is suggested that prices are allowed to follow world market prices and that general taxation (through excise revenues, income taxes, and import and export duties) be increased in export booms and reduced in export slumps. In this way a budget surplus could be achieved in export boom periods

so as to accumulate the essential buffer fund available for expenditure in depression years, without interfering with incentives to shift resources into or away from export production in response to price changes. However, the possibility of conducting this general counter-cyclical fiscal policy in underdeveloped countries may be extremely limited. It may very well be that the simplest counter-cyclical policy for underdeveloped countries is the direct manipulation of export prices for primary commodities. Although national stabilization schemes will mitigate the effects of price-induced changes in the income of producers, the undesirable effects of the different policies (which among other things, depend on supply conditions of the particular commodities) have to be realized.

The Economic Role of Price Fluctuations

So much has been said about the detrimental effects of price instabilities on export proceeds that one inadvertently may acquire the impression that price fluctuations are not bad *per se*. They constitute the essential

mechanism for the allocation of resources.[1] Price movements are the warning signal to increase or reduce output of a commodity. Doubts concerning this function of price fluctuations arise from the limited reliability of price signals in the short-run.

In the first place, there is the possibility of unreliable price signals due to short-run speculative as well as cyclical nature of many price movements.[2] Secondly, short-run price movements are often misleading; producers may be hesitant to react too rapidly or too intensively to price increases which may later prove to be of a more permanent nature. Conversely, failure of producers to contract production in the event of price declines thought to be of a short-run nature (when they are cyclical), together with a lower inelasticity of supply in periods of falling prices, may lead to surpluses (which in turn have further depressing effects on prices). Finally there is the possibility of the cobweb situation: high prices

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[1] Op. cit., Wallich, 346.

[2] Ibid., 246-247.

cause overproduction which depresses prices and output; lower prices and reduced output will lead to high prices and renewed overproduction, and so on.[1]

To summarize: High price instability is a fact. While recognizing the essential dynamic function of price changes in the allocation of resources, there seems to be a well-supported case to try to counteract violent price fluctuations of primary commodities. Policies designed to counteract price fluctuations are beneficial to both producers and consumers as long as the stabilized prices do not interfere with needed long-run price and output shifts.

Relations Between Industrial and Primary Producing Countries: The Prebisch-Singer Thesis for Latin America

In 1950, Professor Raul Prebisch hypothesized that economic development in Latin American was being inhibited on account of deteriorating terms of trade.[2] He

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[1] Ibid.

[2] United Nations, Economic Commission for Latin America, The Economic Development of Latin American and Its Principal Problems (New York, 1950).

used United Nations' figures of Britain's terms of trade between 1876 and 1946 to support his hypothesis.

The Prebisch thesis states that the economic advantage of the division of labor is theoretically sound but is based on unsound assumptions. According to this assumption, the benefits of technical progress tend to be distributed alike to the whole community, either by lowering of prices or by corresponding rise in income. Countries producing raw materials (peripheral countries) obtain their shares of these benefits through international exchange, and therefore have no need to industrialize. If they were to do so, their lesser efficiency would result in losing the advantages of such exchange. In practice, however, Prebisch believes that the advantages of technical progress have been concentrated in the industrial countries of the world (the center) and have not been extended to the countries making up the periphery of the world economic system (primary producers).[1]

If prices had behaved according to the classical theory, prices of industrial products would have fallen

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[1] Ibid., 8.

relative to primary prices, in response to advances in technology and productivity. If this had happened, " . . . the countries of the periphery would have benefited from the fall in price of finished products to the same extent as the countries of the center and the benefits of technical progress would have been distributed alike throughout the world."[1] However, the reverse has been true. In the 1930's, an average of 58.6 per cent more primary products were needed to buy the same amount of finished industrial products as in the 1960's.[2] This led Prebisch to believe that the terms of trade of peripheral countries are deteriorating. Prebisch believes that the improvement in terms of trade during 1946-47 in favor of primary producers was the result of war and post war boom in supplies but the general unfavorable trend will eventually be resumed. The trend in deteriorating terms of trade seems to have been resumed during the 1950's.

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[1] Ibid., 8.

[2] Ibid., 8-9.

Prebisch explains the deteriorating terms of trade with the following arguments. On the demand side, the explanation is based on the disparity of income elasticity of demand for imports at the center and at the periphery.[1] On one hand, the low income elasticity of demand for imports at the center,[2] combined with higher rates of output at the periphery which are due to increased productivity, exerted a depressing effect on prices of exports produced at the periphery. On the

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[1]Raul Prebisch, "Commercial Policies in Underdeveloped Countries," American Economic Review, Papers and Proceedings (May, 1959), 251-54. Prebisch states that for every one per cent rise in per capita income in the U. S. imports of primary goods tend to increase 0.6 per cent. Robert Lekachman, National Policy for Economic Welfare at Home and Abroad, comments by Professor Prebisch, 277-80.

[2]The low income inelasticity, as well as the low price inelasticity of the imports at the center, are due to the nature of exports from the periphery which are food and raw materials. The lag in the growth of demand for these commodities is either due to the effect of Engle's Law and protective measures on the part of center countries with respect to agricultural commodities, or to technological innovations which reduce the proportion of raw materials per unit of output or synthetic substitutes. Werner Baer, "The Economics of Prebisch and ECLA," Economic Development and Cultural Change, Vol. XI, No. 2 (January, 1962), 170.

other hand, the high income elasticity of demand for imports at the periphery[1] tends either to keep the price of imports constant if there is a proportional increase in productivity at the center, or to increase the price of the periphery's imports if such proportional increase in productivity does not occur or if market imperfections at the center restrict the supply.

On the supply side, the reason suggested for the deterioration of the terms of trade against peripheral countries is that money incomes (and hence prices) have risen more rapidly than productivity in the Center, while in peripheral countries, increases in productivity have been distributed in the form of price reductions or only in proportional increases in money income.[2] This difference in the behavior of prices in

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[1]The reason for the high income elasticity of demand for imports from the center is that these imports consist mostly of capital equipment and machinery needed for development and manufactured goods with high demonstration appeal.

[2]See also the Singer version, p. 40.

center and peripheral countries is attributed to the difference of primary product prices and industrial prices over successive business cycles, and to the monopolistic industrial market structure.

During the upswing of business cycles, prices of primary products rise more rapidly than industrial prices, but subsequently lose this gain during downswings. Conversely, although industrial prices rise less rapidly during upswings, they do not fall so far in a downswing as they have risen in prosperity. The reason for this is; one, the rigidity of industrial wages caused by the organization of labor,[1] and two, price inflexibility in a more monopolistic industrial market.[2] Therefore, Prebisch asserts that the gap between industrial and primary product prices have progressively widened,[3] and peripheral countries have suffered an

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[1] In contrast with a monopolistic organization of labor in the center, Prebisch assumes unlimited supplies of labor in peripheral countries. Prebisch, op. cit., "Commercial Policies in Underdeveloped Countries," 255.

[2] United Nations, op. cit., 12-14.

[3] Ibid., 10.

unfavorable movement in their terms of trade. Thus, " . . . while the centers kept the whole benefit of the technical development of their industries, the peripheral countries transferred to them a share of the fruits of their own technical progress."[1] As long as these phenomena occur, it follows that productivity of industrial centers exerts a retarding effect on the development of peripheral countries.[2] Unless some kind of counteraction is taken, the long-run prognosis is for continued deterioration of the relative trade position of peripheral areas. Consequently, policies should be enforced to prevent transfers of income (in the form of lower prices) to center countries and to protect the periphery's capacity to import. According to Prebisch, to achieve this purpose, government interference with the import and export trade, in the form of protection, subsidies, export taxes or any other form

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[1] Ibid.

[2] In fact, Prebisch states: "The high productivity of the great industrial countries is one of the greatest obstacles which the peripheral countries must overcome in order to achieve a similar degree of productivity." United Nations, Economic Survey of Latin America, 1949 (New York: 1951), 173.

of interference is required. The best way to counteract the long-run tendencies of deteriorating terms of trade is through a policy of selective protection of import substituting industries.[1] The criterion of the feasibility of import substituting industries is not relative efficiencies of industrial production in the usual sense, but the establishment or expansion of local industries which contribute (or would contribute) most to national income. In other words, protection is economically justified when the possible loss caused by the fall in export prices (due to expansion and increased productivity of traditional exports) is greater than the higher cost of internal production in relation to imports. In Prebisch's words,

> It is not really a question of comparing industrial costs with import prices but of comparing the increment of income obtained in the expansion of industry with that which could be obtained in export activities had the same productive resources been employed there.[2]

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[1] Raul Prebisch, op. cit., "Commercial Policies . . ." 255.

[2] Ibid., 255.

Although Prebisch warns that protectionistic policies are beneficial as long as they are not exaggerated to shelter inefficiency,[1] the application of such policies by some Latin American countries has resulted in the creation of inefficient industries and economic unbalances, as will be pointed out later.

The Singer Version

Writing about the same time, Hans Singer presented a very similar argument to that of Prebisch.[2] Singer begins his argument by exploring the role of foreign investment in underdeveloped countries which has been mainly concentrated in primary production. He concludes that foreign investment by industrial countries has detrimental effects on primary producers for two reasons: first, because secondary multiplier and backwash effects of foreign investment have returned to the investing countries, and second, because foreign

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[1] Ibid., 257.

[2] Hans Singer, "The Distribution of Gains Between Investing and Borrowing Countries," American Economic Review, Papers and Proceedings (May, 1950), 477-85.

investments have diverted underdeveloped countries into primary production (which offers less scope for technical progress, internal and external economies), and withheld productive efforts from the "central factor of dynamic radiation," industrialization.[1] Singer states that the most important factor which has reduced the benefits of foreign trade-cum-investment to underdeveloped countries, has been the deterioration of the terms of trade. He dismisses the possibility that the deterioration of the terms of trade reflects the relative changes in real cost of manufactured exports of industrial countries relative to those of food and raw materials of primary producers, since productivity has increased more rapidly in the former than in the latter. Moreover,

> The possibility that changing price relations could merely reflect relative trends in productivity may be considered as disposed of by the very fact that the standards of living in industrialized countries (largely governed by productivity in manufacturing industries) have risen demonstrably faster than standards of living in underdeveloped countries (generally governed by productivity in agriculture and primary production) over the last sixty or seventy years.[2]

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[1] Ibid., 477.

[2] Ibid., 478.

Having dismissed changes in productivity as a governing factor in explaining the deterioration of the terms of trade, Singer turns to another explanation. Singer believes that in industrial countries the benefits of technical progress have been distributed to producers primarily through higher incomes rather than to consumers in the form of lower prices. However, in underdeveloped nations, Singer feels that producers have suffered and consumers have gained lower prices as a result of technical progress.

Since both Prebisch and Singer agreed on the deterioration of the terms of trade against primary producers, their thesis has come to be known as the Prebisch-Singer thesis.

Criticism of the Prebisch-Singer Thesis

Criticism of the Prebisch-Singer thesis has been rather extensive. One criticism is based on the statistical inadequacy of Britain's terms of trade since the 1870's--the empirical evidence used by Prebisch and Singer for their arguments. On one hand, the commodity

terms of trade are thought to be an inadequate measure because:

> It is clearly possible that a country's income terms of trade and single-factoral terms of trade may improve at the same time as its commodity terms deteriorate.[1]

Also, trade statistics give no weight to the gain in utility from new commodities which have become available during the period considered.[2] Moreover, even "where the manufacturers are nominally the same, they are over the years incomparably superior in quality, . . . whereas primary commodities used in price indexes . . . are for the most part . . . not superior in quality and in some cases inferior."[3] On the other hand, long-run period terms of trade are misleading since the British terms of trade were based on C.I.F. import prices and

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[1]Gerald M. Meier, "Export Stimulation, Import Substitution and Latin American Development," Social and Economic Studies, Vol. X, No. 1 (March, 1961), 53.

[2]Jacob Viner, International Trade and Economic Development (Glencoe, Illinois: 1952), 143. See also Gottfried Haberler, "International Trade and Economic Development," in National Bank of Egypt, Fiftieth Anniversary Commemoration Lectures (Cairo, 1959), 19.

[3]Ibid.

F.O.B. export prices. This means that the import prices included transport costs while export prices did not.[1]

One of the most vehement critics of this thesis, Professor Haberler questions both the empirical evidence and the assumption of the deterioration of terms of trade for primary producers. He states that:

> This alleged historical trend is supposed to be the consequence of deep-seated factors and hence capable of confident extrapolation into the future. To my mind the alleged historical facts lack proof, their explanation is faulty, the extrapolation reckless and the policy conclusions irresponsible to put it mildly.[2]

Haberler denies the validity of Prebisch's assertion that prices of industrial products are kept high by monopolistic behavior of labor unions and cartels.

> It is true that industrial progress in the developed countries rarely takes the form of constant money wages and money incomes associated with falling prices, but rather the form of constant

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[1] P. J. Ellsworth, "The Terms of Trade Between Primary Producing and Industrial Countries," Inter-American Economic Affairs, Vol. X, No. 1 (Summer, 1956), 55-57.

[2] Gottfried Haberler, "Critical Observations on Some Current Notions in the Theory of Economic Development," L'industria (No. 2, 1957), 8.

> (or even rising) prices associated with rising money wages. . . . but there is no evidence that it has changed relative prices as between industry and agriculture or between finished goods and raw materials.[1]

Nor will Haberler accept the "heavy burden" that this theory places on Engle's Law in explaining the slow growth of demand for food and primary products in industrial countries. Although this Law applies to food in general, it does not apply to every kind of food, and it is not clear that rising incomes lead in every case to a proportional decline in the demand for raw materials. Finally Haberler believes that even if evidence clearly shows that the terms of trade have deteriorated in the last century, policy conclusions cannot be derived from these facts unless it is certain that the deterioration is likely to continue.[2]

Recent studies have given additional support to the Prebisch-Singer thesis.[3] A recent study, based on

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[1] Ibid., 9.

[2] Ibid., 8-9.

[3] M. K. Atallah, "The Long-term Movement of the Terms of Trade Between Agricultural and Industrial Countries," (Rotterdam, 1958), summarized in Benjamin Higgins, Economic Development (New York: W.W. Norton & Co., 1960), 375, and C. P. Kindleberger, "The Terms of Trade and Economic Development," The Review of Economics and Statistics, Supplement (February, 1958), 85.

empirical evidence, reaches the following conclusions:

> Even if some of the doubts expressed concerning the validity of the long-run downward tendency of the terms of trade are correct, it seems fairly clear that over long and crucial periods of time in the twentieth century terms of trade have been declining for many peripheral areas. And the few periods of primary materials boom were not sufficient to build up enough reserves for adverse periods. This has been especially true for the greater part of the 1950's, when concern for economic development has become increasingly important. [1]

With reference to Prebisch's explanation for the deterioration of the terms of trade and their effects for peripheral countries, Baer concluded that the ". . . low income elasticities of Center countries and high income elasticities for peripheral countries has validity for many important areas in the world." [2] Moreover, although it is difficult to prove that the unfavorable terms of trade for peripheral countries are partially due to monopolistic pricing at the center and greater degree of competition at the periphery, this study adds support to the Prebisch-Singer thesis.

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[1] W. Baer, op. cit., 179.

[2] Ibid.

Thus it can be concluded that productivity conditions and changes in international demand have handicapped or diminished the relative benefits of international trade that can accrue to primary producing countries such as those in Latin America. However, to conclude from that that the concentration of primary production has been one of the principal inhibiting factors of Latin America's long-run economic development seems to be an over simplification of the complex aspects of Latin American development. Some of the responsibility for the slow rate of economic growth in Latin America obviously can be attributed to fiscal and economic policies pursued by the governments of the various countries as well as to the political, and social organizations of the nations.[1] Moreover, Meier points out that market imperfections in primary producing countries (such as ignorance of market conditions, factor immobility, restrictive tendencies both in the factor and goods market, monopolistic and

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[1]B. A. Rogge, "Economic Development in Latin America: The Prebisch Thesis," Inter-American Economic Affairs, Vol. IX, No. 4 (Spring, 1956), 34.

semi-monopolistic practices, restraints on land tenure, marketing facilities and capital markets) suggest that in the past, domestically-based impediments to development have been more influential than any obstacle attributable to international forces. Moreover, Meier believes that these domestic impediments have not only reduced the "gains from trade" but also the "gains from growth" that can emerge from the former.[1]

Policy conclusions derived from deteriorating terms of trade argument have not gone unchallenged either. ECLA's doctrine of accelerated industrialization and import substitution has been criticized by Meier; he believes that although there is a place for import substitution, in order to achieve a higher rate of growth, Latin American countries cannot afford to emphasize replacement of industrial imports at the expense of policies designed to increase productivity, diversification of primary production, and replacement of agricultural imports.[2] Meier's criticism of ECLA's

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[1] Gerald M. Meier, op. cit., 54.

[2] Ibid., 62.

economic policy is based both on general principles and on empirical studies of Latin America's replacement of industrial imports and general production conditions in the post-war period.[1]

According to Meier, the post-war Latin American economic performance has been rather discouraging. Although aggregate agricultural production has increased over prewar level in absolute terms, the rate of growth has failed to keep up with industrial expansion and population growth. Agricultural exports have grown on an absolute basis (12 per cent increase in 1955/56 over 1949/50) but have actually decreased on per capita basis. The growth rate of mineral production has fallen substantially behind world rates of mineral production except for iron ore and crude petroleum.

The reasons for these slow rates of growth of production are to be found in economic and monetary policies of the particular governments. In many cases, the increase in the money supply has not increased aggregate demand and the use of underemployed resources, but

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[1]Meier, op. cit., 60-62.

has led to inflation. Industrialization programs have withdrawn labor from agriculture and without a change in the other factors agricultural output per capital has declined.[1] This suggests that disguised unemployment is not wide-spread. Moreover, inflationary trends have tended to maintain investment in agriculture at low levels and actually decreased in per capita absolute terms. All these factors plus the lack of an effective program of agricultural development have caused a decline in agricultural output per person. In order to satisfy the rising demand for agricultural products, many Latin American countries have imported food. Moreover, due to foreign exchange shortages, agricultural imports have had to be controlled. As a result, prices of agricultural products have risen more rapidly than the general price level. Based on this evidence, Meier concludes that the concentration of limited financial and human resources on industrialization programs, the attraction of productive resources to the industrial sector, and the inflationary consequences

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[1] Ibid., 60.

of industrialization, have handicapped primary production.[1] With respect to industrial import substitution policies, Meier observes that:

> From the general arguments against the replacement of industrial imports and the particular experiences of Latin American economies during the postwar period, we may suggest that the development of primary production and the promotion of exports should have higher priority than import replacement. Although under certain conditions there is place for import substitution, its role is limited, it has generally resulted in higher prices, excess capacity in the import competing industries, and a domestic product of inferior quality. Moreover, to the extent that import substitution has been directed to industrial products that have required capital-intensive methods of production, it has failed to absorb as much labor as would more labor-intensive activities. Nor has the expansion of industries producing non-durables allowed the highest possible net saving of imports (that is, the value of imports replaced minus direct and indirect costs of equipment, operating and maintaining the industry).[2]

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[1] Ibid.

[2] Meier, op. cit., 62. The last point mentioned in the quotation is by no means the one advocated by ECLA with respect to the feasibility of import replacement industries. According to Prebisch, protection is economically justified when the possible fall in export prices is greater than the higher cost of internal production in relation to imports (see page 39).

In view of the experience with import replacing industries, and the relatively stagnant agricultural production, Meier concludes that ". . . it would appear more desirable to concentrate the import replacement programmes in the direction of foodstuffs and raw materials."[1] Policies helping to achieve this purpose would not only lessen the dependence on imports, but would also improve the balance of payments situation to the same extent as would the replacement of industrial products. In addition, agricultural products and raw material import replacement policies would have the advantage of not adversely affecting exports or contribute to the establishment of uneconomic industries.[2]

The Role of Agriculture in External Balance and Internal Growth

In the preceding sections of the chapter, we have explored some of the problems and disadvantages involved in the specialization of production in agricultural and raw materials for export. There are, however,

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[1] Ibid.

[2] Ibid.

a number of important functions that agriculture performs in the process of economic development. The discussion which follows relates agriculture's role in economic development through its contribution to external balance and internal growth of a nation.

Agriculture's Role in External Balance

The principal role of agriculture in external balance is as a source of foreign exchange for capital imports required in the process of development. This means that as a nation's export agriculture expands, export earnings will likely increase. This will enable a nation to increase its capital imports in the form of products or equipment which it obtains at a lower cost than they could possibly obtain from indigenous sources. Some economists contend that market instabilities and the inelastic world demand for primary products act as an important constraint on the economic development of primary producers. Their policy prescriptions are that these nations should diversify their economies and emphasize industrial production rather than the output of primary products. Morgan, however, points out that:

> High price instability for primary products is a fact. But are the policy implications valid? Price variation is not an argument for staying out of a given line of production, but rather for a discount on (average) returns--for calculating whether expected net returns minus expected net returns in each of the alternatives. Such calculations will often lead to some diversification, but it will not lead to a flat choosing of unremunerative price-stable production.[1]

Thus, while in the long run, it may be feasible to emphasize industrial production, of greater immediate importance is the function of present day exports in providing the foreign exchange required for capital imports which would allow long-run economic development and lessen dependence on export proceeds. Furthermore, present day exports not only cater to an existing foreign market but also, may face a relatively elastic demand schedule in the short run. The reason being that exports of any given country probably account for only small percentage of the world's trade in the commodity or commodities concerned; therefore, a country can expand its exports without causing any significant decline in prices.

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[1]Theodore Morgan, "Comment: Some Interrelationships Between Agricultural Trade and Economic Development," Boris C. Swerling's paper presented at a Social Science Research Council Meeting at Stanford University (November, 1960), 4.

Diversification of exports, while not reducing the dependence on export proceeds, can provide a more stable flow of foreign exchange by spreading the risk of single price declines over wider range of commodities. A profitable export crop can frequently be added to an existing cropping system. Some writers believe that the capital requirements for such innovations are often moderate and largely dependent on direct, non-monetary investment by farmers.[1]

It must also be remembered that considerable real income to launch development programs can be amassed during periods of high-import prices. Domestic markets of most underdeveloped countries are, in general, too small to justify the establishment of industries producing capital goods which are essential for the success of any development program. In addition, the possibility of developing a sufficiently large market are limited. Therefore even when considering long-run development, the maintenance of an ever-growing supply of

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[1] B. F. Johnston and J. W. Mellor, "The Role of Agriculture in Economic Development," American Economic Review, Vol. LI (September, 1961), 575.

imports is of prime importance. Unless domestic industries achieve a degree of efficiency and productivity sufficient enough to make their products competitive in international markets, agricultural exports will have to pay for capital imports.

In summary, the expansion of agricultural export production is sometimes a promising and rational means of augmenting foreign exchange earnings despite unfavorable world supply-demand conditions. Neglect of the export producing sector of an economy, combined with a rising demand for imports, have often resulted in balance of payment problems and external imbalances.

Agriculture's Role in Internal Growth

Agriculture can play an important role in the internal growth of an economy by: a) providing increased food supplies, b) releasing labor to non-agricultural sectors, c) contributing to capital formation, and d) providing a market for industrial products.

Providing Increased Food Supplies

Apart from autonomous changes in demand, the annual rate of increase in demand for food depends on the rate of population growth, per capita income and the income elasticity of demand.

A growing food supply is of major significance in underdeveloped countries. The rapid rate of population growth which many underdeveloped countries are experiencing exerts great pressures on the available supplies of food. Furthermore, the improvement in nutritional standards resulting from increased incomes, accentuate this problem. Annual rates of population growth of 3 per cent of higher are not uncommon in underdeveloped countries. In the case of Latin America, which is experiencing average annual rates of population growth as high as 2.7 per cent,[1] this factor alone accounts for a substantial increase in demand for food. Secondly, not only large proportions of per capita income are spent on food, but also the income elasticity of demand for foodstuffs, is very high in underdeveloped countries.

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[1] "Latin America: A Decade of Decision," Population Bulletin, Vol. XVII, No. 2 (April, 1961), 21.

It has been estimated that the income elasticity of demand for food in Latin America is about 0.7 on the average.[1]

With per capita income rising in the process of development, high income elasticities of demand for food, high rates of population growth, together with high percentages of total consumption spent on food, increased food supplies are of primary importance. Failure of supply of food to keep up to the growth of demand may have adverse effects on underdeveloped nations. On the one hand, demand pressures on scarce supplies are likely to result in substantial rises in food prices. The inflationary impact of a proportional increase in food prices upon the general price level is more severe in underdeveloped countries than in developed ones because of the higher proportion of income spent on food and the higher income elasticity of demand in the former than the latter. A rise in food prices may lead to political discontent if there is a

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[1] T. W. Schultz, "Prospects of Primary Products," Economic Development for Latin America, op. cit., 316.

lag in increases in wage rates and salaries. Moreover, higher wages may lead to lower industrial profits and to a slower rate of economic growth. On the other hand, if supplies fail to keep in pace with the growth in demand for food, a nation may expand food imports which compete with capital imports for foreign exchange and thereby slow down the rate of growth.

Transfer of Manpower from Agricultural to Non-agricultural Sectors.

The assumption that the marginal productivity of labor in agriculture is zero or even negative, is a factor very frequently cited. If this assumption is valid, it follows that labor can be transferred from agriculture to manufacturing or other expanding sectors, without any appreciable effect on agricultural output. However, the presence of disguised unemployment in agriculture is debatable, at least in some parts of the world. Experiences in Latin America suggest that disguised unemployment does not exist,[1] or that its presence cannot be substantiated by empirical evidence.[2]

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[1] See page 50 .

[2] Op. cit., 321.

Even if disguised unemployment does not exist, the agricultural sector constitutes an important reservoir of labor. Productivity increases in agriculture will make it possible for labor to be transferred to other sectors, without adverse effects on agricultural output. In fact, the agricultural sector will benefit from this transfer. As labor is transferred, pressures on land are reduced and consolidation of farms is facilitated.

Agriculture's Contribution to Capital Formation

Underdeveloped nations striving to achieve economic progress are faced with large requirements of capital for investment in manufacturing and other productive enterprises, social overhead facilities and human capital investment. Agriculture can make important contributions to capital formation, particularly in early stages of development when the capital intensive sector is relatively small. The sheer size of the agricultural sector, as the major existing industry, indicates its importance as a source of capital for general economic development. Agriculture's net

contribution to capital formation can be increased by means of rising productivity through the reorganization of resources already committed to agricultural production, or through moderate capital outlays on present patterns of production. Johnston and Mellor feel that the latter prospect has been generally underemphasized by some economists. If productivity gains are passed to consumers in the form of lower prices, the internal terms of trade will not deteriorate, or even improve in favor of the industrial sector. Conversely, if productivity gains are retained by producers in the form of higher incomes, they can be offset by other means--land or income taxes or both.

With respect to the role of agriculture's contribution to capital formation, Johnston and Mellor have stated that:

> The conclusion suggested to strongly by both theoretical considerations and historical experience is that in underdeveloped countries, where agriculture accounts for some 40 to 60 per cent of the total national income, the transition from a level of savings and investment that spells stagnations to one permitting a tolerable rate of economic growth cannot be achieved unless agriculture makes a

significant net contribution to capital formation in the expanding sectors.[1]

Agriculture as a Market for Industrial Products

Agriculture provides a substantial market for industrial goods and many industrial projects can direct their production toward the agrarian sector. Agriculture provides a potential market for manufactured products; not only goods for human consumption but also capital input goods.

The development of this agricultural market will depend to a great extent on the increment in real income of the rural population which will tend to shift agriculture's demand for industrial products.

If, on one hand, agriculture's purchases of industrial products emphasize human consumption goods, agriculture's contribution to capital formation for overall economic development can be substantially reduced. If, on the other hand, increases in real income in the rural sector are used for industrial

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[1] B. F. Johnston, J. W. Mellor, op. cit., 579.

capital input purchases, the contribution to capital formation will be reduced at any given time but productivity increases will make possible a larger contribution in succeeding periods. Therefore, although agriculture's contribution to capital formation for overall development and increased purchasing power of the rural population are conflicting issues, they are not mutually exclusive. Moreover, substitution of domestic output for imported manufactured products often provides a significant addition to demand which does not depend on real income increases.

Summary

Primary producers are often confronted with two main problems in their relations with industrial countries: first, instability of export proceeds on account of price instability of primary products and second, a relative decrease in the capacity to import due to the deterioration of their terms of trade. Industrialization has frequently been suggested as the structural solution to both of these problems affecting the external balance of primary producers.

Industrialization, however, is a long-run process which does not offer an immediate solution to the price instability problem. A number of national and international policies and programs are now being used to counteract price instabilities of primary products. Many others have been proposed. It can be concluded that there is no "best" price stabilization policy since every policy must take into consideration the unique supply-demand and production conditions of the commodity in question. Whichever policy is advocated, in order for it to be beneficial to both producers and consumers, the stabilized price should not interfere with long-run price shifts. Finally, price instability is not an argument to stay out of a given line of production. On the contrary, price instability merely requires that the discounted average expected returns in primary production be compared with alternative production possibilities. When this allowance is taken into consideration, it is often wise for a nation to continue placing a high priority on producing primary products in order to earn foreign exchange.

Industrialization has often been suggested as the solution to deteriorating terms of trade. In order to maintain the capacity to import, to increase employment and to prevent relative income transfers to industrial countries, it has been advocated that primary producers (especially in Latin America) accelerate industrialization. Over the past ten years, an increasing number of Latin American countries have concentrated scarce human and financial resources on import replacing industrialization programs at the expense of agricultural and other primary production. According to Meier, industrialization policies in Latin America in recent years have led to higher prices, failure to absorb labor surpluses, failure to allow the highest possible net savings of imports, excess industrial capacity and in some cases, the establishment of industries with heavy import requirements. Moreover, the neglect of agriculture and other primary production has often resulted in stagnant rates of growth in these activities and food shortages which, in many instances, have had to be met by agricultural imports. To overcome these numerous difficulties, it has been suggested by some economists that Latin

American countries should expand their output of food and primary products and place less emphasis on import replacement industries.

Agricultural exports can contribute to the external balance and internal growth of a nation by paying for capital imports required for economic development. Agriculture also has two important contributions to the internal growth of a nation. First, agriculture must provide increased food supplies for higher incomes and a growing population. Second, agriculture is an important source of revenue for capital formation required for general economic development. Moreover, agriculture can provide the labor force required by other expanding sectors, as well as serving as a major market for industrial products.

CHAPTER II

SCOPE OF THE THESIS

General Considerations

In the preceding chapter we have explored the literature and current thought pertaining to four topics in particular; a) economics and economic characteristics of small nations, b) the instability of international markets and stabilization schemes for primary producing countries, c) the problems of deteriorating terms of trade against primary producers and finally, d) the contribution of agriculture to economic development through external balance and internal growth.

Costa Rica is a small underdeveloped nation of one and one-quarter million people. Moreover, as is characteristic of most underdeveloped countries, it relies very heavily on agricultural export proceeds and industrial imports for its economic welfare and development. Cost Rica is therefore, subject to and affected by instabilities of international markets. In addition, the terms of trade affect Costa Rica's development possibilities. Moreover, being primarily an agricultural country,

agriculture plays a very important role in the external balance and internal growth of Costa Rica.

Chapter I has provided a theoretical framework of the economic instability of primary production and the terms of trade with special reference to Latin America. My purpose now is to turn to Costa Rica and in remaining chapters to present empirical data on each of the four aspects outline above. This analysis will enable us to appraise the performance of the country's agriculture and its contribution to the growth and development of Costa Rica.

General Literature on Costa Rican Development

There is a relative scarcity of literature dealing with Cost Rican development. I have therefore, had to rely considerably on raw data published by the various official agencies of the Government of Costa Rica. To my knowledge, the only literature on Cost Rica's economic development available at the present, are the following publications: a) a 1952 publication by May, Faaland, Kock, Parsons and Senior on Costa Rica's

economic development[1] covering the 1940-1950 period with special emphasis on the second half of the 1940's, b) a series of three studies prepared by the Economic Development Project of the University of Costa Rica: one covers the External Sector of the Costa Rican Economy[2] during the period 1946-1954, a second one studies the Industrial Sector[3] during 1946-1957, and the third one deals with the Agricultural Sector[4] during the 1950-1956 period, and c) a United Nations' study prepared by Louis Ducoff[5] which deals with the human resources

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[1]Stacy May et al, Costa Rica: A Study in Economic Development (New York: The Twentieth Century Fund, New York, 1952).

[2]Universidad de Costa Rica, El Desarrollo Economico de Costa Rica-Sector Externo (Ciudad Universitaria, 1958).

[3]Ibid., Estudio del Sector Industrial, (1959).

[4]Ibid., Estudio del Sector Agropecuario, (1959).

[5]United Nations, Comision Economica para la America Latina, Los Recursos Humanos de Centroamerica, Panama y Mexico en 1950-1980 (New York: 1960).

of Central America, Mexico and Panama and their relations to some aspects of economic development.

Statement of the Thesis Problem

In view of May's study of Costa Rican economic development for the 1940-1950 period, the purpose of the thesis is to analyze the role and performance of Costa Rica's agriculture in the external balance and internal growth of the Costa Rican economy during the ten-year period, 1950-1959.

Methodology and Procedure

The organization of the remainder of the thesis is as follows:

Chapter Three depicts the general characteristics of Costa Rica. It deals with geographical and historical aspects, political organization, major public institutions aiding economic development in Cost Rica, international ties and demographic characteristics of the population.

Chapter Four presents a brief review of Cost Rica's economic history since the 1930's and explores the performance of the Costa Rican economy during the period

1950-1959 using national income statistics. These national income data for Costa Rica are analyzed by using seven different statistical methods presently available for the computation of annual growth rates.

Chapter Five discusses the social and economic organization of Costa Rica's agriculture, such as agricultural regions, land use, land distribution, etc. In addition, it covers trends in production of principal crops and livestock.

The contributions of agriculture to the internal growth and balance of Costa Rica's economy are explored in Chapter Six. This chapter presents agriculture's contribution to Gross Domestic Product and its growth during the period considered, as well as the influence of agricultural prices on the general price level. Moreover, the principal agencies responsible for Costa Rican agricultural development are examined.

The role of Costa Rica's agriculture in external balance is covered in Chapter Seven. This chapter deals with exports, imports and their composition, balance of trade and balance of payments situations, terms of trade, export price stability, etc.

Finally, Chapter Eight summarizes the findings of the thesis and their implications for future development.

CHAPTER III

GENERAL CHARACTERISTICS OF COSTA RICA

The purpose of this chapter is to delineate the social, political and historical aspects of Costa Rica in order to understand better the economic problems which are discussed in later chapters.

Historical Characteristics

Costa Rica is located in the central part of the American Isthmus. This small country of 23,000 square miles borders with Nicaragua in the North, Panama in the South, the Pacific Ocean in the West and the Atlantic Ocean in the East.

Costa Rica was discovered by Christopher Columbus in September, 1502. Columbus landed at Cariari (Port Limon) on Costa Rica's Atlantic Coast on his fourth and last trip to the New World. The Pacific Coast of the country was later explored (1519) by the Spanish Conquerors.

The conquest of Costa Rica was terminated in 1564 with the founding of Cartago by the Adelantado Mayor Don Juan Vazquez de Coronado. Cartage was the capital of the Ducado de Veragua (Costa Rica).

Costa Rica acquired its independence from Spain on September 15, 1821, and became a member of the Central American Federation. In 1848, Costa Rica was separated from the Federation and became an independent and free nation.

Political Organization of Costa Rica

Political Division

The Costa Rican territory is divided into seven provinces, sixty-five cantones (counties) and 326 districts. Each province is governed by a Governor appointed by the President of the Republic. Cantones are in turn governed by a board elected by universal suffrage.

Government

Costa Rica has a centralized government with three distinct and independent powers: Legislative, Executive and Judicial.

The Legislative power is in the hands of a Legislative Assembly of forty-five members elected for four year terms. Members of the Assembly cannot be re-elected for successive terms.

Bills may originate at the Assembly or at the Executive branches of the government via members of the Cabinet. They ordinarily become laws upon a simple majority vote of the chamber and approval of the President, although certain laws are required by the Constitution to have larger majorities.

The Executive Power is vested in the President of the Republic and the Ministers of Government. There are two vice-presidents who along with the President are elected by universal suffrage. The presidential term is for four years beginning May 8th.

The Judicial Power is vested in the Supreme Court of Justice which appoints its own personnel and that of other courts. The Judicial branch of the government consists of sixty-one Alcaldías (Justice of Peace Courts), twenty-two Lower Courts, fourteen Labor Courts, a Court of Cassation (with five Magistrados or member Judges of the Supreme Court. The Plenary Court consists of seventeen Magistrados; five from the Court of Cassation, twelve from the Civil Courts of Appeal and the Penal Courts of Appeal. The fifteen Magistrados constitute the Supreme Court of Justice. Magistrates of the Supreme Court are elected for

eight year periods and are regarded as re-elected for a like period unless the Legislative Assembly decides otherwise by a vote of two-thirds of the entire membership of the Chamber.

Suffrage and Elections

Suffrage is exercised under the supervision of election boards by universal, secret and compulsory vote by citizens registered in the Civil Register. The organization, direction and supervision of acts relating to suffrage are exclusively a function of the Supreme Tribunal of Elections, which is an independent agency carrying out this function. This Tribunal is composed of three principal Magistrates and three alternate ones appointed by the Supreme Court of Justice by a vote of not less than two-thirds of its membership. They are elected for six terms and enjoy the same immunities and prerogatives as are granted to the three powers into which the government is divided. Decisions of the Supreme Tribunal of Elections cannot be appealed except on grounds of prevaricato (betrayal of trust).

Local Government

For the purpose of public administration, the Costa Rican territory is divided into seven provinces, these in turn into sixty-five cantones and the latter in terms of distritos (326).

The administration of local interest of each cantón is vested in a Municipal Government consisting of Regidores elected by universal suffrage for a four year term. These positions are compulsory and honorary. An Executive Official is appointed by the Regidores, who is traditionally the Governor of the Province. Municipal corporations are autonomous. Each district is represented in the Municipal Assembly of the Cantón by a Síndico with right of discussion but no vote. Municipalities require authorization from the Legislative Assembly to contract loans, to mortgage their property or to alienate real or removable property.

Major Institutions in the Public Sector

An important role of government is to create and encourage the development of the proper "environmental conditions" in which economic activity and economic growth are to occur. The institutional framework is an important element in creating conditions which are propitious to economic growth, especially in the early stages. In some instances, the institutional organization of governments may inhibit and curtail economic growth; in such cases, institutional changes are required to facilitate progress. Gorwth-promoting institutions, whether in the private or in the public sector, have a very prominent and important function in the process of economic growth. In fact, Wolf has stated that:

> Institutions--as well as capital and technology--are protective; or, more accurately, different institutions have differentially productive consequences. Growth-promoting institutions, without themselves adding resources to the economy--or at least by a process that is distinguishable from any resources which they directly add--may so restructure the environment in which factors of production meet that the rate at which combinations occur is accelerated.[1]

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[1] Charles Wolf, Jr., "Institutions and Economic Development," reprinted in Okun and Richardson, Studies in Economic Development (New York: Holt, Rinehart and Winston, Inc., 1961), 349.

Since the importance of institutions in economic development cannot be underestimated, we intend to explore, in the following pages, some of Costa Rica's major institutions in the public sector. These institutions are the Ministries of Government, their specialized agencies, and the Autonomous Institutions of the State.

Ministries of Government and Specialized Agencies

All Ministries of Government have a direct or indirect role in stimulating economic development. However, only the Ministries of Economics and Revenue, Agriculture and Livestock, Industries, Public Works and Public Education have a specific commitment to development. These Ministries have specialized agencies which are responsible for research and policy prescription to be followed or pursued; they are, in fact, advisory departments to the pertinent Ministries in policy issues.

Ministry of Economics and Revenue

The General Direction of Economics is the most important agency within this Ministry. The duties of this agency are, among others, the coordination of all

activities leading to the Central American Economic Integration. Furthermore, it makes recommendations in matters pertaining to international treaties and agreements and controls ceiling prices of consumption goods in the domestic market.

Ministry of Industries

The most important agency in the Ministry of Industries is the General Direction of Industries which has direct control over all matters pertaining to the industrial development except in those aspects pertaining to credit and the application of industrial laws.

Ministry of Agriculture and Livestock

The General Direction of Agriculture of this Ministry is responsible for studies and policy pertaining to agriculture, livestock, forestry and extension services.

Ministries of Public Works and Public Education

The Ministry of Public Works has the responsibility to construct and maintain the road network as well as other public works.

The Ministry of Public Education controls and supervises all educational establishments in Costa Rica with the exception of the University of Costa Rica.

Tariff Commission

The Tariff Commission is an independent official agency designed to study and make recommendations pertaining to tariff and import duty policies. Recommendations made by this organism are enacted and enforced by the General Direction of Economics.

Autonomous Institutions

As the name implies, autonomous institutions are official institutions independent of the centralized government. They were organized to permit technical and administrative expansion of the State, yet avoiding the hazard of excessive accumulation of political authority and new functions in the hands of the State.[1] Autonomous institutions are relatively new, most having been created after 1949. Together they now form a highly

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[1]Rodrigo Facio, Planificación Económica en Régimen Democratico (San José, Costa Rica: 1959), 54. This document was published in full in Universidad de Costa Rica, Revista de Ciencies Sociales, No. 4 (September, 1959).

important and significant feature of the economy. These autonomous institutions of the State are controlled by boards of directors of five to seven members, in most cases appointed by the President of the Republic. In case of a change of national political administration, control of the board of directors of the institutes cannot change except when the membership expires. Among the autonomous institutions are the Nationalized Banking System, the National Production Council, the Costa Rican Institute of Electricity, the National Institute of Housing and Urbanization, the University of Costa Rica, the Pacific Electric Railway, the Social Security Board and the National Insurance Agency.

Nationalized Banking System

The Costa Rican banking system consists of the Central Bank, the National Bank of Costa Rica, the Anglo-Costa-Rican Bank, the Bank of Costa Rica, Lyon Bank and the Bank of Agricultural Credit of Cartago.

The Central Bank is designed to promote the orderly development of the Cost Rican economy with the purpose of achieving the highest possible utilization of the productive resources of the Nation. For this purpose,

the Bank has the complete cooperation and support of the State, its dependences and institutions. In 1957 the Bank created the Section for the Preparation of Specific Investment Projects to encourage the investment in certain priority projects.

The National Bank of Costa Rica was established in 1914 under the name of The International Bank of Costa Rica. This Bank, as well as other banks which were private at one time, has the duty to finance those banking operations related to the development of agriculture, livestock and industrial production; to stimulate savings; to promote agricultural credit and the economic and social conditions of producers. The National Bank of Costa Rica administers the Costa Rican Agricultural Credit System (Juntas Rurales de Crédito Agrícola). In addition to the above mentioned duties, these banks are supposed to encourage the creation and expansion of new and existent industrial enterprises; to foster and encourage the cooperative movement and to collaborate in the application of fiscal policy of the Republic.

National Production Council

The National Production Council has among its duties encouragement of agricultural and industrial production of the country, and the application of the price stabilization for agricultural products. In addition, the C.N.P. cooperates with credit institutions, the agricultural extension service (STICA) and any other institution whose efforts are aimed to the increment of national production. The C.N.P. also administers and operates the national liquor monopoly whose revenues represent over 25 million colones annually.

Costa Rican Institute of Electricity

This agency was created to channel the use of hydroelectric energy to promote industrial development and economic production. The Institute of Electricity is the owner and operator of 58 per cent of the country's electric power and receives an annual subvention from the government of 10 million colones.

National Institute of Housing and Urbanization

This autonomous institution is a public housing authority intended to stimulate the development of those

industries which contribute directly to the solution of housing and urbanization problems. This autonomous institution is guaranteed a subvention equal to two per cent of the amount of the annual government budget.

University of Costa Rica

The University is the only autonomous institution directly concerned with education. It is guaranteed a subvention of 10 per cent of the amount of the annual government budget of the Ministry of Education.

Pacific Electric Railroad

The Pacific Electric Railroad, which began operating in 1925, controls the operation of the railway connecting the Central Plateau and San Jose with the Pacific Coast and the Port of Puntarenas. The railroad receives no direct subvention from the State.

Other Autonomous Institutions

The Social Security Board and the National Insurance Institute have no direct concern with the material aspects of the economic development of Costa Rica, but they are

both very important from the point of view of investment institutions. The organic law of both of these institutions obliges them to invest their monetary reserves in activities which yield a high rate of profit.

The Coffee Office

The Coffee Office is a semi-autonomous institution connected with the Ministry of Economics. Among the duties of the Office is the regulation of all economic aspects of the coffee industry in Costa Rica, including the enforcement of international quotas. The Coffee Office was reorganized in 1948 to take direct responsibility of the Costa Rican Coffee Exchange and the Junta de Liquidaciones del Café, both established in 1933. The Junta sets the minimum price to be received by producers from coffee mills buying their coffee. This price is determined at the end of the production year, based on prices received by individual coffee mills from the sale of their coffee in international and domestic markets.

The Coffee Office must authorize all pruchases or sales of coffee, including authorization of exports.

No coffee transaction can be made without having been registered and approved by the Office.

The Coffee Office is ruled by a Board of Directors composed of five members elected for two year periods. Associations of producers, millers, roasters and exporters, and the Ministry of Economics, are each represented by one member on the Board.

The operations of the Coffee Office are financed by revenues obtained from transactions in the Coffee Exchange, authorization of exports and direct allocation of funds from the Legislative Assembly.

International Ties

In addition to the normal trade relationships with most countries in the world, Costa Rica maintains commercial treaties and bilateral agreements with a number of countries, including Mexico, the United States, Canada, Norway, Denmark, The Netherlands, the United Kingdom, Italy, France, West Germany, Japan, Uruguay, Guatemala and El Salvador. Moreover, special trade concessions are granted to Central American Countries.

As a corollary of Costa Rica's economic development,

Costa Rica is an active member in the Organization of Central American States (ODECA), which seeks, among other things, the progressive economic integration of the Central American States. In 1958, along with other Central American Republics, Costa Rica signed the Agreement for the Central American Economic Integration. The fundamental features in this Agreement are: a) the Multilateral Free Trade Treaty, b) the Agreement for the Integration of Central American Industries, and c) the Central American Agreement for the Equalization of Duties on Imports. The number of items included in the Free Trade Treaty is small in terms of the volume of trade among the five Central American Republics.[1] It is hoped, however, that the list of items included will be substantially expanded over the initial ten year period of the Agreement.

The Agreement for the Integration of Central American Industries envisages the integration and development of industrial plants whose products will enjoy free trade in the Central American market, thus making possible the

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[1] Panama is not included in the overall plans of Central American Economic Integration. Nevertheless, Panama is participating in some secondary treaties and trade agreements.

formation of industrial concerns which would be unprofitable on the basis of a single country market.

The Central American Agreement for the Equalization of Duties on Imports is designed to encourage and stimulate free trade of Central American products and to lead the way in providing the necessary incentives for the achievement of the integration of Central American industries.

Other international ties of Costa Rica are represented by the membership of Costa Rica in the International Wheat Agreement and the International Coffee Agreement.

United Nations technical assistance to Costa Rica has been largely concentrated in education, public health and agriculture. An FAO mission has provided assistance in the eradication of the hoof-and-mouth disease, in nutrition, agricultural statistics and land colonization. The World Health Organization has helped train nurses. Technicians of UNESCO have helped improve secondary and university education. Another United Nations project which has attracted special attention is the establishment of the Central American School of Public Administration in San Jose.

The Inter-American Institute of Agricultural Sciences of the Organization of American States was established in Costa Rica in 1942 on land granted by the Costa Rican Government. The research and technical facilities of the Institute are available to all participating member nations.

The United States and Costa Rican Governments maintain a bilateral technical assistance program through the International Cooperation Agency. The largest project is the International Technical Service of Agricultural Cooperation (STICA), which is a joint program with the Ministry of Agriculture and Livestock and ICA. STICA and the Agricultural Extension Service were separate entities before they were united under the Ministry of Agriculture and Livestock in 1956. Additional technical assistance in the agricultural field is provided by the University of Florida and the University of Kansas to the University of Costa Rica and the Ministry of Agriculture, respectively.

Demographic Characteristics of Costa Rica

Costa Rica's population has grown from less than half a million in 1927 to 1.12 million in 1959. The rate of population growth reached an all-time high of 3.87 per cent for the 1950-1959 period, as shown in Table 3.1. This makes Costa Rica one of the fastest growing countries in the world. The rapid rate of population growth can be attributed mainly to natural growth, since immigration has been negligible. The high birth and fertility rates together with rapidly declining mortality rates are the principal factors determining the high rate of population growth.

TABLE 3.1

COSTA RICA: POPULATION AND POPULATION GROWTH
1920-1959

Year	Population	Growth Rate per Annum
1920	421,000	
1927	480,326	
1940	619,000	1.95 (1927-40)
1950	812,000	2.59 (1940-50)
1959	1,126,000	3.87 (1950-59)

Source: United Nations, Economic Commission for Latin America, Los Recursos Humanos de Centroamérica, Panamá y México en 1950-1980, 1960, table 1, 4. Data for 1927 and 1950 from Direccion General de Estadística y Censo, Areas Demográficas de Costa Rica (San José, 1959), table 1, 39.

Over one-half of the Costa Rican population (52.2 per cent) lives in the central part of the country known as the Intermountainous Valley. There is, however, a net migration from this area to the less densely populated regions along the Atlantic and Pacific Coasts.[1]

Population Density

The Costa Rican territory is not densely populated. In 1955, the average population density was nineteen inhabitants per square kilometer. Corresponding figures for other Central American countries for 1955 are: Mexico, fifteen; Guatemala, thirty; and El Salvador, 110.[2] By 1957, the population density in Costa Rica had increased to 20.5 inhabitants per square kilometer.[3] There are, however, large differences in population density in the different areas of the country. In fact, in 1957, population density in the Intermountainous Valley was 142.3 inhabitants per square kilometer. Conversely, the population density in

[1]Direccion General de Estadística y Censos, Areas Demográficas de Costa Rica (San José, 1959), 13.

[2]United Nations, Economic Commission for Latin America, Los Recursos Humanos de Centroamérica, Panamá, y México en 1950-1980 (New York, 1960), Table 2, 5.

[3]Ibid., 42.

other areas in Costa Rica is no higher than 13.2 inhabitants per square kilometer.

Rural and Urban Economically Active Population

Costa Rica is still a predominantly rural country, with 66.5 per cent of the population living in the rural sector.[1] The 1950 Census of Population shows that 36.7 per cent of the total urban population and 32.5 per cent of total rural population over twelve years of age are economically active.[2] This means that only one-third of the population is economically active and must support the remaining two-thirds of the population.[3]

A large proportion of Costa Rica's active population is engaged in primary production, namely, agriculture. Table 3.2 shows that 54.7 per cent of economically active population is engaged in agriculture and forestry, 10.9 per cent in manufacturing, and 14.7 per cent in services.

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[1] Direccion General de Estadística y Censos, op. cit., 46.

[2] Universidad de Costa Rica, El Desarrollo Económico de Costa Rica, Sector Agropecuario (Ciudad Universitaria, 1959) 18.

[3] Ducoff has pointed out that 49.7 per cent of the population between 10 and 12 years old is economically active in Costa Rica. United Nations, op. cit., 142, table XXV.

TABLE 3.2

COSTA RICA, ECONOMICALLY ACTIVE POPULATION BY ECONOMIC ACTIVITY, 1927 AND 1950

Economic Activity	1927		1950	
	Number	Per Cent	Number	Per Cent
Agriculture and forestry[a]	91,791	61.77	148,837	54.72
Mining and quarrying	398	0.27	754	0.28
Manufacturing	11,701	7.88	29,870	10.98
Construction	5,933	3.99	11,625	4.28
Electricity, water and sanitation service	--	--	1,607	0.58
Wholesale and retail trade	8,541	5.75	21,412	7.87
Transportation, storage and communications	3,643	2.45	9,465	3.48
Services	21,223	14.28	40,166	14.77
Other	5,369	3.61	8,248	3.03
Total active population	148,599	100.00	271,984	100.00

[a]Includes fishing and hunting.

Source: Universidad de Costa Rica, El Desarrollo Económico de Costa Rica--Sector Agropecuario (Ciudad Universitaria, 1959), 19.

This table also shows that there has been a decrease of seven per cent in the proportion of the labor force engaged in agriculture from 1927 to 1950.

Determinants of Future Population

In a recent study of the human resources in Central America, Panama and Mexico, Ducoff classifies Central America as a high potential population growth area. He asserts that the principal determinants of demographic growth for Costa Rica (as well as for Central America) are, and have been in the past, the level of fertility and the level of mortality.[1] The net international migration has been negligible and can be expected to continue to be negligible although the process of economic integration of Central America will stimulate and facilitate migratory movements between the Central American countries.[2]

Disregarding at this stage Ducoff's demographic projections it is still appropriate to mention the demographic characteristics which make Costa Rica a country of high potential population growth. As mentioned before, these

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[1] Ibid., 29.

[2] Ibid., 29, footnote 3.

determinants of future population are mortality, birth and fertility rates.

Birth and Mortality Rates

These determinants of future population are shown in Table 3.3.

The rapid rate of natural growth of population is due to a 50.9 per cent decline in mortality rate and increase in the birth rate of 11.4 per cent in 1952-56 relative to the base period 1930-34.[1] The decline in the mortality rate has increased the life expectancy of the population very considerably.

TABLE 3.3

COSTA RICA, BIRTH, MORTALITY AND NATURAL GROWTH RATES OF POPULATION PER 1000 INHABITANTS, 1930-1934 AND 1952-1956

	1930-1934	1952-1956	Per Cent Change
Birth rates	45.7	50.9	+11.4
Mortality rate	22.0	10.8	-50.9
Natural growth	23.7	40.1	

Source: United Nations, Economic Commission for Latin America, Los Recursos Humanos de Centroamérica, Panamá y México en 1950-1980, 1960, 31.

[1]Birth rates in the United States for the period 1952-1956 were 25.1 per cent and death rates 9.4 per cent per 1000 inhabitants. Ibid., 31.

Fertility Rates

The fertility rate is the number of children under five years of age per thousand women in the population between the ages of fifteen and forty-nine. The fertility rate in Costa Rica was 686 compared to 103 in the United States in 1950.

With a high birth rate, high fertility rate and rapidly declining mortality rate, Costa Rica will probably continue to experience a rapid rate of population growth in the 1960's.

Social Characteristics of the Population

Costa Rica has a homogeneous population. The ethnic composition of the population, according to the 1950 Census of Population, consists of 97.7 per cent Whites, 0.3 per cent Indians, 1.9 per cent Negroes and 0.1 per cent Asians. Furthermore, only 4.2 per cent of the population was born in a foreign country. Spanish is spoken by 97.3 per cent of the population.[1]

The level of illiteracy in Costa Rica is low relative to Latin America. In 1950, 21 per cent of Costa Rica's

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[1] Ibid., 18-21, tables 11, 12, 14.

population ten years of age or older were illiterate. Illiteracy rates in the rural population amount to 28 per cent while the corresponding figure for urban areas is only 8 per cent.[1] The reason for these relatively low rates of illiteracy is found in Costa Rican history. In 1886 the Minister of Education, Don Mauro Fernández ("The Father of Costa Rican Education"), dictated and enacted the Fundamental Law of Public Education which established primary education to be free, compulsory, laic and under the direct responsibility of the State.[2] Congress closed the University of Santo Tomás in 1887 in order to bring about a greater expansion in primary education. Hence, in 1886 Costa Rica made the decision to give priority to investment in the human agent through universal education; this investment decision is one of the topics which has attracted a great deal of attention in the recent literature in economic development.[3] The success of the decision to

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[1]Juan Perez Fajardo, "Caracteristicas Educacionales de Nuestra Población," Atlas Estadístico de Costa Rica, Direccion General de Estadística y Censo (San José, 1953), 55.

[2]Ricardo Fernandez Guardia, Cartilla Historica de Costa Rica (33d ed.; San José: Imprenta Lehmann, 1960), 111.

[3]T. W. Schultz, The Economic Test for Latin America (New

give priority to universal education is indicated by the fact that illiteracy rates dropped from 89 per cent in 1864 to 68.6 per cent in 1892, to 24.0 per cent in 1927, to 21 per cent in 1950.[1] The three per cent drop in illiteracy rates from 1927 to 1950 is very significant if one considers that population almost doubled during that period.[2]

The University of Costa Rica was founded in 1940 by merging a number of independent colleges. The present colleges of the University and their founding dates are the following: Law (1891), Pharmacy (1897), Fine Arts (1897), Pedagogy (1914), Agriculture (1926), Philosophy (1940), Engineering and Science (1940), Odontology (1941), Economics and Social Science (1943), and Medicine (1959).[3] The University of Costa Rica is an autonomous institution of the State and receives a subvention of 10 per cent of the amount

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York State School of Industrial and Labor Relations, Bulletin No. 35 (August 1956), 1-30, and "Investment in Human Capital," American Economic Review, Vol. LI, No. 1 (March, 1961), 1-17; also, W. Arthur Lewis, "Education and Economic Development," Social and Economic Studies, Vol. X (June, 1961), 113-127.

[1] Perez Fajardo, op. cit., 52.

[2] Vide, table 3.1.

[3] Perez Fajardo, op. cit., p. 55.

of the budget of the Ministry of Education. The Ministry of Education controls and supervises all primary and secondary education in Costa Rica and receives the highest share of the Government budget; in 1959 this share amounted to 71 million colones or 20 per cent.

Summary

Costa Rica has been a sovereign nation since it attained its independence from Spain 141 years ago. This small country of 23,000 square miles is located in the narrow part of the Central American Isthmus. Costa Rica borders with Nicaragua in the north, Panama in the south, the Pacific Ocean in the west and the Atlantic Ocean in the east. The Costa Rican territory is divided into seven provinces and governed by a centralized democratic government. The government consists of three distinct and independent powers: Legislative, Executive, and Judicial. National elections take place every four years and are supervised by an independent body called Supreme Tribunal of Elections.

The responsibility of Costa Rica's economic development in the public sector is assumed by the Ministers of Government and the autonomous institutions of the State. There is, however, no official planning board. These institutions

are in charge of Costa Rica's international ties. Aside from normal commercial relations with foreign countries, Costa Rica has bilateral agreements for technical cooperation with the United States Government. In addition, treaties leading to the Economic Integration of Central America have been signed with other Central American countries.

The population of Costa Rica is slightly over 1.1 million and is growing at a rate of 3.87 per cent per year. This makes Costa Rica one of the fastest growing countries in the world. Costa Rica is largely a rural country with 66.5 per cent of its population and 55 per cent of its labor force in the rural sector. Only one-third of the Costa Rican population is economically active and must support the remaining two-thirds of the population. Of the total economically active population, 54.7 per cent is engaged in agriculture, 10.9 per cent in manufacturing, and 14.7 per cent in services, and the balance in other activities.

Costa Rica is spending 20 per cent of its national budget on education. Universal education has been a major aim of Costa Rican governments since 1886.[1]

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[1] Vide Chapter IV, table 4.1.

CHAPTER IV

THE CONTEMPORARY PERFORMANCE OF THE COSTA RICAN ECONOMY

This chapter presents macroeconomic data for the Costa Rican economy. A cursory review of the economic history of the nation is presented for the late 1940's and for the 1950-1959 period. A note on the measurement problems of economic growth follows. Since national income data for the period 1950 to the present have been published only since 1956, "modern economic computations" have been used in Costa Rica only in recent years. Although there are shortcomings in these aggregate data, an attempt is made in this chapter to calculate and compare the over-all rate of growth with the rates of growth of the major economic sectors over the 1950-1959 period. Rates of growth for the period under consideration are calculated by six different methods which were recently appraised by Professor Boris Pesek.[1]

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[1] Boris P. Pesek, "Economic Growth and Its Measurement," Economic Development and Cultural Change, Vol. IX, No. 3 (April, 1961), 295-315.

The Status of the Costa Rican Economy in 1950: The Stacy May Study

The standard contemporary document on Costa Rican development--The Stacy May Report[1]--was an outgrowth of the findings of a Twentieth Century Fund Study Group of five economists who visited Costa Rica for six weeks in 1950. This group was asked to review the status of economic development in the major sectors of the Costa Rican economy. In addition, they were asked to recommend specific development projects that might be undertaken with the aid of technical and financial assistance from international agencies. The contents of the report pertain to the general conditions existing in Costa Rica in 1950.

The conclusions and policy recommendations of the study group can be classified as universal statements which would be valid in 1950, 1960 or 1970 in Costa Rica or in many other underdeveloped nations. They recommend for instance, a general development plan for the country, establishment of a better system of economic reporting and statistics as guides for planning and development, expand and improve

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[1]Stacy May et al., Costa Rica, A Study in Economic Development (New York: The Twentieth Century Fund, 1952).

scientific research in agriculture, encourage savings and channel them to fields of agricultural improvements, processing industries, and light manufacturing and assembly industries, maintain a balanced budget and even a surplus as long as inflation is not checked, and revision of the government finances and tax collection systems.

With respect to the agricultural sector, the group recommended expanding the production of domestically produced foodstuffs, and to expand and diversify exports.

Economic History of Costa Rica: 1950-1959

Let us review the major events in the Costa Rican economy from 1950 to 1959. The Foreign Exchange Law of 1950 established differential foreign exchange surcharges on imports. This law also legalized the free market of foreign exchange and directed the Central Bank to use no less than 20 per cent of its receipts of foreign exchange to pay off accumulated backlog and to increase the available volume of foreign exchange in the free market.

The Law of International Payments of 1951 replaces the law mentioned above. By virtue of this law, all surcharges are abolished but both the official and free markets of foreign exchange remain legal. Moreover only "first

necessity imports" were to receive foreign exchange at the official rate.

By 1951 the free market rate of the colon had dropped to 7.00 colones per U.S. dollar; since 1952 this rate has remained at 6.65 while the official rate of exchange was 5.60 (5.67 selling rate). During this period, the Costa Rican balance of trade as well as the balance of payments has been favorable to Costa Rica although deficits were realized in several years.[1]

Government expenditures rose from 140.8 million colones in 1951 to 351.6 million colones in 1959. In spite of this large increase in government expenditures, a surplus of 104.4 million colones was realized from 1951 to 1959. 1958 left a deficit of 0.4 million colones.[2] The 1959 government budget is reproduced in Table 4.1. In 1959, 68 per cent of the total government revenue came from indirect taxes, 15.3 per cent from direct taxes, 8.5 per cent from corporation taxes and 8.2 per cent from other taxes.[3]

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[1]Balance of trade and balance of payments conditions are explored in Chapter 7.

[2]Banco Central de Costa Rica, Memoria Anual de 1955 (San José: 1953), 102; Memoria Anual de 1959 (San José: 1960), 117.

[3]Ibid., 1959, computed from data on 106.

The Costa Rican public debt decreased from 367.0 million colones in 1951 to 323.1 million colones in 1954 to reach 457.2 million colones at the end of 1959. During the same period 1951-1959, the internal debt rose from 202.0 to 301.9 million colones, while the external debt decreased from 164.5 to 155.2 million colones at the end of 1959.[1]

This period was also characterized by the expansion of credit on the part of commercial banks, especially after 1955. The volume of credit rose from 357.2 million colones to 582.3 million in 1959. During this later year 43.3 per cent of the credit was granted to agriculture, 15.4 per cent to livestock, 11.8 per cent to industry, 10.8 per cent to commerce and 18.7 per cent to other activities.[2]

The price level during this period rose 7.7 per cent as measured by the wholesale price index[3] which suggests effective monetary and fiscal policies were operative. Three important laws were enacted during this period to promote economic development: the Mining Code law of 1953, the Indus

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[1] Ibid., 1955, 105; 1959, 123.

[2] Ibid., 1959, 179.

[3] Refer to Chapter 6.

trial encouragement law of 1959 and the Economic Development Law of 1959.

Previously, the mining code of Costa Rica discouraged private activities in this sector. Law No. 1551 of May, 1953 adopted a more liberal policy toward private mining exploration. The government now encourages the mining industry by permitting duty-free importation of machinery, tools and other equipment. The second law concerns that development of industries in Costa Rica.

The Industrial Encouragement Law of September 1959 provides 99 per cent customs tax exemption on imports of construction materials, capital equipment and machinery, fuels and lubricants, raw materials and semi-manufactured products required for the establishment of new industries.[1] New industries are exempted from land taxes for five years and enjoy a 100 per cent exemption from any government tax for the first half of the period granted for the enjoyment of the benefits of this law (determined by the Ministry of Industry) and 50 per cent tax exemption during the second

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[1] "Industrial Encouragement Law" published in La Gaceta (official newspaper) September 9, 1959. New industries are considered those which manufacture products not produced in Costa Rica or produced in quantities amounting to less than 10 per cent national consumption (article 16).

half of the period. A tax equal to triple the tariff rate is established on the importation of foreign merchandise similar to that produced nationally. Merchandise produced by new industries is exempt of export taxes. "Established industries" may also enjoy a number of the benefits of this law according to provisions pertaining to this category. More than 150 applications for benefits under the Industrial Encouragement Law[1] had been made by 1950.

This policy decision of import substitution is an example of a country following the prescription set forth by Prebisch and Singer. The Prebisch-Singer import substitution policies have been discussed in Chapter I.

The third important law enacting policy dealing specifically with economic development was the Economic Development Law of November 1959.[2] This law which provides 170.1 million colones for the economic development of Costa Rica was financed by bonds of the Refund of the Internal Debt and bonds of the National Banking System.[3] Among other

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[1]U.S. Department of Commerce, World Trade Information Service, Economic Developments in Costa Rica, 1960 (Economic Reports, part 2, No. 61-19, 1961), 3.

[2]Op. cit., Memoria Anual de 1959, 357-382.

[3]These bonds bear an interest rate of 7 per cent per

TABLE 4.1

COSTA RICA, GOVERNMENT BUDGET FISCAL YEAR 1959 (ORDINARY AND EXTRAORDINARY), MILLION OF COLONES

	Amount	Percentage
Legislative Power	3,7	1.1
Presidency of the Republic	1,1	0.3
Ministries of Government		
Agriculture and Industry	6,2	1.8
Economics and Revenue	18,2	5.2
Public Education	71,0	20.2
Government, Police, Justice & Grace	18,4	5.2
Public Works	40,3	11.4
Foreign Relations	3,7	1.0
Public Health	8,4	2.4
Public Security	13,3	3.8
Labor and Social Welfare	1,7	0.5
Total Executive Power	182,3	51.8
Judicial Power	13,5	3.8
Supreme Tribunal of Elections	2,0	0.6
Pensions and Retirement	14,0	4.0
Subventions	77,0	21.9
Internation Organ. Quotas	1,7	0.5
Outstanding Payments	0,0	0.0
"Prestaciones Legales" and other additional payments	14,8	4.2
Verdicts and Sentences	0,2	0.0
Pensions, Subventions, etc.	107,7	30.6
Service of External debt	17,5	5.0
Service of Internal debt	24,9	7.1
Financial Transactions	0,0	0.0
Total Service of Public Debt	42,4	12.1
Total Government Budget	351.6	100.0

Source: Banco Central de Costa Rica, Memoria Anual de 1959, San José, 1960, p. 115.

provisions made by this law, 35.0 million colones are to be invested in road construction in agricultural regions; 80.0 million colones were given to the banking system to increase their credit funds (including expansion of the Agricultural Credit System[1] and provisions are made to organize separate Industrial Credit Departments in three commercial banks. The National Production Council[2] received 3.7 million colones for the purchase of agricultural machinery to be rented to agricultural producers, to expand refrigeration facilities and to stabilize the price of brown sugar for consumption. The University of Costa Rica received 1 1/4 million colones to expand its research programs on the production of basic foodstuffs.

Problems of Measurement of Economic Growth

The over-all goal of economic development can be said to be the maximization of the rate of expansion of production over time. In this sense, the process of growth

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year and like all bonds of these two series, are exempt of any municipal or national taxes, present or future, on the principal or on the interest accrued.

[1]The Agricultural Credit System is analyzed in Chapter VI.

[2]See Chapter VI.

is essentially quantitative. Furthermore, economic development implies certain types of changes covering numerous phases which must be studied in the aggregate as well as for the components of the required structural shifts or changes. It would be an impossible task to attempt to estimate the quantitative aspects of economic growth for the thousands of economic units in a nation. It is for this reason that the reduction of these quantitative aspects to some single value measurements is inescapable.

Some single value measurements repeatedly used by economists as gauges of economic performance are National Income Accounts. Records of national product (or income) and its components are an indispensable tool for the study of the general characteristics of the development of a country or region. For many underdeveloped countries records of national product are helpful in planning and policy making.

The most frequently used measures of economic performance using National Income Accounts are: National Product, National Income and Domestic Product. Each one of these three gauges of output can be estimated in gross terms if

they do not include the capital goods consumed in the production process. The inclusion of capital consumption allowance will yield the net figures in either one of the accounts considered.

Gross national product represents the market value of the output of a nation while national income denotes the allocation of income originating from that output. Gross national product refers to the productive contribution of individuals residing in a given country, together with the productive contribution of any property owned by such residents, whether this property is located at home or abroad. In other words, the boundary of gross national product is defined in terms of the nationals of a country and their property rather than in terms of geography. Gross domestic product measures the production occurring within a given geographical area irrespective of whether the productive resources in question are owned by nationals of that area or not. It also excludes any foreign property that is held by nationals of the country in question. Thus, gross domestic product measures the productive activity taking place within a geographical area whereas gross national product refers to the productive activity of a

specific group of individuals (nationals) and their property. Aside from this difference in coverage, gross national product and gross domestic product are equivalent concepts. Both measures have difficulty in handling the problem of defining intermediate goods and services treatment of non-market output and treatment of transfer payments.

Gross domestic product may be larger than gross national product if one or more of the main sources of productive activity and the resources involved, are owned and operated by nationals of other countries. Conversely, gross domestic product will be smaller than gross national product if the nationals of the country have large foreign investments so that the country's net property income from abroad may be substantial.

The three national income estimates mentioned above are usually expressed in terms of market prices. However, an alternative method of valuation production is to value national output in terms of what it costs in terms of factors of production. Any national income aggregate expressed in "factor cost," excludes any indirect tax paid by business to the government since such taxes do not fall on any

specific factor of production. For the same reason, business transfer payments and current surplus of government enterprises are not included, on grounds that they are not payments to the factors of production.

Taxes on any factor of production, such as corporate profit tax, social insurance contributions, as well as subsidies are part of the factor cost to producers. Factor cost valuation is not really an independent method of valuation showing the cost necessary to obtain the services of factors but rather it is an adjustment of market value to show the proportion thereof that the factors receive.[1]

Given the importance of national income estimates in judging economic conditions and their use in economic planning and economic policy, the limitations and shortcomings of these estimates should be kept in mind. The use of national income accounts presents two problems: first, conceptual and statistical problems which are inherent to the actual measurements themselves; second, the failure to reflect non-economic changes.

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[1]Richard Ruggles and Nancy D. Ruggles, National Income Accounts and Income Analysis (New York: McGraw-Hill Book Company, Inc., 1956), 117.

Conceptual and Statistical Problems

The first conceptual problem stems from the definition of intermediate goods and services. In summing the market value of goods and services produced by an economic complex, it is necessary to exclude the intermediate goods and services that enter in the production of other goods and services. In other words, any transaction which represents a purchase by a productive unit from other productive units on current account, should be omitted from the total market value of national output. In many instances, it is difficult to distinguish between intermediate and final goods and services. Some items may appear as an expense in the ledger of a firm, in economic terms, may not represent the use of material or other goods used in current output or increase in inventories. In addition to the conceptual problem of separating current expenditures from capital expenditures, a further problem arises from the fact that many outlays that firms can treat as current expense for taxation purposes, are in reality capital formation.

Another problem involves distinguishing between intermediate and final goods and services provided by the government. Government services can be considered as final

goods given to the economy or as intermediate services given to all economic units of a nation. Since most government services are provided free of charge,[1] it is debatable whether they should be included in the total output of a nation. They should be included if government services are considered as services consumed by producers in their production process or if the market price of goods requiring those services would rise should business be called upon to pay directly for such services. However, government services should not be included in the total value of the output of a nation if one maintains that business does pay for those services indirectly through taxes (i.e., gasoline taxes, corporation taxes, etc.). Again, this is a conceptual problem inherent to national income accounts.

In national income accounting, all consumers' expenditures are considered as outlays for final products. This procedure is to some extent arbitrary and not very accurate since it is based on the assumption that individuals do not

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[1]These services may include roads, information services, conservation or agricultural extension services, public health and facilities, etc.

have expenses that can be classified as purchases of intermediate goods and services.

Another conceptual problem is presented by the omission of unilateral transfers from the computation of national income accounts. These unilateral transfers or payments are mainly constituted by gifts of one individual to another and government transfer payments such as bonuses, relief payments, pensions, etc. The former are omitted from national income estimates on grounds that they do not refer to any particular production, the latter on grounds that they are means of income redistribution rather than income arising from any particular production.

Finally, statistical problems arise from the exclusion of non-market production from national income figures. This non-market production refers to rent "not paid" by home owners residing in their own homes, home-made goods and services for household consumption, domestic servants obtaining free room and board in payment for their services and farm produce consumed at the farm. The omission of non-market production from national product estimates represents a major statistical problem. This is particularly true in underdeveloped countries where the extent of their market or monetary economy is limited.

This discussion brings us to the second major limitation of national income accounts and their use in underdeveloped countries.

Failure To Reflect Non-economic Changes

It has been stated that economic development can be conceived as the maximization of the rate of expansion of production over time. In order to maximize the rate of production in underdeveloped countries, a number of social, political and institutional changes may be required. National income aggregates fail to reflect, to any great extent, such changes. The ultimate goal of economic development is to improve the standard of living of the population through increased output and productivity. However, the standard of living of a community is as a rule affected by much more than the mere flow of goods and services. Non-economic forces such as political, social, religious and cultural considerations, influence the level of well-being achieved by the members of a society. Not only do there exist significant divergences in the socio-cultural environment of different countries relative to their income levels, but also the actual increment in total output of a country may entail radical changes in the

institutional and socio-cultural complex. Changes in national income or output, are almost certain to be accompanied by changes in the distribution of income. Although any rise in income represents a tacit improvement for a given society, given the change in income distribution which is likely to accompany the increase in income the economic situation may be worse than before. Therefore, to equate differences in the level and/or structure of aggregate output with variations in community welfare and levels of economic development, is rather hazardous and arbitrary.

National income records are relatively scarce in underdeveloped nations, and largely unavailable for the study of long period trends. One author contends that the relative scarcity of national income data in underdeveloped countries can be attributed to two factors: first, that the social and economic life does not produce statistics in the course of everyday life, and second, that poorer countries have no resources to spare for the collection and analysis of data which in the short-run, satisfy less pressing needs than food and other necessities of the population.[1]

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[1]Simon Kuznets, "Problems in Comparisons of Economic Trends," Economic Growth, Brazil, India, Japan, Simon Kuznets, Wilbert E. Moore and Joseph J. Spengler (eds.), (Durham, N.C.: Duke University Press, 1955), 9.

In the preceeding pages, some of the contributions and shortcomings of the use of national income estimates for the measurement of economic growth have been discussed. The following quotation offers a good summary of this discussion.

> . . . long-term records of national product and its components are indispensable for the study of the general characteristics of economic growth of nations can hardly be gainsaid. Indeed, the major difficulty is not in the defects of the national product measures, but in their scarcity . . . . Provided that we recognize the assumptions and the difficulties, much can be learned.[1]

Costa Rica National Income Data

National income data for the Costa Rican economy were not available until 1956; the estimates go back as far as 1950.[2] These statistics are reproduced in Table 4.2. The gross national product rose from 1,298 million in 1950 to 2,530 million colones in 1959. All three main aggregates, national income, national product or domestic product, showed almost a twofold increase during the period considered. The per capita national income in current prices rose from 250

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[1]Simon Kuznets, "Some Conceptual Problems of Measurement," Economic Development and Cultural Change, Vol. IV, No. 4 (October, 1956), 7.

[2]Banco Central de Costa Rica, Ingreso y Producto Nacionales de Costa Rica, 1950 (San José, 1956).

dollars in 1950 to 332 dollars in 1959.[1]

Table 4.3 shows the gross domestic product by economic sectors for the 1950 to 1959 period. Table 4.4 shows the per cent contribution of the major economic sectors to the gross domestic product in 1950 and 1959.

Agriculture, manufacturing and mining and services contributed 54.6, 11.4 and 11.8 per cent respectively to the gross domestic product in 1950. These three major sectors employed 54.7, 11.2 and 14.7 per cent respectively of the economically active population in 1950.[2]

In 1959, agriculture accounted for 35.7 per cent of the domestic product which represented a decrease of 9.85 per cent from 1950. Government and government services and state enterprises were the two sectors which showed the greatest proportional increases in their contributions to the domestic product.

National income figures are useful to show structural economic changes over time. However, for purposes of

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[1] Banco Central de Costa Rica, Departamento de Estudios Economicos, Ingreso y Producto Nacionales de Costa Rica, 1950-1958 (San José, December, 1959), 7.

[2] See Chapter III, Table III, 2, p. 14.

TABLE 4.2

COSTA RICA: GROSS NATIONAL INCOME, GROSS NATIONAL PRODUCT AND GROSS DOMESTIC PRODUCT AT FACTOR COST, 1950-1959[a]
Millions of Colones

Year	Gross National Income		Gross National Product		Gross Domestic Product	
	Current Prices	Constant 1953 Prices[a]	Current Prices	Constant 1953 Prices[a]	Current Prices	Constant 1953 Prices[a]
1950	1120.0	992.0	1298.2	1149.9	1205.7	1067.9
1951	1210.0	1039.0	1410.0	1210.8	1304.3	1120.1
1952	1296.0	1239.9	1516.0	1450.4	1438.6	1377.8
1953	1428.7	1428.7	1698.9	1698.9	1568.4	1568.4
1954	1535.6	1470.7	1846.2	1768.2	1676.5	1605.7
1955	1693.6	1579.2	2031.7	1894.5	1830.3	1706.7
1956	1769.7	1636.5	2121.8	1962.1	1886.2	1744.2
1957	1885.0	1744.6	2287.2	2116.7	2031.4	1880.1
1958	2025.0	1874.8	2450.0	2268.3	2180.8	2019.1
1959	2100.0	1954.9	2530.0	2355.0	2223.5	2069.7

Source: United Nations, Yearbook of National Accounts Statistics, 1958 (New Yori, 1956), 52-54. Banco Central de Costa Rica, Departamento de Estudios Economicos, Ingreso y Producto Nacionales de Costa Rica, 1955-1959 (San José, February, 1961).

[a] These statistics have been deflated by the Wholesale Price Index computed by the Central Bank and reproduced in Chapter VI.

TABLE 4.3

COSTA RICA: GROSS DOMESTIC PRODUCT BY ECONOMIC SECTORS 1950-1959

Millions of Colones at Current Factor Cost

Sectors	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Agriculture	549.8	589.5	642.2	695.8	723.8	780.3	702.1	788.2	861.1	795.0
Manufacturing & Mining	137.8	148.5	162.2	175.8	186.5	201.1	220.1	233.8	244.5	260.4
Construction	39.3	42.1	46.1	50.0	53.2	57.3	6218	67.1	71.8	75.6
Transportation, Storage & Communication	41.1	45.8	50.6	55.3	58.4	63.4	68.6	74.2	79.8	90.1
Wholesale & Retail Trade	106.9	115.2	125.1	134.9	142.1	154.2	169.4	184.6	197.7	213.5
Ownership of Dwellings	54.8	58.8	71.5	77.0	82.0	88.0	95.4	99.2	101.9	105.5
Government & Government Institutions	71.7	83.9	99.0	117.1	139.6	158.2	184.5	205.3	229.3	251.1
Services	143.0	156.7	170.3	184.0	195.2	210.4	231.1	245.5	256.1	275.9
State Enterprises	61.3	63.8	71.1	78.5	95.7	117.4	152.3	133.5	138.6	156.4
Gross Domestic Product	1205.7	1304.3	1438.1	1568.4	1676.5	1803.3	1886.2	2031.4	2180.8	2223.5

Source: United Nations, Yearbook of National Account Statistics, 1956 (New York: 1956), 52. Banco Central de Costa Rica, Departamento de Estudios Economicos, Ingreso y Producto Nacionales de Costa Rica, 1955-1959 (San José, 1961).

TABLE 4.4

PERCENTAGE CONTRIBUTION OF MAJOR SECTORS TO THE GROSS DOMESTIC PRODUCT OF COSTA RICA, 1950-1959

Sector	1950	1959	Percent Change
Agriculture	45.60	35.75	-9.85
Manufacturing & Mining	11.43	11.71	.28
Construction	3.26	3.40	.14
Transportation, Storage & Communications	3.41	4.05	.64
Wholesale and Retail Trade	8.86	9.60	.74
Ownership of Dwellings	4.54	4.70	.16
Government and Government Institutions	5.94	11.29	5.35
Services	11.86	12.41	.55
State Enterprises	5.08	7.03	1.95

analysis and planning, macroeconomic statistics have limited value per se. For this purpose, the important issue is the rate of growth. The following pages will present a description and evaluation of the methods currently used to compute growth rates.

Some Measures of the Rate of Growth in Costa Rica: 1950-1959

The goal of economic development is the maximization of the rate of expansion of production over time. The measurement of the rate of economic growth is of vital importance to many nations. In view of this, and the frequent use of rates of growth by economists and policy makers, Professor Boris P. Pesek has explored and commented on the methods that are in use for the calculation of this rate of economic growth.[1] In addition, he proposes a new method which rests on a more meaningful set of algebraic restraints and which more accurately reproduces the flow of actual output during the period covered.

Description of the Methods[2]

Method I

The simplest and most widely used formula to measure economic growth is based on the geometric average of the ratios of output during successive time periods. The

[1] Boris P. Pesek, "Economic Growth and Its Measurement," Economic Development and Cultural Change, April, 1961, 295-315.

[2] I am indebted to Professor Boris Pesek for his personal cooperation and help in the description and mechanics of the application of the techniques to measure the rates of growth in Costa Rica.

formula can be algebraically expressed as follows:

$$G_1 = \left(\sqrt[n-1]{\frac{Pn}{P1}} - 1 \right) \times 100$$

Where G_1 is the rate of growth, n is the number of years considered, P is the output in periods 1,2,3, . . . By this method we can calculate the rate of growth which if compounded annually over a given period yields the terminal increase in the variable analyzed. The main disadvantage of this method is that it is influenced by cyclical fluctuations in the output stream.

Method II

Method II or G_2 is simply the calculation of the arithmetic mean of the annual rates of growth.

$$G_2 = \left(\frac{\sum_{t=1}^{n} \frac{P_t}{P_t - 1}}{n-1} - 1 \right) \times 100$$

Pesek illustrates the serious shortcomings of this method by giving the following example. First, consider an output series of 100, 90, 99. The output decreases and then increases by ten per cent. Consequently, the rate of growth will be shown to be zero despite the fact that output decreased and increased again relative to period

two. An extension of the above series could drive output to zero and the calculated rate of growth would never show a negative growth.[1]

Method III

This formula is simply the calculation of the geometric mean of percentage changes. If one of the factors is equal to zero or if some of the factors have negative signs, this method fails to give useful results. In other words, if there is no growth in output from one year to the next, or if there is an actual decrease in output from one period to the next one, this method, being the geometrical means of percentage changes, would show a zero rate of growth in the first case and a negative growth in the second case. Therefore, this method is not of any practical use.

Method IV

Both methods IV and V fit exponential growth curves of the type $Y = ab^t$ to the values observed during the period analyzed.

Method IV utlizes the least squares method to calculate the rate of growth. However, since it is not possible to

[1] Ibid., p. 300.

fit an exponential curve directly to the actual values of the variable in consideration by the use of the least squares method, the curve has to be fitted to the logarithms of the observed values of the variable. Formula IV can be expressed as:

$$G_4 = \left(t\text{-}1 \sqrt{\frac{e^{P't}}{a^1}} - 1 \right) \times 100$$

in which $e^{P't}$ and a^1 are calculated by the least squares method,[1] which provides for the sum of the logarithms of the actually observed values to be made equal to the sum of the logarithms of the estimated values of output; in other words, this technique makes the product of the actual outputs equal to the product of the estimated output. This method, although found by Pesek to be in considerable agreement with the standard method VII, as far as performance is concerned, fails to achieve the more meaningful economic requirement that the sum of the actual outputs be equal to the sum of the estimated outputs.

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[1] The technique of calculation can be found in any statistical textbook, e.g., F. E. Croxton, D. J. Cowden, Applied General Statistics (2nd ed.; Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1956), 293.

Method V

To eliminate this shortcoming, James W. Glover[1] developed another technique to fit an exponential growth curve to serial data. His technique is:

$$G_5 = \left(t\sqrt{\frac{e^{P''}t}{a''}} - 1 \right) \times 100$$

where $e^{P''}t$ and the a" are calculated to satisfy the requirement that the sum of the actual values of output is made equal to the sum of the estimated values of output; in addition, the sum of the products of the actual values of output and the measure of time is made equal to the sum of the products of the estimated values of output and the measure of time. This technique has the advantage of meeting the requirement that the output produced during the period analyzed is made equal to the sum of the estimated outputs; this quality is not shown by any of the methods previously discussed.

The main disadvantage of this method is the arbitrary selection of weights.[2] As stated above, method V requires

[1]James W. Glover, Tables of Applied Mathematics in Finance, Insurance, Statistics (Ann Arbor: 1923), 468.

[2]See Appendix 1, p. 20.

that the sum of the products of actual outputs and the set of weights (0, 1, 2, 3, . . . n) be equal to the sum of the estimated outputs and the same set of arbitrary weights cannot be given any economic interpretation. As Pesek comments: "Indeed, if we claim that the year 3 is twice as important as year 2 (weights 2 and 1 respectively), consistency would require that year 4 be considered twice as important as year 3; another set of weights 1, 2, 4, 8,...n would seem at least equally defensible."[1]

Method VI

For all practical purposes, method VI can be expressed and calculated by the following formula:

$$G_6 = \frac{\sum^{n} {}_{t+1}P_t}{P_2} = X$$

where X can be found in the body of a table showing the amount of 1 Per Annum at Compound Interest (S_n i) in period n; the rate of interest shown by the table for the known X and n is the rate of growth under method VI or G_6. This method has the advantage not shared by any method

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[1] Ibid., p. 303.

except method V, that it ensures that the sum of actual outputs during the period will be equal to the sum of the estimated outputs during the period. Furthermore, it does not suffer from the weighting procedure which burdens all other methods except method V. Method V is extremely easy to calculate. However, the selection of the base period is arbitrary. This feature is also shared by method I; nevertheless, this method, in contrast to G_1, reflects the pattern of output during the period analyzed.

Method VII

Pesek submits a seventh method for the calculation of growth rates which, in his opinion, is superior to any one of the previously described methods. Method VII simultaneously selects a growth rate and a fictitious base year quantity such that the sum of the actual outputs during the period be equal to the sum of the estimated outputs for the same period and that the sum of the squared absolute deviations between the actual outputs in the various periods and the estimated outputs for the same periods be minimized.

$$G_7 = \frac{b^n + 1}{b + 1} = \frac{\sum_{t=1}^{n} P_t \, b^{t-1}}{\sum_{t=1}^{n} P_t} \quad \text{or} \quad G_7 = (b-1) \times 100.$$

The advantages of this method are substantial. First, the total production during the period is reflected; only G_5 and G_6 share this feature. Secondly, the rate which one obtains by the application of this method is neither determined by the initial and final values of the time series analyzed (as in G_1) nor is the rate of growth influenced more by the initial value in the series analyzed than it is by any other value (as in G_6). The case for the minimization of the squares of the deviations is, according to Pesek, stronger than the set of arbitrary weights employed by the method yielding G_5. The main disadvantage of this method is that it requires a fairly substantial computational effort. Most underdeveloped nations do not have the computer facilities to use method VII.

Performance of the Methods

Pesek used the United States' gross national product from 1929 to 1959, including three subperiods to compare the relative performance of the methods analyzed with method VII. He concluded that methods I, III, and IV lead to less satisfactory results than methods V, VI and VII in estimating the total output of the economy in all cases analyzed. Furthermore, methods I and II show extreme

sensitivity to economic fluctuations caused by the addition or subtraction of one year from the group of seven other years analyzed in the subperiods. Methods V and VII are superior in performance to all the other methods.

In addition, Pesek compared the performance of all seven methods by the estimation of rates of growth over a long period of time. He concluded that method VI misses by substantial margins the standard represented by method VII. The reason for this is undoubtedly the excessive dependence of this method upon the arbitrary selection of the base year. Method I could be expected to yield results which are highly comparable to the ones yielded by method VII because the long time period eliminates the effects of cyclical fluctuations. Pesek found that, in some instances, method I yielded results which are in reasonable proximity with the ones yielded by method VII but in other cases the errors were very substantial. Method V shows, for the first time, considerable discrepancies with the results yielded by method VII. For long-run computations, method V persistently overestimates the rate of growth. This, of course, can be expected since the more recent years, containing higher absolute increases in output, receive a more than proportional share of the total weights.

As an over-all conclusion method VII is the most accurate method of measurement whether considering long run or short run time series data. Method V is an accurate method for data covering short or intermediate run periods (not over 35 years); however, it fails to yield accurate results for long run data. The advantage of method V over method VII is the ease of calculation of the former over the latter method.

Let us turn to the measurement of the rates of growth of the Costa Rican economy. In the first part of the analysis, six different formulas were used to compute the growth rates of the Costa Rican gross national product, gross national income and gross domestic product in the aggregate and economic sectors. It was found that the six rates of growth are in considerable agreement with the results of Pesek's "standard" method VII. Method I shows an average variation of 2.59 per cent from the results yielded by our "standard"; method II 2.01 per cent; method IV 2.99 per cent; method V 0.84 per cent, and method VI 8.35 per cent. This suggests that method V gives results which are superior to the ones given by the other methods, except our "standard." In addition, method V shows the least range of

variations in the results yielded, when considering all economic sectors plus the three main aggregates. However, method I yielded closer results to our standard than method V when considering national product, national income and domestic product only.

TABLE 4.5

ANNUAL RATES OF GROWTH OF THE COSTA RICAN ECONOMY; GROSS NATIONAL PRODUCT AND INCOME, GROSS DOMESTIC PRODUCT BY ECONOMIC SECTORS, USING SIX DIFFERENT COMPUTATIONAL METHODS, 1950-59

	G_1	G_2	G_4	G_5	G_6	G_7
Gross national product	7.79	7.72	7.99	7.84	8.42	7.76
Gross national income	7.23	7.21	7.45	7.34	7.80	7.28
Gross domestic product (total)	7.04	7.00	7.20	7.05	7.85	6.98
Agriculture	4.18	4.40	4.39	4.28	5.64	4.21
Manufacturing & mining	7.73	7.28	7.41	7.33	7.72	7.28
Construction	7.54	7.51	7.71	7.66	7.84	7.62
Transportation, storage and communication	9.12	9.08	8.59	8.57	9.10	8.57
Wholesale, retail trade	7.99	7.93	8.00	8.04	7.93	8.05
Ownership of dwellings	7.44	7.44	8.15	7.88	8.60	7.73
Government & government institutions	14.94	14.94	15.27	14.58	16.14	14.46
Services	7.57	7.53	7.50	7.43	7.96	7.39
State Enterprises	11.00	11.57	12.34	11.41	11.86	11.53

On the basis of this analysis, we can conclude that method V is the best method to use in underdeveloped countries to calculate short-term rates of growth.

The rates of growth of the Costa Rican economy are shown in Table 4.5. All rates shown in this table are based on current prices. During the 1950-1959 period, the national product of Costa Rica increased at an annual rate of 7.84 per cent; national income and gross domestic product at rates of 7.34 and 7.05 per cent respectively. When the rates of growth were computed for the same aggregates at constant prices, no major differences were found; annual rates of growth of 8.00, 7.53 and 7.06 per cent were experienced by national product, national income and domestic product respectively. The sectoral analysis of the gross domestic product of Costa Rica for the 1950-1959 period shows that Government, government institutions and State enterprises are the two most rapidly expanding sectors; they have experienced annual ratesof growth of 14.58 and 11.41 per cent respectively. The manufacturing sector grew at the rate of 7.33 per cent per annum during the period considered. Agriculture's growth rate of 4.28 per cent was the slowest of all sectors. Non-agricultural sectors

expanded at a rate twice as fast as the agricultural sector. Since the rate of population growth for Costa Rica during 1950 to 1959 reached 3.87 per cent annually, and the national income (at constant prices) during the same period experienced a rate of growth of 7.53 per cent, the actual increase in per capita income amounts to 3.66 per cent per year.

Summary

The economic history of Costa Rica in the 1930's and 1940's was marked by extreme difficulties in maintaining external balance. Foreign exchange difficulties have been frequent; import controls have been exercised since the 1930's. Internal economic problems have been marked by lagging production of domestic foodstuffs; retail and wholesale price controls on staple commodities were introduced in 1937. These controls have remained in force for the past twenty-five years.

During the 1950-1959 period, considerable efforts were made to use fiscal and monetary policy to speed-up economic development. Moreover, three important laws were enacted in 1959 to encourage investment and development of mining and import industries. Hence Costa Rica, like several

other Latin American countries, is placing increasing emphasis on import substitution.

Some of the important limitations of national income (or product) estimates were elaborated in this chapter. Costa Rica started using modern economic statistical aggregates in 1956. Six different methods of computing annual rates of growth were discussed and used to compute the rate of growth of the Costa Rican economy from 1950 to 1959. Despite a rate of population growth 3.87 per cent per year, the per capita income in constant prices increased 3.66 per cent per year from 1950-1959. Per capita income rose from 250 dollars in 1950 to 332 dollars in 1959. Gross national product doubled during the same period.

The annual rate of increase during the 1950-1959 period of the gross national income, gross national product and gross domestic product of Costa Rica at constant prices has been 7.53, 8.00, and 7.06 per cent respectively. The Government and State enterprises are growing at rates of 14.58 and 11.41 per cent respectively. Manufacturing experienced a rate of growth of 7.53 per cent per year. The annual rate of growth of the agricultural sector--4.28 per cent--was the smallest of the sectors.

CHAPTER V

THE PERFORMANCE OF COSTA RICAN AGRICULTURE: 1950-1959

The purpose of this chapter is to explore some of the characteristics of Costa Rican agriculture such as: main agricultural regions, shifts in land use, and changes in agricultural output during the 1950-1959 period.

Costa Rica has approximately 50,900 square kilometers (23,000 square miles) of land. Volcanic activity has been an important element in the formation of the Costa Rican territory and the topography of the country is irregular. Mountains and plateaus cover a considerable proportion of the national territory. Two mountain ranges cross the country lengthwise through the central part: the Volcanic Mountain Range in the north and the Talamanca Mountain Range in the south. This last range contains the highest altitude in Costa Rica, the Chirripo Grande which stands at 12,572 feet above sea level. The presence of these ranges divides the country into three physiographical zones: North, Central and South. The same two mountain ranges together with the predominant northeasterly winds divide

Costa Rica's climate into three principal groups: the humid tropical zone in the Atlantic; the Central part with mild climate and the Pacific zone of tropical climate but with well defined dry and rainy seasons.

From a hydrological point of view, Costa Rica is well endowed. The mountain complex mentioned above divides the water resources into the Pacific and the Atlantic watersheds. The hydroelectric potential is probably the country's most valuable resource.[1] In general, Costa Rica has fertile soils with good agricultural potentialities.

Main Agricultural Regions and Their Characteristics

There are six major agricultural regions in Costa Rica.[2] The coffee, sugar cane and dairy regions are found in the Central part of the country where the climate is mild and the soils are of recent volcanic origin.

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[1] Tulia Quiros, "Breve Resena Geografica e Historica de Costa Rica," Atlas Estadistico de Costa Rica (San José: Direccion General de Estadistica y Censo, 1954), 24.

[2] For a more detailed account see: W. A. Peterson, "Regiones Agricolas de Costa Rica," Atlas Estadistico de Costa Rica (San José: Direccion General de Estadistica y Censo, 1954), 74.

Coffee Region

The most important coffee region is located along the Central Plateau from Tres Rios to San Ramon. This region is characterized by subtropical climate with a definite dry and rainy season. The soils are of recent volcanic origin. The altitude varies between 800 and 1400 meters. Coffee is produced under intensive methods. Two coffee sub-regions are located on the southern and eastern part of the plateau. Sugar cane is produced as a complementary crop to coffee in this sub-region.

Sugar Cane Region

This region is located on the western and eastern ends of the Central Plateau respectively. Coffee production is also very important in this region; in many cases, sugar cane also is a complementary crop to coffee. Although ecological conditions do not suggest that this region is best suited for the production of sugar cane, transportation facilities and proximity to the main consumption centers have greatly determined its present use.

Dairy Region

The dairy region begins in the Central Plateau where the coffee region tapers off at altitudes above 1400 meters. The climate of this region is mild and has moderate rainfall. Soils are of volcanic origin with very high fertility. A dairy sub-region is found in the southern part of the Central Plateau. Dairy production is carried out on an extensive basis and in competition with coffee and timber.

The next three regions--Cereal Grain, Beef Cattle, and Cocoa and Banana--are located along the Atlantic and Pacific plains.

Cereal Grain Region

The cereal grain region is located in the low plains of the Pacific Coast. Prior to the wide cultivation of cereals in this region, cattle production was the predominant activity, but with improvements in transportation facilities, livestock production is now carried out as a secondary enterprise along with the production of cereal grains.

Beef Cattle Region

This region is located on the northern side of the Pacific Coast in the Province of Guanacaste. The climate

is dry and warm. Beef breeding cattle are grazed on the plains. A less important cattle region is found on the Atlantic plains. The humidity and the high level of rainfall of the Atlantic region make it ideal for the fattening of cattle since it yields green pastures all year. Cereal grain production in this Atlantic region is also an important activity.

Cocoa and Banana Regions

The banana and cocoa region lies along the southern Pacific Coast of Costa Rica, as well as along the Atlantic Coast. The ecological characteristics of these two regions are fundamentally the same except for the presence of a definite dry season in the Pacific Coast. Their accessibility to international trade, along with their favorable climatic and soil conditions enable these regions to specialize in the production of commodities grown primarily for export.

Land Tenancy in Costa Rica

The social and economic benefit of the use of land depends to a great extent on the status of the agricultural producer. Although Costa Rica has a high proportion of its

TABLE 5.1

COSTA RICA, SIZE AND NUMBER OF FARMS

Size in Manzanas[a]	1950		1955		1950-1955 Change	
	Per Cent of Farms	Per Cent of Farm Land	Per Cent of Farms	Per Cent of Farm Land	Per Cent Change	Per Cent Change in Number of Farms
Less than 4	27.9	1.1	28.8	1.9	+0.9	+0.2
5 - 9	16.2	1.8	15.6	1.9	+0.2	+0.1
10 - 19	15.2	3.4	14.9	3.6	-0.3	+0.2
20 - 49	20.8	10.8	20.8	11.7	0.0	+0.9
50 - 99	10.9	11.9	10.7	12.8	-0.2	+0.9
100 - 174	4.4	9.1	4.7	10.4	+0.3	+1.3
175 - 499	3.2	14.3	3.2	15.9	0.0	+1.6
500 - 999	0.8	8.7	0.8	8.9	0.0	+0.2
1000 - 1499	0.2	4.1	0.2	4.7	0.0	+0.6
1500 - 3499	0.3	8.2	0.2	8.0	-0.1	-0.2
3500 & over	0.1	26.6	0.1	21.0	0.0	-5.6

Source: Direccion General de Estadistica y Censo, Censo Agropecuario de 1950 (San José, 1953), 9; Censo Agropecuario de 1955 (San José, 1955), 121.

[a]One manzana equals 1.7 acres.

agricultural land owned legally by its producers, there is not an egalitarian distribution of land ownership. Table 5.1 shows, for example, that in 1955 a total of 28.8 per cent of the farms were less than five manzanas (8.5 acres) in size. These 13,633 farms comprise only 1.9 per cent of all farm land. On the other hand, 0.1 per cent of the farms were over 3500 manzanas (5950 acres) in size. The fifty farms in this category comprise 21.1 per cent of all farm land.

Table 5.2 shows that in 1955, 75.5 per cent of the farms and 81.1 per cent of the farm land was owned by producers; 1.4 per cent of the farms were rented and 16 per cent were in other forms of ownership. The category "other forms" includes land given free for cultivation, squatters and colonos. Colonos are farmers which have been granted land by the State to form agricultural settlements supported and organized under a National Law. The State assumes the responsibility for the settlement and in some cases may even direct its activities. Although 75.5 per cent of the farms and 81.1 per cent of the farm land is owned by agricultural producers, all together, the land on farms exploited by the legal owner covers 88.9 per cent of the

total agricultural area of Costa Rica.[1]

Comparing the figures in Table 5.2 for 1950 and 1955, it can be seen that there has been a decrease of 5.6 per cent and 8.6 per cent in the number of farms owned by producers and in the percentage of total farm area respectively over the 1950 Census. "Other forms" of land tenancy showed an increase in 1955 of 10.6 per cent in the number of farms and also an increase of 3.9 per cent in the percentage of farm land.

Size and Number of Farms[2]

Table 5.3 shows that there has been an increase of 4,200 farm units and 56,111 manzanas of land over the 1950 census. This represents an increase of 9.8 per cent and 2.2 per cent in the number of farms and area under cultivation

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[1] Direccion General de Estadistica y Censos, Censo Agropecuario de 1955 (San José, 1959), XVII.

[2] The Census defines a farm as "any extension of land of one manzana or more which is dedicated totally or partially to agricultural or livestock production and where the production activities are directed or administered directly by one person alone or with the help of others." A farm could consist of one or more tracks of land, owned or rented, as long as they were located within the same county or nearby counties provided that the tracks of land belonged to the same technical or economic unit. Direccion General de Estadistica y Censo, Censo Agropecuario de 1955 (San José, 1959), XII.

respectively. One-half of the farms are located in the most heavily populated provinces of San José and Alajuela in the Central Plateau of Costa Rica. Only four provinces of the seven provinces of San José, Puntarenas and Limon showed an increase in the number of farms as well as in the area under cultivation. The other four provinces showed a decrease in both. The province of Guanacaste contains only 18 per cent of the farms while comprising 33.7 per cent of the total area of farm land. This fact indicates a high degree of concentration of farm land and therefore the presence of latifundia type of land tenancy. The opposite phenomenon occurs in the Heredia Province where 5.2 per cent of the farms and only 3.1 per cent of the farm area is found. The presence of latifundio as well as minifundio type of land holding is more clearly shown by Table 5.2. The 1950 Census of Agriculture shows that 0.1 per cent of the farms (49 farms) contained 26.6 per cent of the agricultural land; and in 1955, the same percentage of the number of farms (50 farms) comprised 21 per cent of the total farm area, showing a decrease of 5.6 per cent over the 1950 Census. On the other hand, Table 5.1 also shows that in 1955, 28.8 per cent of the total number

of farms had an extension of less than 4.9 manzanas; they contained 1.3 per cent of the total agricultural land. Farms of less than 10 manzanas (17 acres) accounted for 44 per cent of the farms and 3.8 per cent of the farm land.

According to the 1955 Census, 84 per cent of the producers live on the farm. Of this, 84 per cent are resident producers, 81.6 per cent are owner-operators and 2.4 per cent manager-operators. Of the 16 per cent non-farm residents, 9.9 per cent are owners and 6.1 per cent are managers.[1]

Land Use in Costa Rica

The 1955 Census of Agriculture reported an area of 2,648,331 manzanas in farms. This figure represents 36.4 per cent of the national territory. Table 5.4 shows that in 1955 the land used for the production of annual crops, fallow land, and other crop land, comprises 401,663 manzanas which represents 15.2 per cent of the farm land in Costa Rica. Most of the crops for internal consumption are produced on this land. The second major land use group is that made up of land in permanent crops such as coffee,

[1] Ibid., XXI.

TABLE 5.2

COSTA RICA: LAND DISTRIBUTION BY PERCENTAGE OF FARMS AND PERCENTAGE OF TOTAL FARM AREA

Type of Holding	Per Cent Total Number Farms		Per Cent Total Farm Land	
	1950	1955	1950	1955
Owned	81.1	75.5	89.7	81.1
Rented	2.1	1.4	0.7	2.1
Other forms[a]	5.4	16.0	1.5	5.4
Mixed forms[b]	11.4	7.1	8.1	11.4

Source: Direccion General de Estadistica y Censo, Censo Agropecuario de 1950 (San José, 1953), XIII; Censo Agropecuario de 1955 (San José, 1959), XVII.

[1]Includes land given for cultivation free of charge, squatters and colonos.

[2]Includes mixed forms such as owned and rented, owned and squatted or rented and squatted, etc.

TABLE 5.3

COSTA RICA, NUMBER OF FARMS AND FARM LAND, PERCENTAGE DISTRIBUTIONS
1950 AND 1955

Region	1950				1955			
	Number Farms	Total Area Manzanas	Per Cent Farms	Per Cent Area	Number Farms	Total Area Manzanas	Per Cent Farms	Per Cent Area
San José	10,989	306,724	25.7	11.8	12,218	327,004	25.9	12.3
Alajuela	10,377	442,934	24.1	17.1	11,022	486,154	23.3	18.4
Cartago	3,701	267,580	8.6	10.3	3,905	187,144	8.3	7.1
Heredia	2,803	56,836	6.5	2.2	2,475	82,192	5.2	3.1
Guanacaste	7,804	948,116	18.1	36.6	8,476	893,594	17.9	33.7
Puntarenas	4,926	387,210	11.4	14.9	6,017	467,420	12.7	17.7
Limon	2,486	182,770	5.8	7.0	3,173	204,823	6.7	7.7
Costa Rica	43,086	2,592,220	100.0	100.0	47,286	2,648,331	100.0	100.0
1955/1950					4,200	56,111	9.79%	2.2%

Source: Direccion General de Estadistica y Censo, Censo Agropecuario de 1950 (San José, 1953), 9; Censo Agropecuario de 1955 (San José, 1959), 122.

TABLE 5.4

COSTA RICA: FARM LAND USE, 1950 AND 1955

Land Use	1950		1955	
	Manzanas	Per Cent	Manzanas	Per Cent
Forest	1,130,423	43.6	967,779	36.5
Permanent pastures	894,455	34.5	1,033,399	39.0
Permanent crops	189,361	7.3	222,359	8.5
Fallow land	124,904	4.8	209,927	7.7
Annual crops	145,394	5.6	159,146	6.0
Other crop land	48,570	1.9	39,590	1.5
Other land[1]	59,113	2.3	22,131	0.8
Total	2,593,220	100.0	2,648,331	100.0

Source: Direccion General de Estadistica y Censos, Censo Agropecuario de 1950 (San José, 1953), XIV; Censo Agropecuario de 1955 (San José, 1959), XIX.

[1]Includes roads, buildings, swamps, urban areas, etc.

bananas, cocoa and sugar cane. These 222,359 manzanas constitute 8.5 per cent of the land in farms and produce crops which, with the exception of sugar cane, are largely for export. The third group is permanent pastures (natural or planted) where livestock production is located; it comprises 1,033,399 manzanas and represents 39 per cent of the farm

land. The fourth and last group is composed of land in forests which covers 36.5 per cent of the total farm land. Table 5.3 reveals that there was an increase of 2.2 per cent in the area in farms over this 1950-1955 period. The changes occurring during the same period by the major groups of land use are the following: forest, a 7.1 per cent decrease; crops for internal consumption (rice, beans, corn, potatoes, etc.) increased by 2.9 per cent; pasture land 4.5 per cent increase in land in the production of export crops, showed an increase of 1.2 per cent.

Only 22.8 per cent of all land in Costa Rica is used for agriculture. The remaining 77.2 per cent of the territory is in forests. This is shown in the following Table 5.5. Despite the large increase in land brought into agricultural production during this five year period, 1950-1955 (260,736 manzanas or 3.6 per cent of the national territory), there is still much land which could be put to agricultural use.

TABLE 5.5

COSTA RICA: LAND UTILIZATION

Land Utilization	1950		1955	
	Manzanas	Per Cent	Manzanas	Per Cent
Agricultural land	508,229	7.0	625,022	8.6
Land in pastures	889,455	12.2	1,033,399	14.2
Forests[a]	5,882,316	80.8	5,621,579	77.2
Total	7,280,000	100.0	7,280,000	100.0

Source: Direccion General de Estadistica y Censo, Censo Agropecuario de 1950 (San José, 1953), 13; Censo Agropecuario de 1956 (San José, 1959, 8.

[a]Includes other land. Figures obtained by difference.

A study by Waibel in the early 1950's estimates that there were 1,966,250 manzanas of land which could be brought into agricultural use in the future.[1] This potential represents 27 per cent of the country's territory and 34.9 per cent of the area in forest in 1955.

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[1]Universidad de Costa Rica, El Desarrollo Economico de Costa Rica--Sector Agropecuario (Ciudad Universitaria, 1959), 12.

Forest and Forest Products

Although in 1955 there were over 5.5 million manzanas of land in forest, only a small part of them are being utilized at the present in Costa Rica. The Ministry of Agriculture and Livestock has estimated that approximately some 3.3 million manzanas (58.4 per cent) of the land in forest can be considered productive. At the present, only approximately 2.3 million manzanas (40 per cent of the total forest land and 69.5 per cent of the productive forest) are being exploited.[1] The lumber industry has not been extensively developed.

Agricultural Production Data

In 1950 agricultural production had a value of 652.1 million Colones ($116.4 million). The value rose to 808.1 million Colones ($144.3 million) by 1955.[2] The agriculture of Costa Rica is characterized by the specialization in a few crops for export.

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[1] Ibid., 13.

[2] Banco Central de Costa Rica, Valor Global de la Produccion Agropecuaria de Costa Rica en el Ano 1950 (San José, 1959), Mimeo, Ibid., 1955.

TABLE 5.6

COSTA RICA: PRINCIPAL CROPS AS PERCENTAGE OF TOTAL VALUE OF AGRICULTURAL PRODUCTION, 1950 AND 1955

Classification	1950	1955	Per Cent Change
Crops			
Bananas	30.0	23.1	-6.9
Coffee	18.0	25.9	+7.9
Cocoa	2.1	4.4	+2.3
Sugar Cane	4.3	4.1	-0.2
Corn	4.3	2.5	-1.8
Rice	3.4	2.2	-1.2
Plantains	1.7	1.0	-0.7
Beans	1.7	1.4	-0.3
Jute	1.7	----	----
Potatoes	1.0	0.7	-0.3
Total Principal Crops	68.2	65.3	-2.9
Other Crops	5.5	3.9	-1.6
Total Crops	73.7	69.2	-4.5
Livestock	4.1	5.6	+1.5
Milk	9.1	12.0	+2.9
Swine	1.7	1.5	-0.2
Total Livestock and Livestock Products	14.9	19.1	+4.2
Poultry	1.1	1.3	+0.2
Eggs	3.1	3.2	+0.1
Total Poultry and Poultry Products	4.2	4.5	+0.3
Lumber	7.2	7.2	0.0
Total Value of Production	100.0	100.0	000.0

Source: Banco Central de Costa Rica, Valor Global de la Produccion Agropecuaria de Costa Rica en el Año 1950, mimeo. Ibid., 1955.

It can be seen from Table 5.6 that in 1955, fourteen commodities accounted for 92.0 per cent of the total value of agricultural production. It can also be noted that bananas, coffee and cocoa, which are crops produced primarily for exports, accounted for 53.4 per cent of the value of the Costa Rican agricultural output in 1955. Five commodities (coffee, bananas, milk, lumber and livestock) are responsible for 78 per cent of the total value of the output: if cocoa, sugar cane and corn are added, 85 per cent of the total value of agricultural production is included. During the first half of the 1950's, over 40 per cent of the total output of agriculture was exported.[1]

Table 5.7 shows the growth on the major agricultural crops of Costa Rica, which in 1955 accounted for 59 per cent of the total value of agricultural production.

All the crops considered in the table showed an increase in volume of production during the period except bananas which decreased 12.3 per cent despite a 5.2 per cent increase in the area planted. This decrease in yield

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[1]Universidad de Costa Rica, El Desarrollo Economico de Costa Rica--Sector Agropecuario (Ciudad Universitaria, 1959) 32.

TABLE 5.7

COSTA RICA, INDEXES OF AGRICULTURAL PRODUCTION AND CROP LAND
1950 = 100

Year	Bananas		Coffee		Sugar Cane		Corn		Beans		Rice		Pasture Area
	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	
1949-50	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950-51	69.7	94.8	86.2	106.4	130.1	113.9	154.5	97.1	94.5	135.3	176.1	148.8	
1951-52	80.5	102.5	92.6	113.7	132.2	122.6	148.4	123.5	113.6	119.1	124.6	123.7	
1952-53	103.8	107.2	147.3	115.6	133.0	103.3	115.2	103.1	118.4	117.9	134.9	125.5	
1953-54	94.1	103.1	103.8	114.2	98.0	84.5	135.0	137.2	168.2	154.3	151.2	160.7	
1954-55	89.4	100.2	152.9	115.3	103.2	96.9	78.5	90.0	107.0	121.2	92.0	110.3	150.3
1955-56	90.8	105.5	111.8	117.2	94.4	109.8	69.8	91.1	60.6	111.1	112.1	157.0	
1956-57	75.2	108.2	155.9	121.1	112.1	107.7	116.0	106.8	104.4	127.9	124.7	125.1	
1957-58	91.7	104.2	212.0	140.5	155.6	132.2	130.2	113.0	113.3	133.8	131.0	119.9	
1958-59	87.7	105.2	238.2	149.0	193.0	152.2	131.9	115.0	88.7	113.1	115.8	116.6	

*Production

Source: Ministerio de Agricultura y Ganaderia, Proyecto No. 36 de Stica, Principales Datos Sobre La Produccion Agropecuaria de Costa Rica, 1950-1959 (San José, undated), mimeo, 3, 5.

is probably due to weather and disease conditions which have done considerable damage to the plantations of the United Fruit Company which produces over 90 per cent of the commercial banana crop of Costa Rica. Coffee production increased 138.2 per cent with only an increase of 49 per cent in the area planted. Sugar cane production increased 93 per cent with a 52.2 per cent increase in the area planted. Likewise, corn output increased 31.9 per cent with an increase in area of 15.0 per cent. Coffee output reflected a substantial rise in productivity during the period. However, beans and rice yields per manzana have decreased.

Production of Livestock and Livestock Products

Animal and animal products represented 20.3 per cent of the total agricultural production of Costa Rica in 1955. Table 5.8 shows the rapid growth of animal and animal products during the period. Livestock numbers increased 80 per cent during this period and milk production also increased by 48 per cent.

TABLE 5.8

COSTA RICA, INDEXES OF PRODUCTION OF LIVESTOCK, MILK, POULTRY AND SWINE, 1950-59

1950 = 100

Year	Livestock	Milk	Poultry	Swine
1949-50	100.0	100.0	100.0	100.0
1950-51	112.6	171.9	(a)	97.8
1951-52	108.0	118.6	97.9	107.9
1952-53	114.4	131.1	100.2	91.9
1953-54	125.3	159.1	112.1	102.1
1954-55	116.0	104.6	198.5	91.2
1955-56	156.9	135.5	145.8	84.3
1956-57	147.1	136.5	(a)	101.5
1957-58	153.1	126.2	(a)	107.2
1958-59	180.1	143.1	(a)	124.9

Source: Ministerio de Agricultura y Ganaderia, Proyecto No. 36 de STICA, "Principales Datos Sobre la Produccion Agropecuaria de Costa Rica, 1950-1959" (San José, undated), 4.

[a]Not available.

In addition to increase in the livestock numbers, the number of cattle slaughtered in 1959 was almost double the number in 1950. Furthermore, beef cattle exports represented 16.4 per cent of the number of head of cattle and

some 9.59 million kilograms of beef (21.1 pounds).[1]

Some of the progress made by Costa Rican agriculture is frequently attributed to the efforts of three institutions: the Agricultural Extension Service, the price stabilization policies of the National Production Council and the Rural Credit System. The last two organizations will be explored in the succeeding pages.

Price Stabilization Policies

Costa Rica was the first Latin American country to undertake price stabilization policies of agricultural staples following the Great Depression. The government attempted to encourage production and counteract price fluctuations of staple agricultural commodities, which in many cases were associated with speculation.[2] In 1937, a rural credit system based on local credit boards was created[3] and price stabilization policies were enacted. Law No. 82 of August 1937[4] authorized the government to

[1]This rapid rate of growth of livestock corresponds with substantial government encouragement to the industry.

[2]See Chapter IV.

[3]The rural credit system will be explored in the next section.

[4]This program was originally designed to operate for two years but was extended by subsequent legislation which also expanded the commodities included.

buy rice, beans and corn in open competition with grain merchants to stabilize domestic prices of these commodities. Grain purchases were to be made by the Purchasing Section of the Revenue Department at prices stipulated before harvest. Commodities purchased by this agency were stored in government controlled warehouses and released, through normal marketing channels, by the Department of Labor and Social Welfare, as soon as pre-established price levels had been reached. In 1943, the price regulation system was reorganized under the administration of the National Bank. For policy matters, the price stabilization system was dependent on a three-member committee called the National Production Council. The National Bank was authorized to release stored commodities at any time through retail and wholesale stores specifically created for this purpose. In addition, this bank was allowed to make direct purchase contracts with producers at specified prices; producers however, were given complete freedom to sell their products either to the government or to any other party.

Price stability policies remained under the administration of the National Bank from 1943 until 1948 when the price stabilization program was reorganized under the

direct responsibility of a new organization called the National Production Council. Finally, in 1956, the National Production Council became an autonomous institution of the State and gained many functions other than the administration of price stabilization policies. Under its new status, the National Production Council,[1]

> . . . shall have the specific purpose of encouraging agricultural and industrial production and the price stabilization of foodstuff required for the nourishment of the population as well as the price stabilization of raw materials required by industry. It shall procure a just balance in the dealings between consumers and producers so as to improve the living conditions of the Costaricans. The CNP will intervene in the regulation of the internal market of industrial raw materials or agricultural products whenever necessary to stabilize prices for the benefit of producers and consumers. In the pursuing of its ends, the Consejo will coordinate and collaborate with all credit organisms, agricultural extension or technical assistance services, or any other organism whose purpose is to encourage the development of national production.[2]

The activities of the Consejo are directed by a five-member Board of Directors appointed by the government for four-year terms. The government, however, can appoint only one member a year--as the terms of the various members

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[1]Hereon refered to as the Consejo.

[2]Ley Organica de Consejo Nacional de Produccion (San José: Imprenta Nacional, 1956), art. 4.

expire. A President and a Vice-president are elected from the Board. The activities of the Consejo will be appraised from the point of view of the price stabilization system for agricultural products, price stabilization for consumers' goods and then other policies intended to encourage the development of agriculture.

The Consejo's Price Stabilization System for Producers

The main purpose of the program is to provide a stable market at equitable prices for those commodities considered indispensable consumer goods or industrial raw materials.

The price stabilization system for producers is based on a minimum price which is guaranteed to producers of the commodities involved. This minimum price is announced and published before the planting period to permit producers to adjust their production to price conditions. During the 1950-1959 period, only twelve commodities had a guaranteed price: rice, beans and corn--the staple foods of the Costa Rican diet--fish, shrimp, lobster, sesame, peanuts (1950-55, 57 and 58), cotton (1951-56), butter (1952), powdered milk (1953-55), sorghum (since 1955) and beef for export (since 1954).

Minimum prices are fixed after a study of production costs[1] of the various commodities in different regions and different alternative uses of land. The minimum price is determined by estimating production costs, selling costs and allowing for a minimum profit for producers. Minimum prices have often been low for producers in remote regions, in which case the Consejo subsidizes these producers by sharing transportation costs. Minimum prices are periodically revised in response to changing supply and demand conditions.

Purchases of products under price stabilization programs are made through fifty-one purchasing agencies located throughout the country at every production center. Each agency is furnished with technical equipment to measure humidity and impurities in the commodities purchased. All purchases are paid to producers in cash. The Consejo buys not only those commodities included in the stabilization program but also any other products which are offered for sale by producers. Products thus obtained are later

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[1]Production costs include not only the cost of inputs but also capital depreciation and opportunity cost, which for practical reasons is equal to the interest rate on agricultural loans. Regional yields in normal production years are used as a base.

sold through the Consejo's selling agencies in their consumer price stabilization program which will be explained later.

Table 5.9 shows the volume and the value of commodity purchases by the Consejo over the 1950-1959 period. There are large variations in the value as well as in the volume of purchases under the price stabilization program. For example the range in the volume of purchases varied from 14.96 million pounds in 1950 to 67.75 million pounds in 1959. Similarly, the total value of purchases ranged from 5.43 million colones in 1950 to 20.81 million colones in 1959. In general, over the 1950-1959 period, purchases of rice showed the largest amount in terms of value (second largest in terms of volume) followed by corn and beans.

Table 5.10 shows corn, rice, and beans purchases (the three principal staples) by the Consejo, relative to total production during the 1950-1959 period.

It can be observed that there was considerable year to year variation in the percentage of total production represented by the commodities purchased under the price stabilization plan.

TABLE 5.9

NATIONAL PRODUCTION COUNCIL: COMMODITY PURCHASES UNDER THE PRICE STABILIZATION PROGRAM, 1950-1959[a]

Year	Rice		Corn		Beans		Sea Food		Other[b]		Total	
	Quantity	Value	Quantity	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity	Value
1950	42.18	1.48	41.20	.83	53.90	7.52	--	--	9.65	.59	146.92	5.43
1951	68.36	2.35	193.58	4.44	122.97	5.35	--	--	17.53	1.16	402.44	13.30
1952	199.54	7.02	230.75	5.28	158.07	6.87	--	--	23.56	1.38	611.93	20.55
1953	59.39	1.79	49.35	.98	122.11	5.04	2.43	--	5.31	.29	238.59	8.11
1954	155.21	5.80	67.83	1.43	39.47	1.64	3.93	--	3.96	.24	270.40	9.12
1955	203.05	7.65	324.18	7.20	6.18	.28	10.47	--	1.86	.10	455.75	15.22
1956	174.57	5.41	4.41	.87	24.30	1.07	9.75	--	3.31	.19	216.35	7.54
1957	67.48	2.06	188.03	3.95	59.07	2.54	9.86	--	18.07	.70	342.50	9.24
1958	60.23	1.84	182.17	3.80	24.87	1.10	8.62	--	36.58	1.11	313.07	7.85
1959	291.04	9.87	220.49	4.54	117.53	5.57	11.68	--	36.84	.83	677.58	20.81
Total	1,321.65	54.27	1,501.99	33.32	728.47	31.98	45.04	--	156.68	6.59	3,575.53	117.17

Source: Data supplied by the National Production Council.

[a]Quantities are expressed in thousands of pounds; values in millions of colones.

[b]Includes ajunjoli, sorghum and peanuts.

TABLE 5.10

NATIONAL PRODUCTION COUNCIL: PURCHASES OF RICE, BEANS AND CORN AS PERCENTAGE OF TOTAL PRODUCTION, 1950-1959

Year	Rice	Corn	Beans
1950	10.2	3.2	23.2
1951	9.5	9.6	56.1
1952	38.9	12.0	59.9
1953	11.8	3.3	44.4
1954	24.0	3.8	10.1
1955	53.6	31.8	2.6
1956	37.8	0.5	17.3
1957	13.1	12.5	24.4
1958	11.3	10.8	9.4
1959	61.0	12.9	57.1
Average	25.3	9.8	29.5

Source: Computed from data in Table 5.9, and Appendix I.

It can be observed that there were considerable year to year variations in the percentage of total production represented by the commodities purchased under the price stabilization plan. On the average, however, the Consejo controlled 25.3 per cent of total rice production, 9.8 per cent of corn and 29.5 per cent of total bean production during the 1950-1959 period.

In order to maintain price stability and satisfy demand conditions, the Consejo found it necessary to import specific commodities. During the 1950-1959 period, it was necessary to import rice from 1956 to 1959 and beans in 1956 and 1959. Total rice imports amounted to 355.2 million pounds and represented a cost of 13.3 million colones. A total of 104.7 million pounds of beans with a cost of 55.4 million colones were imported in 1958 and 1959.[1]

The price stabilization program is financed by the Consejo from its own funds as well as from credit from the Central Bank. The Central Bank will lend the Consejo up to eighty per cent of the value of commodities in storage up to a maximum of sixteen million colones. The interest rate on these loans varies from three to four per cent per year. The Consejo can borrow from other commercial banks up to twenty per cent of the value of commodities stored at rates of interest of six per cent. Altogether, the price stabilization program has access to credit funds amounting to over 26 million colones a year.

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[1] From unpublished data supplied by the National Production Council.

Price Stabilization System for Consumer Goods

In 1950, a law called "Law of Economic Defense" was enacted to regulate internal prices for some basic commodities which are "indispensable" to the consumers' diet. This law sets up maximum prices for indispensable goods subjected to periodical revisions and limits the gross margin of retail and wholesale establishments dealing with consumer goods. However, the law made no provision to control speculation. Since 1948, the Consejo was given the power to control the price stability of indispensable goods. For this purpose, the Consejo was allowed to stabilize prices and counterspeculate as well as to use its storage facilities to regulate the supply of indispensable consumer goods. To meet this end, the Consejo relies on a network of retail and wholesale establishments. In 1959, this network consisted of seven wholesale stores and 59 retail establishments located throughout the country. Plans for fifteen other stores are pending on account of lack of funds.

The establishment of the Consejo transacted 106.5 million colones of business during the 1950-59 period. The volume of sales has been increasing; and it reached an

all-time high of 21.4 million colones in 1959.[1] Although the Consejo considers normal profits to vary from six to ten per cent of gross sales for wholesale stores and from ten to fifteen per cent in retail stores, total profits amounted to 3.3 per cent of gross sales in 1959.[2]

The Consejo stores currently sell some 120 different consumption goods.

Other Activities and Policies of the Consejo

The Consejo has grain elevators with a total capacity of over eighty million pounds.[3] Although the construction of regional grain elevators is given high priority at the present, the grain elevator in the Pacific Province of Puntarenas (Barranca) still accounts for one-half of the Consejo's total storage capacity.

The Consejo also operates feed mixing plants which prepare concentrate for animals and a flour mill. In

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[1] Consejo Nacional de Produccion, Fundamentos y Otros de Los Expendios y Almancenes de Consejo Nacional de Produccion (San José, 1961), Mimeo, 14, 19.

[2] Ibid., 9-10, 16.

[3] A large proportion of the C.N.P. grain elevator technical staff was trained in the U.S. under the auspices of the ICA.

addition, the Consejo built and administers a model slaughter house in Cartago which has a slaughtering capacity of 105 head a day. A second slaughter house to be built in Alajuela will have a capacity to process 300 animals a day. The Consejo has operated the Nacional Liquor Factory--a government monopoly--since 1949, and receives 42 per cent of the profits of the liquor monopoly. A portion of these profits are used to build feeder roads in rural areas.

In order to contribute to agricultural development the Consejo acts as a guarantor of producers for credit with commercial banks for credit up to 100,000 colones. Under this provision the Institution has made credit available to producers which amounted to 38.3 million colones from 1951-59.[1]

The Consejo also aids producer cooperatives. This organism is the major shareholder of the Milk Producers Cooperative. Among other activities, this organization processes powdered milk which is stored by the Consejo and distributed to the Ministry of Health's nutrition program.

[1]Unpublished data supplied by the Consejo Nacional de Produccion.

Agricultural Credit System

The agricultural credit system had its origin in 1914 with the founding of the International Bank. The program was to make loans to small producers for amounts not greater than 500 colones out of an original fund of 200,000 colones. The modern agricultural credit system in Costa Rica, however, was started in 1937 by the National Bank which replaced the International Bank. This credit system operates through the use of local boards and committees called Rural Boards of Agricultural Credit. The National Bank's branches administer agencies which in 1957 numbered 48 (see Table 5.11). These agencies operate exclusively with respect to agricultural credit. Each agency is governed by a local board of five members appointed by the banks for terms of two years with provision for reappointment. Members of the Board are paid an honorarium for each session attended. The necessary office and field staff of each agency are appointed by the Bank and must include an ingeniero agronomo (agronomist) who must reside in the area and acts as an executive officer. The agronomist has a voice but no vote in the local board. His main duty is to supervise the loans granted to producers.

The Central Office of the Rural Credit Boards advises the local boards, supervises their operations, and acts as their intermediary before the Board of Directors and other officers of the National Bank. Loans are granted to producers without procurement charges and are classified into three major categories: short term loans (one year or less); medium term loans (more than one year but less than ten years) and long term loans (ten years or more). Each major category is subdivided into agriculture, livestock, and industry (especially those utilizing agricultural raw materials). These major subdivisions include loans for working expenses, investment in equipment or other capital goods, transportation storage, and services, loans for purchasing or improvement of property, mortgage cancellation, etc.[1] The interest rate is six percent per year. Each load is limited to fifteen thousand colones per person, however, the maximum credit at any one time is to twenty thousand colones per person. Personal guarantee of the recipient is the usual security accepted by the rural boards on short-term loans, however, for medium and long

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[1]Banco Nacional de Costa Rica-Juntas Rurales de Credito Agricola, Classificacion de Creditos, San José, November, 1955, Mimeo, 19-21, 23.

term loans, the pledging of chattels (including livestock) or mortgages on real estate are required. In 1956, short term loans amounted to 41.9 per cent of the loans, medium term 51.9 per cent and long term 6.2 per cent.[1] During 1947-52, 4,732 loans with a total value of over 10.7 million colones were granted for the purchases of farms. Over half these were made to tenants.[2]

According to one author,[3] the Agricultural Credit System in Costa Rica is one of the world's most successful examples of rural credit systems operated using local boards. The agricultural credit system operated four rural agencies in 1943 which made 578 operations amounting to 145,300 colones; by 1949, the number of rural agencies had increased to 33 and granted 15,846 loan applications with a total value of almost 14 million colones.[4] From 1937 to 1949 rural boards granted 100,000 loans to small producers which amounted to 61.8 million colones. During this same

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[1] Op. cit., Echeverria, 47.

[2] Ibid., 38, 41.

[3] H. Belshaw, "Agricultural Credit in Economically Underdeveloped Countries, F.A.O., Rome, 1959, 140.

[4] Echeverria, op. cit., 39, 49.

period (1937-49) which covers 19 years, the operation of the Rural Credit Boards has represented a 1.9 million colones loss to the National Bank. This operational loss is assumed by the bank as a public service contribution. However, losses on credit amounted only to 2,499 colones which represent the balance on 14 loans.[1] Table 5. shows that from 1950 to 1957 the rural boards granted 154,151 loans for a total of 218.7 million colones. The volume of credit in these eight years more than tripled the 1937-49 period. In 1957, the number of loans reached an all-time high of 27,566 which amounted to 51.2 million colones. It is estimated that by 1957, 95 per cent of the farmers were being served by the rural credit boards.[2] Although a large proportion of the loans are made with the personal guarantee of the recipient (65 per cent in 1952; 42 per cent in 1956), the total loss on credits granted by the rural boards from 1937 to 1955 amounted to 27,245 colones which represent the balance of 52 loans. These figures are insignificant if one takes into account that during that period, 208,957 loans with a value of 194,420 million colones were made.[3]

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[1] Ibid., 32.

[2] Belshaw, op. cit., 142.

[3] Echeverria, op. cit., 46.

TABLE 5.11

RURAL CREDIT BOARDS, NUMBER AND VOLUME OF LOANS, 1950-1957

Year	Number of Boards	Number of Loans	Value[a]	Average Loan[a]
1950	33	17,752	16,976.6	2.32
1951	37	19,403	21,146.4	2.50
1952	38	19,994	24,623.0	2.99
1953	39	18,006	23,824.7	3.43
1954	40	16,838	24,221.3	1.45
1955	44	16,967	26,186.2	1.56
1956	47	17,625	30,492.5	1.73
1957	48	27,566	51,240.0	1.76
Total	48	154,151	218,701.7	2.22

Source: Luis Echeverria, Resena Cronologica de las Cajas de Credito Agricola del Banco International de Costa Rica 1914-36 y de las Juntas Rurales de Credito Agricola del Banco Nacional de Costa Rica 1937-1957 (San José, 1958), 36, 39, 42-43, 46-50.

[a]Thousands of colones.

Summary

The performance and characteristics of Costa Rica's agriculture were explored in detail in this chapter.

The latest Census of Agriculture (1955) indicates that

Costa Rica has 47,286 farms covering a total area of 2.65 million manzanas (4.5 million acres). The land in farms (including farm wood lots) represents 36.4 per cent of the Costa Rican territory. A total of 260,736 manzanas were brought into cultivation from 1950-1955. There still remains a large acreage of idle farm land which could be brought into production. It was estimated in the early 1950's that an additional 27 per cent of the land in forests could be utilized for agricultural production.

Costa Rica is a country of small agricultural producers; in 1955, 60.3 per cent of all farms were 19 manzanas (32.3 acres) or less, and account for 7.4 per cent of the farm land. However, in 1955, 0.1 per cent of all farms or 50 farms comprised 21.0 per cent of all farm land. These figures suggest the presence of minifundia as well as latifundia type of ownership.

In 1955, 75.5 per cent of all farms, and 88.9 per cent of the total agricultural land in Costa Rica was being farmed by their legal owners.

The agricultural census of 1955 shows that 15.2 per cent of the total farm land is utilized for annual crops (and fallow land), in other words, land used mainly to

produce crops for internal consumption. Of the total farm land, 8.5 per cent was in permanent crops grown mainly for exports (i.e., coffee, bananas and cocoa) and 39.0 per cent was in pastures. The remaining 36.5 per cent of the total farm land was in forest.

As can be expected in an underdeveloped country, Costa Rican agriculture is characterized by its lack of diversification. However, for the size of the country, Costa Rican agriculture has a relatively high degree of diversity. In 1955, fourteen commodities (ten principal crops plus livestock, milk, swine and lumber) were responsible for 92 per cent of the total value of agricultural production. Coffee, bananas and cocoa, which are produced primarily for export, accounted for 53.4 per cent of the total value of agricultural production. In 1955, 59.5 per cent of the total volume of agricultural production was exported and 40.5 per cent was domestically consumed.

During the 1950-1959 decade, there was considerable increase in the volume of production of principal crops (with exception of bananas) and livestock production. Table 5.7 shows that coffee production more than doubled during the period while banana production declined. Sugar cane,

corn and rice production increased during the period while bean output increased moderately. However, these increases in production were accompanied by considerable increases in area planted. Coffee production rose 138.2 per cent from 1950 to 1959 while coffee land increased 49.0 per cent; likewise, sugar cane rose 93.0 per cent in volume while area rose 52.2 per cent. This indicates sharp productivity increases in these two commodities. Conversely, corn shows a slight increase in output over the area planted while beans and rice output was surpassed by the increase in area. Banana production decreased despite the increase in area planted. This evidence suggests that increases in output of the staple food commodities (corn, beans and rice) have been brought about by increases in area planted rather than by productivity gains.

A relatively high absolute increase in output has been experienced by animal and animal products. During the 1950-1959 period, livestock numbers rose from 100 in 1950 (base period) to 180.1 in 1959, or 80 per cent; milk production increased 43.1 per cent while swine production showed little change.

Some of the progress made by Costa Rican agriculture is attributed to the Agricultural Extension Service, the price stabilization policies of the National Production Council and to the Rural Credit System. Although it is difficult to measure the degree of success of price stabilization policies, at least some of the general stability of agricultural price levels during the 1950-1959 period can be attributed to the Consejo and its policies.

The Rural Credit System has been very successful. Success can be measured not only in terms of the volume of credit granted to small farmers but also in terms of an enviable repayment record.

CHAPTER VI

AGRICULTURE AND INTERNAL GROWTH

Chapter I pointed out that agriculture can make important contributions to internal growth by earning foreign exchange through food exports, providing funds for capital formation, serving as a market for industrial products, providing manpower for other expanding sectors and finally, providing increased food supplies for the indigenous population. This chapter will explore the contributions of agriculture to the growth of the Costa Rican economy in the 1950-1959 period.

It has been pointed out in Chapter III that the rural sector in Costa Rica comprised 66.5 per cent of the population in 1955 and employed 54.7 per cent of the economically active population in 1950.[1] Furthermore, agriculture provided an average of 43.7 per cent of the gross domestic product over the 1950-59 period (see Table 6.1). These figures alone show that agriculture is the major existing industry in Costa Rica and hence indicate the importance of

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[1] See Chapter III.

agriculture as a market for industrial products and as a source of revenue for over-all capital formation. These figures also show the importance of agriculture as a source of labor for expanding non-agricultural sectors. In fact, the economically active population engaged in agriculture decreased seven per cent from 1927 to 1950.[1]

How well has Costa Rican agriculture provided an increase in food supplies? To avoid price increases, food supplies must expand at a rate equal to the rate of growth of population plus the increment of per capita income times the income elasticity of demand.[2] For the 1950-1959 period, Costa Rica experienced annual rates of population growth and per capita income of 3.87 and 3.66 per cent respectively.[3] Thus, the required annual rate of increase of agricultural output, assuming an income elasticity of 0.5,

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[1] Op. cit., 14.

[2] Should output fail to rise at the required rate, food prices begin to rise relatively, reducing the real income of the population, especially the wage-salary classes since they spend a higher proportion of their income on food. Since rising food prices may lead to political discontent, the alternative is to grant money wage increases (thus reducing profits and investment) or to import more food (which will compete with capital imports for economic development).

[3] See Chapter III and Chapter IV.

would be 5.7 per cent. If income elasticities of 0.6 and 0.7 are assumed, the corresponding annual rates of growth of agricultural output will be 6.0 and 7.4 per cent. Table 6.1 shows agriculture's contribution to the gross domestic product of Costa Rica in constant prices for the period

TABLE 6.1

COSTA RICA: PERCENTAGE CONTRIBUTION OF AGRICULTURE TO GROSS DOMESTIC PRODUCT 1950-1959

Millions of Colones at Constant Prices

Year	Total GDP	Agriculture's GDP[a]	Agriculture's Contribution to GNP Per Cent
1950	1067.9	546.4	51.16
1951	1120.1	564.1	50.36
1952	1377.8	648.9	47.09
1953	1568.4	695.8	44.36
1954	1605.7	646.5	40.26
1955	1706.7	750.0	43.94
1956	1744.2	655.7	37.59
1957	1880.1	727.7	38.70
1958	2019.1	860.8	42.63
1959	2069.7	858.3	41.47

Source: Chapter IV, Table 4.5, p. 135.

[a]Agriculture's GDP was deflated by the combined wholesale agricultural price reproduced in Table 6.3.

1950-1959.[1] The growth of agricultural output computed from these aggregates shows that agriculture achieved an annual rate of growth of 4.55 per cent.[2] Therefore, in view of the discrepancy between the "required" and the actual rate of agricultural output, Costa Rican agriculture has apparently fallen short of meeting the increased demand for food induced by rising incomes and population. To explain this phenomenon the following hypotheses are advanced: first, the apparent inability of agriculture to cope with increased demand for food may be traced to statistical inadequacies of aggregate data. In other words, since national accounts do not measure non-market production of goods and services (i.e., farm produce

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[1]This table shows that agriculture contributes over forty per cent to the total output of the nation. However, the rate of growth of the agricultural sector is the slowest of all sectors and contributes only 28 per cent to the rate of growth of the Costa Rican economy. This figure was obtained by using a formula proposed by Kuznets to calculate the share of growth of agricultural production in the growth of total product. Simon Kuznets, "Economic Growth and the Contribution of Agriculture: Notes on Measurement," International Journal of Agrarian Affairs, Vol. III, No. 2 (April, 1961), 59.

[2]The rate of growth of domesticly consumed agricultural production (agriculture's GDP minus exports, both at constant prices) was 4.3 per cent per year.

consumed at the farm or subsistance production and labor), agricultural output, and hence the rate of growth, may be underestimated. Second, the distribution of income may be such that the rise in incomes has benefited only a relatively small sector of the population and therefore, higher incomes do not bring forth a proportional increase in the demand for food. In this situation, consumption by the masses may have increased, remained constant or possibly decreased over the 1950-1959 period. The third hypothesis is that the failure of supply to cope with increased demand may have been met by increased food imports. The fourth hypothesis is that the income elasticity of demand may be less than 0.5. Finally, a fifth proposition contains elements of the above four hypotheses.

It could be expected that estimates of agricultural production in Costa Rica underestimate the actual output stream since the non-market production may be substantial. Lack of data on consumption levels for the 1950-1959 period as well as data on income distribution do not allow us to substantiate to what extent the second hypothesis may explain the phenomenon. Since it is unlikely that the income elasticity of demand for food is less than .5, the

proposition left for consideration is that the increased demand for food induced by population and income growth has been met, at least partially by increased food imports.

Table 6.2 shows the value of food imported by Costa Rica from 1952 to 1959.[1] It can be seen that food imports rose from 8.2 million dollars in 1952 to 15.2 million dollars in 1959, and represent a total expenditure of 91.92 million dollars over the period. Cereals represent 43.9 per cent of the total value of imports during the period,[2] followed by milk products, eggs and honey with 13.03 per cent. Although 5.7 per cent of the total imports of Costa Rica during this period are live animals for consumption and meat and meat products, Costa Rica has become a net beef exporter since 1954.[3] The bottom line of Table 6.2 shows that food imports as a percentage of total imports have remained at a fairly constant rate--11 to 25 per cent--over the 1952-1959 period. Likewise, food imports as a

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[1]Data for 1950 and 1951 are not included since import classification for those years does not allow an accurate estimate of food imports.

[2]This item is very heavily influenced by wheat imports, a commodity which is not produced in Costa Rica. Rice imports are shown in Table 6.2, p. 187.

[3]See Table 7.1.

TABLE 6.2

COSTA RICA: FOOD IMPORTS 1952-1959

Thousands of Dollars

Classification	1952	1953	1953	1955
Live animals for consumption	240.9	79.3	267.8	250.0
Meat and meat products	147.0	191.7	189.4	119.0
Milk products, eggs and honey	1,032.0	1,428.8	1,304.1	1,385.3
Fish, seafood and seafood products	437.2	517.6	546.7	435.9
Cereals and cereal products	3,749.6	3,905.2	4,375.3	5,882.0
Fruits and vegetables	606.7	718.1	662.7	1,061.8
Sugar and sugar products	194.6	266.8	224.8	208.4
Tea, cocoa, spices	136.8	173.3	188.5	136.2
Feedstuffs for animal nutrition	258.9	366.2	303.7	497.6
Other food products	1,401.0	1,424.2	1,980.7	1,830.8
Total food imports	8,204.7	9,071.2	10,043.7	11,807.0
Food imports as per cent of tl. imports:	12.09	12.31	12.45	13.50
Food imports as per cent of agricultural GDP[a]	7.16	7.58	8.32	8.75

Source: Unpublished data, supplied by the Direccion General de Estadistica y Censos.

Year					
1956	1957	1958	1959	1952-59	1952-59 Per Cent
182.1	150.5	177.2	2,785.9	4,133.7	4.50
162.4	121.8	93.7	113.7	1,138.7	1.24
1,522.6	1,822.8	1,917.9	1,561.9	11,975.4	13.03
383.5	365.1	407.8	461.0	3,554.8	3.87
6,054.6	5,102.0	5,262.3	6,030.3	40,361.3	43.91
1,855.6	746.4	642.6	1,017.6	7,311.5	7.95
1,447.7	213.0	232.8	202.2	2,990.3	3,25
140.1	118.1	163.8	146.7	1,203.5	1.31
882.3	926.9	1,236.0	1,470.5	5,942.1	6.46
1,714.1	1,804.0	1,653.8	1,501.6	13,310.2	14.48
14,345.0	11,370.6	11,787.9	15,291.4	91,921.5	100.00
15.72	11.06	11.87	14.89		
12.18	8.61	7.57	9.81		

[a]In constant prices.

percentage of agriculture's GDP, have remained relatively stable at levels ranging from 7 to 12 per cent. On the export side of the picture, agricultural exports rose from an index of 80 in 1950 to 109 in 1959 (1953 = 100), and Costa Rica has experienced favorable balance of trade during the 1950-1959 period.[1]

Table 6.3 presents some general price indexes for the Costa Rican economy. The wholesale price index declined from 112.9 in 1950 to 100.0 in 1953 and rose again to 107.4 in 1959. The retail price index increased steadily from 96.3 in 1950 to 117.5 in 1959. The cost of living index rose from 100.0 in 1952 (base period) to 113.4 in 1959 at a rate of 1.6 per cent per year. The foodstuff index (a component of the cost of living index) rose 14.9 per cent from 1952 to 1959. These price indexes reveal a considerable degree of price stability especially for an economy which is growing at a rate of eight per cent per year (GNP).

Summary

The gross domestic product of agriculture has experienced an annual rate of growth of 4.55 per cent over the

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[1] Ibid., Table 7.6.

TABLE 6.3

COSTA RICA: GENERAL PRICE LEVEL INDEXES, 1950-1959

Year	Wholesale[a]	Retail[a]	Cost of Living[b]	Retail Foodstuffs[c]	Agricultural Price Index[d]
1950	112.90	96.35	--	--	100.62
1951	116.45	102.91	--	--	104.50
1952	104.52	100.04	100.00	100.00	98.96
1953	100.00	100.00	100.48	101.62	100.00
1954	104.41	103.03	103.09	105.84	111.96
1955	107.24	103.63	106.93	109.74	104.04
1956	108.14	104.64	108.00	110.00	107.07
1957	108.05	105.15	110.15	110.86	108.31
1958	108.01	114.46	113.07	115.59	100.03
1959	107.43	117.53	113.39	114.96	92.62

[a]Price index computed by the Central Bank of Costa Rica with a base of 1953 = 100, Décima Memoria Anual, Año 1959 (San José: Mayo 1960), 85-87; price indexes for 1950-52 are the author's extrapolations of previous indexes computed by the Central Bank with a base of 1936 = 100, Sexta Memoria Anual, Año 1955 (San José: Marzo, 1956), 87-88.

[b]Index computed by the Direccion General de Estadistica y Censo, reproduced in Décima Memoria Anual, Año 1959, 87.

[c]A component of the Cost of Living Index.

[d]Price index computed by the author based on livestock, export and agricultural products wholesale price indexes (computed by the Central Bank) using the 1950-1955 weights.

1950-1959 period. With per capita income growing at an annual rate of 3.66 per cent and assuming an income elasticity of demand for food of .5, the annual growth of demand for food would be 5.7 per cent. Judging from these growth rates, agriculture has apparently been unable to satisfy the increased demand for food. Two principal propositions may help to explain this phenomenon. First, since national income data do not include non-market agricultural output, and this output may be substantial in Costa Rica, gross domestic product may have underestimated agriculture's output. Second, the income distribution in Costa Rica may be such that rising incomes may have benefited only a small sector of the population and therefore, have not induced a proportional increase in demand for food. Thus, in one hand, the actual rate of growth of agricultural supplies in Costa Rica may have been higher than the one shown by agriculture's gross domestic product; on the other hand, the actual rate of increase of demand for food induced by higher incomes may have been lower than the "required" theoretical rate. Moreover, the discrepancy between agricultural supply and demand growth rates was partially filled by food imports. Increased food imports

does not necessarily mean a failure of agriculture to cope with demand increases induced by higher incomes and population growth. The dualism of the agricultural sector in Costa Rica (and other underdeveloped countries), allows agriculture to fail to meet food requirements while agricultural exports pay for food imports.

Costa Rican agriculture seems to have fallen short of satisfying internal demand for food, as can be deduced from the increase in food imports. However, the relative stability of food imports as a percentage of total imports and of total agricultural output, indicates that agriculture's position in coping with internal demand may not have improved but at least it has not deteriorated. Moreover, indexes of agricultural exports and balance of trade conditions reveal that agriculture has succeeded not only in paying for the rise in food imports but also for almost all non-agricultural imports during the 1950-1959 period.[1]

Wholesale and retail price indexes indicate a considerable degree of price stability in the Costa Rican economy over the 1950-1959 period. The cost of living index rose

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[1]The performance of Costa Rican agriculture in the production of export commodities will be explored in greater detail in the next chapter.

from 100.0 in 1952 to 113.4 in 1959 at a rate of 1.42 per cent per year. The food component of the cost of living index rose from 100.0 in 1952 to 114.9 in 1959 or an annual rate of increase of 1.47 per cent.[1] These figures indicate that, unlike other Latin American countries, Costa Rica has not experienced sharp price increases caused by unsatisfied demand for food products. Annual price increases are not only moderate but could also be said to be normal in an economy which is growing at a rate of eight per cent per year (GNP). Some of the price stability may be attributed to the successful price stabilization policies of the CNP.

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[1]The wholesale index of agricultural prices for domestic consumption rose from 100.0 in 1953 to 105.4 in 1955 and then declined to 101.7 in 1959. A total weighted wholesale price index of agricultural products is reproduced in Table 6.3. This index, however, is very heavily influenced by the large price increases of agricultural exports from 1954 to 1957 and their subsequent decline since 1957.

CHAPTER VII

AGRICULTURE AND EXTERNAL BALANCE

It was pointed out in Chapter I that one of the characteristics of small underdeveloped nations is the high concentration of production in primary production for international trade. Small nations, as well as most primary producers, are confronted with two main problems in their relations with industrial countries. First, unstable export proceeds caused by a high degree of price instability of primary products in international markets, and second, a relative decline in their long-run capacity to import caused by the deterioration of their terms of trade. The recommended structural solution for these two main problems is industrialization. However, even if the argument is valid, industrialization is a long-run process and at least, in the short-run, agriculture can plan an important role in external balance by paying for capital imports required for economic development. Moreover, agricultural exports may be called upon to pay for food imports should agriculture fail to satisfy domestic demand. This chapter explores the contribution of Costa Rican agriculture to

the external balance of the nation's economy over the 1950-1959 period. It will deal with the situation and principal trends of exports, imports, balance of trade, balance of payments and the price stability of the external sector of Costa Rica from 1950 to 1959.

Costa Rica has a high degree of concentration of economic activity in production for export. In fact, over the 1950-1959 period, exports represented an average of 23.4 per cent of the nation's GNP and 58.3 per cent of the agricultural GDP (see Table 7.1). However, since 1953 agricultural exports have represented a smaller percentage of GNP.

Over the 1950-1959 period, coffee, bananas and cocoa accounted for 91.7 per cent of the total value of exports. Table 7.1 shows the relative importance of the main exports during this period. Coffee represented 44.3 per cent of total exports, bananas 41.3 per cent, cocoa 6.1 per cent, jute 2.0 per cent and livestock and beef 1.5 per cent. These five commodities are responsible for 95 per cent of the total exports. During this ten year period, banana exports have declined in importance in absolute terms and in relation to coffee which has become the leading export

TABLE 7.1

COSTA RICA: TOTAL F.O.B. EXPORTS 1950-1959
Millions of Dollars

Commodities	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1950-1959	Percentage 1950-59
Bananas	31.50	34.36	38.36	35.79	35.81	33.21	25.69	32.20	26.45	19.09	312.46	41.25
Coffee	17.82	22.18	24.32	33.55	35.06	37.36	33.83	40.62	50.55	40.05	335.34	44.27
Cacao	1.98	1.94	4.20	4.02	8.30	5.90	2.90	3.99	5.85	7.37	46.45	6.13
Jute	1.37	2.51	3.00	2.00	1.80	.60	1.20	.94	1.06	.91	15.39	2.03
Livestock & beef	--	--	--	--	.40	.99	1.02	2.13	3.20	3.56	11.30	1.49
Other exports	2.92	2.43	3.49	4.78	3.33	2.84	2.81	3.48	4.79	5.70	36.57	4.83
Total exports	55.59	63.42	73.37	80.14	84.70	80.90	67.45	83.36	91.90	76.68	757.51	100.00
Total exports as per cent of GNP[a]	22.22	27.54	28.55	26.42	19.53	23.45	17.47	19.67	23.86	22.09	23.37	
Total exports as per cent of agriculture's GNP[a]	53.08	59.12	63.83	64.50	53.42	59.23	52.28	57.23	62.87	58.28	58.28	

Source: Banco Central de Costa Rica, Balanza de Pagos de Costa Rica Año 1959, Undecimo Reporte Anual (San José, 1960), 12; Sexta Memoria Anual, Año 1955 (San Jose, March 1956), 117; 1950 data from El Desarrollo Economico de Costa Rica--Sector Externo, Universidad de Costa Rica (Ciudad Universitaria, 1958), 24, 48.

[a]In constant prices (1953 = 100).

TABLE 7.2

UNITED FRUIT COMPANY EXPORTS AS PERCENTAGE OF TOTAL COSTA RICAN EXPORTS, 1955 - 1959

Commodity	1955	1956	1957	1958	1959	Average
Bananas	98.82	98.95	99.53	98.79	96.12	98.44
Cacao	36.61	33.79	39.35	31.28	25.50	33.06
Jute	100.00	100.00	100.00	100.00	100.00	
Total exports	44.31	41.46	41.82	31.98	27.74	37.46

Source: Banco Central de Costa Rica, Balanza de Pagos de Costa Rica, 1959, Undecimo Reporte Anual (San José, 1960), 18.

commodity. Similarly, the relative importance of jute exports declined during the 1950-1959 period while beef and livestock exports have increased both in absolute terms and in relative importance.

The United Fruit Company marketed over 98 per cent of banana exports, all jute exports and one-third of the cocoa exports, as shown in Table 7.2. This table also shows that United Fruit marketed 37.5 per cent of the total Costa Rican exports during the 1955-1959 period.

The United Fruit Company plantations are located primarily in the Southern Pacific Coast of Costa Rica. In 1955, the company had 25,000 acres of bananas, 10,000 acres of African palm oil and 5,000 acres of cocoa. In addition, they had 5,000 acres of jute and 19,000 acres of cocoa in the Atlantic Coast near Port Limon. In total, the United Fruit Company had approximately half a million acres of land in Costa Rica which represents approximately four per cent of the nation's territory. In 1955, about one-fourth of the land possessed by United Fruit was under cultivation.[1]

Unlike bananas, the coffee industry is entirely owned by Costa Ricans. Moreover, a great proportion of coffee output is produced on small farms. In 1955, 42 per cent of the coffee output was produced on farms of less than 84 acres and 24.8 per cent on farms between 84 and 186 acres.[2] Farms of these two sizes accounted for 90.8 per cent of the total number of farms in 1955.[3]

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[1] Stacy May and Galo Plaza, La United Fruit Company en America Latina (New York: National Planning Association, 1958), 151-52.

[2] Direccion General de Estadistica y Censo, Censo Agropecuario de 1955 (San Jose, 1959), XXVII.

[3] See Chapter V.

This dichotomy in the ownership and organization of production of Costa Rica's two most important exports, coffee and bananas, has important economic implications. Price changes of banana exports have less impact on the economy as a whole than price changes in coffee exports. In the first place, since the coffee industry is entirely owned by Costa Ricans, nearly all the foreign exchange generated by coffee exports is absorbed by the nation's economy. Conversely, since most of Costa Rica's bananas are produced and exported by the United Fruit Company, only a certain percentage of the earnings from banana exports come into the country. The reason for this is that under the present contract, the United Fruit Company is authorized to subtract profits, capital depreciation allowances, and the cost of its own imports, from its export earnings.[1] Thus, a relative price change in banana exports has less impact on export earnings than a similar price change in coffee exports. Moreover, since the total value of coffee exports (even at constant prices) is greater than that of bananas,

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[1] Costa Rica received an average of 44.8 per cent of the total export earnings of the United Fruit Company during 1948 to 1954. Universidad de Costa Rica, El Desarrollo Economico de Costa Rica--Sector Externo (Ciudad Universitaria, 1959), 21-22.

fluctuations in coffee prices will have a greater impact on the Costa Rican economy than equivalent changes in banana prices. Finally, since a larger proportion of the population is dependent either directly or indirectly on the coffee industry, price changes of coffee exports affect a larger proportion of the population than would export price changes of bananas.

Table 7.1 shows the value of Costa Rican exports over the 1950-1959 period. Exports rose from 55.6 million dollars in 1950 to 84.7 million in 1954, declined to 67.4 million dollars in 1956 and rose to an all-time high of 91.9 million dollars in 1958 and declined to 76.7 million dollars in 1959. Year to year fluctuations in export earnings averaged 10.6 per cent over the period considered.

Table 7.3 shows price and volume indexes of total exports and of principal export commodities from 1950 to 1959. The total volume of exports increased 36.2 per cent from 1950 to 1959. However, there were significant year to year variations in volume which averaged 13.2 per cent during the period considered (range 2-27 per cent). Exports prices rose from 84 in 1950 to 109 in 1957 (116 in 1956) and then declined since 1958 to a low of 84 in 1959. Indexes of

both volume and price of exports seem to be dominated and behave similarly to corresponding indexes of coffee exports. Coffee exports rose 126.4 per cent from 1950 to 1959, however, year to year volume variations average 20.0 per cent during this period. Coffee prices rose from 78 to 124 by 1956, then declined to 116 in 1957 and finally to 78 in 1959. Year to year variations in price averaged 14.0 per cent during this period. Banana exports have decreased 37.5 per cent from 1950 to 1959 with average yearly variation in volume of 13.1 per cent. Banana prices increased fairly constantly from 1950 to 1957 and declined sharply to 87 and 88 during 1958 and 1959. Banana prices showed a yearly price fluctuation of only 4.33 per cent; the least variation of all export commodities.

Table 7.4 shows the geographical destination of Costa Rican exports for 1950, 1955 and 1959. In 1959, 48.9 per cent of all export commodities were exported to the United States, 25.2 per cent to Germany and 11.9 per cent to other European countries. The value of Costa Rican exports to the United States decreased 29.3 per cent while the value of exports to Germany has increased 24.8 per cent over the 1950-1959 period. Germany is the principal market for Costa Rica's coffee.

TABLE 7.3

COSTA RICA: INDEXES OF INTERNATIONAL TRADE 1950-1959
1953 = 100

Year	Bananas		Coffee		Cocoa		Tl. Exports		Tl. Imports		Terms of Trade[a]
	Volume	Price	Volume	Price	Volume	Price	Volume	Price	Volume	Price	
1950	96	91	68	78	46	108	80	84	70	88	76.9
1951	98	97	68	98	47	102	82	98	75	101	79.6
1952	114	94	75	96	125	83	97	94	92	100	91.2
1953	100	100	100	100	100	100	100	100	100	100	100.0
1954	100	100	83	125	140	146	94	110	110	99	108.2
1955	90	103	101	110	144	102	98	106	119	100	103.8
1956	63	113	81	124	93	78	73	116	121	103	82.2
1957	86	105	105	116	109	90	96	109	131	107	97.8
1958	85	87	164	92	114	128	123	91	127	106	105.6
1959	60	88	154	78	171	107	103	84	130	106	86.4

Source: International Monetary Fund, International Financial Statistics (Sept. 1956 and April 1961).

[a]Income Terms of Trade (commodity terms multiplied by volume of exports).

TABLE 7.4

COSTA RICA: GEOGRAPHICAL DESTINATION OF EXPORTS 1950, 1955, 1959

Millions of Dollars

Geographical Distribution	1950		1955		1959		1950-1959 Per Cent Change
	Value	Per Cent	Value	Per Cent	Value	Per Cent	
United States	43.46	78.2	44.28	54.7	37.50	48.9	-29.3
Canada	3.17	5.7	4.47	5.5	3.46	4.5	- 1.2
Germany	.21	.4	21.22	26.2	19.33	25.2	+24.8
United Kingdom	.03	.1	--	--	.92	1.2	+ 1.1
Other European countries	5.29	9.5	6.63	8.2	9.13	11.9	+ 2.4
Japan	.50	.9	--	--	.52	.7	- .2
Latin America	1.55	2.8	4.26	5.3	5.53	7.2	+ 4.4
Rest of the world	1.38	2.4	.54	.1	.29	.4	+ 2.0
Total exports	55.59	100.0	80.90	100.0	76.88	100.0	

Sources: Pan American Union, Foreign Trade of Latin America Since 1913 (Washington, 1952); Direccion General de Estadistica y Censos, Anuario Estadistico de Costa Rica 1959 (San José, 1960), 165-66; Banco Central de Costa Rica, Decima Memoria Anual, Año 1959 (San José, Mayo 1960), 150.

Since 92.4 per cent of the value of Costa Rica's foreign trade is purchased by industrial nations, the nation's economy is vulnerable to economic fluctuations originating abroad.

Table 7.5 shows the principal imports of Costa Rica by commodity groups over the 1950-1959 period. During this period, manufactured products accounted for 39.3 per cent of all imports and machinery and parts (capital equipment) for 30.3 per cent. All industrial manufactures together represented 80 per cent of total imports during the 1950-1959 period. Food products and fuels and lubricants represented 13.0 per cent and 6.4 per cent of total imports respectively. Imports rose 85.7 per cent from 1950 to 1959 and at a very constant rate (see Table 7.3). This, of course, is normal in a country which requires capital and other imports for economic expansion. Export prices rose steadily from 88 in 1950 to 106 in 1958 and 1959.

As a result of the Industrial Encouragement Law of 1959, imports of manufactured goods will likely decline because more of these will be produced internally. This law encourages industrial production to substitute for manufactured products not produced domestically or produced

TABLE 7.5

COSTA RICA: TOTAL IMPORTS C.I.F. 1950-1959

Millions of Dollars

Imports	1950[a]	1951[a]	1952	1953
Food products	--	--	8.20	9.07
Beverages and tobacco	--	--	.57	.69
Industrial raw materials	--	--	1.07	.57
Fuel and lubricants	--	--	4.17	4.47
Vegetable oils and lard	--	--	.46	.42
Chemicals	--	--	10.73	9.63
Manufactured products (classified)	--	--	22.79	24.79
Machinery and parts	--	--	13.13	16.37
Other manufactured products	--	--	6.21	6.94
Other merchandise	--	--	.54	.72
Live animals and other transactions	--	--	--	
Total imports	46.03	55.74	67.87	73.67

Source: Banco Central de Costa Rica, Balanza de Pagos de Costa Rica Año 1959, Ondecimo Reporte Anual (San José, 1960) 15; and Sexta Hemoria Anual, Año 1955 (San José, March 1956) 121.

1954	1955	1956	1957	1958	1959	1952-1959	Per Cent 1952-59
10.04	11.81	14.35	11.37	11.79	15.29	91.92	13.03
.73	.69	.75	.74	.80	.93	5.90	.83
.68	.70	.69	.57	.57	.57	5.42	.77
5.44	5.27	5.87	7.20	6.81	6.03	45.26	6.41
.56	.54	.56	.63	.55	.54	4.26	.60
11.54	13.23	13.42	16.34	15.20	15.66	105.75	14.99
24.48	24.78	25.73	30.61	30.55	29.71	213.44	30.25
18.67	23.19	22.10	27.29	24.80	26.14	171.69	24.33
7.93	7.12	7.64	7.89	8.02	7.78	59.53	8.44
.58	.14	--	--	.23	--	2.21	.31
--	--	.12	.14	--	.01	.27	.04
80.65	87.47	91.23	102.78	99.32	102.66	705.65	100.00

[a]The system of import classification used for these two years does not correspond with the one followed since 1952.

in quantities satisfying less than ten per cent of domestic consumption.

Table 7.6 shows the balance of trade and the balance of payments of Costa Rica during the 1950-1955 period. Costa Rica's balance of trade showed surpluses from 1950 to 1955 but deficits were recorded from 1956 to 1959 except for a small surplus of 3.0 million dollars in 1958. Considering the period as a whole, Costa Rica had a balance of trade surplus. Likewise, during the 1950-1959 period, there was a net surplus in the balance of payments. However, balance of payments deficits were realized in 1950, 1954 and 1956 and 1959.

The capacity of the Costa Rican economy to import during the 1950-1959 period was generally unfavorable. The terms of trade shown in the last column of Table 7.3 improved from 76.9 in 1950 to a high of 108.2 in 1954 and declined to 103.8 in 1955. From 1955 to 1959, the terms of trade have been unfavorable to Costa Rica, except in 1958. In general, over the 1950-1959 period, Costa Rica benefited from favorable terms of trade only in 1954, 1955 and 1958, but, on the average, unfavorable terms of trade were prevalent.

To summarize, we note that agriculture was successful in providing an increasing volume of exports which contributed to the expanded demand for imports for industrialization. International price movements were helpful early in the decade but moved in an opposite direction late in the decade. Thus, international price movements helped prevent agriculture from playing as large a role in the external balance as was desired.

TABLE 7.6

COSTA RICA: BALANCE OF TRADE AND BALANCE OF PAYMENTS 1950-1959

Millions of Dollars

Year	Exports[a]	Imports[a]	Balance of Trade	Balance of Payments
1950	56.3	41.1	+15.2	-1.1
1951	61.2	47.7	+13.5	+4.3
1952	72.1	59.2	+12.9	+6.8
1953	79.4	64.8	+14.6	+3.0
1954	85.7	71.8	+13.9	-2.3
1955	80.7	77.7	+ 3.0	+3.1
1956	64.7	81.6	-16.9	-8.1
1957	82.7	92.0	- 9.3	+2.1
1958	93.1	88.9	+ 4.2	+9.4
1959	76.0	93.5	-17.5	-4.0

Source: International Monetary Fund, Balance of Payments Yearbook, Vol. 12, 1955-1959 and Vol. 9, 1950-1954.

[a]Values adjusted by the IMF.

During the 1950-1959 period there were no major changes in commercial policy. Balance of payments difficulties from 1948 to 1950 compelled the Central Bank to legalize the free market exchange rate in 1950. From 1950 to 1951 a surcharge was added to the preferred rate of 5.60 and the surcharges on the free rate were raised to 9.27 for most free market transactions and 11.82 for others. In 1952 the free rate was stabilized at a level of 6.65 colones per dollar. The free market rate remained at this level throughout 1950-1959. From 1952 until 1959, the following official exchange rates were in effect: 5.60 for all exports except those authorized to at mixing rates, such as cocoa beans, cocoa products, and raw cotton whose rate is 6.62; 5.67 for import goods considered most essential to the Costa Rican economy (about 50 per cent of all imports); and 6.65 for the remaining imports.

The 1959 difficulties appear to have continued into 1960 and 1961.

Differential exchange rates have been the only domestic policies used to stabilize export proceeds. Given the importance of coffee exports to the nation's economy, Costa Rica has been a strong supporter and active member of the International Coffee Agreement.

Summary

Costa Rica is heavily dependent on foreign trade for its economic welfare. In fact, exports accounted for 23.4 per cent of Costa Rica's GNP and 58.3 per cent of agriculture's GDP over the 1950-1959 period.

Bananas, coffee and cocoa account for 91.7% of Costa Rica's exports. During the 1950-1959 period, coffee replaced bananas as the leading export. Beef is emerging as an important export commodity while jute exports are declining in value of importance.

The volume of exports increased 36.2 per cent from 1950 to 1959. Coffee and cocoa exports have increased 126.4 and 271.7 per cent respectively in 1959 over 1950. Banana production decreased 37.5 per cent during the same period mainly on account of the Panama disease. There were, however, considerable year to year fluctuations in the export volume of the principal commodities. Year to year volume variations averaged 10.6 per cent over the period. In general, Costa Rica experienced rising prices for its exports from 1950 to 1957 and then a sharp decline in 1958 and 1959. This price decline is not only due to a drop in coffee prices but also to a drop in banana prices

during these two years. Export prices showed an average yearly variation of 9.6 per cent. Year to year variations in export proceeds over the 1950-1959 period averaged 10.6 per cent.

Imports are increasing at a faster and more constant rate than exports; they have increased 85.7 per cent from 1950 to 1959 (exports 36.2). This very rapid rate of increase of imports has placed a considerable burden on the balance of trade situation, especially since 1955. Manufactured products accounted for 63 per cent of total imports, food products 13.0 per cent and fuels and lubricants 6.4 per cent.

Costa Rican exports have been generally successful in paying for its imports and the balance of trade over the 1950-1959 period has been a net surplus. Balance of payments conditions have been generally favorable to Costa Rica although deficits were realized in 1950, 1954, 1956 and 1959. Since 1959 the situation has been less favorable.

During the period under study there was no major change made in Costa Rican commercial policy. Since 1952 the exchange rate remained at 5.60 for exports and 5.67 for imports considered most essential to the Costa Rican economy

(approximately 50 per cent of all imports) and 6.65 for the remaining imports. Free market exchange rate fluctuated about 6.65.

Aside from differential exchange rates, no other policies have been undertaken to stabilize export proceeds. With respect to international price stabilization policies, Costa Rica was an active member and supporter of the International Coffee Agreement.

CHAPTER VIII

SUMMARY

Primary producers are often confronted with two main problems in their relations with industrial countries: first, instability of export proceeds on account of price instability of primary products and second, a relative decrease in the capacity to import due to the deterioration of their terms of trade. Industrialization has frequently been suggested as the structural solution to both of these problems affecting the external balance of primary producers. Industrialization, however, is a long-run process which does not offer an immediate solution to the price instability problem. A number of national and international policies and programs are now being used to counteract price instabilities of primary products. Many others have been proposed. Which ever policy is advocated, in order for it to be beneficial to both producers and consumers, the stabilized price should not interfere with long-run price shifts. Finally, price instability is not an argument to stay out of a given line of production. On the contrary, price instability merely requires that the discounted average expected net returns

in primary production be compared with alternative production possibilities. When this allowance is taken into consideration, it is often wise for a nation to continue placing a high priority on producing primary products in order to earn foreign exchange.

Industrialization has often been suggested as the solution to the deteriorating terms of trade problem. In order to maintain the capacity to import, to increase employment and to prevent relative income transfers to industrial countries, it has been frequently advocated that primary producers (especially in Latin America) accelerate industrialization. Over the past ten years, an increasing number of Latin American countries have concentrated scarce human and financial resources on import replacing industrialization programs at the expense of agricultural and other primary production. According to one economist, Gerald Meier, the results of such industrialization policies in Latin America in recent years have been higher prices, failure to absorb labor surpluses, failure to allow the highest possible net savings of imports, excess industrial capacity and, in some cases, the establishment of industries with heavy import requirements.

Moreover, the neglect of agriculture and other primary production has often resulted in stagnant rates of growth in these activities and food shortages which, in many instances, have had to be met by agricultural imports. To overcome these numerous difficulties, it has been suggested by some economists that Latin American countries should expand their output of food and primary products and place less emphasis on import replacing industries.

Agricultural exports can contribute to the external balance of a nation by paying for capital imports required for economic development. Agriculture also can make two important contributions to the internal growth of a nation. First, agriculture must provide increased food supplies for higher incomes and a growing population. Second, agriculture is an important source of revenue for capital formation required for general economic development. Moreover, agriculture can provide the labor force required by other expanding sectors, as well as serving as a market for industrial products.

Costa Rica is a small underdeveloped nation of 1.12 million people. As is characteristic of most underdeveloped countries, it relies heavily on agricultural export proceeds

and industrial imports for its economic welfare and development. Costa Rica is, therefore, subject to and affected by instabilities of international markets. In addition, the terms of trade affect Costa Rica's pace of development. Moreover, being primarily an agricultural country, agriculture plays an important role in the external balance and internal growth of Costa Rica.

The population of Costa Rica is largely of European extraction and is characterized by its homogeneity. Levels of illiteracy are among the lowest in Latin America. The population of Costa Rica is growing at a rate of 3.87 per cent per year. This makes Costa Rica one of the fastest growing countries in the world. Costa Rica is largely a rural country with 66.5 per cent of its population and 55 per cent of its labor force in the rural sector. Only one-third of the Costa Rican population is economically active and must support the remaining two-thirds of the population. Of the total economically active population, 54.7 per cent is engaged in agriculture, 10.9 per cent in manufacturing, 14.7 per cent in services, and the balance in other activities.

The 1940-1950 performance of the Costa Rican economy has been covered by the 1952 Twentiety Century Fund study headed

by Stacy May. The recommendations of this Study Group after six weeks of investigation were to expand the production of domestically produced foodstuffs, to expand and diversify exports, to encourage savings and channel them into agricultural improvements, processing and light manufacturing industries, to draft a general development plan and to establish a better system of economic reporting and statistics as guides for planning and development.

Since agriculture is the major industry in Costa Rica and plays an important role in determining the general level of welfare of the country, the purpose of this thesis was to appraise agriculture's contribution to internal growth and external balance of the Costa Rican economy during the 1950-1959 period.

Modern economic statistics for the Costa Rican economy were not available until 1956, when national income accounts were first published beginning with 1950. These aggregate statistics for the period 1950-1959 and the shortcomings and limitations of national income accounts were pointed out in Chapter V. The Costa Rican national income, gross national product and gross domestic product showed almost a twofold increase from 1950 to 1959, which indicates that the economy

grew at a very rapid rate. For the purpose of determining annual rates of growth, seven different methods were discussed in Chapter IV, and six methods were used to compute the annual growth rate of the Costa Rican economy. All methods yielded almost identical rates for the ten-year period considered. However, it is recommended that method five is best suited to be used in underdeveloped countries because of its statistical accuracy and its ease of calculation. Using method five, it was calculated that the annual rate of growth of Costa Rica's gross national product was 8.00 per cent, gross national income 7.53 and gross domestic product 7.06 per cent at constant prices during the 1950-1959 period. The gross national product in current prices by economic sectors showed manufacturing growing at a rate of 7.58 per cent per year while agriculture only grew at an annual rate of 4.28 per cent. Government and government enterprises experienced the fastest rates of growth of all sectors.

This period of rapid economic growth was accompanied by fairly successful fiscal and monetary policies designed to encourage economic development. Three important laws were enacted in 1959; two of them were designed to encourage

investment and development of mining and import substituting industries. The third law pertains to the general development of the country but places emphasis on the development of the agricultural sector.

Since the agricultural sector experienced the slowest rate of growth of production of all sectors of the Costa Rican economy (4.28 per cent) during the 1950-1959 period, an attempt was made to explore the performance and characteristics of Costa Rica's agriculture as well as some specific institutions directly responsible for agricultural development.

The latest Census of Agriculture (1955) indicates that Costa Rica has 47,286 farms covering a total area of 2.65 million manzanas (4.5 million acres). The land in farms (including farm wood lots) represents 36.4 per cent of the Costa Rican territory. A total of 260,736 manzanas were brought into cultivation from 1950-1955. There still remains a large acreage of idle land which could be brought into production. It was estimated in the early 1950's that an additional 27 per cent of the land in forests could be utilized for agricultural production.

Costa Rica is a country of small agricultural producers;

in 1955, 60.3 per cent of all farms were 19 manzanas (32.3 acres) or less, and account for 7.4 per cent of the farm land. However, in 1955, 0.1 per cent of all farms or 50 farms comprised 21.0 per cent of all farm land. These figures suggest the presence of minifundio as well as latifundio type of ownership. In 1955, 75.5 per cent of all farms, and 88.9 per cent of the total agricultural land in Costa Rica was being used by their legal owners.

Costa Rican agriculture is characterized by limited diversification. In 1955, 14 commodities (ten principal crops plus livestock, milk, swine and lumber) were responsible for 92 per cent of the total value of agricultural production. Coffee, bananas, and cocoa which are produced for exportation accounted for 53.4 per cent of the total value of agricultural production. In 1955, 47.1 per cent of the total volume of agricultural production was exported and 62.8 per cent was domestically consumed.

During the 1950-1959 period there was a considerable increase in the volume of production of principal crops (with the exception of beans and bananas) and livestock. Indexes of production (1950 = 100) show bananas have decreased 11.3 per cent while coffee production rose 138.2

per cent, sugar cane, 93 per cent; corn, 31.9 per cent; and rice, 15.8 per cent. However, these increases in production were accompanied by increases in the area planted. Corresponding indexes for crop land show the following increases in area planted: bananas, 5.1 per cent; coffee, 49 per cent; sugar cane, 52.2 per cent; corn, 15 per cent; beans, 13.1 per cent; and rice, 16.6 per cent. Coffee, sugar cane, and corn had a larger proportional increase in output relative to area planted; beans and rice experienced a decrease in production per manzana. This evidence shows there has been a sharp rise in coffee and sugar productivity while beans and rice reflect a decline in productivity per manzana.

Animal and animal products expanded very rapidly. During 1950-1959, livestock numbers rose 80 per cent and milk production 43 per cent. Swine production remained essentially unchanged during this period.

The gross domestic product of agriculture (in constant prices) experienced an annual rate of growth of 4.55 per cent over the 1950-1959 period. With per capita income growing at an annual rate of 3.66 per cent and assuming an income elasticity of demand for food of 0.5, the annual

growth of demand for food would be 5.7 per cent. Judging from these growth rates, agriculture has apparently been unable to satisfy the increased demand for food. Two principal propositions may help to explain this phenomenon. First, since national income data do not include non-market agricultural output, and this output may be substantial in Costa Rica, gross domestic product may have underestimated agriculture's output. Second, the income distribution may be such that rising incomes may have benefited only a small sector of the population and therefore, have not induced a proportional increase in demand for food. Thus, on one hand, the actual rate of growth of agricultural supplies in Costa Rica may have been higher than the one shown by agriculture's gross domestic product; on the other hand, the actual rate of increase of demand for food induced by higher incomes may have been lower than the "required" theoretical rate. The discrepancy between agricultural supply and demand growth rates was partially filled by food imports. Increased food imports do not necessarily mean a failure of agriculture to cope with demand increases induced by higher incomes and population growth. The dualism of the agricultural sector in Costa

Rica (and other underdeveloped countries), allows agriculture to fail to meet food requirements while agricultural exports pay for food imports. This is discussed further below.

Costa Rican agriculture seems to have fallen short of satisfying internal demand for food, as can be deduced from the increase in food imports. However, the relative stability of food imports, both as a percentage of total imports (11.0 - 15.7 per cent) and as a percentage of agriculture's gross domestic product (7.1 - 9.8 per cent) indicate that agriculture's position in coping with internal demand may not have improved but at least it has not deteriorated. Moreover, as will be pointed out later, indexes of agricultural exports and balance of trade conditions reveal that agriculture has succeeded not only in paying for the rise in food imports but also for non-agricultural imports during the 1950-1959 period. Wholesale and retail price indexes indicate a considerable degree of price stability in the Costa Rican economy over the 1950-1959 period. The cost of living index rose from 100.0 in 1952 to 113.4 in 1959 or a rise of 1.42 per cent per year. The food component of the cost of living index rose

from 100.0 in 1952 to 114.9 in 1959 or a rise of 1.47 per cent per year. These figures indicate that, unlike other Latin American countries, Costa Rica has not experienced sharp price increases caused by unsatisfied demand for food products. Annual price increases have not only been moderate but also could be said to be "normal" in an economy which is growing at a rate of eight per cent per year.

Costa Rica's economy is highly dependent on foreign trade. Exports accounted for 23.4 per cent of Costa Rica's gross national product during the 1950-1959 period. Over the same period, at least 95.2 per cent of the country's exports were agricultural products, and coffee and bananas accounted for 91.7 per cent of total exports. Exports constituted 58.3 per cent of agriculture's gross domestic product. Cocoa, jute and livestock and beef exports represented 6.1, 2.0 and 1.5 per cent of total exports respectively. Exports represented 58.3 per cent of agriculture's gross domestic product during the 1950-1959 period. The figures presented above point out the importance of agricultural exports in the level of welfare of the country. Instabilities in export prices have exerted a great impact on the Costa Rican economy in the latter part of the 1950's. More

specifically, economic fluctuations in Costa Rica are tied to prices of coffee and banana exports. However, fluctuations in coffee prices exert greater repercussions on the over-all economy than fluctuations in banana prices. The reason for this lies in the difference in organization of production of the coffee and banana industries. The coffee industry is entirely owned and operated by Costa Ricans; and a great proportion of the coffee output is produced in small farms. A total of 67 per cent of coffee was produced on farms of less than 184 acres in size in 1955. Conversely, the banana industry is in the hands of the United Fruit Company which markets 98.4 per cent of Costa Rica's bananas (and 37.5 per cent of total Costa Rican exports). Under the present contract between the United Fruit Company and the Costa Rican government, the former can subtract profits, imports and capital depreciation allowances from its export earnings. Therefore, all foreign exchange originating from coffee exports and only a certain percentage of the foreign exchange from bananas (approximately 45 per cent) return to the country. Thus, a relative change in the price of banana exports has less impact on export earnings than a similar price change in coffee exports. Moreover, since the total

value of coffee exports (at constant prices) is greater than that of bananas, fluctuations in coffee prices will have more of an impact on the Costa Rican economy than equivalent changes in banana prices. Finally, since a larger proportion of the population is dependent either directly or indirectly on the coffee industry, price changes in coffee exports affect a larger proportion of the population than would export price changes of bananas.

Coffee exports increased 126.4 per cent from 1950 to 1959; however, year to year variations in volume averaged 20.0 per cent during the period. Rising coffee prices benefited Costa Rica from 1950 to 1957; however, from 1957 to 1959 coffee prices dropped 44 per cent (while volume increased 59 per cent). Year to year variations averaged 14.0 per cent.

Banana exports declined 36 per cent during the period. Banana prices increased fairly constantly from 1950 to 1956 and declined rapidly from 1956 to 1959. Year to year banana price and volume fluctuations averaged 4.33 and 13.1 per cent respectively.

The total volume of exports increased 36.2 per cent from 1950-1959. Year to year variations in volume averaged

13.2 per cent during this period. Export prices rose fairly steadily from 1950 until 1957 and declined sharply from 1957 to 1959. The value total of exports rose from 55.6 million dollars in 1950 to 84.7 million dollars in 1954, declined to 67.4 million in 1959 and rose to an all-time high of 91.9 million in 1958. In 1959 exports dropped to 76.7 million.

The volume of imports rose 85.7 per cent from 1950 to 1959; import prices rose 20 per cent during the same period. The terms of trade were, on the average, unfavorable to Costa Rica during this period, having benefited Costa Rica only in 1954-1955 and 1958.

During the 1950-1959 period, Costa Rica had a net balance of trade and balance of payments surplus, although sporadic deficits were realized in some years. These deficits were financed mainly from accumulated reserves.

Price instabilities have not caused serious damage to the external balance of the economy during the period, 1950-1959. No major changes were made in commercial policy during the period. Moreover, Costa Rican agriculture was fairly successful in paying for the increasing volume of food and non-food imports. This success, however, was

accompanied by favorable export prices during the first part of the 1950's. The period following 1957 was marked by the declining international price of coffee and increasing stress on the external balance of the Costa Rican economy. This situation was only partially remedied by participation in the International Coffee Agreement.

Rising food imports are sometimes viewed with unwarranted alarm. Costa Rica, for example, has a comparative advantage in producing crops such as coffee and bananas and importing certain food such as cereals and cereal products. In order to satisfy the rising incomes and population growth during the 1950's, Costa Rica expanded coffee exports and increased food imports. All food imports, however, increased by only $7 million over the 1950-1959 period while coffee exports were $23 million higher at the end of the period than in the beginning.

Sharp gains in productivity were recorded in coffee and sugar cane production while production of beans, rice and corn for the indigeneous market was unimpressive. Therefore, in Costa Rica's dualistic economy, productivity gains have been centered in the coffee sector and not in crops produced for the domestic market.

Costa Rica has relied on a moderate rise in food imports and effective stabilization policies of the National Production Council to maintain food price stability.

In general, the 1950-1959 decade was a period of overall high rates of growth--8 per cent per annum--rising incomes, political harmony and a stable general price level including stable food prices.

APPENDIX

APPENDIX TABLE I

COSTA RICA: VOLUME OF AGRICULTURAL PRODUCTION 1950-59

Año Agrícola	Banana Bunches	Coffee[a]	Sugar Cane Tons	Corn 100 lbs.	Beans 100 lbs.	Rice 100 lbs.
1950	14,801,435	445,837	627,568	1,296,561	232,007	411,284
1951	10,315,738	384,533	816,350	2,004,303	219,278	724,581
1952	11,916,779	412,824	829,388	1,923,610	263,580	512,758
1953	15,366,691	656,523	834,654	1,493,130	274,742	554,953
1954	13,927,154	462,896	614,941	1,749,780	390,190	646,508
1955	13,238,176	681,525	647,366	1,017,554	234,502	378,579
1956	13,437,958	498,243	592,674	905,541	140,616	461,170
1957	11,126,772	695,065	703,722	1,504,508	242,343	513,021
1958	13,573,805	945,023	976,607	1,688,505	262,917	538,996
1959	12,991,195	1,061,795	1,211,066	1,710,530	205,811	476,555

Source: Ministerio de Agricultura y Ganaderia, Proyeto 36 de STICA, Principales Datos Sobre la Produccion Agropecuaria de Costa Rica, 1950-1959, Mimeograph, 3.

[a]One fanega = approximately 110 lbs. of green coffee.

APPENDIX TABLE II

COSTA RICA: VOLUME OF ANIMAL PRODUCTION 1950-1959

Numbers

Año Agricola	Livestock	Swine	Poultry	Milk, Botellas per day[a]
1950	607,857	112,156	875,026	361,290
1951	684,887	109,635	-------	621,555
1952	656,836	120,072	857,400	428,729
1953	695,913	103,094	877,650	473,735
1954	761,661	114,511	983,974	575,157
1955	705,172	102,284	1,738,710	378,248
1956	954,212	94,557	1,277,107	489,764
1957	894,202	113,877	-------	493,596
1958	930,767	120,240	-------	456,067
1959	1,095,017	140,082	-------	517,395

Source: Ministerio de Agricultura y Ganaderia, Proyeto 36 de STICA, Principales Datos Sobre la Produccion Agropecuaria de Costa Rica, 1950-1959, Mimeograph, 3.

[a]A botella equals .67 centiliters or 1.5 pounds.

APPENDIX TABLE III

COSTA RICA: LAND PLANTED TO PRINCIPAL CROPS 1950-59

Manzanas = 1.7 acres

Año Agri-cola	Banana	Coffee	Sugar Cane	Corn	Beans	Rice	Gross
1950	33,508	69,836	28,414	78,619	39,439	32,855	868,225
1951	31,743	74,354	32,356	76,296	53,358	48,904	--
1952	34,326	79,435	34,853	97,092	46,995	40,656	--
1953	35,914	80,783	29,354	81,096	46,524	41,260	--
1954	34,556	79,809	24,023	107,882	60,873	52,823	--
1955	33,570	80,574	27,536	71,466	47,822	36,237	1,306,433
1956	35,328	81,936	31,229	71,580	43,849	51,606	--
1957	36,249	85,110	30,597	83,995	50,457	41,109	--
1958	34,903	98,162	37,561	88,828	52,798	39,392	--
1959	35,236	104,171	43,252	90,425	44,624	36,698	--

Source: Ministerio de Agricultura y Ganaderia, Proyeto 36 de STICA, Principales Datos Sobre la Produccion Agropecuaria de Costa Rica, 1950-1959, Mimeograph, 5.

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