

**THE SUGAR ECONOMY
OF PUERTO RICO**

THE SUGAR ECONOMY OF PUERTO RICO

BY

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FOREWORD

THE present study was made at the suggestion of two land-owning partnerships in Puerto Rico engaged in the cultivation of sugar cane and financed principally by capital coming from the continental United States. The work was paid for jointly by these companies. The authors were approached with the request that they make an objective factual analysis of the Puerto Rican sugar industry and its relation to the general economy of the Island, and that they interpret their findings in relation to controversial questions of public policy affecting the sugar industry. The manuscript upon completion was to be rendered to the sponsors. The authors consented to undertake the commission on the explicit contractual agreement that no part of the manuscript less than the whole would be published with their names attached except with their consent.

The present report is the final complete manuscript of their study, unchanged in any detail. All statements made and conclusions reached are those of the authors alone and are, therefore, not necessarily subscribed to by the sponsors. Certain matters of opinion and conclusions are, indeed, definitely not accepted by the sponsors. None of the authors has any private interest in the sugar industry, nor reason to present facts relating to it in any other light than that of his own knowledge and understanding.

The study does not attempt an examination of all of Puerto Rico's varied and complex problems. It is concerned with the structure and operation of the sugar industry, the most important in the Island, and with the place of that industry in the general Puerto Rican economy. The field is an important one. For in Puerto Rico the elements of friction that everywhere characterize the working of human institutions, and the natural conflict of interests between different sections of the community, are reinforced and aggravated by the triple circumstance that

the sugar industry looms so large in its economy; that investments from the outside play a substantial part in the cane-growing and manufacturing aspects of that industry; and that this external capital represents ownership and control by those who, though of the same citizenship, belong to a different culture. Thus the sugar industry is a badly exposed target for criticism, and the so-called "American corporations" doubly so.

Some consideration of general Puerto Rican economic problems has been necessary in order to provide a background against which to present the more specific materials relating to the sugar industry.

The study is based on data available in 1936 except for some insertions and footnotes based on more recent events. It has required far more original research and has taken much longer than was anticipated at its inception in April, 1936. There exists a striking lack in the available body of accurate data, especially statistical, bearing on many of the most fundamental aspects of the Island's problems. This is particularly surprising in view of the abundance of sweeping generalizations so freely voiced as to the nature of the Island's ills and as to the remedial measures which should be adopted. It is the purpose of this report to present such basic information as could be secured by the authors in the time and with the facilities at their disposal, and to make such interpretative comment as seemed justified. It is their hope that the information presented will facilitate the search for reasonable solutions to Puerto Rico's difficult problems.

In making the study the authors consulted innumerable persons of all shades of opinion and walks of life, and their obligations both for specific facts and for general enlightenment are so numerous as to be embarrassing. Though it seem invidious toward many others, they feel bound to acknowledge their special debt to the Sugar Section of the Agricultural Adjustment Administration both at the Washington and San Juan offices, to the staff of the Association of Sugar Producers of Puerto Rico, to the staff of the Puerto Rico Reconstruction Administration, and to officials of the Insular government.

To the scores of individuals who so generously responded to every demand made upon them for information and assistance,

the authors must perforce, for lack of space, forego the pleasure of making acknowledgment by name. Detailed enumeration would fill many pages. But in certain cases at least their debt is recorded at appropriate points in the body of the text.

They also offer thanks to the many sugar companies that coöperated by filling out a very troublesome questionnaire, and to many company officers for the aid given in personal interviews. For the kindness and hospitality which they everywhere encountered they have no fitting words of appreciation. For ample reason has the report been written in a spirit of appreciation and affection for Puerto Rico and its people.

The organization of the materials is as follows: Part I consists of a brief survey of salient aspects of the general Puerto Rican economy. Part II contains the detailed data on the sugar industry which the authors were able to accumulate in the time and with the resources at their disposal. Part III presents the authors' general interpretations of these data, and such conclusions and opinions as they felt justified in making. Nowhere do they commit the presumption of attempting a definitive solution of Puerto Rico's difficult social and economic problems.

The report is in the fullest sense the joint product of its three authors. They worked in close and harmonious coöperation throughout the investigation; they all three participated in the collection and analysis of all the data; and the successive drafts were passed upon and worked over by each of them, and the comments and suggestions of the others, often substantial, embodied in them. But primary responsibility for various chapters, and especially for their initial drafting, belongs, respectively, as follows: Arthur Gayer, Chapters 1-5 inclusive, 16, and 17 (in part); Paul Homan, Chapters 6-11 and 18-20, inclusive; Earle James, Chapters 12-15, inclusive, 17 (in part), and section 3 of Chapter 19.

The use of certain terms calls for a word of explanation. As the name for the Island, *Puerto Rico* was officially adopted by Act of Congress in 1932. Previously, *Porto Rico* had been current among English-speaking peoples. The latter spelling is retained in the present study only in quotations or citations of sources using this form.

While Puerto Rico is American territory and Puerto Ricans are American citizens, it has been necessary for purposes of analysis to distinguish between factors of a local nature and those involving the United States proper. Thus the term "Mainland" is used for continental United States; "American-owned," for enterprises owned by capital from the Mainland; "external trade" for what, were the Island an independent unit, would be called "foreign trade"; and others which are self-explanatory. Such terms are used simply for convenience.

The use of Spanish terms has been held to a minimum. The chief exception is the word *colono*, referring to cane growers not allied with sugar-mill interests. The special contractual relationship in which independent cane growers stand to a mill makes desirable the retention of the term when this particular relationship is involved in the discussion. The term "mill," on the other hand, is used in place of the Spanish *central*, but in the broader sense implied by the Spanish term—that is, not merely the grinding enterprise proper (called *factoria* in Spanish) but the numerous properties and plantations that may be operated by a milling company.

For the benefit of readers who may wish to get the substance of the report as quickly as possible, the more detailed statistical tables have been placed at the end of each chapter.

August, 1938

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Part One

THE PUERTO RICAN ECONOMY

I

THE ISLAND OF PUERTO RICO

PUERTO RICO lies midway in the island group of the Antilles that forms the northern and eastern boundaries of the Caribbean Sea. The Island is the most easterly of the Greater Antilles—Cuba, Haiti and the Dominican Republic, and Puerto Rico—and from it the numerous Lesser Antilles curve southward to the coast of South America. Its location is 1,000 miles east and south of Florida and 1,400 miles from New York.

1. A HISTORICAL VIEW

Puerto Rico is one of the spots in the New World early colonized by Europeans. Columbus visited it on his second cruise in 1493, and named it St. John the Baptist. Fifteen years later Ponce de León established a settlement. Enthusiastic over its resources, he named it Puerto Rico (Rich Port), and transferred the name Columbus had given the Island—San Juan or St. John—to the capital city he founded.

The Island soon became the first port of call for galleons bound to the New World, the last one for those sailing east. A spearhead reaching out into the Atlantic, it also became a focus for raids on Spanish trade by English, French, and Dutch privateers. Time and again San Juan was attacked by marauders, until the harassed citizens raised gigantic stone defenses—started in the early sixteenth century and completed toward the close of the eighteenth—that made San Juan the second-best fortified city in the New World, and are today eloquent witness to the perseverance and engineering skill of the Spaniards.

But by the time the fortifications were completed, the power of Spain was already declining. Puerto Rico, like Cuba, did not at the beginning of the nineteenth century revolt with the other Spanish colonies and become independent. Both these islands had too long been centers of Spanish military and naval rule,

and the fires of independence could find little on which to feed. Furthermore, no sizable Creole class, engaged in agriculture and industry, had grown up to challenge the authority of a strongly entrenched Spanish landed aristocracy. The islands continued Spanish colonies until the Spanish-American war. Then, while Cuba became a republic, Puerto Rico passed into the possession of the United States.¹

Until the recent acquisition of the Virgin Islands, Puerto Rico was the only possession of the United States in the Caribbean area, that region of the New World where American influence perhaps has been strongest. It still is the only land under the American flag on which Columbus set foot.

These factors have given Puerto Rico a particular significance. Because of its location and historical background, the Island has been seen by many as a cultural and geographic bridge between Anglo-Saxon and Hispanic America. It has been viewed as a field laboratory where two cultural strains are to mingle and learn to understand each other, a laboratory of Pan-Americanism. This experiment in inter-cultural appreciation has not perhaps of late, however, given evidence of being as successful as was originally hoped. At least it has entered a period of strain.

On the whole, the government of the United States appears to have given little systematic thought to the status of Puerto Rico. Having set up a form of insular government, it largely left the Island to adapt itself to its new place within the economy of the United States.

2. GOVERNMENT

The political status of the Island is ambiguous, but in some respects resembles that of an American territory. A significant difference is that, not being a territory, it is not eventually automatically eligible for the status of statehood. Perhaps the best description is to say that it is a partially self-governing "possession."

¹ In 1897 the autonomy movement under the leadership of the great liberal statesman Luis Muñoz Rivera had actually secured an Autonomy Charter from Spain. But this form of government lasted only a few months, owing to the Spanish-American war.

The Foraker Act, passed by Congress in 1900, provided for a civil government of Puerto Rico with very limited powers of Island autonomy. The Jones Act of 1917 made provision for the admission of virtually all Puerto Ricans to American citizenship. The Foraker Act had provided for a bicameral legislature, the upper house being the Executive Council, whose members were appointed by the President. The Jones Act effected important changes in this form of government, in substituting an elective Senate for the Executive Council, in containing a Bill of Rights, hitherto absent, in transferring jurisdiction over franchises and public-service companies to a local public-service commission, and in generally granting a larger measure of self-government to the Island. A Puerto Rican delegate is elected by popular vote to the national House of Representatives, with the title of Resident Commissioner in Washington, but has no vote in Congress. The Governor is appointed by the President and enjoys veto power over bills passed by the Insular legislature. Bills repassed by a two-thirds legislative majority go to the President for final decision. Congress, of course, has the power to modify the Organic Act at any time.

The Insular legislature cannot act upon international affairs, including the tariff; nor can it raise tariff barriers against the Mainland. The latter provision has been partially circumvented by Insular excise and sales taxes. In relation to continental United States, Puerto Rico enjoys all the benefits, as an exporter to the Mainland, and is subject to all the disadvantages, in importing from foreign countries, of being completely inside the American tariff system. Federal tariff revenues collected in Puerto Rico are, however, covered into the Insular Treasury. The Island also imposes its own income taxes, in lieu of Federal levies.

The Governor heads the executive branch of the Insular Government and is assisted by Commissioners, comparable to cabinet ministers, who head Insular departments—Attorney-General, Treasurer, Commissioners of Agriculture and Commerce, Education, Health, Interior, and Labor. These are selected by the Governor, (subject to approval by the Senate of Puerto Rico), with the exception of the Attorney-General and

the Commissioner of Education, who are presidential appointees, as is also the Auditor, who supervises disbursements.

The Federal official most directly concerned with Puerto Rican affairs is the Director of the Division of Territories and Island Possessions, in the Department of the Interior. To this office in 1934 were transferred the supervisory functions that had theretofore been exercised by the Bureau of Insular affairs in the War Department. This office is charged with no *direct* administrative authority in Puerto Rican government. The Director, however, naturally exercises considerable influence by virtue of his relation to the Secretary of the Interior and the President. He also gained further powers of large importance by being made Administrator of the Puerto Rican Reconstruction Administration (PRRA), but this titular office has more recently been taken over by the Secretary of the Interior. This emergency agency, set up in 1935, is financed with a large grant of funds allocated in the Federal Relief Act of that year. The organization in Puerto Rico is headed by a Regional Administrator. This agency is not a part of the political government, but, because of the power which attaches to reconstruction expenditures in initiating important economic experiments, the PRRA may be thought of as exercising some political authority in the field of public economy.

Throughout the period of the American regime Puerto Ricans have, on the whole, accepted it in a markedly peaceful spirit. Independence has been a continuing plank in the platform of one political party, but one would judge mainly hitherto for its emotional appeal and not as a really anticipated end. More generally, it would appear, Puerto Ricans have looked forward to a larger status in the United States family, either a more autonomous position or statehood.

Recently, however, a group of "nationalists" has been advocating independence violently and under high emotional pressure. For the first time under American rule, there has been a political assassination of an American official and a conviction for seditious conspiracy. The party of violence is no doubt small, but the growth of political feeling appears to be widespread. Not only has popular interest in recent elections run unusually

high, but there has been a corresponding tension that reflects the pressure of acute issues and a profound stirring of public opinion.

This strain may possibly be a healthy sign, indicative of an aroused interest in basic economic, social, and political problems. It undoubtedly has had the effect of calling the attention of the people and government of the United States to the Island that forms part of their nation, and an important program of rehabilitation has been undertaken by the Federal Government in an effort to ameliorate social and economic ills.

3. AGRICULTURAL ECONOMY

Under Spanish rule Puerto Rico had for centuries primarily a strategic military value. This fact, together with the raids of foreign privateers and the predominance of a military-aristocratic class controlling most of the settled coastal lands, impeded its early economic development.

During the nineteenth century, however, there was a considerable Spanish immigration, numbers multiplied rapidly, and a dense population covered the whole Island. On the coast the economy was mainly one of large estates, with slave labor. Much of these estates was given over to grazing land. The interior, on the other hand, fell mainly into the small farms of peasant proprietors, chiefly of Spanish blood. Agricultural production fell roughly into two large categories, food supply for local consumption and commercial crops to export in payment for industrial products. Spanish commercial policy severely restricted industrial enterprise and enforced an almost wholly agricultural economy.

Ginger was for long the chief agricultural export. Coffee, introduced in 1726, rapidly became the Island's most important product and retained this position down to the time of the American occupation. Sugar cane, though introduced long before coffee, never approached the importance of the latter under the Spanish regime. During the later nineteenth century it ran a poor second to coffee.

American occupation brought about profound changes in the Puerto Rican economy, and of these changes the greatest was the rise of sugar. Covered into the United States tariff system,

sugar went rapidly into first place, with special stimulation from American investment and enterprise. Ultimately the whole agricultural economy of the Island has come to center on specialization in cane cultivation and sugar manufacturing. Under the American regime the Island's external trade has multiplied several times over, with sugar accounting today for about 60 percent of its exports. Among other developments, a railroad almost encircles the Island, good roads crisscross it, electric power is well developed, and other auxiliary facilities exist for exploiting the economic potentialities.

What remains the same is that Puerto Rico is still predominantly an agricultural economy. Though there are no restrictions against industrial development as there were under Spanish rule, little progress has been made in introducing industrial employments. Sugar factories and needlework shops are the sole important exceptions. The heart of Puerto Rico's economic problem lies in having to support a dense and growing population from the products of its soil, without benefit of extensive auxiliary industries.

4. PHYSICAL AND CLIMATIC FEATURES

Puerto Rico is 100 miles long and 35 miles wide, and comprises a land area of 3,435 square miles, or two-thirds that of Connecticut. It is divided longitudinally by a steep chain of hills running up to peaks of 4,000 feet. It is wholly mountain and valley country, except for the flat belt around the coast. The lowlands (everything below 250 feet) cover almost exactly a third of the total area of the Island. At the other extreme, a quarter of the total area lies between 1,000 and 3,000 feet above the sea.

As the dividing range of hills is nearer the south coast, the north side of the Island is more extensive, and is also cooler and enjoys greater rainfall. The flat coastal belt is devoted mainly to sugar cane, particularly in the east and south. Crops on the north side are more varied, and include citrus fruits, pineapples, and coconuts. In the more rugged interior country, tobacco is the chief crop toward the east, coffee toward the west.

The soil, though naturally rich, has suffered seriously from

erosion, and its plant food has been depleted by centuries of unscientific cultivation, so that today fertilizers are needed. It has also been severely deforested.

Puerto Rico enjoys a mild and exceptionally equable temperature, but is exposed to the scourge of Caribbean hurricanes which occasionally devastate large areas. The coffee, citrus fruit, coconut, and to a lesser extent the sugar industry, were severely affected by the hurricanes of 1928 and 1932. None of them, except sugar production, has fully recovered from the tremendous damage suffered. The destruction of the coffee plantations, in particular, is responsible for much of the economic want in Puerto Rico today, as nearly 25 percent of the rural population and 15 percent of the entire population were dependent on that industry.

II

POPULATION AND SOCIAL FRICTION

OVERPOPULATION is Puerto Rico's most serious problem. This combines with other elements in the social situation to create a state of social friction and unrest. A view of these elements is the essential starting point for an understanding of the problems of the Puerto Rican economy.

1. POPULATION DENSITY AND GROWTH

The population of the Island is 1,723,500.¹ The birth rate per thousand in recent years has been 40.1, and the death rate 20.6 (averages for the years 1929-34). In the decade 1920-30 the population increased 18.8 percent, or 1.69 percent per annum; between 1930 and 1935 the yearly average rate of increase was 1.95 percent. Between the time of the American occupation in 1898 and the year 1935 the population increased over 80 percent. Since 1930 the net increase each year has been nearly 32,000 persons.

The population consists almost entirely of native-born Puerto Ricans, mainly of Spanish descent, although about one-quarter of the population was classified by the Census of 1930 as colored. The largest non-native-born groups are composed of about 2,000 continental Americans and 5,000 Spaniards.

In 1935 the density of the population was over 500 per square mile of the total area, or 1,500 per square mile of cultivated land. Puerto Rico thus ranks as one of the most densely populated regions in the world, surpassed only by the highly industrialized countries of Europe; by Java and the Straits Settlements in the East; by Madeira; and by island dependencies in the Lesser Antilles, such as Barbados, Martinique, and Mauritius. It is twelve times as densely populated as the United States, without

¹ Special census taken in 1935 by the U. S. Census Bureau for the Puerto Rico Reconstruction Administration. On the population problem in Puerto Rico see also the forthcoming study by Professor Rafael de J. Cordero.

possessing the latter's rich mineral and other natural resources and highly developed manufacturing industries. It is more densely populated than the industrial state of Connecticut.

Under these circumstances the paramount economic problem of Puerto Rico is the great pressure of population, with, inevitably, a correspondingly low standard of living for the mass of the people. All plans for economic amelioration are contingent upon lessening this pressure. On this point the Puerto Rico Policy Commission wrote:

A policy of fundamental reconstruction . . . will be unavailing, however, if population growth cannot be checked, or at least reduced. This last factor is of very great importance because, even if a parity between population and employment—as to farming or industrial jobs—can be approximately achieved, it cannot be maintained unless the rate of population growth can be kept within the scope of further economic development.²

In the same connection the remarks of Gov. James R. Beverley in 1932 are still relevant:

Without some extraordinary and unexpected changes in economic conditions, further net additions to population in the Island must inevitably result in greater distress and poverty and ultimately in a rising death rate. The population question is fundamental and is intimately related to the standard of living, to labor conditions and especially to health conditions.³

2. UNEMPLOYMENT, PUBLIC HEALTH, AND LIVING CONDITIONS

Unemployment is a chronic and widespread condition in Puerto Rico through "good times" and bad. It is, however, difficult to estimate its extent, because of the fact that so much of the employment is seasonal or intermittent. All figures on unemployment do little more than indicate inaccurately the large proportions of the problem.

The annual report of the Puerto Rico Emergency Relief Administration for the year 1933-34 stated that under the best conditions about 65 percent of the working population is employed. A survey made in 1929 estimated the population of

² *Report of the Puerto Rico Policy Commission* (Chardón Report), (146 pages, mimeographed, Washington, D. C., 1934), p. 1.

³ *Thirty-Second Annual Report of the Governor of Puerto Rico*, 1932, pp. 7-8.

available workers at 461,000 persons, of whom 290,000 were employed and 171,000 unemployed.⁴

So far as census figures show, the situation had not grown worse under American rule up to the advent of the depression. The percentage of employable persons employed in Puerto Rico showed no tendency to decrease between the time of American occupation and 1930, the date of the latest census, despite the rapid increase in population. In 1899 the census showed that 47.7 percent of the population over ten years of age was gainfully employed. In 1930, the year of the latest official statistics, the corresponding figure was 46.1 (Table 1, below). Of course neither of these figures accurately reflects the extent of cyclical unemployment or intermittent employment.

Overpopulation, unemployment, and consequent low standards of living are responsible for unhealthy conditions and poor housing facilities. These circumstances, in turn, perpetuate the low degree of industrial skill, training, efficiency, and initiative of large portions of the workers. The most acute health problems are tuberculosis, malnutrition, malaria, hookworm and intestinal diseases. Housing conditions affecting a large portion of the population are naturally very unsatisfactory, especially in the cities.

It is impossible to make any close comparison of present standards of living with those existing before the American occupation. Tremendous changes have been wrought by the investment of private capital in economic developments and by the activity of Government in the spheres of sanitation, education, public works, irrigation, means of communication, and so forth. By personal observation, many persons have seen great external improvements for certain sections of the population in such matters as clothing, housing, and cleanliness. Much also has been done in the matter of public health, especially in mitigating hookworm and ending the periodic plagues that used to sweep the Island. Population has, however, tended to keep pace with expanding economic opportunities and to retard the rise of standards of living. Indeed the benefits accruing from

⁴ "Unemployment in Puerto Rico, 1929," *Monthly Labor Review*, September, 1930, p. 25.

American rule, especially in respect to public health and sanitation, have reduced some of the "positive" checks to population growth. The death rate has been substantially reduced while the birth rate has not been retarded, with resulting accelerated increase in numbers.

Though by ordinary continental norms the standards of living of the Puerto Rican masses are low, it may well be true that they are higher than in certain Latin-American countries and in certain of our own Southern States. This again is one of those points upon which comparison is difficult. In any case, the problem in Puerto Rico is not some "general" standard of living, but the absolute poverty of the chronically unemployed.

3. SOURCES OF SOCIAL FRICTION

Most of the social-economic friction that of late has been manifest in the Island springs from half a dozen salient features that have increasingly characterized the economy of Puerto Rico.

The most disturbing economic force is naturally the pressure of population, with its consequent low standards of living, unemployment, and underemployment. These are long-standing and chronic conditions, but there has arisen a new feeling of impatience about them, a quest for ameliorating measures.

The Island is dependent upon the Mainland for virtually all its manufactured goods and for the greater part of its food supply. Relatively to low dollar incomes in Puerto Rico the American prices are high. What the tariff gives in markets it tends in some measure to take away in a high cost of living. With the Island's existence dependent largely on a few cash crops destined for external markets, the question has been raised whether its economy might not be more soundly based on a smaller volume of exports, and a revised internal economy covering larger production of food and manufactures for local consumption. The answer to this question is not very clear, nor is there any consensus of opinion upon it. It is treated fully at later points.

The rise of the sugar industry has inevitably created a special set of social problems. It has disturbed the social primacy of the old landed aristocracy, except as a few of the latter have

become mill owners. The concentration of land in the hands of the companies is looked upon with envy in a land-hungry country. The patriarchal relation between proprietor and *peon* also breaks down under corporate management of great plantations. The position of the sugar companies as the chief source of income for both landowners and workers leads to feelings of grievance, whether justified or not, against the dominant "pay-master."

Finally, on the economic side, the considerable volume of capital investment in the Island by continentals gives rise to a special grievance under the heading of so-called "absentee ownership." There is in certain quarters a widespread belief that the flow of income from the Island is draining away its prosperity. This questionably founded economic belief is mingled with a dislike on their part of having so much economic authority repose in the hands of "outlanders."

To these economic factors may be added the further social complications resulting from the Island's ambiguously defined political status. It is not a "territory" as is Hawaii or Alaska. It is governed under forms devised by the President and the Congress of the United States; yet, although its inhabitants have been granted American citizenship, they are not entitled to vote in presidential and congressional elections. While enjoying a large measure of local autonomy, the ultimate word as to their political, social, and economic destinies rests with the government in Washington. In this government they have no voice, except through a Resident Commissioner who sits in Congress but may not vote on measures affecting the Island. It is a status easily represented as an offense to their pride.

Thus it has not been difficult for critics of present social-economic conditions in Puerto Rico to portray the situation as one of imperialistic rule by a "foreign power" for the benefit of "absentee owners" who dominate a few industries, which in turn dominate the economy of the Island, while the great mass of the people suffers poverty and want.⁵ It is hardly an accurate picture, but it has sufficient verisimilitude to have received widespread acceptance.

⁵ This is the burden, for example, of B. W. and J. W. Diffie, *Porto Rico: A Broken Pledge*, New York, 1931.

Underlying the more specific sources of social friction is the clash of social traditions. This has in it an economic element, and is exacerbated by the damage to "Spanish pride" in the anomolous political status. It has, however, a more deep-seated emotional basis in the general lack of sympathy and understanding between persons of disparate social backgrounds. It also creates cleavages within Puerto Rican society between those who cling to the old tradition and those who attempt to adjust themselves to the new order of American ways.

Under these various circumstances and beliefs Puerto Rico is not altogether happy. It is a lovely island, filled with gracious, pleasant and naturally care-free people, but oppressed by economic difficulties, changing social structure, and a pride-injuring sense of dependency. With these matters, as such, the present study is only indirectly concerned. It is primarily a study of facts, not of intangible attitudes of mind. But facts have an inescapable relevance to attitudes. It will be impossible, therefore, to avoid some further examination of them at later points.

Table 1

NUMBER AND PROPORTION OF PERSONS GAINFULLY OCCUPIED,
CONTINENTAL UNITED STATES AND PUERTO RICO, 1899-1930

Puerto Rico

CENSUS YEAR	TOTAL POPULATION	POPULATION TEN YEARS OLD AND OVER	PERSONS TEN YEARS OLD AND OVER GAINFULLY OCCUPIED	
			Number	Percent of Population Ten Years Old and Over
1899	953,243	659,294	314,695	47.7
1910	1,118,012	781,600	394,148	50.4
1920	1,299,809	904,423	408,928	45.2
1930	1,543,913	1,093,423	503,810	46.1

Continental United States

1900	75,994,575	57,949,824	29,073,233	50.2
1910	91,972,266	71,580,270	38,167,336	53.3
1920	105,710,620	82,739,315	41,614,248	50.3
1930	122,775,046	98,723,047	48,829,920	49.5

Source: *Fifteenth Census of the United States, 1930*. Population, Porto Rico. United States Dept. of Commerce, Washington, 1932; *Statistical Abstract of the United States, 1935*.

III

AGRICULTURE IN PUERTO RICO¹

AGRICULTURE has been of paramount importance in Puerto Rico since the first colonization of the Island. Geographical conditions are such that it seems likely to continue to be so in the future, though in recent years there has been some growth in processing industries and in other manufacturing enterprises. The greater part of the population derives its livelihood from agriculture. The percentage of gainful workers ten years and over engaged in agriculture has varied from 62 percent in 1899 to 52 in 1930.² In the latter year over two-thirds of the male workers of the Island were engaged in agriculture. Furthermore, most of the other occupations of the Island depend directly or indirectly on agriculture, through the transportation, processing, and marketing of its products.³

Agricultural commodities constitute the great bulk of Puerto Rico's export trade, in volume and value. Since the beginning of the century they have represented over 50 percent of the value of exports, and, in 1920, 82 percent. In 1935 direct products of the soil, plus processed sugar exports, constituted about three-fourths of the value of total exports; and more than three-fourths if products of the elaboration of other agricultural crops are included.⁴

1. LAND UTILIZATION, BY CROPS

The extremely dense population of Puerto Rico, in conjunction with the limited natural resources of the Island, largely explains the intensiveness of the cultivation it practices, in order

¹ In this chapter the authors have drawn freely for both text material and tables on *The Agricultural Problems of Puerto Rico*, by Professor Rafael Picó of the University of Puerto Rico (Puerto Rico Reconstruction Administration, San Juan, 1936).

² Unless otherwise stated, figures cited are from the *United States Census Reports*.

³ In 1930, according to the Census, manufacturing and mechanical industries employed 15 percent of all workers; transportation and communications, 3.9 percent; and trade, 7.5 percent.

⁴ See tables in Chapter IV (External Trade Relations).

to assure high yields per acre, and its specialization in a few highly productive crops. Density of population in 1930 showed 1.42 acres per capita; but as only a portion of the total area is productive, the per-capita figure for improved land amounts to less than four-fifths of an acre, and of cultivated land to less than half an acre. It is significant that although land under cultivation has increased from 478,000 acres in 1899 to 757,000 acres in 1929, the per-capita acreage of cultivated land has remained almost stationary, at about half an acre per person (Table 2, below).

Out of the total area for the whole Island of 2,198,400 acres,⁵ 90 percent, or 1,979,500 acres, were reported by the 1930 census as being "in farms"⁶ (Table 3, below). Improved land, a very generalized and inexacty determined area, was estimated to be 62 percent of the total land in farms. This area is supposed to be the best land in the Island, including that which is cropped or has been recently cultivated, clear pasture land, and farm home sites. Unimproved land, including pasture not cleared, brush, and land not utilized at all, was estimated at 22 percent of the land in farms. Finally, all lands covered with forest of present or future value for timber covered 16 percent of the land in farms in 1930. The remainder of the total area was occupied by urban areas, and Federal or Insular Government lands mainly covered with forest.

Of the 1,222,000 acres of "improved" land, only 757,000 acres, or 37 percent of the total land "in farms" is reported as being under cultivation. In the opinion of many, the land now under cultivation is close to the maximum acreage in Puerto Rico available for profitable commercial crops, at least of types now grown. In this connection the observations of Professor Picó are of interest:

It is difficult to estimate up to what area cultivation might be extended; but probably the area limit has now been closely approached. Full

⁵ The term "acre" is used throughout this report, but in most cases *cuerdas* are meant. For all practical purposes the terms are interchangeable, as a cuerda is 0.974 of an acre.

⁶ The term "farm," as used by the Census, means all land, wherever located, owned and leased by a single proprietor. It includes pasture, timber, and waste, as well as cultivated land.

irrigation of arid and semi-arid lands, and drainage of the lagoons and mangrove soils, may extend the cultivated acreage to around one million. Yet that area will have to include many acres of poor lands that would be unfit for crop cultivation, were it not for the excessive population pressure. Even at present we are forced to use steep, stony, sandy and generally unproductive soils because of the pressing need for larger production. In many such cases the farmers are actually losing money when such items as taxes, depreciation, and interest on capital are included in the production costs.⁷

Since 1899 Puerto Rican farming has tended toward increasing specialization in commercial crops, destined for markets in the United States. In that year roughly 58 percent of the cultivated land was planted to sugar cane, tobacco, and coffee (Table 2). In 1929, out of the 756,642 acres cultivated, 72 percent was devoted almost exclusively to export crops, such as sugar cane, coffee, tobacco, coconuts, vegetables, and others (Table 4, below). The tendency toward increasing specialization in the production of commercial crops has swelled the export trade enormously. In 1901 it amounted to \$8,584,000; by 1928 it had increased to \$103,535,000.⁸

The most important cash crops in recent years have been sugar cane, coffee, tobacco, coconuts, and fruits. In 1929 sugar cane occupied 31 percent of the *cultivated* acreage and coffee 25 percent (Table 4). A variety of food crops accounted in the aggregate for 28 percent, but were only partially cash crops. Two-thirds of the total farm area of Puerto Rico, however, is not cultivated. With regard to the *total* area "in farms," in 1935 sugar cane occupied only 14 percent of the total farm area and coffee 7 percent, while pasturage comprised 49 percent, and woodland 18 percent (Tables 5 and 6, below).

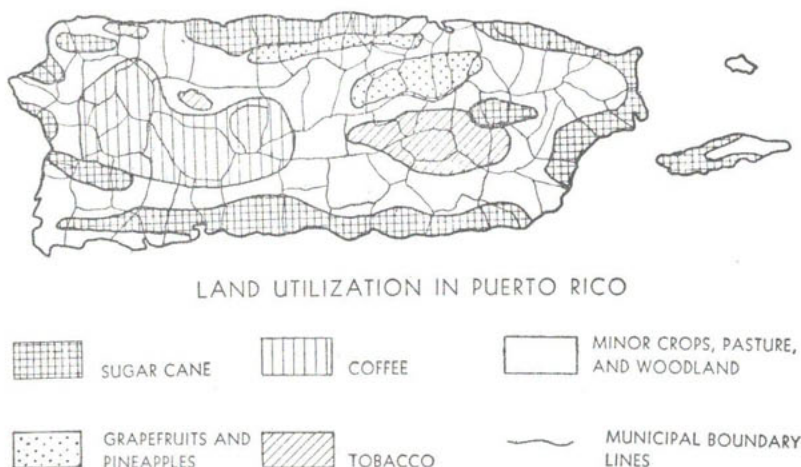
Most of the agriculture of the Island today is in the hands of native-born Puerto Ricans, although the four largest sugar companies, which cultivate nearly one-fourth of the total area in cane, are owned and operated by continental capital. There is also a small European interest. The grapefruit industry is almost exclusively controlled by continental Americans, but coffee has always been in the hands of Island farmers. Most of

⁷ Picó, *op. cit.*, pp. 9-10.

⁸ See Chapter IV (External Trade Relations).

the other types of farming are in the hands of Puerto Ricans, with the exception of pineapples and a few specialized truck crops which are shipped to the States, and in the production of which continental Americans play a major part.

Between 1899 and 1929 the acreage devoted to sugar cane increased three-fold, from 72,000 to 238,000 acres,⁹ and to tobacco nine-fold, from 6,000 to 53,000 acres (Table 2). The coffee acreage remained virtually unchanged¹⁰ (197,000 and



192,000 acres respectively). Land under other crops, however, also increased, from 203,000 acres to 274,000 acres. The increase in the cane and tobacco acreage appears to have been only in a minor degree at the expense of food and other crops, and mostly of land hitherto uncultivated, mainly pasturage. The increase of 279,000 acres in the total cultivated area, between 1899 and 1929, was distributed as follows: cane, 166,000; tobacco, 47,000; other crops, 71,000; coffee, (—) 5,000. In the

⁹ More recent figures on sugar-cane acreage are shown in Chapter IX. By 1935 it had increased to over 300,000 acres. The census figures are used here merely to show the relative importance of different land uses at the latest date for which comparative figures are available. The 1899 figures are probably inaccurate, on the side of understatement.

¹⁰ Official figures for coffee acreage need to be interpreted with some care. Much of the acreage is in a sad state of neglect, following the damage of hurricanes and loss of markets. Properly cultivated farms undoubtedly have a much smaller area than that given in official figures.

case of cane, much of this additional land was made fit for cultivation only by irrigation, drainage, and heavy application of fertilizers.

2. FOOD SUPPLIES

Puerto Rico imports the great bulk of its foodstuffs, including most of the beans, rice, and dried codfish which form the staple articles of diet of the poor. Imports of foodstuffs constitute over a third of the total imports. Plantains, bananas, corn, sweet potatoes, and coffee, which are also important elements in the diet of the masses, are produced locally. Food crops planted in Puerto Rico in 1929 are estimated to have provided only 40 percent of the total consumption of farm products.¹¹

The Insular Government has attempted in recent years to reduce the dependence on cash crops and to encourage the growth of consumable vegetable crops in marginal land, in uncultivated land, and in land taken out of cane or tobacco crops and placed in the hands of small farmers for truck farming. These attempts have hitherto met with little success, having encountered obstacles of a social and economic nature. Some feel that the peasant, having for several generations been accustomed to receiving his wages in the form of cash and maintenance from large landowners, would prefer to continue to work for wages and purchase his food, rather than raise it himself.¹² However, even granted that the effectiveness of such a psychological deterrent to self-subsistence is exaggerated, there are numerous serious problems involved in attempting to transform a wage-earning population into a small-farming one. It is even highly questionable whether the cultivable land in Puerto Rico, if placed entirely in consumable crops, would be sufficient to feed the whole population.¹³

3. EXTENT AND TREND OF LAND CONCENTRATION

Puerto Rico shows both a fairly wide distribution of land-ownership and a high degree of concentration. There is a rela-

¹¹ Picó, *op. cit.* p. 14.

¹² Cf. Darwin De Golia, *The Tariff Problems of Puerto Rico*, (Puerto Rico Emergency Relief Administration, San Juan, 1935), pp. 65-66.

¹³ This problem is discussed more fully in the concluding chapters (Part III).

Table 2
ACRES OF CULTIVATED LAND BY IMPORTANT CROPS AND ACRES
OF IMPROVED AND OF TOTAL LAND IN PUERTO RICO,
COMPARED WITH TOTAL POPULATION,
CENSUS YEARS 1899 TO 1929

CROPS	NUMBER OF ACRES			
	1899	1909	1919	1929
Sugar cane	72,146	145,433	227,815	237,758
Tobacco	5,963	22,142	39,068	52,947
Coffee	197,031	186,875	193,561	191,712
Beans	^a	20,652	34,907	40,902
Corn	18,093	56,640	58,785	70,217
Sweet potatoes and yams	51,465	^a	31,457	47,616
Other crops ^b	133,291	110,931	74,971	115,490
Total cultivated ^c	477,987	542,675	660,564	756,642
Population	953,243	1,118,012	1,299,809	1,543,913
Cultivated land per capita	0.50	0.49	0.51	0.49
Improved land	^a	1,570,304	1,303,547	1,222,284
Improved land per capita		1.40	1.00	.79
Total land area	2,198,400	2,198,400	2,198,400	2,198,400
Total land per capita	2.31	1.97	1.69	1.42

Source: Prepared by Professor Rafael de J. Cordero of the University of Puerto Rico, from census reports.

^a Not reported separately.

^b Includes fruits, cotton, grains not listed, grasses, vegetables, and other minor crops.

^c Totals are not absolutely comparable. Area in fruits is estimated from official assessments; area in bananas is included in 1899 only.

Table 3
UTILIZATION OF LAND IN FARMS, 1929

LAND	ACRES	TOTAL ACRES	PERCENT OF ACRES	PERCENT OF TOTAL
Cultivated land	756,642		38.00	
Improved land not cultivated	465,642		23.75	
Total improved land		1,222,284		61.75
Unimproved land (mainly pasture and bush)	434,743		21.97	
Total unimproved land		434,743		21.97
Woodland		322,447		16.28
Total land in farms		1,979,474		100.00

Source: *United States Census, 1930.*

tively large number of farm owners, but the average size of the holdings of the great majority is small—under twenty acres. On the other hand, the large farms are relatively few in number but extensive in size. Farms less than twenty acres in size, most of them owned by their operators, constituted 71 percent of the total number in 1930, but comprised 14.1 percent of the total acreage. Farms of less than one hundred acres, constituting 94 percent of the total number of farms, comprised 38.9 percent of the total land in farms in Puerto Rico (Tables 7 and 8).

Of the total number of farms in 1930, the census reports 81.4 percent as worked by their owners, 12.2 percent by tenants, and 6.4 percent by managers. The percentage worked by owners

Table 4
UTILIZATION OF CULTIVATED LAND BY CROPS, 1929

CROPS	ACRES	PERCENT OF CULTIVATED LAND
Sugar cane	237,758	31.42
Coffee ^a	191,712	25.34
Corn	70,217	9.28
Tobacco	52,947	7.00
Sweet potatoes and yams	47,616	6.29
Beans (dry)	40,902	5.41
Coconuts ^b	31,383	4.17
Yautía	16,683	2.20
Vegetables	11,962	1.58
Cotton (unginned)	10,282	1.36
Peas (dry)	8,373	1.11
Plantains ^c	7,730	1.02
Grapefruit ^d	6,639	0.87
Yuca	6,072	0.80
Rice	5,244	0.69
Name	5,186	0.68
Pineapples ^e	1,727	0.23
Malanga	1,326	0.17
Milo maize	1,147	0.15
Potatoes (Irish or white)	1,061	0.14
Peanuts	217	0.03
All other crops	458	0.06
Total	756,642	100.00

Source: *United States Census, 1930.*

^a Coffee lands include acres planted to oranges and bananas.

^b Estimated from the *Census and Insular Government Reports.*

^c Calculated on the basis of 625 plants to the acre.

^d Calculated on the basis of 100 trees to the acre.

^e Calculated on the basis of 10,000 plants to the acre.

Table 5
UTILIZATION OF LAND BY PURPOSES, 1935*

PURPOSE	ACRES	PERCENT OF TOTAL
		AREA
Sugar cane	299,384	14.4
Coffee	148,671	7.1
Tobacco	20,131	1.0
Pineapple	4,437	0.2
Citrus fruits	8,960	0.4
Coconuts	9,959	0.5
Minor crops	127,766	6.2
Pasturage	1,017,173	48.9
Timber and brush	383,831	18.4
Marshes	18,796	0.9
Other lands	43,089	2.1
Total	2,082,197	100.0

Source: *Annual Report of the Treasurer of Puerto Rico, 1934-35.*

* The differences between these figures and those of Table 4 are explained by the differences in the years to which they refer, in the gathering agencies, and in the methods of compilation and classification.

Table 6
UTILIZATION OF CULTIVATED LAND BY CROPS, 1935

CROP	FARMS REPORTING	ACREAGE CROPPED	PRODUCTION
Sugar cane	7,089	245,154	8,299,977 tons
Coffee	21,124	182,316	25,855,543 pounds
Tobacco	17,686	45,720	31,254,288 pounds
Corn	25,298	49,820	316,593 quintals
Beans	25,202	31,470	135,012 quintals
Gandules	18,450	15,954	87,148 quintals
Rice	6,233	9,386	48,906 quintals
Sweet potatoes	31,759	36,947	816,878 quintals
Ñame	11,468	7,966	200,984 quintals
Yautía	20,686	17,596	341,294 quintals
Yuca	9,508	6,846	128,085 quintals
Potatoes	597	680	13,683 quintals
Cotton	400	934	498,706 pounds

Source: PRRA release of August 7, 1937.

* Total larger than in Table 7 because of duplication. Many farms produce more than one crop.

Table 7

NUMBER OF FARMS CLASSIFIED BY SIZE, 1910, 1920, AND 1930

SIZE OF FARMS (IN ACRES)	1910		1920		1930	
	NUMBER OF FARMS	PERCENT OF TOTAL	NUMBER OF FARMS	PERCENT OF TOTAL	NUMBER OF FARMS	PERCENT OF TOTAL
0-19	42,004	72.0	25,602	62.3	37,587	71.0
20-49	8,872	15.2	8,467	20.6	8,835	16.7
50-99	3,728	6.4	3,493	8.5	3,351	6.3
100-499	3,228	5.5	3,047	7.4	2,825	5.3
500 and over	539	0.9	469	1.2	367	0.7
Total	58,371	100.0	41,078	100.0	52,965	100.0

Source: *United States Census Reports.*

Table 8

LAND IN FARMS CLASSIFIED BY SIZE OF FARMS, 1910, 1920, 1930

SIZE OF FARMS (IN ACRES)	1910		1920		1930	
	TOTAL ACRES	PERCENT OF TOTAL	TOTAL ACRES	PERCENT OF TOTAL	TOTAL ACRES	PERCENT OF TOTAL
0-19	257,922	12.4	215,222	10.6	278,935	14.1
20-49	268,234	12.9	255,199	12.6	264,712	13.4
50-99	250,691	12.0	234,993	11.1	226,464	11.4
100-499	645,345	31.0	600,500	29.7	341,873	27.4
500 and over	662,970	31.7	716,490	36.0	867,490	33.7
Total	2,085,162	100.0	2,022,404	100.0	1,979,474	100.0

Source: *United States Census Reports.*

is about the same as that reported for 1910. As to acreage, 59 percent of the total acreage in farms was operated by owners, 34.1 percent by managers, and 6.9 percent by tenants. The corresponding 1910 census figures were 69.9 percent operated by owners, 19.3 by managers, and 10.8 by tenants. Acreage operated by managers has thus increased at the expense of that operated by owners and tenants.¹⁴

¹⁴ The increasing size of large plantations has been correlative to the extension of sugar cane cultivation (see Chapter IX). The development of Hawaii is also instructive. A bulletin of United States Interior Department, issued 1935, entitled "General Information Regarding Territory of Hawaii," says: "Such extensive production of crops, all of which are grown in competition with other tropical agricultural countries, requires the highest degree of efficiency. The United States has no other example of efficiency in farming that can equal that of the Territory. This high efficiency is due to the advanced industrialization of sugar and pineapple farming. Hawaii has adopted the corporation form of organization in agriculture and has proved it to be a sound economic base for high standards of living for its people."

IV

EXTERNAL TRADE RELATIONS

1. CHARACTERISTICS OF PUERTO RICO'S EXTERNAL TRADE

SINCE the American occupation of the Island, three features have increasingly characterized Puerto Rico's external trade relations: first, a consistent expansion of the Island's external trade—from less than \$29,000,000 in volume in 1901 to over \$160,000,000 in 1935 (Table 18, below); second, an increasing dependence on United States markets—the share of the United States in Puerto Rico's external trade being 71.7 percent in 1901 and 94.3 percent in 1935 (Table 10, below); and third, the dominant rôle played by agricultural products in the Island's exports, and the predominance, in particular, of sugar. In 1935 71.4 percent of Puerto Rico's exports were products of the soil, and of these sugar constituted 60 percent of the Island's total exports (Table 11, below).

As the expansion in trade has been greater than the increase in population, Puerto Rico's economic life has become progressively more dependent on outside markets—which at present means the United States. From \$29 per capita by volume in 1901, the Island's external trade grew to \$95 per capita in 1935 (Table 18), an increase of some 230 percent. This volume of external trade per capita, relative to the average income of the Island's people, ranks Puerto Rico very high compared to other geographic areas. The dependence of the Island's economy on external trade is accentuated by the fact that foodstuffs (a large part of them essential to the maintenance of the population) constitute over a third of all imports (36.6 percent in 1935—Table 12, below).

Furthermore, to meet many of its external financial obligations the Island has counted on another element in its external trade—a favorable trade balance. Since 1902 there has been an annual excess of exports over imports, except in 1907, 1924,

and 1929;¹ whereas prior to 1903 imports had for some years regularly exceeded exports. In the 1931-35 period, the favorable balance of trade averaged \$20,000,000 annually (Table 10).²

This combination of circumstances has placed Puerto Rico in a unique situation. From what was originally a more self-sufficing economy, the Island has gradually been transformed into a community heavily dependent on an external trade that rests chiefly on a few commodities, and for which the principal markets today are in the United States. It is this situation, and some of its implications, which will be examined in this chapter.

2. COMPOSITION OF PUERTO RICO'S EXPORTS

Three agricultural commodities (sugar, tobacco, and fruits) and textiles³ are the items showing the most substantial increases in Puerto Rico's export trade since American occupation, in both total value and per-capita terms. These four items now represent around 90 percent of the Island's export trade (Table 11). In 1935 three of them—sugar, tobacco, and textiles—accounted for 87 percent of Puerto Rico's total exports. Their percentage share from 1933 to 1935 has been as follows:

Table 9

COMPOSITION OF PUERTO RICO'S EXPORTS, 1933, 1934, and 1935

COMMODITY	1933	1934	1935
	PERCENT OF TOTAL EXPORTS		
Sugar	67.3	60.5	60.0
Tobacco	5.8	7.1	9.0
Textile and needlework products	16.2	16.8	18.5
Totals	89.3	84.4	87.5

¹ In 1929 the excess of imports was due to the great reduction of exports resulting from the 1928 hurricane and increased imports of commodities for hurricane relief purposes.

² It should be noted, of course, in connection with the favorable trade balance that not all the values reported for exports return to the Island, as these values may be obtained, say, in New York markets for Mainland owners of the products. Also, the value assigned to needlework products in export figures is misleading, as a large bulk of these is made up of textiles or garments sent to Puerto Rico for finishing. The revenue here is really a "service charge," not the market value of the products.

³ Textiles include certain local manufactures, chiefly cotton and jute, and the "serviced" products of the needlework industry.

Sugar. Sugar has maintained the leading place since the beginning of the century, when it overtook coffee as the Island's chief export crop. In 1935 sugar exports were valued at \$47,-837,000, as compared with 4,008,000 *pesos*⁴ in 1897. In the latter year, sugar represented 21 percent of the Island's exports; but shortly after the American occupation it accounted for well over 50 percent (Table 11). In 1920 the percentage was 65.6, owing to the extraordinarily high price of sugar that year. Percentages in recent years, not shown in the table, have been as follows: 1930, 54; 1931, 55; 1932, 58; 1933, 67; 1934, 60.

Since the price of sugar was much the same in 1901, 1929, and 1935, the real growth in sugar exports during the present century is accurately enough reflected in the value figures. Quantities exported increased from 108,000 short tons yearly, on the average for 1901-5, to 823,000 tons for 1931-35.

Tobacco. Tobacco exports have also expanded considerably since American occupation—from 1,194,000 *pesos* in 1897 to \$11,917,000 in 1930, reduced to \$7,148,000 in 1935.⁵

Exports of leaf and scrap tobacco increased enormously in aggregate value and in relation to the total, between 1901 and 1928, rising from \$375,000 and 4.4 percent of the total in 1901, to \$17,075,000 and 16.6 percent of the total in 1928. Since then they have declined sharply in both respects, the figures for 1935 being \$7,148,000 and 9.0 percent respectively.

Coffee. In contrast to sugar, coffee has shown a drastic decline both in the absolute amounts exported and in the percentages the latter have constituted of total exports.

During the Spanish regime, coffee was one of Puerto Rico's most important crops, constituting in 1897 66 percent of the Island's exports. Exports of coffee for the 1891-95 period totalled 45,000,000 pounds annually on the average. Since American occupation the decline has been rapid. From a total value of \$1,678,000 in 1901 (19.5 percent of all exports), coffee exports dropped to \$208,000 (0.3 percent) in 1935. Today exports are around 1,400,000 pounds (1931-35 average) and, as in value

⁴ A *peso* was worth 60 cents, United States currency.

⁵ When cigars are added to tobacco exports, the figures are \$15,407,000 for 1930 and \$8,472,000 for 1935.

Table 10
VALUE OF PUERTO RICO'S EXTERNAL TRADE
(FISCAL YEARS, ENDING JUNE 30)
(In Thousands)

FISCAL YEAR	IMPORTS	EXPORTS	NET EXPORTS ^a	SHARE OF THE UNITED STATES (PERCENTAGE OF TOTAL EXTERNAL TRADE)
1901	\$ 8,908	\$ 8,584	—\$ 334	71.7
1902	13,209	12,434	— 775	75.1
1903	14,449	15,089	640	79.2
1904	13,169	16,266	3,097	77.9
1905	16,536	18,710	2,173	84.0
1906	21,828	23,258	1,430	85.1
1907	29,267	26,996	— 2,271	84.9
1908	25,826	30,644	4,819	86.0
1909	26,544	30,391	3,847	87.8
1910	30,635	37,960	7,325	86.3
1911	38,787	39,918	1,131	88.2
1912	42,973	49,705	6,733	87.8
1913	36,900	49,104	12,204	85.7
1914	36,407	43,103	6,696	84.3
1915	33,884	49,357	15,473	88.0
1916	38,951	66,732	27,780	91.6
1917	53,545	80,971	27,426	91.2
1918	63,389	74,294	10,905	90.4
1919	62,391	79,496	17,105	90.8
1920	96,389	150,811	54,423	90.6
1921	105,480	112,279	6,799	92.1
1922	64,175	72,173	7,997	90.7
1923	71,945	82,293	10,349	91.9
1924	89,370	88,281	— 1,089	90.8
1925	90,505	94,819	4,314	88.4
1926	95,258	98,725	3,467	88.2
1927	98,811	108,067	9,257	90.7
1928	92,348	103,535	11,186	90.1
1929	97,861	81,723	— 16,138	89.9
1930	83,923	99,566	15,643	91.7
1931	76,437	98,401	21,964	93.2
1932	61,281	86,417	25,136	92.4
1933	54,746	75,406	20,661	93.9
1934	63,925	85,972	22,047	93.9
1935	69,986	79,678	9,692	94.3

Source: *Annual Book of Statistics*, 1934-35, Division of Commerce of the Department of Agriculture and Commerce, San Juan, 1936. (Information compiled from figures of the United States Customs House.)

^a A minus sign indicates net imports.

Table 11

COMPOSITION OF THE EXPORT TRADE FOR SELECTED YEARS
(Years Ending June 30)

	1901			1914			1928			1929			1935		
	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS	PER- CENTAGE DIS- TRIBUTION	IN THOU- SANDS OF DOLLARS
EXPORTS															
Products of the Soil	6,861	79.9	35,065	81.3	80,845	78.1	51,406	62.9	56,871	71.4					
Sugar ^a	4,716	54.9	20,240	47.0	54,570	52.7	35,222	43.1	47,837	60.0					
Leaf and Scrap Tobacco	375	4.4	3,350	7.7	17,075	16.6	12,886	15.7	7,148	9.0					
Coffee	1,678	19.5	8,194	19.0	2,597	2.5	459	0.6	208	0.3					
Pineapples, fresh	—	—	1,246	2.9	1,654	1.6	1,727	2.1	911	1.1					
Grapefruit, fresh	—	—	752	1.7	2,704	2.6	530	0.7	487	0.6					
Oranges	84	1.0	752	1.7	1,286	1.2	60	0.1	41	0.1					
Coconuts	8	0.1	452	1.1	714	0.7	265	0.3	233	0.3					
Cotton	—	—	79	0.2	245	0.2	257	0.3	7	0.0					
Manufactures	968	11.3	7,065	16.4	15,823	15.2	21,169	25.9	19,941	24.5					
Molasses	596	6.9	986	2.3	862	0.8	938	1.1	2,099	2.6					
Alcohol	—	—	21	0.1	405	0.4	326	0.4	364	0.5					
Cigars	306	3.6	5,597	13.0	3,626	3.5	3,848	4.7	1,324	1.7					
Fruits, canned, and other	17	0.2	199	0.4	1,180	1.1	534	0.7	662	0.8					
Textiles	8	0.1	—	—	9,584	9.3	15,337	18.8	14,730	18.5					
Straw and palm leaf (hats mainly)	41	0.5	262	0.6	166	0.1	186	0.2	313	0.4					
Miscellaneous exports	755	8.8	973	2.3	6,867	6.7	9,148	11.2	3,316	4.1					
Grand total	8,584	100.0	43,103	100.0	103,535	100.0	81,723	100.0	79,678	100.0					

Source: Victor S. Clark and Associates, *Porto Rico and Its Problems* (p. 404) for 1901, 1914, 1928, and 1929; for 1935, *Annual Book of Statistics*.

^a Includes raw and refined sugar. The latter is significant in the exports since 1929.

they represent less than one-third of one percent of the Island's total exports, are almost of negligible importance (Table 11).

Although crop destruction through hurricanes has been an important factor in this decline, the fall is also explained by the lack of a protected market on the Mainland and the closing of the European market, practically the only one left (outside of the local market) for the high-grade coffee the Island produces.

Fruits. Fruit exports have developed largely as the result of American occupation. In 1897 fruits were insignificant in the export trade—35,000 *pesos*⁶ worth were shipped that year. In 1935 the value of exports of pineapples, grapefruit, oranges, and coconuts was \$1,672,000, or 2.1 percent of total exports (Table 11). Hurricanes have also affected this industry, and the importance of fruit exports has declined since 1928, when they accounted for 6.1 percent of the Island's exports.

*Textile and Needlework Products.*⁶ As with fruits, products of the needlework industry were practically nonexistent at the time of American occupation; in 1901 these items represented less than one-tenth of one percent of the Island's exports. In 1935, however, they were valued at \$14,730,000 and represented 18.5 percent of exports (Table 11). In terms of aggregate values, they now rank second among Puerto Rico's exports.⁷

3. IMPORTS

Puerto Rico's import trade has shown a growth corresponding to that of the export trade. Imports increased from \$8,918,000 in 1901 to \$69,986,000 in 1935 (Table 12) or in volume from \$17 to \$52 per capita (Table 18). Foodstuffs, since American occupation, have continuously constituted much the largest portion of total imports (Table 12), and in recent years (1930-35) have accounted for about a third of all imports. It is interesting to note, however, in view of the alleged diminishing self-sufficiency

⁶ As noted above, a substantial part of the Puerto Rican exports classified under "textiles" are products of the needlework industry, which, while it includes some locally manufactured goods, consists largely of articles sent from the Mainland to the Island for finishing work, involving hand sewing, embroidery, and so forth.

⁷ In estimating the net return to the Island from the exports of needlework products, allowance should be made for the values of the materials received from the Mainland, for reasons explained in footnotes 2 and 6 above.

Table 12
COMPOSITION OF THE IMPORT TRADE OF PUERTO RICO
(Years Ending June 30)

CLASSES OF IMPORTS	1901		1914		1928		1929		1935	
	IN THOUSANDS OF DOLLARS	PER-CENTAGE DISTRIBUTION	IN THOUSANDS OF DOLLARS	PER-CENTAGE DISTRIBUTION	IN THOUSANDS OF DOLLARS	PER-CENTAGE DISTRIBUTION	IN THOUSANDS OF DOLLARS	PER-CENTAGE DISTRIBUTION	IN THOUSANDS OF DOLLARS	PER-CENTAGE DISTRIBUTION
Foodstuffs	4,452	49.9	14,844	40.7	29,644	32.1	34,557	35.3	25,624	36.6
Apparel	2,118	23.8	6,629	18.2	18,299	19.8	21,168	21.7	14,720	21.0
Household goods, including furniture and supplies	701	7.9	3,519	9.7	7,578	8.2	9,185	9.4	7,904	11.3
Building material	992	11.1	4,868	13.4	8,714	9.5	12,947	13.2	5,685	8.1
Motor railway cars, other vehicles, and other transportation equipment	71	0.8	538	1.5	8,761	9.5	8,587	8.8	5,045	7.2
Machinery and supplies used in manufacturing	519	5.8	2,302	6.3	5,549	6.0	4,827	4.9	5,534	7.9
Machinery and supplies for agriculture	...	...	762	2.1	7,771	8.4	4,307	4.4	2,490	3.6
All other imports	65	0.7	2,945	8.1	6,026	6.5	2,283	2.3	2,984	4.3
Total	8,918	100.0	36,407	100.0	92,342	100.0	97,861	100.0	69,986	100.0

Source: *Porto Rico and Its Problems* (p. 407), for 1901, 1914, 1928 and 1929; for 1935, *Annual Book of Statistics*.

of the Island, that foodstuffs were responsible for 50 percent of all imports in 1901.

During the present century, the growth of imports of foodstuffs has paralleled the increase of sugar, tobacco, and fruit exports to the United States. As the population increased, instead of more land being devoted to produce food crops, the production of commercial crops was extended (stimulated by the protection afforded by the tariff), and a larger proportion of the food supply was bought from the United States. In 1899 42 percent of Puerto Rico's crops were food crops for local consumption, the remainder being cash-export crops. By 1929 the proportions were 28 percent for food crops and 72 for cash-export crops. During the latter year, about 60 percent of the total food supply was imported and 40 percent produced locally.

4. PUERTO RICAN TRADE WITH THE MAINLAND

Over 90 percent of Puerto Rico's external trade is now conducted with the United States (Table 10); and the share of the United States in both Puerto Rico's exports and imports has grown steadily since American occupation (Table 13). Prior to 1900, the United States accounted for only about 25 percent of Puerto Rico's external trade (1887-91 average), while 26 percent was with Spain, 32 percent with other European countries, and 11 percent with Cuba. By 1901 the share of the United States had already climbed to 72 percent, while that of Spain had fallen to 8 percent, and that of the remainder of Europe to 9 percent. By 1936 Europe, including Spain, had ceased to be of any relative importance as a market for Puerto Rico's exports, and even America outside of the United States was only of slight importance. All but a very small fraction of Puerto Rico's exports in that year went to the United States.⁸

In the import trade of the Island, the United States does not loom quite so large, but its share has ranged around 90 percent. Among other American regions from which Puerto Rico imports, the West Indies have been the most important. Imports

⁸ Included in the trade with the United States is trade moving through the United States to and from foreign countries. Consequently, these percentages slightly exaggerate the importance of trade with the United States. The distortion, however, is very small.

from the neighboring islands, and from Canada, have increased steadily in value terms. South American countries are unimportant as a source of imports into Puerto Rico. Imports from Spain have remained at a fairly stable level in absolute volume, but their relative importance has steadily declined.

Puerto Rico has become one of the most important of the United States' markets for exports and as a source of imports. Comparing the Island with foreign markets of the United States, we find that as an importer of American goods, Puerto Rico ranks ninth amongst all the countries of the world (Table 14). In the American hemisphere it is surpassed only by Canada,

Table 13
DIRECTION OF PUERTO RICO'S EXTERNAL TRADE:
PERCENTAGE DISTRIBUTION, BY COUNTRIES

(Fiscal Years, Ending June 30)

COUNTRIES	1887-91 (annual average)	1901	1914	1920	1928	1935
Exports to:						
United States	28.7	65.0	79.9	88.3	93.4	97.4
Cuba	19.8	12.9	7.1	4.8	0.2	...
Other American countries	6.9	5.9	0.4	5.4	5.1	2.6
Spain	21.4	7.0	3.2	1.1	0.8	...
Other European countries	23.2	9.2	9.3	0.4	0.2	...
Other countries	...	...	0.1	...	0.3	...
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total exports (In thousands)	\$10,548	\$8,584	\$43,103	\$150,811	\$103,535	\$79,678
Imports from:						
United States	23.6	78.1	89.5	94.1	86.3	90.8
Cuba	4.3	...	0.1	0.1	1.4	0.4
Other American countries	6.8	3.6	2.6	3.3	7.0	5.2
Spain	28.6	9.1	2.1	1.0	0.8	0.8
Other European countries	36.7	9.1	4.5	1.0	3.2	1.6
Other countries	...	0.1	1.2	0.5	1.3	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total imports (In thousands)	\$14,412	\$8,908	\$36,407	\$96,389	\$92,348	\$69,986

Sources: Report on *The Trade of Puerto Rico*, by Frank H. Hitchcock, (U. S. Department of Agriculture, 1898); *Commercial Porto Rico in 1906* (United States Department of Commerce); *Annual Reports of the Governor of Puerto Rico*; and *Annual Book of Statistics*.

Table 14

PUERTO RICO'S PLACE IN THE EXTERNAL TRADE OF
THE UNITED STATES

(Calendar Years, in Thousands)

EXPORTS FROM UNITED STATES	1932	1933	1934
1. United Kingdom	\$288,326	\$311,732	\$383,317
2. Canada	241,351	210,651	302,418
3. Japan	134,921	143,435	210,420
4. France	111,561	121,711	115,937
5. Germany	133,668	140,024	108,815
6. China	56,171	51,942	68,632
7. Italy	49,135	61,240	64,907
8. Hawaii	58,578	57,894	63,473
9. Puerto Rico	48,780	51,697	59,477
10. Mexico	31,900	37,521	55,356
11. Netherlands	45,254	48,659	50,506
12. Belgium	40,278	43,268	49,814
13. Philippine Islands	44,968	44,782	47,528
14. Cuba	28,755	25,093	45,355
15. Union of South Africa	15,811	22,050	45,291
IMPORTS INTO UNITED STATES	1932	1933	1934
1. Canada	\$174,101	\$185,409	\$231,690
2. Japan	134,011	128,418	119,251
3. United Kingdom	74,631	111,218	115,358
4. British Malaya	34,806	59,912	105,499
5. Hawaii	82,688	92,277	94,514
6. Brazil	82,139	82,628	91,484
7. Philippine Islands	80,877	93,048	87,811
8. Puerto Rico	74,290	76,212	81,184
9. Cuba	58,330	58,498	78,929
10. Germany	73,572	78,185	68,805
11. France	44,738	49,702	61,037
12. British India	33,204	43,759	55,082
13. Colombia	60,846	47,637	47,115
14. Alaska	30,183	33,131	45,059
15. China	26,177	37,807	43,933

Source: *Annual Book of Statistics*, Puerto Rico Department of Agriculture and Commerce.

being a better customer than any of the republics of Latin America. Its place amongst sources of United States imports—again comparing it with foreign countries—is eighth; among countries of the American Continent it is surpassed only by Canada and Brazil. Puerto Rico's exceptionally high place in the external trade of the United States is of course explained by

the rapid growth of the sugar industry and its great importance in the Puerto Rican economy.⁹

5. PUERTO RICAN TRADE AND THE AMERICAN TARIFF

The great expansion of Puerto Rico's trade with the United States, at the expense of trade with other countries, is of course very largely due to the inclusion of Puerto Rico within the American customs area, virtually like any state of the Union. This circumstance has been one of the most important factors, if not the most important, in bringing about the phenomenal transformation which Puerto Rico's trade, commerce, and economy have undergone. The immediate results were that Puerto Rican products covered by the tariff, such as sugar and tobacco, received a tremendous impetus; while unprotected products, like coffee, declined.

Even before American occupation Puerto Rico tended to gravitate within the economic orbit of the United States. In spite of the restrictive character of Spanish colonial policy, over 20 percent of Puerto Rico's imports came from the United States. Had Puerto Rico continued outside of American political domination, her trade relations with the United States would in all probability have tended to grow parallel with the influence of American finance. But inclusion within the American tariff effected great changes. Today Puerto Rico depends almost completely on United States markets. The economic and social significance of this arrangement is of absolutely prime importance. It has so profoundly affected all aspects of Puerto Rico's

⁹ In 1935 the following imports from the United States constituted the largest values of the import trade (in thousands):

Textile manufactures	\$11,369
Rice	7,679
Woods and manufactures	3,500
Iron and steel manufactures	3,345
Lard	2,464
Tobacco and manufactures	2,331
Leather and manufactures	2,328
Automobiles and other vehicles	2,150
Wheat flour	2,124
Fertilizers	1,400
Paper manufactures	1,373
Beans	1,290
Gasoline	1,129

life, social, economic, and political, that any sudden alteration would probably cause a complete economic breakdown, with correlative collapse in all spheres of social organization.

The utilization of land in Puerto Rico, to cite but one example, offers significant evidence of correlative developments in internal economy and external trade relations. In 1899, 58 percent of the cultivated acreage was planted to export crops; in 1929, 72 percent. Land under cultivation had, however, increased from 22 percent of the total land area of Puerto Rico in the former year to 34 percent in the latter. Nearly all the increase of cultivated acreage has been devoted to the export crops.¹⁰

Sugar, tobacco, and fruits have been protected products in the United States market. Under the Hawley-Smoot tariff they paid the following duties, when imported from foreign countries other than Cuba (in cents, per pound): raw sugar, 2.5; stemmed tobacco, 50.0; grapefruit, 1.5; oranges, 1.0; pineapples, 2.0. However, the real benefit of the tariff to Puerto Rico must be computed on the basis of effective rather than nominal protection, in which case Cuba's 20 percent preferential must be taken into account. On this basis, the tariff duty represented a nominal two-thirds of the export value of sugar when it sold at around 3 cents per pound.

In the case of tobacco, the amount added by the tariff is of doubtful calculation, since the price of that commodity has been consistently less than the protection afforded. (This does not mean, however, that the tariff has been inoperative.) As to fruits, canned and fresh, the calculated value added by the tariff can be roughly put at \$1,600,000 for the year 1928. A rough estimate might be made of around \$45,000,000 as the value added to Puerto Rican products exported in 1928 as the result of the tariff; but such a calculation has little meaning in

¹⁰ A significant exception and one throwing much light on one phase of the Island's economy is found in the coffee industry. From 1899 to 1929 official classification of land showed only a small decrease in coffee acreage—from 197,000 to 192,000 acres—despite the sharp drop in coffee exports, discussed above. In view of the neglected state of much of the coffee-producing area, the 1929 figure of coffee acreage is relatively meaningless, except as illustrating a social-economic lag.

relation to the well-being of Puerto Ricans, since it implies comparison with a hypothetical situation outside the tariff.¹¹

Freedom from duties on products shipped to the Mainland has given Puerto Rican producers a vital advantage over outside competitors. As will be shown in Chapter VIII (Production Costs), Puerto Rican sugar, for example, could not hope, without protection, to compete with Cuba, the Dominican Republic, and other lower-cost sugar-producing regions. By and large, most of the Puerto Rican sugar industry is dependent for its existence upon the protection afforded by the American tariff. Cuba, Puerto Rico's chief competitor in the American market, today pays a duty of ninety cents a hundred pounds on raw sugar (of 96 degrees) entering the United States:¹² Puerto Rico pays none. Continental capital would not have been attracted to Puerto Rico for the development of the sugar industry this substantial difference had not existed. Inclusion within the American tariff wall has been directly responsible both for the increasingly close trade relations between the Island and the Mainland, and for the direction the development of Puerto Rican industry has taken.

As shown above, imports from the United States have also been greatly stimulated as a result of the tariff situation. In the case of exports, Puerto Rico is clearly the gainer: its "exports" enter the vast market of the United States duty-free. In the case of imports, Puerto Rico in some measure sustains a loss, as the same duties have to be imposed upon imports from foreign countries as are maintained by the continental United States. The American tariff, in other words, by eliminating foreign countries as a source of supply, raises the cost of certain products that the Island consumes.

This situation has been a source of complaint on the part of the Puerto Rican people. As the Brookings Institution report observes, it is contended that Puerto Ricans "must buy the great

¹¹ In De Golia, *Tariff Problems of Puerto Rico*, published by the FERA of Puerto Rico, the amount is given as \$49,000,000. But it is a very doubtful method of calculating the cost added by the tariff to consumers, simply to add its nominal value as a full value. In the case of sugar it may be really so, but not, certainly, in the case of other products.

¹² 1897-1903, \$1.685; 1903-14, \$1.35; 1914-21, \$1.00; 1921-22, \$1.60; 1922-30, \$2.00; 1930-34, \$1.50.

bulk of their imports in the United States protected markets, where wages and costs are high," while being "denied the opportunity of importing their goods from markets where costs of production are lowest." However, as this report also observes, "the logic of the situation does not point toward giving any state or territory the benefit of inclusion within the American customs union so far as the sale of its commodities is concerned, and of remaining outside that union in connection with its purchases."¹³ What Puerto Rico, on balance, gains or loses from this state of affairs, is a question the discussion of which lies outside the scope of this study.¹⁴

6. PUERTO RICO'S EXTERNAL TRADE DURING THE DEPRESSION

It is often considered an evil for a country to be largely dependent economically upon the production of one commodity. Such a situation, usually increasing exposure to the vicissitudes of the so-called business cycle, is held to constitute a potential source of economic instability; for, with a country's eggs all in one basket, the danger of sudden dislocation and loss, both cyclical and non-cyclical, is likely to be greater than were its economic activities diversified. This evil is likely to be aggravated when the product in question is an export commodity, dependent upon external markets, and consequently one whose price is subject to the influences of a world market and world prices.

In Puerto Rico, as we have seen, the combination of factors described above is found in pronounced form. The Island's economy is dominated by one commodity, sugar; that commodity is a farm product and a cash crop; it is exported virtually in its entirety to one country, the United States; and in the United States Puerto Rico has no control whatsoever over its price. It is worth inquiring, therefore, whether and to what extent dependence upon sugar has affected Puerto Rico in respect of economic stability.

Analysis of the data over a long period of years cannot be undertaken here; nor would it be significant, for various reasons:

¹³ Clark and Associates, *Porto Rico and Its Problems* (The Brookings Institution, Washington, D. C. 1930), pp. 410-11.

¹⁴ See De Golia, *Tariff Problems of Puerto Rico*, mentioned above, for one computation of net gains and losses.

Puerto Rico is an almost wholly agricultural economy, and the "business" cycle has a character of its own in agriculture; the relevant statistics on certain vital aspects of the problem are lacking; and, perhaps most important, the sharp upward *trend* in sugar production since American occupation, the steep downward *trend* in coffee, the upward *trend* of tobacco and fruit production until 1928 and their subsequent decline since then, tend to smother cyclical variations and render them of dubious significance.

All that will be attempted in this section, therefore, is a comparison of the course of production, prices, and so forth, during the past ten years of alternating prosperity, depression, and recovery, of a few of Puerto Rico's leading industries—sugar, coffee, tobacco, fruits, and products of the needlework industry, all cash export commodities, which together constitute today some 90 percent of the Island's total exports. It should be noted, however, that in the explanation of the phenomena analyzed, the cyclical factor is often of less importance than the effects of hurricanes. The fiscal year 1928–29 was, for instance, one of depression for Puerto Rico, unlike the United States, in consequence of the damage wrought by the hurricane late in 1928. In 1932 another hurricane occurred. Certain agricultural industries, such as coffee, have not yet recovered from the effects of these sporadic non-cyclical catastrophes.

The immediate effects of the depression (plus the hurricanes) are observable, of course, in the general decline of Puerto Rico's external trade. Between 1928 and 1933, total exports fell 28 percent and imports 40 percent in value, and 25 percent and 9 percent respectively in volume (Table 15). However, it will be noticed that the drop in the price of imports was markedly greater than that of exports. Thus the *terms of trade* became more favorable to Puerto Rico during these years.¹⁵

However, declines in the five Puerto Rican commodities that in 1935 comprised 90 percent of the total export trade have not been consistent, and an examination of them reveals varying degrees of stability.

¹⁵ Some account should be taken of hurricane relief expenditures by the Federal Government.

Table 15
PUERTO RICO'S EXTERNAL TRADE, 1926-35
(In Millions)

FISCAL YEARS	VALUES		VOLUME*	
	Exports	Imports	Exports	Imports
1926	\$ 99	\$ 95	\$ 99	\$ 92
1927	108	99	98	102
1928	104	92	100	95
1929	82	98	89	101
1930	100	94	109	91
1931	98	76	101	97
1932	86	61	75	90
1933	75	55	75	86
1934	86	64	89	89
1935	80	70	74	90

Source: Table 10 above, and Table 18 below.

* Value figures adjusted to the 1926 price level.

Sugar. In contrast to the decline in total exports, sugar exports have continued at a remarkably steady level in value, except for 1928-29, a hurricane year (Table 20, below). The years 1931 and 1932 show no decline, and 1933 (another hurricane year) one of only some 9 percent. Although between 1928 and 1932 the export price of sugar fell no less than 33 percent (Table 16), this decline was offset by an almost exactly equal increase in the *volume* of sugar exported, from 605,538 to 912,000 short tons. Indeed, year by year (excepting 1928-29) sugar exports increased in volume sufficiently to offset price declines, until A.A.A. quota restrictions went into force. Thus, contrary to a priori expectations, sugar proved a very important factor of remarkable stability during the depression years.

Other Commodities. In this respect, tobacco, coffee, and fruits present a spectacular contrast. Values of exports of tobacco rapidly and steadily declined yearly from \$21,000,000 in 1927 to \$4,000,000 in 1933. Between those two dates, prices and amounts exported, unlike sugar, *both* declined, the former by 49 percent, the latter by 58 percent. Coffee presents a similar, but even worse picture. Between 1926 and 1933, value of exports declined from \$7,071,000 to \$125,000. Prices did not fall much, but the quantity exported dwindled to a negligible amount. Values of exports of fruits fluctuated irregularly until 1930.

Between the latter date and 1933 they fell 75 percent. Among fruits, pineapples and grapefruit constitute the bulk of exports in value. Although neither product has declined much in price, pineapple exports declined 30 percent in volume between 1927 and 1933, and grapefruit exports 77 percent between 1928 and 1933 (Table 16).

Table 16

EXPORTS OF SUGAR, TOBACCO, COFFEE AND FRUITS
FROM PUERTO RICO 1926-35: AMOUNTS AND UNIT PRICES
(Fiscal Years)

PRODUCT	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Sugar: tens of thousands of short tons	58	57	61	47	72	81	91	82	82	76
Sugar: value per ton, in dollars	83	95	90	75	74	67	60	62	66	63
Tobacco: millions of pounds	25	31	30	27	26	25	17	13	19	20
Tobacco: value per pound, in cents	57	67	57	47	46	52	39	34	34	36
Coffee: millions of pounds	26	19	8	1	0.4	2	0.6	0.5	3	0.8
Coffee: value per pound, in cents	27	30	33	36	35	28	26	23	23	26
Grapefruit: thousands of boxes	810	692	892	215	978	428	626	284	479	216
Grapefruit: value per box, in dollars	3.06	3.02	3.03	2.46	3.70	3.25	2.91	3.02	2.62	2.25
Pineapples: thousands of crates	507	597	549	529	501	703	615	414	424	396
Pineapples: value per crate, in dollars	3.03	3.00	3.01	3.27	3.48	3.24	3.08	2.96	2.49	2.30

Source: *Annual Book of Statistics*, Puerto Rico Department of Agriculture and Commerce.

Textiles and Needlework Products. The only industry which can begin to compare with sugar in stability in export values during depression years is needlework and textiles (Table 20), although the peculiar nature of this industry, involving shipment of the "raw materials" to Puerto Rico for finishing, does not permit adequate comparison. Between 1929 and 1932 or 1933, the decline in the value of exports was 20 percent, followed by a sharp recovery in 1934 and 1935 (unlike coffee, tobacco, and fruits). Here a very sharp upward trend since the war is evident.

The trend of Puerto Rican sugar production and exports has also been upward. While world sugar production during the depression years declined somewhat, and Cuba's very sharply, Puerto Rico's increased rapidly (Table 17). This increased production, and the correspondingly greater exports, largely explain the remarkable steadiness of the aggregate value of sugar exports during these years, despite the decline in prices.

Table 17

SUGAR PRODUCTION, PUERTO RICO, CUBA, AND THE WORLD,
1926-35*

(In Thousands of Short Tons)

CROP YEARS	WORLD	CUBA	PUERTO RICO	PERCENTAGE PUERTO RICO'S PRODUCTION TO CUBA'S
1926	17,961	5,471	603	11
1927	18,405	5,045	629	12
1928	19,115	4,493	749	17
1929	20,308	5,775	587	10
1930	20,417	5,232	866	17
1931	19,209	3,497	783	22
1932	19,959	2,915	992	34
1933	18,453	2,234	816	37
1934	18,325	2,593	1,104	42
1935	17,850	2,842	773	27

Source: United States Tariff Commission, *Report to the President on Sugar*, Report No. 73, Second Series, 1934.

* Raw cane sugar.

Because of the unusual factors operative in the Puerto Rican situation, no valid inferences for the future can be drawn from the above analysis of depression experience regarding the consequences, in respect of economic stability, of sugar's predominance in the Puerto Rican economy. The Island's relations to the United States, the fact that the depression coincided with an expanding sugar industry in the Island and hurricane destruction to crops less easily rehabilitated, and the control of the United States market established by quota restrictions, all are special aspects of the Puerto Rican economic environment.¹⁶ The analysis does, however, establish the impossibility of arguing from general principles, at least in this instance, about the dangers of dependence on a "one-commodity" economy.

¹⁶ Cf. Chapter XI below, section 4.

Table 18
VOLUME OF EXTERNAL TRADE, 1901-35
(Value Figures, for Years Ending June 30, Adjusted
to the 1926 Price Level)^a

YEAR	IMPORTS		EXPORTS		YEAR	IMPORTS		EXPORTS	
	Total (In Thou- sands)	Per Capita	Total (In thou- sands)	Per Capita		Total (In Thou- sands)	Per Capita	Total (In thou- sands)	Per Capita
1901	\$17,150	\$17.47	\$11,759	\$11.97	1919	\$46,567	\$36.36	\$58,026	\$45.30
1902	24,463	24.55	18,020	18.09	1920	62,999	48.47	70,472	54.21
1903	25,349	25.07	21,868	21.63					
1904	23,516	22.91	22,910	22.33	1921	85,065	64.24	62,726	47.37
1905	29,011	27.85	21,261	20.40	1922	68,271	50.62	75,180	55.75
					1923	71,233	51.88	64,798	47.19
1906	37,634	35.60	30,205	28.58	1924	91,194	65.26	68,435	48.97
1907	48,778	45.47	34,172	31.85	1925	89,609	63.02	90,304	63.51
1908	42,338	38.89	38,305	35.17					
1909	42,813	38.75	37,989	34.38	1926	92,483	63.92	98,725	68.24
1910	45,724	40.77	44,140	39.38	1927	101,867	69.27	98,243	66.80
					1928	95,198	63.67	99,553	66.59
1911	61,567	54.10	47,521	41.76	1929	101,410	66.74	88,829	58.46
1912	68,211	59.06	52,321	45.30	1930	91,112	59.01	108,527	70.29
1913	55,909	47.70	59,161	50.48					
1914	52,764	44.35	55,978	47.04	1931	96,756	61.25	101,353	64.16
1915	49,829	41.27	51,414	42.60	1932	90,119	55.78	75,183	46.54
					1933	85,541	51.80	74,652	45.21
1916	51,935	42.39	61,789	50.44	1934	88,785	52.62	89,411	52.99
1917	53,015	42.63	72,296	58.16	1935	89,726	52.08	74,101	43.01
1918	50,711	40.18	58,499	46.35					

Source: *Porto Rico and Its Problems* (p. 402), for years up to 1929. Figures for years 1930-35 computed by same methods as those employed in that report.

^a The methods of adjustment applied by the Brookings Institution are explained as follows: "The import figures have been adjusted by using the Bureau of Labor index number for wholesale prices, with the monthly data regrouped to correspond to the trade year of Porto Rico. Before deciding to apply this index number, we made a test of the trend of Porto Rican import prices as compared with American prices, using for this purpose an index number which we constructed on the basis of the Porto Rican import price of the seven most important food imports of the Island. In connection with export prices, a similar test showed that the Bureau of Labor index number does not compare closely with the movement of Porto Rican export prices. Accordingly, for exports we are using a special index number based on the principal exports of Porto Rico, covering the value of approximately 85 per cent of the total exports of the Island. While the value trade figures as adjusted by these index numbers do not pretend to give a precise measure of the volume of trade from year to year, they do give a rough indication of the trend and the fluctuations in the quantity of goods imported and exported" (*ibid.*).

Table 19
COMPOSITION OF THE EXPORT TRADE, 1935
(In Thousands)

COMMODITY	TO UNITED STATES	TO FOREIGN COUNTRIES	TOTAL	PERCENT OF TOTAL
Agricultural Products	\$49,104	\$222	\$49,325	62.6
Raw sugar	39,915	—	39,915	50.7
Leaf and scrap tobacco	7,146	1	7,148	9.1
Coffee	3	205	208	0.3
Pineapples, fresh	911	—	911	1.2
Grapefruit, fresh	484	3	487	0.6
Oranges	37	4	41	0.1
Citrons	34	—	34	•
Other fresh fruits	5	1	6	•
Cocoanuts	233	—	233	0.3
Vegetables, fresh	162	—	162	0.2
Seeds, bulbs, roots, etc.	24	1	26	•
Cacao beans	10	—	10	•
Cotton	—	7	7	•
Ginger root, not prepared	3	—	3	•
Hides and skins	72	—	72	0.1
Honey	60	—	60	0.1
Beeswax	4	—	4	•
Woods and manufactures	2	—	2	•
Mineral products	166	—	166	0.2
Manganese ore	111	—	111	0.1
Gold ore and base bullions	3	—	3	•
Scrap metals	52	—	52	0.1
Manufactures	27,112	410	27,522	54.9
Textiles	14,417	320	14,737	18.7
Refined sugar	7,922	—	7,923	10.1
Molasses	2,099	—	2,099	2.7
Cigars	1,323	1	1,324	1.7
Cigarettes	18	15	33	•
Other tobacco manufactures	1	1	2	•
Grapefruit, canned	480	—	480	0.6
Pineapples, canned	125	—	125	0.2
Other canned or preserved fruits	18	49	66	0.1
Alcohol	323	—	323	0.4
Rum	41	—	41	0.1
Bay rum	8	—	8	•
Bay oil	15	—	15	•
Medicinal and pharmaceutical preparations	18	14	31	•
Straw and palm leaf (hats mainly)	303	9	312	0.4
Buttons, pearl or shell	4	—	4	•
Miscellaneous exports	300	1,444	1,745	2.2
Grand total	\$76,684	\$2,075	\$78,759	100.0

Source: *Annual Book of Statistics*, Fiscal Year 1934-35, Division of Commerce, Puerto Rico Department of Agriculture and Commerce.

• Less than one-half of one percent.

Table 20
EXPORTS OF SUGAR, TOBACCO, FRUIT, COFFEE AND TEXTILES
FROM PUERTO RICO, 1926-35
 (Values, in Millions)

FISCAL YEARS	SUGAR ^a	TOBACCO ^b	FRUIT ^c	COFFEE ^d	TEXTILES ^e
1926	\$48	\$14	\$7	\$7.071	\$ 8
1927	55	21	6	5.749	9
1928	55	17	8	2.597	9
1929	35	13	3	0.459	15
1930	54	12	8	0.152	13
1931	54	13	5	0.546	14
1932	55	7	5	0.155	12
1933	51	4	2	0.125	12
1934	54	6	3	0.672	15
1935	48	7	2	0.208	14

Source: *Annual Book of Statistics*, 1934-35, Puerto Rico Department of Agriculture and Commerce.

^a Raw and refined sugar.

^b Unmanufactured tobacco.

^c Fresh and prepared, or preserved, fruit.

^d Raw, or green, and roasted, or prepared, coffee.

^e Cotton, linen, and silk manufactured goods.

Table 21
COMPOSITION OF THE EXPORT TRADE, 1935: SUMMARY

PRODUCTS	TO UNITED STATES		TO FOREIGN COUNTRIES		TOTAL	
	In Thou- sands	Percent	In Thou- sands	Percent	In Thou- sands	Percent
Agricultural products	\$49,104	64.0	\$ 222	10.7	\$49,325	62.6
Agricultural manufactures	12,355	16.1	67	3.2	12,422	15.8
Other manufactures	14,757	19.2	343	16.5	15,100	19.2
Mineral products	166	0.2	—	—	166	0.2
Woods and manufactures	2	^a	—	—	2	^a
Miscellaneous exports	300	0.4	1,444	69.6	1,745	2.2
Total	\$76,684	100.0	\$2,075	100.0	\$78,759	100.0

Source: *Annual Book of Statistics*, 1934-35, Puerto Rico Department of Agriculture and Commerce.

^a Less than one-half of one percent.

V

EXTERNAL FINANCIAL RELATIONS

1. PUERTO RICO'S "ADVERSE" BALANCE OF PAYMENTS

A FREQUENT charge made in connection with Puerto Rico's political and economic relations with the United States is that the Island suffers a "drainage of its wealth," due to an "adverse" balance of payments. As we have seen, Puerto Rico's *trade* balance is a "favorable" one. Critics, however, argue that this assumed benefit is offset by a "drainage" resulting from absentee ownership, which, it is claimed, leaves or returns to the Island only a small residue of the supposedly incoming values reported in the commodity export trade.

Unfortunately, very little light is available on this important matter of Puerto Rico's "international" financial accounts, as no annual calculation is made in the Island similar to that issued for the United States by the Federal Government. The only study of this nature available is for a single fiscal year (1927-28) made by the Brookings Institution.¹

This investigation revealed that the net deficit shown by the non-trade, or "service" transactions, for the period studied was some \$21,000,000, despite a favorable balance in the commodity trade of some \$11,000,000, resulting in a net deficiency for all trade and service operations of \$10,000,000. The latter amount was made up on balance by an equal excess in the capital transactions or borrowing operations by Puerto Rico for that year. In other words, the trade and service deficit for 1927-28 was found to be covered by an equal increase in Puerto Rico's indebtedness to outsiders.

This figure of a "really" unfavorable balance of \$10,000,000 (in the face of an "apparently" favorable balance of \$11,000,000) is constantly cited as evidence that the Island is "annually drained of its wealth" by this amount for the benefit of "absentee

¹ *Porto Rico and Its Problems*, pp. 413-18, and Appendix C, pp. 582-604.

owners." Yet it is obvious that the figures for a single year cannot be used to support any such contention—quite apart from the consideration that whether an increase of indebtedness to outsiders is a good or bad thing depends entirely on the circumstances. Only such a calculation over a period of years would allow us to draw significant inferences.

The situation must have changed greatly since 1927–28. Every single item in the Brookings calculations—whether trade, service, or borrowing operations—would be different today, some of them greatly so (for instance, Federal relief and reconstruction expenditures in Puerto Rico). Nobody can say with assurance in advance whether today the "adverse" balance on trade and service operations is \$10,000,000, or \$5,000,000, or \$15,000,000, or *nil*, or has been transformed into a "favorable" balance; or whether the social-economic consequences in each case are beneficial or the reverse, since the aggregate figure, whether plus or minus, has little meaning in itself. Some official agency in Puerto Rico could render a valuable service by drawing up annually such a statement of "international" accounts. The present authors had neither the time nor the facilities for such a large undertaking. But elsewhere in this report calculations are presented of payments in the sugar industry over a period of years to absentee owners, an item in the accounts which usually provokes the greatest interest.²

2. NATURE OF PUERTO RICO'S "INTERNATIONAL" ACCOUNTS

The detailed items figuring in Puerto Rico's "international" financial accounts may be classified into two major groups: (1) the *income* account, which comprises trade and service operations; and (2) current *capital* transactions, or borrowing operations.

Normally the most important items in the first group have been, on the income side (i.e., operations resulting in net income to Puerto Rico), the following: net receipts from the commodity trade; sums received in the form of gifts and contributions for educational, scientific and religious purposes; Federal expenditures in the Island; remittances received from emigrant Puerto

² See Chapter XI (Capital Investments and Earnings).

Ricans; and sums spent by outsiders for advertising in the Island. The chief items on the outgo side have been amounts spent for shipping, banking, and trade commissions; insurance, motion-pictures and lottery tickets; and interest, dividends, and rents paid to Mainland and foreign investors. In respect to the tourist trade, there is both an outgo through Puerto Ricans traveling abroad and an income from continental tourists to Puerto Rico.

A summary of the Brookings Institution calculations for the fiscal year 1927-28 may be useful. In that year the non-trade (or "service" transactions) in the *income* account showed a deficit for Puerto Rico amounting to \$21,427,000.³ Deducting the surplus of \$11,070,000 in the commodity trade, the net deficiency for trade and service operations together amounted, therefore, to \$10,357,000. The trade surplus is almost equaled by payments of interest, dividends, and rents (\$11,019,000); and it is exceeded by the aggregate amount of freight payments, commissions, insurance, and other transactions, totaling \$12,150,000.

3. AMOUNT OF, AND RETURNS ON, EXTERNAL INVESTMENT IN PUERTO RICO

The deficit on trade and service operations was offset by various forms of borrowing—sale of securities and mortgages, short-term credits, and so forth. However, as indicated above, one cannot say, circumstances apart, whether this was a good or a bad thing. It depends wholly upon the purposes for, and the terms and conditions on which the debts are contracted. (The term "borrowing," which often has a bad flavor, and the term "investment," which rings pleasantly, are, of course, usually identical.) Between 1900 and the outbreak of the war, there must have been a substantial yearly deficit in the income account (trade and service items), by reason of the fact that this was a period of heavy investment by outsiders. Under the circumstances, there *had* to be a deficit, and the latter can be regarded as "excessive" only if the terms on which external capital was

³ Table 22 below. Note that capital movements are excluded.

attracted to Puerto Rico were unduly high, something not to be determined from the bare figures themselves.

It is of considerable relevance and interest to note, however, that the Brookings Institution estimated the net amount of all foreign and Mainland holdings in Puerto Rico, in excess of Puerto Rican holdings abroad in 1927-28, as amounting to \$145,927,000.⁴ Payments on this sum of interest, dividends and rents, amounting to \$11,019,000, are equivalent to 7.5 percent, which does not seem an extraordinarily high rate of return in a year of prosperity, when government bonds were carrying 4.5 percent.⁵

A breakdown of these figures by classes is further revealing. For this purpose the figures of the Brookings report have been regrouped and brought together to show the relationship between different types of investments and the respective returns upon them, and the rates of return have been calculated (Table 23, below). An average return of 6.9 percent is shown on all investment from the outside, of 4.5 percent on government securities, of 5.3 percent on mortgages and loans made by the two Federal banks, and of 8.0 percent on private investments in the form largely of equities, real estate, and mortgages. The figures must be regarded with caution, because of the difficulties of estimating the "true" value of many types of investments. Returns on absentee investment in the sugar industry, over a period of years, are calculated in greater detail in another part of this report.⁶

4. PUERTO RICO'S BORROWING OPERATIONS

The estimates of the Brookings Institution as to Puerto Rico's borrowing operations during the year 1927-28 show that net receipts from capital transactions, representing increased in-

⁴ *Op. cit.*, pp. 416-18, 601-4. The estimate is all-inclusive and comprises Insular and municipal government securities, corporation stocks and bonds, real estate, mortgages, bank deposits, loans and advances by commercial banks and government credit agencies, cash and currency, and so forth. Total foreign and Mainland holdings in Puerto Rico amounted to \$176,294,000, and Puerto Rican investments outside the Island to \$30,367,000.

⁵ The percentage which payments of interest, dividends, and rents to external owners (\$12,148,000) represented in relation to their holdings (\$176,294,000) was 7.0.

⁶ See Chapter XI (Capital Investments and Earnings).

debtedness to outsiders, amounted to \$10,357,000, a sum which of course exactly equals the net deficit on income account (Table 24, below). The main items composing the net receipts on capital account were decreases in Puerto Rican investments in foreign and Mainland securities (\$2,300,000), in deposits in foreign and Mainland banks (\$1,100,000), and in commercial credits to outsiders (\$1,000,000); and, on the other hand, increases in bank loans and advances from the Mainland (\$2,500,000), in foreign and Mainland holdings of Puerto Rican securities (\$2,983,000), and in foreign and Mainland mortgages and liens on Puerto Rican property and crops (\$1,532,000).

5. EXTENT AND NATURE OF ABSENTEE OWNERSHIP

A summary of the investments of outsiders in Puerto Rico, as they stood in 1927-28, reveals that investments in the securities of the Insular and municipal governments accounted for about one-fourth of all external holdings (Table 23). The largest item, "continental and foreign investments by private persons and corporations," amounting to two-thirds of the total, includes a diversity of items. The most important are the following:

(1) Securities of corporations whose primary operations are in the Island (\$70,000,000). (These corporations are chiefly Mainland ones, and their securities represent assets in the form of both fixed and working capital.)

(2) Real estate and mortgages owned by individuals living abroad, as distinguished from those held among the assets of concerns engaged in some active enterprise in the Island (\$25,000,000). (These are mostly owned in Spain, though also partly in France and continental United States.)

(3) Deposits of outsiders in Puerto Rican banks (\$2,000,000), loans and advances in Mainland and foreign banks (\$15,000,000), and commercial debts due to outsiders (\$1,000,000), making \$18,000,000 in all.

(4) Puerto Rican branches of Mainland and foreign enterprises (\$5,000,000). (These are chiefly continental in ownership.)

The Brookings report estimated that in 1927-28 the item of \$70,000,000, representing investment by outsiders in securities

of Puerto Rican corporations, was distributed as follows (in millions of dollars): sugar, 40; tobacco, 10; banks 3.5; fruit 2; miscellaneous, including public utilities, 14.5.⁷ Thus, on the basis of these figures, the external capital invested in sugar was several times that invested in any other industry. On the other hand, it amounted to less than one-fourth of all external holdings, and was somewhat less than the total value of Puerto Rican government securities held externally. Payments of dividends and interest in 1927-28, if these figures are accurate, were perhaps some \$3,000,000 on account of absentee sugar investments, and some \$2,000,000 on account of absentee investments in Puerto Rican government securities.

6. OBSERVATIONS ON PUERTO RICO'S SITUATION

Any discussion of Puerto Rico's external trade and financial relations must take into account two opposite types of fallacy, of common occurrence in the popular treatment of external economic transactions. The more naïve of the two—which holds extraordinarily wide sway—is to imagine that a “favorable” balance of trade, in the sense of an excess of *physical* exports over imports, is a good thing, regardless of circumstances. Thus Puerto Rico's normally large “favorable” commodity trade balance is often cited with satisfaction, irrespective of the actual internal economic situation. Yet a “favorable” balance of trade is simply evidence that the excess of exports is going in payments to outsiders for one or more of a variety of purposes—shipping, banking, or other *services*, remittances to relatives, interest and dividend payments on domestic securities held in the other country, purchases of securities or lottery tickets from the other country, and so forth. These are, in effect, *unrecorded* (“invisible”) imports, which are paid for by the excess of recorded (“visible”) exports.

Such a situation may be a good or a bad thing, depending upon the nature of the circumstances: it is impossible to tell, a priori and in a general way. A debtor country, such as the United States was on balance before the war, or Australia is today, must ordinarily expect an excess of exports over imports.

⁷ *Op. cit.*, p. 418.

The difference represents the return on, and the price paid for, capital invested by outsiders.

Puerto Rico today finds itself in the latter situation. There is nothing *inherently* good or bad in such a situation. If the investments from the outside are productive, they will presumably themselves create the values out of which interest and dividends can subsequently be paid, to the benefit of both the "foreign" investor and the country in question. Payment for services is necessary for value received. Whether the "favorable" balance of physical trade is excessive can be determined only by examination of the detailed items in reference to the total *balance of payments*, including all the visible and invisible elements.

Those who realize this circumstance, however, are sometimes guilty of the opposite type of fallacy; because all payments in and out must balance, they conclude that everything is all right. What matters, however, is the character of the underlying transactions. In social and economic consequences, it may make a world of difference whether the balance is effected as a result of outside investment in capital expansion, or through the passing of property into the hands of established "absentee corporations," or through the purchase by outsiders of new issues of government securities, or through large grants of relief or reconstruction funds by the Federal Government, and so forth. In each case the terms and conditions of the investment, and the use to which it is put, are of equal importance.

Consequently, it is highly desirable that accurate studies be conducted of Puerto Rico's external financial relations, in order that discussion of this important problem be predicated on exact information as to the actual nature of these transactions and the real benefits or disadvantages accruing to the Island as their result. This is particularly desirable not only because of the misconceptions and unfounded statements at present surrounding the problem in lieu of factual material, but also because the Island's external and internal economic relations possess certain unique aspects that make unwise the uncritical adoption of current norms as to what is "good" or "bad" in the international flow of commerce and finance—norms that are derived from studies of such relationships between independent states not en-

joying the special bonds that tie Puerto Rico and the United States together. In this connection, the conclusions of the Brookings report on this head may be quoted as probably being as true today as when the words were written:

In the first place, it is to be noted that there is no real problem in connection with the maintenance of currency stability. Since the Island is not an autonomous political unit, it does not maintain a separate currency system of its own. . . . The Porto Rican banking system is, by means of branch banks and correspondent relations, closely integrated with that of continental United States. Accordingly if a heavy adverse balance in the Island's external accounts resulted in a temporary drain of money from the Island, the deficiency would doubtless shortly be made good by a transfer of banking funds from the Mainland.

In the second place, there is an element of flexibility in the fact that from one-third to one-half of the total ownership by outsiders is in the form either of share capital or direct ownership in land or business enterprises. Outsiders included in this group do not receive a fixed return on what they have invested, but in good years receive more, in poor years less. This represents an element both of strength and of weakness. In poor years the amount of external payments required shrinks considerably. In good years, however, it expands. Moreover, so far as sugar, tobacco, and fruits are concerned, outsiders come in for a large share of the benefits that may result from increased efficiency in operation.

In the third place, it is to be noted that the growth of foreign indebtedness, while occasioning large interest and dividend payments abroad, has resulted from productive operations. As has been shown elsewhere, the earnings on foreign capital have been, generally speaking, relatively large, and the interest and dividend payments abroad have been made possible by the expansion of exports which has resulted from the development of the Island. So long as the new capital which comes in earns a substantial rate of return, the fact that there exists an adverse net balance against the Island is not a matter of concern from the point of view of the maintenance of general economic stability.⁸

Summing up, we find, as stated above, no data on the exact content of Puerto Rico's international accounts, except for the

⁸ *Op. cit.*, pp. 419-20. The Brookings report rightly adds that "while it cannot be denied that the inflow of capital has increased the efficiency of production and promoted general economic development, it does not follow that the benefits of this have accrued to the working people of the Island" (*ibid.*, p. 420). The present report defers examination of this question to later chapters.

Table 22

PUERTO RICO'S INCOME ACCOUNT, 1927-28

(Trade and Service Operations: in Thousands)

OPERATIONS RESULTING IN NET INCOME TO PUERTO RICO			
Commodity trade, including unrecorded exports and imports	\$11,070		
Gifts and contributions	506		
Federal expenditures in Puerto Rico	2,712		
Advertising	400	\$14,688	
OPERATIONS RESULTING IN NET OUTGO FROM PUERTO RICO			
Freight payments and marine insurance on imports	\$ 5,980		
Commissions	4,190		
Remittances to families abroad in excess of emigrant remittances	302		
Tourist trade	110		
Other insurance transactions	1,980		
Motion picture royalties, cable and radio charges	407		
Lottery tickets	1,000		
Interest, dividends, and rent	11,019		
Miscellaneous	57	\$25,045	
Net deficiency for all trade and service operations		\$10,357	

Source: *Porto Rico and Its Problems*, pp. 414, 583-84, 587-98.

Table 23

EXTERNAL HOLDINGS IN PUERTO RICO, 1927-28,
BY CLASSES, WITH RATES OF RETURN

EXTERNAL HOLDINGS IN PUERTO RICO, 1927-28	AMOUNT (IN THOUSANDS)	INTEREST, DIVIDENDS AND RENTS PAID	PERCENT RETURN ON INVEST- MENT
Continental and foreign investments in Puerto Rican government securities	\$ 45,594 ^a	\$ 2,072	4.5
Mortgages and loans of Federal Land Bank and Intermediate Credit Bank	12,700 ^b	676	5.3
Continental and foreign investments by private persons and corporations	118,000 ^c	9,400	8.0
Total	\$176,294	\$12,148	6.9 ^d

Source: *Porto Rico and Its Problems*, pp. 417, 584. Items are regrouped and brought together and percent returns calculated.^a *Op. cit.*, p. 417, sum of items 1, 8, and 10 of table.^b Item 5 of same table.^c Sum of items 2, 3, 4, 6, 7, and 9 of same table.^d Weighted average.

one year examined in the Brookings report. If, as is likely, there has usually been a deficit in the combined trade and service accounts, this is simply a circumstance collateral to the continued investment of outside funds in Puerto Rico. If it were not for this new investment, the lack of balance in the other items would simply be impossible. Misapprehension on this point is widespread and profound in the Island. The basis of this misinterpretation could be removed by some careful marshaling of the facts and the application of simple reasoning about inter-regional financial relations.

Table 24

PUERTO RICO'S CAPITAL TRANSACTIONS, 1927-28
(In Thousands)

OPERATIONS RESULTING IN NET RECEIPTS TO PUERTO RICO			
Decrease in Puerto Rican investments in foreign and Mainland securities		\$2,300	
Decrease in direct ownership in outside enterprises, real estate and mortgages	500		
Decrease in holdings of foreign currency notes	356		
Decrease in external short-term investments	100		
Decrease in deposits in foreign and Mainland banks	1,100		
Decrease in commercial credits to outsiders	1,000		
Increase in bank loans and advances from the Mainland	2,500		
Increase in foreign and Mainland holdings of Puerto Rican securities	2,983		
Increase in foreign and Mainland mortgages and liens on Puerto Rican property and crops	1,532		
Increase in external ownership of Puerto Rican real estate	150	\$12,521	
OPERATIONS RESULTING IN NET OUTGO FROM PUERTO RICO			
Net increase in holdings of United States cash and currency notes	\$ 664		
Decrease in deposits in Puerto Rican banks by outsiders	500		
Decrease in commercial debts due to foreigners	1,000	\$ 2,164	
Net receipts resulting from debt and investment operations		\$10,357	

Source: *Porto Rico and Its Problems*, pp. 415, 585-87, 598-601.

Part Two
THE SUGAR INDUSTRY

VI

GENERAL ASPECTS OF THE PUERTO RICAN SUGAR INDUSTRY

IN THE present chapter, a bird's-eye view of the Puerto Rican sugar industry will be presented. The various aspects of the industry will be taken up in greater detail in the later chapters.

1. PHYSICAL ASPECTS

In its physical aspects, the sugar industry in Puerto Rico consists of the cane fields with their complement of farm equipment, and the sugar mills with their collateral machine shops, warehouses, docks, and transportation equipment. To this may also be added the housing facilities for workers, both on farms and at the mills.

The sugar-cane lands follow the coastal plain almost entirely around the Island. A number of valleys in the interior also support considerable tracts of cane. The coastal lands cultivated to cane are for the most part quite flat, but in certain areas cane fields extend up into the rolling hills. Cane is the principal crop of the entire coastal region, except in the northwest, where the somewhat unfavorable terrain—broken up by countless “haystack” hills—is largely devoted to fruits and a variety of minor crops. Along the north coast, too, considerable areas are devoted to fruits. Elsewhere the coastal landscape is an almost unbroken sweep of cane fields, merging inland into the hilly pasture land.

Dotting the coastal plain at intervals of a few miles are the sugar mills (*centrales*)¹ from each of which radiates a system of

¹ Sugar mills came to be called *centrales* (the singular form is *central*) when a “central” mill serving all cane growers in a given area began to replace the primitive individual mills, operated by individual cane growers. In the present text, they are usually referred to as “sugar mills” or “mills,” although a technical differentiation is possible, inasmuch as the Spanish term *central* today connotes not merely a sugar-cane grinding establishment, but all the properties and activities of any company engaged in cane grinding.

narrow-gauge track or roads for transporting cane. There are thirty-one such mills near the coast and ten in the interior. Longer transportation service is provided by a public-service railroad and good motor roads. A few of the larger mills have their own harbors and docks, and ship directly from their home ports.

Among the mills there is to be found the greatest diversity in size. Central Guánica, in the southwest, has a rated daily grinding capacity of 8,000 tons of cane, while Central Pellejas has a rated daily capacity of 150 tons. Twenty-four of the forty-one mills are rated from 1,000 to 2,000 tons, twelve others at less, and 5 others at more. Actual sugar production in the peak year of 1933-34 ranged from 152,000 tons at Guánica to 1,400 tons at Pellejas, with an average for all mills of about 28,000 tons.²

The mills are for the most part highly modern in their technical equipment, and are run on modern lines of factory management. It is difficult to make any general statements about the relation between size and efficiency in the industry, since there are so many variables in each local situation. Probably the larger mills have the highest technical efficiency, but many smaller ones, with a more compact area of cane supply and less extensive overhead charges, appear to get along well. The larger mills incur heavy transportation costs, owing to the necessity of securing their cane from a wider area.³

As a result of the special factors involved in their supply of raw materials, sugar mills, in comparison with most types of manufacturing, exhibit certain unique features. In the first place, the raw materials, being both bulky and perishable, require that for best results the factory be contiguous to the source of its supply. Secondly, there must be careful timing in the planting and harvesting of the crop, so that a constant and regular flow of cane may be fed the mills, once the grinding machinery has been set in motion. These factors (and others developed in the next few chapters) induce mills to undertake, in part, the production of their own raw materials; and also

² Rated capacity and production figures for each mill are given in Tables 31 and 32, Chapter VII (Production of Sugar and Sugar Cane).

³ In the case of one of the large mills, its cost of bringing cane to the factory exceeds all its manufacturing and Puerto Rican shipping costs.

result in the maintenance of close personal contact between the manufacturer and the independent producer of sugar cane, a situation which has disappeared in almost all other fields of factory operation. This situation bears closely upon problems of the Puerto Rican economy which will be discussed at later points.⁴

Before the American occupation of Puerto Rico, the coastal lands now largely planted to sugar cane were typically held in large estates mainly devoted to cattle raising and cane cultivation—rather more the former than the latter. Sugar mills, mainly of primitive type, were accessories of these estates. Some also were run as separate private or cooperative enterprises. In 1888, 440 mills were listed, and in 1898, 250.⁵ As late as 1908, there are reported to have been as many as 107 *hacienda* mills, in addition to 45 *centrales*, or mills grinding as a separate business. Thereafter the family mills rapidly disappeared, and the *centrales* went through a process of technical change. From 1908 to 1932 twenty new mills were erected, and twenty-one old ones were dismantled. In the same period the rated daily grinding capacity per mill increased on the average by about five times.⁶

The newer mills, some of them lineal descendants of earlier ones, took over the family practice of combining the growing of cane with the manufacture of sugar. In this process the total number of relatively large estate owners was much diminished, but the size of the large cane-growing estates increased. Mill-owning companies and partnerships became, *pari passu*, large landholders. Concentration of manufacturing and concentration of landholding moved along together. Today some estates attached to smaller mills are no larger than many personal holdings in the last century. But the holdings of the largest companies, running into thousands of acres, though created chiefly out of the larger farms of the prior period, are quite beyond earlier experience.

⁴ See especially Chapter X (Relations Between Mill-Owners and Growers) and Chapter XX (The Land Question).

⁵ *Agricultural Resources and Capabilities of Porto Rico*, House Document No. 171, 56th Congress, 2d Session, 1901.

⁶ Cf. Manuel A. del Valle in *Proceedings of the International Society of Sugar Cane Technologists*, San Juan, 1932.

For many years it has been repeatedly stated, in official reports and elsewhere, that sugar-cane cultivation had reached its geographical limits. Nevertheless, acreage has gone on expanding. Official figures of the Treasurer of Puerto Rico reported 240,000 acres of cane land in 1920 and 299,000 acres in 1935. Recent Agricultural Adjustment Administration figures are 318,000 acres. It is problematical how large the cane acreage might become under circumstances of favorable markets and improved transportation facilities. Certainly the possibilities are not exhausted.

2. FINANCIAL ORGANIZATION

Considerable diversity is to be found in connection with financial organization. As to form, all but five of the sugar companies, it is true, are organized as corporations, and the remainder are limited partnerships.⁷ Several of the smaller companies, and one or two of the larger, are strictly family enterprises, usually in lineal succession from earlier family estates. The majority of companies are rather closely held by small groups of stockholders, and their affairs are, on the whole, regarded as "strictly private." At the other extreme are the four large American-owned sugar companies and allied enterprises, each with assets of from \$10,000,000 to \$16,000,000.⁸

Of the forty-one mills, eleven are owned by the four American-owned groups, six are owned by three different family groups (two each) and the remaining twenty-four are separate enterprises, though six of the latter in the north, known as the "Spanish group," are rather intimately associated, through interlocking stock ownership and directorates. Except for the four American-owned companies and one company previously owned by a French family,⁹ all the mills are mainly owned by Puerto

⁷ The list of land-owning companies in Table 52, Chapter IX, is practically the same as a list of mill-owning companies except for the American-owned mills.

⁸ Although Puerto Ricans are of course American citizens, it has been felt desirable to retain the somewhat inaccurate term "American-owned" in referring to sugar companies owned by Continental, or Mainland, Americans, particularly as the "external" and "local" ownership of economic interests in the Island is a distinction so frequently made by Puerto Ricans themselves in their discussion of Insular economic problems.

⁹ This company has recently sold its mill (Central Lafayette) and lands to the Puerto Rico Reconstruction Administration. See Chapter XVII.

Ricans, or in a few instances by persons of Spanish nativity living in Puerto Rico.

Three of the American-owned companies have been operating in Puerto Rico since the early days of the American occupation, and have grown to their present size through a slow process of reinvestment and expansion. The fourth has been operating only since 1926, with properties rapidly acquired from local owners. All four are of rather similar size.¹⁰

3. LAND TENURE

The land-tenure system shows striking extremes, from a relatively few large properties, which include sugar mills as well as farm lands, to numerous very small sugar-cane farms. Considerable areas are leased by the large proprietors, but operation by the owner is the rule on smaller farms. Small-scale leaseholds are relatively few in number. The number of separate proprietors of cane farms was reported by the Agricultural Adjustment Administration as 7,693 for the year 1935.¹¹

According to the most recent and most complete evidence, sugar-cane growers (including both sugar companies and independent farmers) owned or leased about 40 percent of all lands in farms in Puerto Rico. Lands planted to cane in 1934-35 took

¹⁰ The original Central Aguirre Co. started operations in 1901. The Central Aguirre Associates, a Massachusetts trust, controls the Central Aguirre Sugar Co., which operates *centrales* Aguirre and Cortada. This company in turn controls the Ponce and Guayama Railroad Co. The Associates also control the Central Machete Co., operating Central Machete. The same interests are allied with Luce and Co., a limited landowning partnership.

The original South Porto Rico Sugar Co. was organized in 1902. At present the South Porto Rico Sugar Co. of New Jersey controls the South Porto Rico Sugar Co. of Puerto Rico, which operates Central Guánica. Allied interests control Russell and Co., a limited landowning partnership. The New Jersey company also controls companies operating in Santo Domingo, and a marketing subsidiary.

The original Fajardo Sugar Co. was organized in 1905. It is a Puerto Rican corporation operating Central Fajardo, and in turn controls the Loíza Sugar Co., operating Central Canóvanas. The same interests also control a landowning subsidiary, the Fajardo Sugar-Growers Association, organized as a New Jersey joint-stock company, and the Fajardo Development Co. which operates the railroad.

The Eastern Sugar Associates, a Maryland trust, now controls the properties, both land and mills, taken over in reorganization from the United Puerto Rican Sugar Co., organized in 1926. The properties are operated by a management company, the Eastern Sugar Corporation. The properties include five *centrales*, Cayey, Defensa, Juncos, Pasto Viejo, and Santa Juana.

¹¹ All the figures in this section are from Chapter IX (Land Tenure).

up 41 percent of the land in cane farms. The balance of the land in cane farms included large amounts of pasture and waste land, but relatively little cultivated to other crops.

Of total lands in the farms of sugar-cane growers, somewhat over one-half is owned or leased¹² by the mill-owning companies or allied interests. Similarly, of the lands cultivated to cane, just over one-half are owned or leased by mill-owning interests. The four American-owned companies and allied interests own or lease somewhat less than one-fourth of the lands cultivated to cane.

At the other extreme is a large number of small proprietors, represented by 5,306 sugar-cane farms of less than twenty-five acres, which aggregate 5.4 percent of the land in cane farms. The remaining individual properties, about 2,200 in number, own or lease 43.2 percent of the land in cane farms.

The actual tenure situation is varied. For example, some mills own and lease land outright, while others have land subsidiaries. Some landholding companies or partnerships are owned by the same interests as those owning the mills, but without any direct corporate affiliation. This mixed situation is partly to be accounted for by the so-called "500-acre law," Joint Resolution passed in 1900 which prohibits agricultural corporations from owning or controlling more than 500 acres of land. Some mill companies have taken title to land in excess of the 500-acre limit, assuming the provisions of the Act to be non-enforceable, encouraged, doubtless, by the fact that for over thirty years no real attempt was made to enforce it, while others have resorted to various forms of organization which they believe are within the law.¹³

The tenure situation is further complicated by the fact that leases run both ways, from individuals to landholding companies and vice versa, though more commonly the former.

In spite of these complications, the land can be roughly classified into those areas owned or leased by the mill companies or allied interests (commonly called "administration" lands), and

¹² From inquiries made on this point by the present writers it would appear that leases for a relatively short term of years are the rule.

¹³ See Chapters IX (Land Tenure), and XX (The Land Question).

those owned or leased by independent proprietors (commonly called *colono* lands). The latter run from large to very small holdings. In some instances it is difficult to say which is the more appropriate classification, since there are many gradations of closeness of interests between the actual proprietors and the mill-owning companies.

4. "COLONO" RELATIONS

Mills and *colonos*¹⁴ are bound together in a rather complex scheme of economic and technical relations, the formal evidence of which is the so-called "*colono* contract."¹⁵ One part of this contract states the terms governing the purchase of sugar cane. Payment is not made at a definite price for sugar cane, but by one of several formulas for dividing the proceeds of extracted sugar between mill and cane grower, according to the average monthly price of raw sugar in the New York market. The older method, which is still used at some mills, is to pay a given number of pounds of sugar (usually seven pounds in recent years) for each hundred pounds of sugar cane delivered. The method more commonly used at present is to make an analysis of the cane and pay a percentage of the sugar content. This part of the contract represents the basic economic relation between mill and grower, and its terms are the focus of agitation for improving the earnings of farmers at the expense of the mills.

Another part of the "*colono* contract" commonly covers the financing of farmers. A very large portion of them are financed during the growing and harvesting seasons by advances from the mills, which are collected by deductions from amounts due for sugar cane. This creditor position gives the mills considerable authority in supervising the farming operations of growers. The mill owners commonly borrow from the banks the funds which they advance. Some *colonos* borrow directly from banks, some from Federal lending agencies, some from private sources, and

¹⁴ The term *colono* is applied to an independent grower of sugar cane in contractual relationship with a mill. In the present text the *colono* is usually referred to as the "grower."

¹⁵ Discussed in greater detail in Chapter X (The Relations between Mill-Owners and Growers).

some finance themselves, but the financing by mills is the more widespread.

Since the timing of cane arrivals at the mill is of great importance to efficient operation, this and allied technical matters are covered by the contract.

5. LABOR

The labor supply of the industry is partly fixed and partly floating. There is a village at each mill where a considerable number of mill employees live permanently, usually in company houses. Similarly each farm or *hacienda* has its permanent population, in small villages or scattered huts. During the harvesting and grinding season, from December to May, large bodies of workers come down from their homes in the hills or out from the towns. Work is highly seasonal, and only a fraction of the workers have regular year-round jobs. It may be roughly estimated that in 1934-35 about 125,000 persons were employed at the height of the season, 50,000 at the bottom, and 80,000 as a year-round monthly average.¹⁶ The A.A.A. restriction program tended to reduce employment in that year, but the introduction of the eight-hour day was an offsetting influence.

The figures given include an estimate of employment by individual farmers, as well as by mills and company plantations. They do not include workers engaged in transportation on public railways, nor in other employments collateral to sugar production. More than 90 percent of employment is in the fields, less than 10 percent in and around the mills.

The working day is now limited by law to eight hours, but there appears to be deviation from this, especially during the harvest season. Wage rates of most companies and large planters are nominally governed by a *convenio*, or collective agreement, between employers and a union of workers,¹⁷ but it is impossible to say how extensively the agreement is honored, especially by the smaller operators. The majority of workers receive wages of from seventy-five cents to a dollar per day, while working. Stated money wages are supplemented for many workers by free housing, medical care, and other services.

¹⁶ See Chapter XII (Employment and Hours of Labor).

¹⁷ In spite of the fact that most workers are not union members.

6. ORGANIZATION OF SUGAR PRODUCERS

The sugar industry is not highly organized in Puerto Rico. There exists an Association of Sugar Producers of Puerto Rico, to which most of the companies belong, but its field of activity is relatively limited. It maintains an office in San Juan for the assembling of information and for contact with public officials on matters affecting the industry. It has recently opened an office in Washington, partly as a contact with the Agricultural Adjustment Administration, partly as a research office, and partly in view of possible impending legislation on Puerto Rico which might vitally affect the industry. The executive committee meets from time to time to discuss or act upon matters of common interest, but there are practically no collective activities on a permanent basis. An individualistic frame of mind appears to be dominant in company managements. The situation is in striking contrast to that in Hawaii.

This individualistic attitude is one which gives rise to adverse criticisms on the failure of the industry *as a whole* to engage extensively in scientific experimentation and to adopt standardized practices. (Individual companies, however, have carried on intensive experimentation in developing improved cane varieties and methods of cultivation, the benefits of which have been available to the entire industry.) On the other hand, this attitude modifies and restrains the monopolistic element, which might otherwise become almost complete in matters of purchasing sugar cane and labor, and maintains the reality of competition in a considerable degree. Except for this, problems of public control might long since have become acute, since the industry definitely presents certain aspects of the sort associated with the idea of "quasi-public service industries," especially as exemplified by gristmills and cotton gins. No doubt the individualism of the industry is rooted in a cultural tradition; but it is undoubtedly fortified by the vastly different size and circumstances of the mills which make common lines of action difficult. Even the four American-owned companies do not work in coöperation; and, contrary to widespread belief, they in no strict sense "dominate" the industry.

Organization among the farmers is even more rudimentary. There exists an Association of Agriculturists of Puerto Rico, which, however, furnishes no focus for effective collective action among cane growers. In recent years an association of *colonos* has been organized, which to date has not succeeded in securing a large membership or in establishing itself as the effective instrument of the independent growers. In the field of coöperative credit, there is a Production Credit Association, under the Federal Farm Credit Administration, but it is small. The traditions and mental habits of Puerto Rican farmers have not been conducive to coöperative organization, and, as will be seen later, the peculiar relation of the farmers to the mills is a barrier.¹⁸

In the sphere of labor, the workers are not generally organized in either field or factory. On the other hand, the Federación Libre de los Trabajadores de Puerto Rico has been active and militant in promoting collective agreements, and the existence of the present *convenios* (collective agreements governing wages and working conditions)¹⁹ is the outcome of its initiative, backed by sympathetic public officials.

7. GENERAL ROLE OF THE SUGAR INDUSTRY

It has already been shown in Chapters III and IV to how large a degree Puerto Rico produces for export. Some part of the proceeds of sale of course remains on the Mainland, in payment for equipment and supplies. In the case of the American-owned companies, some part also remains as dividends to investors. The bulk of the proceeds, however, returns to Puerto Rico, to pay for sugar cane, meet payrolls, and purchase supplies in the Island. Indirectly, the accrual of the proceeds in New York furnishes the exchange basis for the large Puerto Rican imports of food and other products from the Mainland.

With the exception of the railroad interests of the Aguirre and Fajardo companies, the American-owned companies have kept their investments almost strictly within the fields of sugar manufacturing and cane growing. They have shown no tendency to expand into other fields of enterprise. The same is very generally

¹⁸ See Chapters X and XIX.

¹⁹ Discussed in Chapter XV (Collective Labor Agreements).

true of the Puerto Rican companies. There is, however, the difference that some of the owners of the latter are among the wealthiest individuals in the Island and have, as individuals, invested their earnings in other Puerto Rican enterprises. In contrast with the situation in Hawaii, few of the principal owners of the American-owned companies reside in the Island.

Indirectly, of course, the growth of the sugar industry has fostered the development of other lines of enterprise. It accounts for the existence of the railroad around the coast. It has stimulated the electrical utility industry. Its needs account for the existence of the government irrigation and hydroelectric enterprises. It creates much of the market for all sorts of retail, jobbing, and service enterprises. Its taxes constitute a very important contribution to the public revenues. No one can say what the economic development of the Island would have been in the absence of sugar; but, as matters stand, the industry is the foundation of the Island's economy. Any eventuality which seriously impaired its operation would move in widening circles of economic disaster for the Island.

8. SOURCES OF CONTROVERSY

By reason of its dominant position in the Island's economy, the sugar industry is naturally the object of much public attention, and the center of much political controversy. The public problems connected with the industry are on a somewhat different level from those of other parts of the economy. The basic agricultural problem of the Island, effective land utilization, relates mainly to other spheres than sugar-cane growing. Another need, the introduction of industrial activity, has already been accomplished in the case of sugar.

The focus of agitation concerning the sugar industry is on the distributive level. Farmers and workers are both interested in sharing more largely in the proceeds, and consider themselves at a disadvantage in bargaining with the companies. The American companies are the object of special attention, in the effort to limit the outflow of earnings to investors on the Mainland.

The industry also is caught in the swirl of general opinions on

social organization, not strictly on the economic level. The new system of factories and company plantations has impinged on the old aristocratic organization of coastal agriculture in a way to leave many scars. The wider distribution of land resources is an objective of many Puerto Ricans, an objective which is in conflict with the trend toward large company plantations. Various efforts to improve the condition of workers face the specific mold of conditions as they now exist. From another angle, sugar companies are charged in certain quarters with not accepting social responsibilities correlative with their degree of importance in the Island's life. Over the whole situation spreads the inevitable friction arising between those of different types of background, both cultural, as between American and Spanish traditions, and social, as between the corporate system and an old agrarian system. Injured pride, due to the equivocal political status of Puerto Rico, enters in to complicate matters still further.

In the whole situation there is therefore the basis for much conflict of economic interests, much emotional disturbance, much unsound economic thinking, and much reasonable difference of opinion concerning the objectives of social policy. The remaining chapters of Part Two are devoted to displaying the facts concerning the sugar industry as accurately and as objectively as possible. Part Three is devoted to an analysis of the problems which arise within the industry, and to displaying the nature of controversial questions of public policy in which the industry is involved.

VII

PRODUCTION OF SUGAR AND SUGAR CANE

1. PUERTO RICO'S PLACE IN THE AMERICAN SUGAR MARKET

IN 1935 the continental United States market absorbed 6,399,000 short tons of raw sugar. Of this total, 26.9 percent was produced on the Mainland, 42.3 percent in the insular areas of the United States, and 30.7 percent in Cuba. The receipts from United States insular sources were distributed between Hawaii, 15.5 percent; Philippine Islands, 14 percent; and Puerto Rico, 12.8 percent. A small amount also came from the Virgin Islands. Table 25 presents the figures for 1935, together with those for 1928 and 1934, the latter being the last year before the A.A.A. restriction program.

Table 25
CONSUMPTION OF RAW SUGAR IN CONTINENTAL UNITED STATES, BY SOURCES OF SUPPLY
(Short Tons)

	1928	1934	1935
Continental United States (total)	1,383,021	1,800,190	1,724,430
Insular United States (total)	2,099,173	2,837,730	2,707,666
Hawaii	819,090	889,319	990,042
Puerto Rico	698,591	834,720	817,367
Philippine Islands	570,524	1,108,651	897,794
Virgin Islands	10,968	5,040	2,463
Cuba	3,124,839	1,514,119	1,964,717
Other countries	35,262	1,441	2,533
Total deliveries	6,642,295	6,153,480	6,399,346

Source: United States Tariff Commission, *United States-Philippine Trade* (Washington, D. C., 1937), I, 102.

In recent years there has been a striking increase from the United States insular areas, a smaller Mainland increase, and a correlative decline from Cuba. The insular areas supplied one-third less than Cuba in 1928 and two-fifths more in 1935. The

very low world price of sugar during the depression undermined the Cuban industry, while the areas protected by the tariff were able to expand at Cuba's expense. Among the insular areas, the increase of production was most spectacular in the Philippine Islands, that in Puerto Rico next, and that in Hawaii least. Over a period of many years, Puerto Rico has contributed about 30 percent of the total insular production.¹

2. GROWTH OF PRODUCTION

Prior to American occupation of Puerto Rico, sugar production had exceeded 100,000 tons in only four years, the latest of which was 1884. From 1890 to 1899 the largest production in any year was 74,000 tons, and the industry was in a depressed condition. Thereafter, the advantages of producing inside the American tariff wall were quickly recognized. American companies were organized, and Puerto Rican producing interests took a new lease of life. Productive equipment of a more modern type was rapidly introduced.

The growth of the industry in Puerto Rico is shown at five-year intervals in the following production figures:²

<i>Period</i>	<i>Short Tons</i>
1900	81,000
1905	214,000
1910	349,000
1915	345,000
1920	485,000
1925	660,000
1930	866,000
1934	1,103,000

In 1935 the trend of growth was sharply reversed by the imposition of the A.A.A. restriction program, which reduced production to 780,000 tons.³

¹ United States Tariff Commission, *Report to the President on Sugar*, (Report No. 73, Second Series, Washington, D. C., 1934), p. 137. For an extended account of the sources of American sugar supply, see J. E. Dalton, *Sugar: A Case Study of Government Control*, New York, 1937.

² The year-by-year production figures are given in Table 30 (end of chapter).

³ This is the A.A.A. figure. The official Puerto Rican figure is slightly lower.

The picture of growth can also be seen in the following five-year averages of annual production:⁴

<i>Period</i>	<i>Short Tons</i>
1912-16	400,000
1917-21	470,000
1922-26	500,000
1927-31	726,000
1932-34	936,000

Except for a relatively small amount retained for consumption in the Island, almost the whole production has been sold in continental United States. From \$4,700,000 in 1901, the value of sugar exports exceeded \$50,000,000 in 1917, and, after a peak of \$98,900,000 in 1920, has remained relatively close to the \$50,000,000 figure ever since. Since 1923 the falling price of sugar has just about offset the increasing physical volume of exports.⁵

Over a ten-year period from 1926, the average of the four American-owned companies has been slightly under 50 percent of total Island production, and the percentage has shown no tendency to increase.⁶

The distribution of production among the mills for the years 1928 (the largest year before the depression), 1934, and 1935 is shown in Table 31; more detailed production figures for each mill for the year 1934-35 are presented from A.A.A. sources, in Table 32 (end of chapter). In addition to showing tonnage of sugar produced and of cane ground for sugar, this table shows total cane ground,⁷ total of cane, both ground and standing, marketing allotments of sugar,⁸ and an estimate of total sugar production if all cane had been ground. In Table 32 the American-owned mills are listed first, and the other mills are then listed geographically, starting in the northwest corner of the Island and moving clockwise around it. Puerto Rican-owned

⁴ Report No. 73, pp. 137-38.

⁵ See Chapter IV (External Trade Relations) for detailed data on sugar exports.

⁶ *Gilmore's Puerto Rico Sugar Manual*, 1934.

⁷ The A.A.A. program permitted some cane to be cut and ground for molasses only.

⁸ The allotments were larger than actual production, owing to the existence of reserves from the preceding year.

mills in the north produced 162,000 tons of sugar, in the south and south-central region 178,000 tons, and in the west 67,000. Of the 373,000 tons produced by American-owned mills, about half should be attributed to the south and half to the east and east-central region.⁹ Though these figures relate to a year of controlled production, they give a fairly accurate idea of the regional distribution of sugar production.

3. IMPROVEMENTS IN SUGAR-CANE YIELDS

Year-by-year figures are not available for sugar-cane production. Naturally it has increased more or less in step with sugar production, but somewhat less rapidly, since improvements in the quality of cane and the methods of grinding have permitted higher sugar recovery per ton of cane.

General records for recovery of sugar per ton of cane run back only to 1919. The improvement is indicated in the following five-year averages:¹⁰

1919-23	9.74 tons of cane per ton of sugar
1931-35	8.49 tons of cane per ton of sugar

Census figures for 1920 and 1930 show an increase of 47 percent in the production of cane and an increase of 79 percent in the production of sugar during the decade. Although this increase actually occurred, the particular choice of years exaggerates the rate of progress. The 1920 season was one of exceptionally low recovery, with 10.87 tons of cane per ton of sugar, or 9.2 percent recovery. Calculating from that base, the percentages cited would give 8.54 tons of cane per ton of sugar in 1930, or 11.7 percent recovery, which is about right. On the other hand, if the base year had been 1919, which was a high recovery year, the comparison would have shown only a slight increase. Actually, considerable variation occurs from year to year,¹¹ and it requires a long series of annual figures to show the very gradual upward trend of sugar recovery.

⁹ The geographical allocations for mills near the corners and in the interior are somewhat arbitrary.

¹⁰ From data of the Association of Sugar Producers of Puerto Rico.

¹¹ For the decade in question, beginning with 1919, the tons of cane per ton of sugar ran as follows: 9.134, 10.871, 10.794, 8.994, 8.892, 9.493, 9.346, 8.964, 8.988, 8.525, 8.940. (Cf. F. R. Hilera, in *Gilmore's Puerto Rico Sugar Manual*, 1930-31.)

Historically, the most important aspect of cane production is the great increase in yield per acre, based on experiments by the larger companies and the agricultural experimental stations. General figures on this subject are available for the period from 1919. The extent of the increase is shown in the following five-year averages:¹²

1919-23	17.7 tons of cane per acre
1931-35	27.9 tons of cane per acre

It has been shown by Dr. Chardón that while the average cane acreage for the period 1925-31 increased 7.8 percent over the average acreage for 1915-24, the average cane crop in tons increased by nearly 70 percent.¹³ This record, however, is not based on consistent growth, since after 1918 great inroads were made by the mosaic disease. The decided improvement in yield per acre came after 1925, when the disease had been stamped out by the introduction of new varieties of cane.¹⁴

Figures have been compiled for one sugar-producing district of the Island—the Fajardo region—for the years 1911, 1920, and 1927. These data cover the production records of both the company's own cane and that purchased from independent farmers. The results are summarized in Table 26. Average yield per acre for the district increased by more than 75 percent from 1911 to 1927. The company's own farms showed almost a 35-percent increase from 1920 to 1927. Single-year comparisons of this sort are of limited significance, owing to annual fluctuations, but they express the trend correctly.

In response to a questionnaire from the present writers, a number of companies gave data on recent sugar-cane tonnage per acre, but only three carried the figures back to prewar

¹² From data of the Association of Sugar Producers of Puerto Rico.

¹³ Dr. Carlos E. Chardón, reported in *Proceedings of the International Society of Sugar Cane Technologists*, San Juan, 1932.

¹⁴ Dr. Chardón is no doubt correct in speaking of the mosaic disease as a "beneficial calamity," since it led both to scientific research and to popular education in matters of cane breeding and growing. It was in this connection that the Federal and Insular agricultural experiment stations proved their worth to the Island. The Federal station at Mayagüez introduced the disease-resisting Uba cane, a development which was worth to Puerto Rico, many times over, the total expenditure on the station. Thereafter both stations, working in close cooperation with some of the mills, carried on experiments which resulted in what Dr. Chardón characterizes as the "varietal revolution."

Table 26

COMPARATIVE YIELDS OF SUGAR CANE PER ACRE, FAJARDO MILL DISTRICT, 1911, 1920, AND 1927

YEAR	SOURCE OF CANE	TONS PER ACRE
1911	All cane	14.92
1920	All cane	20.20
	Administration cane	22.81
1927	All cane	26.27
	Administration cane	30.54

Source: From data compiled by R. A. Veve, of the Fajardo Sugar Company, reported in *Gilmore's Puerto Rico Sugar Manual*, 1930-31.

years. The record of these companies is a remarkable one, showing an increase from 23.82 tons per acre in the period 1914-17 to 41.28 tons in the period 1931-35, or 73 percent. A fourth company shows the most remarkable rise of all, from 27 tons in 1917 to 52 tons in 1935. The per-acre tonnage of these companies is not to be regarded as typical of the whole Island, since the companies have all been leaders in scientific cultivation; and, furthermore, over three-fourths of the area reported is in the irrigated south, where cane yields are highest. It is probable, however, that the same picture of relative improvement would be shown by similar figures from any section of the Island.

Another way of showing the improvement of cane yields is by tons of *sugar* per acre of cane.¹⁵ According to an estimate by Mr. F. A. López Domínguez, Director of the Agricultural Experiment Station of the University of Puerto Rico, the yield in 1900 was 0.69 tons per acre.¹⁶ Mr. F. R. Hilera has calculated 1.81 tons for the period 1919-24, and 2.68 tons for the period 1925-29.¹⁷ And finally A.A.A. figures show 3.33 tons for 1935.¹⁸

The A.A.A. calculation, in addition to the Island average, shows the recovery of sugar per acre for farms of different sizes. The figures are presented in Table 27. The yield varies from 2.41 tons per acre on the smallest farms to 4.43 tons on the largest, and the very interesting fact emerges that the yield shows an unbroken increase from the smallest to the largest groups of farms.

¹⁵ The improvement is, of course, a composite of increased cane yield per acre, higher sugar content of cane, and more efficient methods of recovery at the mill.

¹⁶ *Proceedings*, cited above.

¹⁷ *Gilmore's Puerto Rico Sugar Manual*, 1930-31.

¹⁸ Sugar Section, A.A.A., Release of August 24, 1936.

Table 27

YIELD OF SUGAR PER ACRE ACCORDING TO ACREAGE OF SUGAR-CANE FARMS, 1934-35^a

DISTRIBUTION OF FARMS BY AREA OF CANE ACREAGE ^b (IN ACRES)	YIELD OF SUGAR CANE PER ACRE (IN TONS OF 2,000 POUNDS)	
	Unweighted Average	Weighted Average ^b
Up to 2	2.41	
3 to 10	2.77	
11 to 25	2.89	
26 to 100	3.39	
101 to 200	3.43	3.46
201 to 500	3.93	3.90
More than 500	4.43	4.57
Grand total	3.33	4.27

Source: Sugar Section, Agricultural Adjustment Administration, Release of August 24, 1936.

^a For the detail of this table, see Chapter IX (Land Tenure), Table 50.

^b The weighted average was introduced as a check on possible distortion in the unweighted averages, arising out of the small number of farms in the high acreage groups.

4. CANE PRODUCTION BY COMPANIES AND INDEPENDENT GROWERS

It was shown in the preceding chapter that the land devoted to cane cultivation is almost equally divided between company land and the land of independent farmers. The former, however, produces well over one-half the cane. Relatively accurate figures are available only for the year 1934-35¹⁹ and are summarized in Table 28.

Table 28

ADMINISTRATION AND *COLONO* SUGAR-CANE GROUND, 1934-35^a

MILLS	TOTAL CANE GROUND	COLONO CANE GROUND	PERCENTAGE COLONO CANES IS OF TOTAL CANE
11 American mills	3,418,297	1,013,239	29.6
30 Other mills	4,292,139	1,727,043	40.2
Total	7,710,436	2,740,282	35.5

Source: Association of Sugar Producers of Puerto Rico, from data of the Treasurer of Puerto Rico.

^a The detailed figures for each mill are given in Table 33 (end of chapter). This table shows the great variety of circumstances in different mill areas.

¹⁹ For earlier years, some companies reported their landholding associates or family estates as *colonos*. The figures for 1934-35 are not entirely free from this prac-

When the figures of cane production are checked against those of lands planted to cane,²⁰ it appears that in 1934-35 sugar companies and allied interests cultivated 51.3 percent of the cane land and produced 64.5 percent of the cane. The American-owned interests cultivated 23.3 percent of the cane land and produced 31.2 percent of the cane. Other mill interests cultivated 28 percent of the cane land and produced 33.3 percent of the cane. Independent farmers cultivated 48.7 percent of the cane land and produced 35.5 percent of the cane. These data are summarized in Table 29.

Table 29

PERCENTAGE DISTRIBUTION OF TOTAL SUGAR-CANE LAND
CULTIVATED AND TOTAL SUGAR CANE PRODUCED BY
MILL INTERESTS AND INDEPENDENT FARMERS, 1934-35

TYPE OF PRODUCER	PERCENT OF TOTAL SUGAR- CANE LAND CULTIVATED	PERCENT OF TOTAL SUGAR CANE PRODUCED
<i>Administration cane:</i>		
American mill interests	23.3	31.2
Other mill interests	28.0	33.3
<i>Total for mill interests</i>	51.3	64.5
<i>COLONO cane:</i>		
Independent farmers	48.7	35.5
<i>Total</i>	100.0	100.0

Source: Table 33 below and data in Chapter IX (Land Tenure).

The figures express roughly what is no doubt the case: that per-acre yields are considerably larger, on the average, on company lands.²¹ This is no doubt partly a matter of more efficient agricultural methods, and partly a matter of superiority in the average quality of "administration" lands.

tice, but the degree of error is very much smaller than in earlier years. Figures for earlier years may be found in the *Report of the Commissioner of Agriculture and Commerce* for 1933-34.

²⁰ See Chapter IX (Land Tenure).

²¹ A similar conclusion may be drawn from the data presented in Table 27 above, where higher yields of sugar per acre are progressively shown, as the size of farms increases. See also Table 35, Chapter VIII, in which the United States Tariff Commission figures show 37.4 tons per acre on company farms and 27.9 on independent farms.

Table 30
SUGAR PRODUCTION IN PUERTO RICO, 1828-1935
(Tons of 2,000 Pounds)

CROP YEAR	PRODUCTION	CROP YEAR	PRODUCTION	CROP YEAR	PRODUCTION
1828	9,391	1864	46,255	1900	81,526
1829	13,857	1865	60,526	1901	103,152
1830	17,008	1866	55,679	1902	100,576
1831	15,389	1867	60,125	1903	139,096
1832	17,326	1868	61,707	1904	151,088
1833	17,139	1869	72,475	1905	214,480
1834	17,940	1870	95,824	1906	206,864
1835	21,928	1871	103,303	1907	230,095
1836	24,944	1872	89,059	1908	277,093
1837	22,827	1873	95,260	1909	346,786
1838	34,569	1874	77,995	1910	349,840
1839	34,622	1875	81,096	1911	371,070
1840	40,896	1876	72,829	1912	398,004
1841	42,278	1877	61,578	1913	351,666
1842	45,953	1878	83,416	1914	346,490
1843	35,519	1879	170,679	1915	345,490
1844	40,580	1880	110,847	1916	483,589
1845	46,452	1881	63,236	1917	503,081
1846	43,870	1882	92,115	1918	453,793
1847	52,089	1883	87,895	1919	406,002
1848	50,649	1884	109,098	1920	485,077
1849	50,371	1885	98,059	1921	491,000
1850	56,064	1886	70,295	1922	405,000
1851	59,208	1887	89,057	1923	379,000
1852	46,815	1888	68,328	1924	447,000
1853	55,302	1889	70,117	1925	660,003
1854	53,935	1890	64,144	1926	603,187
1855	50,718	1891	53,014	1927	629,133
1856	58,468	1892	74,187	1928	748,677
1857	43,195	1893	47,495	1929	586,760
1858	61,771	1894	53,361	1930	866,109
1859	44,222	1895	66,073	1931	783,163
1860	58,007	1896	61,472	1932	922,335
1861	65,517	1897	63,546	1933	816,337
1862	64,401	1898	60,285	1934	1,103,822
1863	58,122	1899	39,200	1935	773,021

Source: *Annual Book of Statistics*, Puerto Rico Department of Agriculture and Commerce (1935) p. 132.

Table 31

**LIST OF CENTRALES (MILLS) IN ORDER OF RATED
CAPACITY, WITH PRODUCTION FOR SELECTED YEARS**
(Tons of 2,000 Pounds)

MILL	RATED CAPACITY PER 24 HOURS	SUGAR PRODUCTION		
		1927-28	1933-34	1934-35
Guánica	8,000	112,840	152,244	98,249
Aguirre	4,500	79,899	77,096	66,291
Fajardo	4,400	48,679	86,398	54,230
Cambalache	2,800	30,263	44,377	31,048
Roig	2,750	25,782	34,580	24,129
Coloso	2,000	23,363	38,123	29,352
Mercedita	2,000	27,002	44,945	34,442
Pasto Viejo (Eastern)	2,000	18,106	40,850	28,977
Canóvanas (Fajardo)	1,900	28,550	45,063	27,177
Constancia-Toa	1,900	16,155	29,212	17,808
Juncos (Eastern)	1,800	24,231	28,979	20,956
Plazuela	1,750	18,624	27,912	16,923
Lafayette	1,700	23,401	37,378	26,365
San Vicente	1,700	21,555	33,609	23,213
Rufina	1,500	17,852	36,000 ^b	24,224
Machete (Aguirre)	1,250	21,171	26,584	23,653
Boca Chica	1,400	13,850	19,433	15,317
Cortada (Aguirre)	1,200	21,030	26,383	21,506
Playa Grande	1,200	13,088	8,915	5,612
Defensa (Eastern)	1,100	13,471	19,816	14,237
Los Caños	1,050	10,117	16,086	10,131
Victoria	1,050	11,606	19,339	13,820
Carmen	1,000	12,729	17,698	12,942
El Ejemplo	1,000	13,942	17,078	12,005
Guamaní	1,000	—	15,772	8,761
Juanita	1,000	9,333	15,584	10,456
Monserate	1,000	9,080	15,000 ^b	7,545
Santa Juana (Eastern)	1,000	6,715	15,831	12,239
Vannina	1,000	10,188	19,521	12,383
Eureka	900	7,817	14,571	9,939
Plata	850	3,159	11,710	9,377
Igualdad	750	7,412	15,327	10,218
Rochelaise	700	7,775	13,862	8,707
Caribe	600	—	8,085	5,997
Constancia-Ponce	550	6,630	9,866	8,302
Cayey (Eastern)	450	1,818	8,657	5,450
San Francisco	360	6,404	7,778	5,258
Soller	300	1,617	5,694	5,984
Santa Bárbara	250	729	3,528	3,999
Herminia	150	1,767	2,072	2,355
Pellejas	150	592	1,443	1,156
Total ^a		728,352	1,113,399	780,741

Source: *Gilmore's Puerto Rico Sugar Manual*, 1934, and Sugar Section, A.A.A.

^a The failure of the totals to check exactly with the column figures is due to the omission of decimals in the columns.

^b Estimated.

Table 32
SUGAR PRODUCTION UNDER THE A.A.A., 1934-35
(Tons of 2,000 Pounds)

MILL AREA	CANE GROUND FOR SUGAR	TOTAL CANE GROUND ^a	TOTAL CANE GROUND AND STANDING	SUGAR PRO- DUCTION (96%)	TOTAL SUGAR ALLOT- MENT INCLUD- ING FROM SURPLUS	PROBABLE PRODUC- TION IF ALL CANE HAD BEEN FOR SUGAR
Aguirre (3 mills)	850,322	850,322	864,718	111,450	86,070	113,339
Eastern (5 mills)	670,096	816,197	1,022,291	81,859	98,214	124,883
Fajardo (2 mills)	686,090	809,615	995,662	81,407	94,892	118,160
Guánica	780,184	882,179	1,031,913	98,249	117,875	129,949
Total, American- owned interests ^b	2,986,692	3,358,313	3,914,584	372,965	397,051	486,331
Soller	50,454	51,027	90,166	5,984	5,912	10,628
Plazuela and Los Caños	236,145	309,913	473,480	27,062	29,317	54,332
Cambalache	277,126	329,064	491,251	31,048	36,161	55,035
Monserate	67,681	109,237	171,143	7,545	7,675	19,079
San Vicente	183,969	284,591	371,022	23,213	27,770	46,816
Carmen	110,031	111,155	145,368	12,942	15,182	17,098
Constancia-Toa	153,968	216,558	259,782	17,808	19,883	30,046
Juanita	91,078	149,100	204,278	10,456	10,427	23,451
Vannina	104,417	152,200	169,176	12,383	13,851	20,063
Victoria	120,956	147,368	178,967	13,820	16,340	20,449
Total, north region	1,395,825	1,860,213	2,554,633	162,261	182,518	296,997
El Ejemplo	96,873	96,873	123,889	12,005	14,407	15,213
Roig	196,303	196,672	272,337	24,129	27,678	33,476
Playa Grande	50,613	50,613	89,125	5,612	5,558	9,882
Lafayette	216,089	260,005	307,969	26,365	30,107	37,575
Guamaní	68,887	83,970	115,969	8,761	9,550	14,749
Caribe	47,017	81,111	81,111	5,997	6,259	10,346
Boca Chica	127,596	127,596	173,636	15,317	15,488	20,843
Mercedita	282,028	333,815	380,489	34,442	34,786	46,465
Constancia-Ponce	71,656	71,656	85,155	8,302	8,294	9,866
Rufina	205,689	233,241	333,514	24,224	28,707	39,278
San Francisco	43,918	56,538	67,454	5,258	5,790	8,076
Herminia	20,276	23,578	27,261	2,355	2,317	3,166
Santa Bárbara	34,587	35,349	35,894	3,999	4,000	4,150
Pellejas	12,536	15,316	15,316	1,156	1,660	1,412
Total, south region	1,474,068	1,666,333	2,109,119	177,922	194,601	254,497

Table 32 (Continued)
SUGAR PRODUCTION UNDER THE A.A.A., 1934-35

MILL AREA	CANE GROUND FOR SUGAR	TOTAL CANE GROUND ^a	TOTAL CANE GROUND AND STANDING	SUGAR PRO- DUCTION (96%)	TOTAL SUGAR ALLOT- MENT INCLUD- ING SUGAR FROM SURPLUS	PROBABLE PRODUC- TION IF ALL CANE HAD BEEN GROUND FOR SUGAR
Eureka	76,237	78,621	105,639	9,939	9,856	13,772
Rochelaise	68,101	68,101	93,637	8,707	9,968	11,971
Igualdad	86,088	115,031	136,645	10,218	10,466	16,218
Coloso	232,077	272,578	404,343	29,352	33,351	51,137
Plata	73,459	99,271	135,413	9,377	9,003	17,285
Total, west region	535,962	633,602	875,677	67,593	72,644	110,383
Grand total	6,392,547	7,518,461	9,454,013	780,741	846,814	1,148,208

Source: Table compiled by Carlos J. Benítez, based on A.A.A. statistics, issued in photostat form by Association of Sugar Producers of Puerto Rico.

^a The A.A.A. program permitted some cane to be cut and ground for molasses purposes only.

^b The above eleven mills are excluded from the geographical classifications below.

Table 33
TOTAL CANE AND COLONO CANE GROUND, BY MILL AREAS,
1934-35

(Tons of 2,000 Pounds)

NAME OF MILL	TOTAL CANE GROUND 1934-35	COLONO CANE GROUND 1934-35	PERCENTAGE COLONO OF TOTAL CANE
Fajardo			
Fajardo	579,600	116,500	20.1
Canóvanas	229,900	69,800	30.3
Guanica	882,500	497,600	56.3
Aguirre			
Aguirre	499,200	75,200	15.0
Cortada	167,400	300	0.1
Machete	183,500	11,700	6.3
Eastern Sugar Associates			
Pasto Viejo	323,400	14,400	4.4
Cayey	46,400	17,600	37.9
Defensa	135,100	80,600	59.6
Juncos	240,000	75,400	31.4
Santa Juana	130,700	53,100	40.6
Sub-Total ^a	3,418,297	1,013,239	29.6

Table 33 (Continued)
TOTAL CANE AND COLONO CANE GROUND, BY MILL AREAS,
 1934-35
 (Tons of 2,000 Pounds)

NAME OF MILL	TOTAL CANE GROUND 1934-35	COLONO CANE GROUND 1934-35	PERCENTAGE COLONO OF TOTAL CANE
Cambalache	370,500	177,700	47.9
Carmen	133,400	47,900	35.9
Constancia-Toa	216,400	92,700	42.8
Juanita	156,000	109,000	69.8
Los Caños	113,800	28,700	25.2
Monserate	109,100	45,600	41.7
Plazuela	195,900	76,300	38.9
San Vincente	287,600	150,200	52.2
Vannina	152,100	38,300	25.1
Victoria	148,700	88,600	59.5
El Ejemplo	96,800	96,800	100.0 ^a
Playa Grande	50,600	19,400	38.3
Roig	196,500	42,700	21.7
Boca Chica	127,500	39,900	31.2
Caribe	65,500	51,500	78.6
Constancia-Ponce	71,600	900	1.2
Guamaní	83,800	1,700	2.0
Lafayette	251,000	48,900	19.4
Mercedita	385,500	75,400	19.5
Rufina	233,200	135,400	58.0
San Francisco	55,800	21,600	38.7
Coloso	276,600	87,900	31.7
Eureka	80,900	20,600	25.4
Igualdad	124,500	109,500	87.9
Rochelaise	68,100	21,600	31.7
Herminia	29,500	5,800	19.6
Pellejas	15,000	300	2.0
Plata	107,000	61,900	57.8
Santa Bárbara	35,500	7,700	21.6
Soller	51,000	20,400	39.9
Sub-Total ^a	4,292,139	1,727,043 ^b	40.2
Total ^a	7,710,436	2,740,282	35.5

Source: Association of Sugar Producers of Puerto Rico, from data of the Treasurer of Puerto Rico.

^a The sub-totals and totals in this table are complete figures and slightly exceed the sum of the columns, since in the latter the two final digits were dropped.

^b This total is somewhat too large, owing to inclusion of some cane grown by companies or persons allied with the mills. The most conspicuous example is El Ejemplo.

^c This percentage is incorrect for the reason stated in note b above.

VIII

PRODUCTION COSTS

THE cost of producing sugar in Puerto Rico comes up for public discussion in two important connections. First, Puerto Rican costs have been examined by the United States Tariff Commission, for purposes of proposed tariff changes. Second, discussion of the relative rewards of independent cane growers (*colonos*) and mill owners commonly centers on the idea of equitable distribution in relation to costs incurred. The circumstances of the present study did not permit much in the way of detailed cost studies, based on new information on the subject. However, such information as is available is here reviewed.

1. UNITED STATES TARIFF COMMISSION FIGURES ON COSTS

The United States Tariff Commission in recent years has made two reports on sugar costs, the first published in 1926, the second in 1934. The latter is the one mainly cited in the following pages.¹

The Cost of Sugar. The Commission calculates costs in a number of different ways which, if not carefully studied, are likely to prove confusing. Thus it reports them both excluding all interest and rent and including 6 percent interest on investment. It reports each of these, both f.o.b. mill and delivered in New York. Finally, it reports costs based on computed costs of *colono* cane and on actual prices paid by the mill.

To avoid confusion, it will be advisable to take as the base figure the f.o.b. mill cost excluding interest, and using the computed cost for both *colono* and "company," or "administration," cane. The cane costs are taken from the books of cane growers, both company and independent.² Other costs are from milling

¹ United States Tariff Commission, Report No. 73, Second Series, 1934. The citation for the earlier report is: *Sugar: Report of the United States Tariff Commission to the President of the United States*, Washington, D. C., 1926.

² Independent growers' costs were computed from a rather small sample, 125 farms in 1931, 127 in 1932.

company books. Actual interest and rent paid is excluded. On this basis, the total Puerto Rican cost of producing sugar was computed to average as follows:³

<i>Year</i>	<i>Cents per pound</i>
1929-30	2.54
1930-31	2.79
1931-32	2.29
3-year average	2.54

When imputed interest at 6 percent is added, the three-year average rises to 3 cents, and, when transportation costs to New York are also added, it rises further to 3.28 cents.

For purposes of comparison, the figures of the Commission on costs in other producing areas are of some interest. These are shown in the following tabulation of the three-year average, 1930-32, using f.o.b. mill costs without interest:⁴

<i>Producing area</i>	<i>Cents per Pound</i>
Cuba	1.33
Philippines	1.97
Puerto Rico	2.54
Hawaii	2.54
Louisiana	3.77

Puerto Rico, in this respect, is seen to be about midway between Cuba and Louisiana, well above the Philippines, and on a par with Hawaii. When interest and transportation to New York are added, the relative costs remain about the same.

With the aid of both the 1926 and 1934 reports, the Commission's estimates of Puerto Rican sugar costs have been summarized for a series of years (Table 34).

These figures show the remarkable saving which costs and prices have undergone. From 3.32 cents delivered cost per pound in 1914, the figure moves to a high of 9.08 cents in 1920, and down to a low of 2.98 cents in 1932. The average annual delivered price is also included in the table, to show the estimated average margin of profit (over and above the 6 percent interest which is included as a cost).

³ Report No. 73, 1934, p. 123.

⁴ Report No. 73, 1934, pp. 70, 130.

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Table 34

DELIVERED COST OF SUGAR AND RECEIPTS FROM SALE OF SUGAR
(Cents per Pound)

YEAR	DELIVERED COST OF SUGAR	RECEIPTS FROM SALE OF YEAR
1914	3.32	•
1917	•	5.55
1918	5.14	5.95
1919	6.24	7.03
1920	9.08	12.88
1921	5.74	4.62
1922	4.64	2.98
1923	6.07	6.78
1930	3.27	•
1931	3.60	•
1932	2.98	•

Source: United States Tariff Commission, *Sugar* (1926), pp. 16-17, and Report No. 73, Second Series, 1934, p. 130.

* No comparable data available. Average daily prices, duty paid, at New York were 3.39 cents in 1930, 3.33 in 1931, and 2.93 in 1932 (United States Tariff Commission, Report No. 73, p. 176).

The Cost of Sugar Cane. The cost of cane is a major fraction of the cost of sugar. The Commission's figures for the three-year average, 1930-32, make cane costs just over 70 percent of total f.o.b. mill costs, either including or excluding interest. Owing to methods of calculation, this percentage is greater than the actual mill outlay for cane, which is probably nearer 60 percent. One reason for this is that credits for the sale of molasses are deducted from milling costs before the latter are entered in the tables. The other reasons lie hidden in the Commission's particular methods of cost-finding. In any case, the fact should be emphasized that the Commission's figures do not express the actual ratio of cane cost to total cost incurred by the mills. On the latter point, the only evidence known to the writers is that which they collected, presented below in this Chapter.

Because of the importance of cane costs, the Tariff Commission was at some pains to ascertain "representative" figures on this point. A composite summary of its findings, based on data from company and independent farms, is presented in Table 35. From the table it will be seen that company costs are reported on a much more detailed schedule than *colono* costs.

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Table 35

UNITED STATES TARIFF COMMISSION FIGURES ON COSTS OF SUGAR IN PUERTO RICO

(In Dollars per Acre)

COST ITEMS	1929-30	1930-31		1931-32	
	COMPANY	COMPANY	COLONO	COMPANY	COLONO
Cultivating	\$ 61.90	\$ 51.48	\$ 23.45	\$ 43.11	\$ 23.24
Harvesting	25.43	21.23	27.95	22.13	30.57
Supervision	7.98	7.49	8.34	7.63	7.86
Development			15.75		15.65
Seed cane	7.71	6.16		4.95	
Fertilizer	22.37	19.98	16.81	18.70	15.14
Other supplies	1.83	2.68		3.58	
Repairs	4.21	3.83		5.37	
Drainage and irrigation	11.16	10.61	6.77	10.16	5.00
Insurance	.44	.50		.73	
Taxes	6.80	5.31	2.83	5.46	2.71
Depreciation	6.90	6.02		4.82	
Livestock	5.91	4.96		4.08	
Clerical	.50	.48		(4.49)*	
Other expense	3.42	2.94	5.73	3.74	5.13
General and administrative	9.61	8.38		7.81	
Sub-total	\$176.17	\$152.05	\$107.63	\$142.76	\$105.30
Less sundry income	6.97	5.42		4.96	
Net cost excluding interest	\$169.20	\$146.63	\$107.63	\$137.80	\$105.30
Imputed interest	37.86	36.58	11.24	33.90	10.69
Total cost	\$207.06	\$183.21	\$118.87	\$171.70	\$115.99
Yield per acre (tons)	36.7	32.7	24.83	37.4	27.96
Cost per ton excluding interest	\$4.610	\$4.485	\$4.334	\$3.685	\$3.765
Imputed interest	1.032	1.118	0.452	0.906	0.382
Total cost per ton	\$5.642	\$5.603	\$4.786	\$4.591	\$4.147
Average price paid <i>colono</i>			\$4.38		\$3.77

Source: United States Tariff Commission, Report No. 73, Second Series, 1934, pp. 118, 119, 121.

* This figure appears to represent a clerical or typographical error.

On this showing, costs per ton for 1930-31, excluding interest or land charges, were \$4.334 for *colono* cane and \$4.485 for "company" cane. In 1931-32 they were \$3.765 and \$3.685 respectively. By a heavier loading of interest charges (made

without explanation), company costs are made to appear decidedly higher than *colono* costs. Including interest, cost figures in 1930-31 were \$4.786 for *colonos* and \$5.603 for companies; in 1931-32, \$4.147 and \$4.591 respectively. The average price paid for *colono* cane in the two years was \$4.38 and \$3.77, or almost exactly the computed cost, excluding interest. The figures in Table 35 are those which were used in computing the cost of sugar shown in Table 34.

The figures show striking differences in detail between company and *colono* costs. For example, cultivation is a much larger percentage, and harvesting a much smaller percentage, of total costs of companies as compared with those of *colonos*. The large "development" item in *colono* costs presumably covers various items reported in detail for companies. Imputed interest per acre is twice as large a percentage for companies as for *colonos*. This no doubt reflects a higher average value of company land, but may also reflect differences in capital accounting.

When figures such as these of the United States Tariff Commission show *colono* costs per ton to be lower than those of companies, it is probably because the accounts are not comparable. The companies incur elements of overhead expense which can be ignored by *colonos*—paid managements, for example. Also, *colono* costs usually have to be computed from very inadequate sets of books. All the figures are therefore somewhat suspect. They undoubtedly show the general order of magnitude of costs in a way which is of use to the Commission in performing its function; but it is naïve to use them as a basis for precise cost comparisons between different classes of growers.

The Association of Sugar Producers of Puerto Rico has made some further comparisons between the computed cost of company cane and the actual price paid for *colono* cane. These comparisons, based on data supplied to the United States Tariff Commission, furnish the basis for Table 36.

As will be seen from the table, the actual price paid for *colono* cane is strikingly lower than the cost of company cane as computed by the Commission.

From the same data for the year 1931-32, the present writers have compiled a more detailed comparison by mill districts

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Table 36

COMPUTED COST OF COMPANY CANE, COMPARED WITH PRICE PAID FOR *COLONO* CANE

	1928-29	1929-30	1930-31	1931-32
Computed cost, company cane (Dollars per ton) ^a	7.64	5.5922	5.7153	4.5415
Cost to company, <i>colono</i> cane (Dollars per ton)	4.8799	4.851	4.2928	3.7231
Cost of sugar made from ad- ministration cane (Cents per pound)	5.1885	3.7398	4.131	3.2384
Cost of sugar made from <i>colono</i> cane (cents per pound)	3.9527	3.4204	3.4687	2.8808

Source: Data furnished by Association of Sugar Producers of Puerto Rico.

^a Including imputed interest of 6 percent on investment.

(Table 37). The difference between the price paid for *colono* cane and the computed cost of company cane varied widely, from 8 cents in one district to \$1.61 in another, with an average difference of 85 cents for the ten districts included in the comparison.

These data are presented in some detail, in view of the fact that such figures are commonly used in Puerto Rico as evidence

Table 37

COST OF CANE, TEN MILL DISTRICTS, 1931-32

(In Dollars per Ton)

MILL DISTRICT	COMPUTED COST COMPANY CANE ^a	COST TO COMPANY OF PURCHASED CANE	DIFFERENCE BETWEEN PRECEDING COLUMNS
1	4.95	3.78	1.17
2	4.24	3.41	.83
3	3.51	3.41	.10
4	4.06	3.32	.74
5	4.90	3.79	1.11
6	5.54	3.93	1.61
7	5.23	3.84	1.39
8	4.63	4.55	.08
9	4.20	3.66	.54
10	4.71	3.81	.90
Average	4.597 ^b	3.75 ^b	.847

Source: Data furnished by Association of Sugar Producers of Puerto Rico.

^a Including 6 percent interest on investment.

^b There is a slight discrepancy between these figures and those presented in the preceding table from the same data.

that the milling companies "exploit" growers by paying them "less than cost" for their cane. We do not wish at this point to express any opinion on the "rightness" of the price paid for cane.⁵ What should be noted, however, is that the data call for great care in their interpretation.

For example, to put the matter in one light, it is quite clear that if, year after year, mills incurred out-of-pocket costs much higher than the price at which they buy *colono* cane, they would be "exploiting" themselves by growing their own cane. Also, with respect to the United States Tariff Commission figures, it should be noted that they include one hurricane year and, further, relate to the period when sugar prices were collapsing. If, as is the case in the bookkeeping of at least some companies, company cane was charged to the mill at the rates paid for *colono* cane, the farming end of sugar production no doubt appeared highly unremunerative on the books of account during this period. Complete figures might be highly instructive as to the hazards of producing for a falling market; but those available have no bearing upon the alleged "exploitation" of cane growers.⁶

2. QUESTIONNAIRE RETURNS ON COSTS

In making the present study no cost figures were gathered on *colono* cane, and there is no evidence to present on that point. Questionnaires covering the cost of sugar and cost of company cane were filled out by fifteen sugar companies. Unfortunately, the writers are not sufficiently sure of the uniformity of the reporting to justify putting all the returns in tabular form. Moreover, the data are not in a form to be stated in costs per ton. In spite of these limitations, some account will be given of the data.

Two American-owned companies show the distribution of costs of sugar in percentages, for three years, as presented in Table 38.

In the case of other reporting companies, cane and cane

⁵ The discussion of economic relations between mills and *colonos* is to be found in Chapters X and XIX.

⁶ The matter of *colono* costs is discussed further in section 3 below.

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Table 38

PERCENTAGE DISTRIBUTION OF SUGAR PRODUCTION COSTS, TWO AMERICAN-OWNED COMPANIES

	1927-28	1932-33	1934-35
Cost of cane	62.4	63.4	60.3
Transportation of cane	7.0	9.0	8.1
Manufacturing and shipping	12.9	10.9	13.0
General administration	8.9	6.5	7.3
Taxes	4.5	6.8	7.7
Interest and depreciation	4.3	3.4	3.6
	100.0	100.0	100.0

Source: Privately circulated questionnaire.

transportation costs average somewhat lower, and manufacturing and shipping costs somewhat higher; but the sum of these costs is, as in the case of the American-owned companies, slightly over 80 percent of all costs incurred.

Among the fifteen companies reporting for 1927-28, the percentage of cane costs to total costs for individual companies ranged between 49 and 67. For 1932-33 the range was from 47.4 to 72; and for 1934-35 from 47.8 to 67.5. The average of all reporting companies for 1927-28 was 61.5 percent; for 1932-33, 60.5 percent; and for 1934-35, 59.4 percent.⁷ Though not strictly accurate, owing to some lack of uniformity in the reports, these figures probably express the general order of magnitude in the relation of cane costs to total costs of producing sugar. So far as the writers could judge from a study of the returns, these probably err somewhat on the side of being too small. From 60 to 65 percent is no doubt the correct range.

An interesting aspect of mill operations is the very low percentage of labor costs. Mill wages and salaries run almost uniformly below 10 percent of the total cost of sugar, and as low as 5.5 percent in one instance, though in another instance they run as high as 17.1 percent. This is in marked contrast to the place of labor costs in cane growing.

⁷ The figures cited are taken directly from questionnaire returns. Two sets of company books, which were checked, agreed closely with the full tabulation. The cane-cost figures used for the preceding calculations make no distinction between company and *colono* cane. They include the actual prices paid to *colonos* and the cost of company cane as carried on the milling company books. On the latter point, accounting practices vary. Some companies charge their own cane to the mill at actual cost, some charge it at the price paid to *colonos*, and some handle the accounting otherwise.

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Figures relating to the costs of growing cane were collected from a number of companies, and these are summarized in Table 39.

Table 39
COST OF GROWING CANE*
(In Dollars, 000 Omitted)

TYPE OF COSTS	1927-28	1932-33	1934-36
Field costs	\$4,694 (71 percent)	\$5,365 (69 percent)	\$5,071 (67 percent)
General administration	324	432	594
Taxes	416	408	483
Rents	551	775	774
Depreciation	208	337	256
Interest	161	314	323
Other costs	181	108	103
Total	\$6,535	\$7,739	\$7,604
Total labor cost	\$3,184 (49 percent)	\$3,835 (50 percent)	\$3,888 (51 percent)

Source: Privately circulated questionnaire.

* Six companies reporting for 1927-28, 12 companies for the other years. Figures for 1934-35 and 1935-36 are reported in a single column, which is thus given the same coverage as the 1932-33 column.

These figures throw no light upon costs per ton, but have some interest in showing the distribution of costs. Labor costs show a marked stability around 50 percent of total cane costs. Field costs (which are largely made up of the labor costs) are near 70 percent and have tended to decline somewhat. The detailed underlying figures vary greatly from the averages, owing mainly to different situations or different accounting practices.

From very restricted sources, it was possible to compile the accompanying figures concerning costs per ton (Table 40). We

Table 40
COST OF CANE PER TON

	1917	1920	1925	1929	1931	1933	1935
Total cost*	\$4.49	\$11.11	\$5.70	\$6.70	\$5.17	\$3.98	\$4.15
Direct labor cost			\$2.40	\$2.58	\$2.01	\$1.47	\$1.56
Total labor cost			3.09	3.38	2.56	1.90	2.09

Source: Company books.

* The figures include rent and interest paid. Omitting interest would reduce the figures by from 8 to 10 percent.

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wish to emphasize the fact that these figures are not to be regarded as "representative," since they derive solely from a narrow coverage in one section of the Island.

From the same data, detailed figures were compiled for two years, and are presented in Table 41. These figures show a decline in field costs from 1929 to 1935, from \$4.57 to \$2.53 per ton. Total costs, except capital charges, declined from \$5.47 to \$3.26, or 40 percent. Direct labor costs declined from \$2.58 to \$1.56, or 40 percent. These figures indicate the drastic readjustments which took place during the depression.

Table 41
DETAILED COST OF CANE PER TON

TYPE OF COSTS	1929	1935
Cultivation	\$1.337	\$0.579
Irrigation	.648	.367
Fertilizing	.836	.323
Field overhead	.707	.444
Cutting and hauling	.934	.796
Other field cost	.099	.024
Total field cost	\$4.570	\$2.533
Taxes, real property	.325	.222
Other taxes	.118	.027
General administration	.234	.300
Depreciation	.185	.215
Special income (deduct)		.031
Total without rent and interest	\$5.472 ^a	\$3.268
Rents	.780	.487
Interest	.452	.397
Total	\$6.704	\$4.152
Direct labor cost	\$2.585	\$1.564
Total labor cost	\$3.387	\$2.094

Source: Company books.

^a This total is slightly out of check with the figures in the column, owing to some undiscovered error in the data. The discrepancy is so small, however, that it may be ignored.

The principal interest which these figures have is that they are the only completely dependable figures in our possession, taken directly from company books. No doubt figures for other growers and for other parts of the Island, if they were available, would show marked deviation from those given.

3. COSTS OF COLONO CANE BY SIZE OF FARM

Nothing except a series of carefully conducted farm-management studies could throw real light on the cost of cane or its relation to the net returns of growers at current prices. Mr. J. A. Dickey made a few studies for the Brookings report,⁸ which show revenues and expenses for thirty-one independent cane growers, classified by size of farm. His figures throw no light on the cost of cane per ton, or per ton of sugar; but they are of interest in connection with the possibility of *colono* survival with cane prices at "less than cost." His basic table is therefore reproduced as Table 42.

It will be seen that on farms of twenty-five acres and less, "receipts" are lower than "expenses." Nevertheless, under the two headings of "unpaid labor" and "interest on investment" there is left some margin for actual cash family income, impaired, of course, by whatever actual interest was paid. It must be understood that *colono* production can proceed perennially at "less than cost," if costs are defined to include imputed wages and interest. The same is partially true of any enterprise; but, where family labor is involved, it can be ignored as a cost in a way not possible where all labor costs must be compensated in cash. The point may be stated more precisely by saying that, given exactly comparable accounting methods, *colonos* can continue to produce under cost conditions which would bankrupt corporate producers, because of the latter's larger necessary cash outlays.

There is no way of knowing to what extent it is true that *colonos* sell cane at less than its complete accounting cost. Presumably such a situation was common during the depression, and probably more so in the case of smaller farmers than of large. Farm-management studies in the United States characteristically show no profit on small farms over and above wages and imputed interest. It must be regarded as typical of small-scale farming that it is conducted without "profit," technically defined.

⁸ *Porto Rico and Its Problems*, pp. 622-26.

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Table 42

AVERAGE RECEIPTS AND EXPENSES OF NORTH COAST FARMS WITH SPECIFIED CANE ACREAGE

CROP	10 ACRES OR LESS	11-25 ACRES	26-50 ACRES	51-200 ACRES	OVER 200 ACRES
1. Receipts from the Several Crops Grown					
Principal Cash Crops	\$ 725	\$2,150	\$5,196	\$17,179	\$54,774
Cane	725	2,050	4,145	17,006	54,474
Tobacco		100	1,051	173	300
Food Crops Sold		36	328		
Bananas			5		
Sweet potatoes		36	80		
Others			243		
Livestock and Livestock Products		100	245		
Livestock		60	100		
Livestock products ^a		40	145		
Miscellaneous ^b	173	127	437	15	15
Total receipts	\$ 898	\$2,413	\$6,206	\$17,194	\$54,789
2. Classified Expenses					
Material Purchased	\$ 100	\$ 160	\$ 499	\$ 1,393	\$ 5,533
Seed				8	38
Fertilizer	100	160	374	1,352	5,461
Insecticides			35		1
Miscellaneous			90	33	33
Labor	630	1,199	3,411	10,027	38,104
Labor	200	723	3,262	9,055	36,115
Supervision		38	114	773	1,820
Unpaid labor	418	428		128	
Compensation insurance	12	10	35	71	169
Real Estate Costs	392	1,323	2,500	4,598	7,439
Taxes	88	212	304	1,065	716
Rent		9	165		365
Repair on buildings	101	321	487	341	1,333
Repair on machinery		9	44	219	330
Interest on investment	203	772	1,500	2,973	4,695
Total expenses	\$1,122	\$2,682	\$6,410	\$16,018	\$51,076

Source: *Porto Rico and Its Problems*, p. 623.

^a Largely dairy products.

^b Work off farm.

4. CONCLUSION

The fragmentary evidence on the cost of sugar and the cost of sugar cane which has been presented in this chapter is too inconclusive to serve as a firm basis in considering any of the

public problems of Puerto Rico commonly associated with the sugar industry. It shows certain facts about the structure of costs, and cost adjustments which have been made in response to lower sugar prices during the depression. There are, however, no "lessons" in it. In particular, it points no moral with respect to the "fairness" of the distribution of the proceeds of the sugar industry. This problem is taken up for discussion in later chapters.

It will be understood that if the open-market denominator of fairness were to be abandoned in favor of extensive public intervention, extensive cost and earnings figures would be prerequisite to intelligent public action. What would be required would be "bulk-line" studies of the sort that were widely made in the United States during the World War. This would not be very difficult so far as company operations are concerned, both for sugar and sugar cane; but doubtless the incomplete books of independent cane growers would present serious barriers to cost-finding. Yet, until such studies have been made, there is very little one can say with confidence about the distribution of costs among mills and independent cane growers. Certainly there is no existing foundation for putting into effect the widely proposed principle of compensating sugar companies and independent growers in relation to their respective cost outlays.⁹

⁹ See Chapter XIX (The Distribution of Income from Sugar).

IX

LAND TENURE

THE public discussion of the land question in Puerto Rico centers on the large holdings of the sugar companies, and for that reason the present chapter is devoted mainly to reducing the picture of concentration to relatively accurate perspective.¹

1. THE 500-ACRE LAW

In the law passed by Congress for the government of Puerto Rico,² limitations upon corporate land holding were stated in the following words:

. . . every corporation hereafter authorized to engage in agriculture shall by its charter be restricted to the ownership and control of not to exceed 500 acres of land. This provision shall be held to prevent any member of a corporation engaged in agriculture from being in any wise interested in any other corporation engaged in agriculture.

This provision was repeated in the Organic Act of 1917.

While there was thus established a nominal policy opposed to large-scale corporate agriculture, no enforcing legislation was passed by the Insular legislature, nor does it appear that—until very recently—any serious effort was made by any Insular political party to make this provision effective. Doubts have all along been entertained as to the constitutionality of the Federal law, the possibility of enforcing it in the courts, and its economic wisdom.

Consequently, until 1935, when the Insular Government took steps to test the enforceability of this provision, the law has been a dead letter, and no effective barriers have existed to the process

¹ The facts upon land tenure are here presented solely as facts. They are used to point no moral. They simply state in relatively accurate dimensions some things which have importance in connection with the discussion of Puerto Rico's future land policy. The problems and controversies related to the land-tenure situation are discussed elsewhere in this volume (Chapter XX) and need not be reviewed here.

² Joint Resolution of May 1, 1900.

of land concentration. A number of Puerto Rican sugar companies have openly ignored the law and acquired lands in their corporate names. Other companies, both Puerto Rican and American-owned, have resorted to non-corporate agencies of tenure, usually in the form of limited partnerships not nominally related to the mill corporations. No law relating specifically to these forms of organization has been passed either by Congress or the Puerto Rican legislature. Neither is there any statutory limitation upon the size of landholdings of individuals.

On July 22, 1935, the Legislature enacted a law (Act No. 33) conferring upon the Supreme Court exclusive original jurisdiction in *quo warranto* proceedings instituted by the Insular Government for violations of the "500-acre law" provisions of the Organic Act; and on August 7 of the same year, through Act No. 47, it amended sections of the local *quo warranto* proceedings law, mainly for the purpose of providing for actions against foreign and domestic corporations "unlawfully holding lands in Puerto Rico." Act No. 48, finally, imposed penal sanctions for violations of the "500-acre" provision.³

Following the enactment of this enabling legislation, *quo warranto* proceedings were instituted on behalf of the People of Puerto Rico against two domestic corporations and a joint-stock association organized under the laws of New York State. These suits at the time of writing are being argued before the Supreme Court of Puerto Rico.⁴

2. CENSUS FIGURES ON CONCENTRATION

The sources on land concentration most frequently quoted are the United States census monographs.⁵ The 1930 census shows a total of 52,965 farms in Puerto Rico. Of these, 37,587 were under 20 acres; 12,186 were from 20 to 100 acres; 2,825 were from 100 to 500 acres; 258 were from 500 to 1,000 acres; and 109 were above 1,000 acres. The 367 farms over 500 acres contained a little over one-third of the land, and the 109 over

³ *Thirty-fifth Annual Report of the Governor of Puerto Rico*, 1935, pp. 13-14.

⁴ *Thirty-sixth Annual Report of the Governor of Puerto Rico*, 1936, p. 28.

⁵ Fifteenth Census of the United States: 1930. *Agriculture—Porto Rico* (U. S. Department of Commerce, Bureau of the Census) and analogous monographs for the two preceding censuses.

1,000 acres contained about one-fourth of the land in farms. This is the general picture of the degree of concentration throughout the Island. Under the heading of "improved land" the census shows the larger farms to contain a slightly larger percentage of the total. The data can be summarized in the following form:

	<i>Number</i>	<i>Acres</i>
All farms	52,965	1,979,474
Farms under 500 acres	52,598	1,311,984
Farms 500 to 1,000 acres	258	168,050
Farms over 1,000 acres	109	499,440

Full figures on changes in number and acreage of farms from 1910 to 1930 are presented in Table 45. The figures, if correct, present some striking aspects. The total number of farms is reported to have declined by 17,000 from 1910 to 1920 and then to have increased by 12,000 in the following decade.⁶

The number of farms over 1,000 acres⁷ has progressively declined from 207 to 109 in the twenty-year period. This acreage increased 55,000 acres in the same period, but declined slightly in the latter half of it from 1920 to 1930. The amount of improved land in these large holdings changed but little. The fact that from 1920 to 1930 the total acreage of farms over 1,000 acres remained practically constant while the number of them was declining 35 percent suggests that in that period there was a "merger movement" among large farms, rather than an adsorption of small ones.

Land Tenure by Municipalities

The trend toward concentrated land proprietorship shown in the census figures need not be brought into question. It should be pointed out, however, that the details of the census enumerations are misleading, and have served to propagate errors as to the geography of concentration. The census enumerators appear

⁶ Several remarkable fluctuations in the census figures from decade to decade suggest the idea that the changes are not entirely in the facts, but somewhat in the method of census enumeration.

⁷ In Puerto Rico, land concentration is usually discussed in terms of farms over 500 acres, presumably because of the "500 acre law." In the present discussion, 1,000 acres is made the dividing line, since this figure includes almost all company land and excludes all but a few individual proprietors.

to class together all land, owned or leased, which can be attributed to a particular landholder, and to assign it to the home or office municipality. As a result, a municipality may have attributed to it farm acreage far above or below the actual area.

The results of the system used by census enumerators, assigning all land held by the particular landholder to the home office or municipality, leads to rather absurd results. Thus, in the 1930 census the municipality of Arroyo, with an actual area of about 10,000 acres, is credited with a single farm of 16,000 acres; and Guánica with an area of 22,000 acres, is credited with 40,000 acres in farms over 1,000 acres. Conversely, other municipalities show far less farm land than they actually contain. A sample run was made of fifteen municipalities, comparing census and official Puerto Rican figures of farm acreage. The aggregate census figures for 12 of them gave 116,000 acres more than they actually contained, and for the other 3 gave 36,000 acres less than their actual area. The same type of error occurs in the census figures of cane acreage.

This error in the figures can be much diminished by adding up the acreage of smaller farms in each municipality as reported by the census and subtracting this figure from the area of the municipality as reported by the Treasurer of Puerto Rico.⁸ The remainder, though inaccurate, serves at least as a first approximation of the land in large estates. This method of subtracting the acreage of small farms is less inaccurate, as the small farms are more likely to lie within a single municipality, and to be owned by a person living in the same municipality. The figures grow increasingly inaccurate the larger the farms which are included. This method has been used in Table 46, where acreage of farms *under* 500 acres is shown for each municipality. There are 21 municipalities in which 50 percent or more of farm land is in farms *over* 500 acres.

Land Tenure by Status of Management

The census also distributes the number and acreage of farms by the form of tenure among "owners," "managers," and

⁸ This method of computation was devised by Professor Rafael Picó of the University of Puerto Rico, and the compilation in Table 46 was kindly made available by him.

"tenants." In 1930, the 52,965 farms enumerated by the census were classified as follows: 43,101 operated by owners; 3,374 operated by managers; and 6,490 operated by tenants. The acreages covered by these classifications were, respectively, 1,166,976; 676,760; and 135,738 acres (Table 47).

The figures which are commonly quoted in connection with the problem of land concentration are those showing "farms operated by managers." The census figures show an increase in the number of such farms from 1,170 in 1910 to 1,213 in 1920 to 3,374 in 1930. It is difficult, however, to give these figures any significance in the matter of concentration of control. The number of farms stated to be in this class in 1930 is a larger number than all farms in Puerto Rico over 100 acres. Only 367 farms over 500 acres and 109 farms over 1,000 acres are listed, and these are the ones of principal significance to the concentration question.

The acreage report for "farms operated by managers" moved from 401,000 acres in 1910 to 351,000 in 1920 and to 676,000 in 1930. Since from 1920 to 1930 the acreage in farms over 500 acres decreased as well as the number of such farms, whatever meaning the large figure of 3,374 "managed" farms has must relate to local, small-scale "absenteeism"; that is, the ownership of farms by persons living in the towns.

3. SOURCES OF NEW DATA ON LANDHOLDINGS

The census figures quoted above refer to the Island's farming as a whole, and say nothing specifically about sugar cane farming. The lack of any careful earlier study of land tenure in the sugar industry made it necessary for the present writers to build from the ground up.

Three principal sources of information were utilized: first, the statistical materials of the Agricultural Adjustment Administration (hereafter referred to as A.A.A.); second, the property tax records of the Puerto Rican Department of Finance; and third, returns from questionnaires sent to sugar companies.

Two A.A.A. documents were especially useful. The first was Senate Document No. 274, 74th Congress, 2d Session, *Payments Made under the Agricultural Adjustment Program* (1936). In this doc-

ument are listed all sugar-cane growers receiving over \$10,000 in benefit payments, the amount of the payment, the land in each farm, and the cane acreage in each farm. Since all large growers except two are included, a very accurate picture of large holdings is made possible. Data from this report are summarized in Table 48. The second document is a photostat release of August 24, 1936, which shows all the farms in each district, classified by size, with the total acreage and cane acreage in each size group. This is a complete picture of the state of land concentration in the sugar industry. The release is reproduced in two parts as Tables 49 and 50.

The property tax records were used to find the land *owned* by sugar companies. They permitted total owned lands and the lands of each company to be distributed by municipalities. These data are given in Tables 51 and 52. Two companies are missing from the data supplied by the Treasurer's office, but the showing is relatively complete.

The private questionnaire, designed to show the history of company land holdings, yielded very meager results. Rather complete data were, however, secured for three of the American-owned companies. These are given in Table 53. Less complete data for 11 Puerto Rican companies are summarized in Table 54.

4. TOTAL LAND IN SUGAR-CANE FARMS

The total amount of land, both arable and non-arable, in sugar-cane farms is reported by the A.A.A. as 765,375 acres (Table 49). Since these figures underestimate the holdings of Luce and Co., which did not sign an A.A.A. contract, by at least 6,000 acres (Table 53), 771,000 acres may be regarded as a very close estimate of the total. This is just under 40 percent of all farm lands as reported by the census of 1930.

The total number of cane farms is reported by the A.A.A. as 7,693.⁹ In Table 43, these have been divided into size groups, to show distribution of acreage by size of farms. There are shown

⁹ A release of the Puerto Rico Reconstruction Administration, dated May 10, 1937, places the total number of cane farms in 1935 at 6,620 (*The New York Times*, May 11, 1937). The larger A.A.A. figure, based on actual growers' contracts, is presumably more nearly accurate than the PRRA census figures.

to be 5,306 farms of 25 acres or less totaling 42,000 acres; 2,231 farms over 25 and under 500 acres totaling 224,000 acres; 90 farms from 500 to 1,000 acres totaling 62,000 acres; and 66 farms above 1,000 acres totaling 437,000 acres.¹⁰

Table 43

DISTRIBUTION OF FARMS OF SUGAR-CANE GROWERS BY SIZE OF FARMS, 1934-35^a

SIZE OF FARM, IN ACRES	NUMBER OF FARMS	FARM AREA IN ACRES
Up to 5	2,558	7,093
6 to 10	1,222	9,618
11 to 25	1,526	25,704
26 to 50	897	31,998
51 to 200	1,058	104,641
201 to 500	276	87,729
501 to 1,000	90	61,647
More than 1,000	66	436,945
Grand total		7,693,765,375

Source: Sugar Section, Agricultural Adjustment Administration, Release of August 24, 1936.

^a The distribution for each mill district is given in Table 48.

After checking all available data, the present writers have arrived at an estimate of 396,000 acres as the amount of farm land, owned and leased, held by sugar companies and allied interests. This is 51.4 percent of all land, both arable and non-arable, in cane farms. Independent growers thus hold about 375,000 acres, or 48.6 percent.¹¹

The evidence on which the estimated acreage of company-held lands is based is as follows: In an A.A.A. report listing all persons receiving \$10,000 or more under the crop restriction program,¹² 125 Puerto Rican sugar growers are listed. These payments were carefully analyzed and checked against a list of sugar companies and their principal owners. On this basis 337,900 acres were isolated as the amount of "administration" lands (Table 48). Two companies were missing. Playa Grande was

¹⁰ A farm, as defined, includes both owned and rented lands. Many of the large farms consist partly of numerous smaller leased properties.

¹¹ The percentage stated is based on a total cane farm area of 771,000 acres.

¹² Senate Document No. 274, 74th Congress, 2d Session, *Payments Made under the Agricultural Adjustment Program* (1936).

later shown to hold 11,100 acres (Table 49) and Luce and Co. has reported holdings of 47,400 acres (Table 53); the sum of these figures is 396,400 acres.

Large independent holdings of over 1,000 acres are estimated to be held by 37 owners in the amount of about 49,000 acres. Independent holdings of from 500 to 1,000 acres are estimated at 85, totaling 58,000 acres.

These estimates are based on cross-checking Senate Document 274 and the A.A.A. release cited above. The number of company holdings above 1,000 acres and from 500 to 1,000 acres were found in the former. These were then deducted from the total number as reported in the latter, which is summarized in Table 49. Similarly, from the total amount of land in each group was deducted the amount identified as being under company control.

Of the total amount of farm land held by sugar companies and allied enterprises (396,000 acres), approximately 183,000 acres are held by interests allied with the four American-owned companies. This is 23.7 of all land in cane farms and 46.3 of company-held land. The other companies, Puerto Rican owned, thus hold 213,000 acres, or 28 percent of all land in cane farms.

These figures are based partly on a private questionnaire, partly on A.A.A. sources. Three American-owned companies privately reported their acreage in 1935 as follows (Table 53):

	<i>Acre</i>
Fajardo Sugar-Growers' Assn.	48,361
Luce and Co.	47,436
Russell and Co.	32,793
Total	<u>128,590</u>

The A.A.A. reports landholdings of Eastern Sugar Associates as 54,691 acres (Table 48). The sum of these figures is 179,596 acres. An almost exactly similar result is secured by taking A.A.A. figures for Eastern, Fajardo, and Russell (Table 48) and adding private figures for Luce (Table 53).¹³ This gives the following sum:

¹³ Since Luce and Co. did not sign an A.A.A. contract, no official figures for it are given in the sources cited. There is a slight deficiency in each calculation which, when corrected, raises the totals to about 183,000, acres.

	<i>Acres</i>
Eastern Sugar Associates	54,691
Fajardo Sugar-Growers' Assn.	48,170
Russell and Co.	29,317
Luce and Co.	47,436
Total	179,615

5. LAND PLANTED TO SUGAR CANE

The A.A.A. figures on land planted to sugar cane in 1934-35 total 317,992 acres.¹⁴ In Table 44, the figures are distributed

*Table 44*DISTRIBUTION OF FARMS OF SUGAR-CANE GROWERS BY ACREAGE
IN SUGAR CANE, 1934-35^a

CANE ACREAGE	NUMBER OF FARMS	AREA IN CANE, ACRES
Up to 2	2,736	3,954
3 to 10	2,905	15,285
11 to 25	986	16,079
26 to 100	752	37,086
101 to 200	141	20,098
201 to 500	114	35,259
More than 500	59	190,231
Grand total	7,693	317,992

Source: Sugar Section, Agricultural Adjustment Administration, August 24, 1936.

^a The distribution for each mill district is given in Table 49.

among the 7,693 farms by size of farm. There are 5,641 farms with ten acres or less in cane having a total of 19,239 acres; 1,879 farms with 11 to 200 acres totaling 73,263 acres; 114 farms with 200 to 500 acres totaling 35,259 acres; and 59 farms with over 500 acres in cane totaling 190,231 acres.¹⁵

¹⁴ For the same year, the Annual Report of the Treasurer of Puerto Rico gives a figure of 299,000 acres, based on assessment rolls. The A.A.A. figures, based on separate contracts for each farm, are undoubtedly the more accurate. The PRRA release of May 10, 1937, cited above, records 346,154 acres of cultivated land on 6,620 farms. The larger cultivated area presumably covers some land in crops other than sugar cane.

¹⁵ A somewhat similar, but less complete, table is to be found in U. S. Tariff Commission Report No. 73 (1934), p. 192. The report states a total of 6,502 cane farms. The picture of distribution by size groups is substantially similar to that in the more complete A.A.A. figures.

Of the total of about 318,000 acres, it is estimated that approximately 164,000 acres, or 51.5 percent, are planted by sugar companies and allied enterprises.

This estimate was arrived at in exactly the same manner as that for total landholdings in the preceding section. The A.A.A. report on payments to cane growers was analyzed (Table 48) and 142,730 acres were isolated as company lands planted to cane. To this was added privately furnished information from Luce and Co., showing cane land of 20,947 acres. These two total 163,647 acres.

It is estimated that there are 27 large independent growers with cane plantings of over 500 acres, totaling about 28,000 acres. The method used in arriving at these figures was the same as that for total acreage of large independent growers in the preceding section.

The four American-owned companies and their associated enterprises are found to have about 72,000 acres of cane land, owned and leased. This is 22.6 percent of the total cane acreage and 43.9 percent of that planted by sugar companies and allied enterprises.

This finding is arrived at by two calculations based on private questionnaire and A.A.A. sources. The private figures supplied on cane acreage for 1935 are as follows (Table 53):

	<i>Acres</i>
Fajardo Sugar Growers' Assn.	18,978
Luce and Co.	20,947
Russell and Co.	9,493
Total	49,418

To these figures may be added the A.A.A. figure of 20,287 acres for Eastern Sugar Associates (Table 48), giving a total of 69,705 acres. In the other calculations, the A.A.A. figures for three companies (excluding Luce and Co.) is 51,997 acres (Table 48). Adding Luce and Co. figures of 20,974 gives a total of 72,971. On the basis of these two estimates, the figure of 72,000 acres is accepted as approximately correct.

The figures presented in this section are for the year 1934-35 in which some acreage reduction in planting was effected under

the A.A.A. program. The only direct evidence on the amount of the reduction is that the three companies furnishing private information had cane acreage in 1933-34 larger by 13 percent than in 1934-35 (Table 53). If this ratio obtained throughout, it would mean that nearly 360,000 acres were planted to cane in the peak year of 1933-34. This no doubt exaggerates the facts. In any case that year was a very high peak, and the figures given for 1934-35 are probably rather representative of the facts for a number of preceding years.

6. OWNED AND LEASED COMPANY LANDS

At an earlier point, 396,000 acres was given as the approximate farm landholdings of sugar companies and allied interests. Most of the mills have parcels of land for mill site and mill village not included in a statement of farm lands. Only scattering evidence from private sources was available as to the extent of such holdings, but it permits raising the general estimate of all company lands to around 400,000 acres. That figure includes all lands under the discretionary control of milling or allied interests, both owned and leased.

The next analytical task is to separate owned lands from leased lands. The source for this purpose was the property tax records of the Department of Finance of Puerto Rico.¹⁶

Owned "Administration" Lands

From these records it is estimated that sugar companies and allied interests *own* approximately 280,000 acres of land.¹⁷ From the total of 400,000 acres, this would leave 120,000 acres of *leased* lands. The total is thus distributed 70 percent owned and 30 percent leased.

The evidence on the above points is as follows: From the tax records 264,132 acres were identified as owned by sugar companies and allied interests (Table 52). The records secured do not include Central Carmen Inc. and the Mayaguez Sugar Co. From A.A.A. sources it is learned that their farm holdings,

¹⁶ Except in two instances, the records for 1934-35 were consulted. In these cases the records for the following year were used.

¹⁷ If the adjustment noted below is made, this is reduced to 272,000 acres.

owned and leased, come to 18,002 acres (Table 48). On the assumption that two-thirds of these lands are owned,¹⁸ the total amount of owned lands would be increased to 276,000 acres. The tax records available to the writers were also incomplete in the case of Central Playa Grande and on this account it appears reasonable to raise the general estimate of owned "administration" lands to about 280,000 acres. Because of the hypothetical elements, this may be in error by perhaps 5,000 acres one way or the other.

One point of possible difference of opinion arises over an item of approximately 8,000 acres, representing lands owned by one man who as a cane grower is technically a *colono* of one mill at the same time that he is a principal owner of other mills. If it be thought that this tract should not be classified as belonging to "sugar companies and allied interests" the total would fall to 272,000 acres.

The amount of land owned by the four American-owned companies and allied interests is placed at about 107,000 acres, or 38 percent of all land owned by milling or allied interests (Table 52). This leaves an estimated 173,000 owned by Puerto Rican companies and allied interests.

This estimate is based on two sources which check closely. According to the tax records, the four American-owned companies and allied enterprises owned about 107,000 acres (Table 52, text and footnote^b). The detail is as follows:

	<i>Acres</i>
Eastern Sugar Associates	30,967
Fajardo Sugar Growers' Assn.	29,290
Luce and Co.	24,134
Russell & Co.	21,275
Undistributed items, ¹⁹ about	1,500
Total	107,166

Another calculation was made from privately furnished data. In Table 53 the owned farm lands of three of the above companies in 1935 is given as 73,253 acres. Adding the tax figure

¹⁸ The average of owned lands is somewhat over two-thirds of the total.

¹⁹ Small plots owned by mill companies, as distinguished from allied farming enterprises.

for Eastern Sugar Associates, 30,967, and 1,500 for undistributed items gives 105,720 acres. With such close correspondence, the official figures are accepted.

Leased "Administration" Lands

It is now possible to make an estimate of leased lands, distributed among American and Puerto Rican companies. Total company lands (400,000 acres) minus total owned lands (280,000 acres) leaves leased lands of 120,000 acres. Of this amount it appears that the American-owned companies lease approximately 78,000 acres and the Puerto Rican companies 42,000 acres.

The American-owned company calculation may be made first. Their farm lands (183,000) and mill lands (1,500) come to about 184,500. Subtracting owned lands (107,000) gives leased lands of 77,500 acres. This calculation may be checked against other data. In Table 53 three American-owned companies report 55,337 acres of leased land in 1935. The leased land of Eastern Sugar Associates may be calculated by subtracting owned lands in the tax record from total lands in the A.A.A. record. This leaves 23,654 acres, which, added to reported holdings of the other companies, gives a total of 78,991. With two estimates agreeing so closely, 78,000 acres may be accepted as approximately accurate.

When the preceding type of calculation is applied to the lands of Puerto Rican companies, they lead to a figure of roughly 42,000 acres of leased lands.

On the showing of the estimates made, the lands of the American-owned companies are 58 percent owned and 42 percent leased, while those of Puerto Rican companies are 80 percent owned and 20 percent leased. For the two groups combined, the percentages are 70 and 30, respectively.

The percentages on Puerto Rican companies are strictly calculated derivatives, but are somewhat supported by external evidence. Eleven Puerto Rican companies furnished the present writers with data covering 94,000 acres of which 74.7 percent was owned (Table 54). These companies did not include several

of the largest locally-owned companies which are among the most concentrated landowners.

Private inquiries by the present writers covering the length of leases brought information from 12 companies reporting 65,162 acres of leased lands. Of this amount, 70 percent was covered by leases originally drawn to run for more than seven years.²⁰ No information was secured concerning the actual average length of existing leases nor concerning their actual average unexpired term. It is therefore impossible to say whether the semi-permanent type of lease is much in use or not. Presumably there is no reason for the use of the latter type, as is reputed to be the case in the Philippines, for the purpose of evasion of land laws.

7. GEOGRAPHICAL DISTRIBUTION OF OWNED "ADMINISTRATION" LANDS

The data from the tax records permitted the total lands owned by companies and allied interests to be distributed geographically. In Table 51, the amount of such land is distributed by municipalities.²¹

Of the 77 municipalities there are 21 in which 20 percent or more of the total area is owned "administration" land. Of these, the amount is more than one-third in 8 municipalities. In one the amount is as much as 50 percent.

No similar record exists for the geographical distribution of leased lands. It would not be safe to assume that it is distributed in the same way, since the proportion of leased land varies greatly from mill to mill.

From the same data, Table 52 was drawn to show the geographical distribution, by municipalities, of owned lands of each company.

8. CHANGES IN LANDHOLDINGS OF AMERICAN- OWNED COMPANIES

Only two companies²² supplied information concerning the

²⁰ Seven years was made the rough dividing line between "short" and "long" leases.

²¹ The record is incomplete to the extent probably of some 15,000 acres.

²² Fajardo Sugar-Growers' Association and Russell and Co.

history of their landholdings as far back as 1914. In the period from 1914 to 1936, the owned lands of these companies increased by 19,500 acres and the leased lands decreased by 13,000 acres. The summary figures are as follows:

	1914	1920	1928	1936
Owned land	28,663	34,041	46,346 ²³	48,104
Leased land	42,388	39,857	39,181	29,365
Total	71,051	73,898	85,527	77,469

From 1928 to 1936 the facts are available for Luce and Company also, and the trend of landholdings for all three companies since that date is shown in the following tabulation. This shows that leased lands declined by 10,000 acres, while owned lands increased by 3,500 acres.

	1928	1936
Owned land	69,791	73,256
Leased land	61,646	51,649
Total	131,437	124,905

When the same figures are broken down to show types of land, cane land shows little change, while pasture shows a marked decline. In 1934, however, cane land reached a peak of nearly 56,000 acres, and the decline thereafter is doubtless the result of the A.A.A. restriction program. The summary figures follow:

	1928	1936
Cane land	50,709	50,068
Other cultivated	5,331	5,587
Pasture	55,937	47,933
Other (mainly waste)	19,460	21,317
Total	131,437	124,905

The detailed figures for each company are shown in Table 53.

With respect to the agricultural enterprises allied with the three older American-owned companies, it can be stated with certainty that their landholdings are not now greatly larger than in 1920.²⁴ The fourth company, which is the largest single landholder in the Island, has, however, been organized since that

²³ The increase over 1920 is mainly a reflection of the acquisition of the Loiza Sugar Co. by the Fajardo Sugar Co.

²⁴ The principal increases have come through the acquisition of the land connected with two additional mills purchased by two companies.

date. The amount of holdings by all American-owned companies in the aggregate is therefore considerably larger than in 1920.

SUMMARY

The somewhat complicated data in the preceding pages may be summarized as follows:

General Farm Acreage in Puerto Rico

For the whole of Puerto Rico, the 1930 census showed 52,965 farms with a total acreage of 1,979,474 acres.

Size of Sugar-Cane Farms

Of the 7,693 cane farms reported by A.A.A., 5,306, or 70 percent, are of 25 acres or less. At the other extreme, 66 farms over 1,000 acres have a total acreage of 437,000 acres. Of these farms, 37 are in the hands of proprietors not connected with mills.

Size of Cane Plantings

Cane acreage of 10 acres or less is reported for 5,641 farms, or 72 percent of the total. Farms with acreage in cane of over 500 acres number 59, and have a total cane planting of 190,000 acres. Of these farms, 27 are in the hands of farmers not connected with mills.

Acreage of Sugar-Cane Farms

The total acreage of land of all kinds in sugar cane farms in 1934-35 is estimated at 771,000 acres, or 39 percent of all Puerto Rican farm land. Of this area 396,000 acres, or 51.4 percent, is in the hands of sugar companies or allied interests. And of the latter area, 183,000 acres, or 23.7 percent of all land in cane farms, is held by enterprises allied with the four large American-owned sugar companies.

Acreage in Sugar Cane

The A.A.A. reports approximately 318,000 acres planted to cane in 1934-35, or 41.2 percent of all land in cane farms. Of the cane acreage, 164,000 acres, or 51.5 percent, are estimated

to be sugar-company plantings. American-owned companies have cane acreage of about 72,000 acres, or 22.6 percent of the total.

Owned and Leased Lands

The division between owned and leased lands can be made only for lands under company control. Of the total of 400,000 acres,²⁵ it is estimated that 280,000 acres, or 70 percent, are owned. The percentage of owned lands is much lower for the American-owned companies than for the Puerto Rican companies, the percentages being 58 and 80, respectively.

Changes in Landholdings

Very little historical information is available concerning company landholdings. The holdings of two American-owned companies have increased by 9 percent since 1914. Much more is now owned and much less leased than in 1914. Since 1928 the total holdings of three American-owned companies have declined slightly.

²⁵ The "administration" farm total of 396,000 acres is raised to include mill and village sites.

Table 45
NUMBER OF FARMS, TOTAL ACREAGE, AND IMPROVED ACREAGE
FOR PUERTO RICO, DISTRIBUTED BY SIZE OF FARMS

NUMBER OF ACRES	NUMBER OF FARMS			TOTAL ACREAGE IN FARMS			IMPROVED ACREAGE		
	1910	1920	1930	1910	1920	1930	1910	1920	1930
Under 20	42,004	25,602	37,587	257,922	215,222	278,935	219,991	154,993	188,297
20 to 49	8,872	8,467	8,835	268,234	255,199	264,712	210,282	168,498	153,225
50 to 99	3,728	3,493	3,351	250,691	234,993	226,464	191,837	150,199	130,533
100 to 499	3,228	3,047	2,825	645,345	600,500	541,873	473,754	376,794	324,869
Sub-total	57,832	40,609	52,598	1,422,192	1,305,914	1,311,984	1,095,864	850,484	796,924
500 to 999	332	302	258	219,608	201,694	168,050	152,368	123,983	96,257
1000-over	207	167	109	443,362	514,796	499,440	322,072	329,080	329,103
Sub-total	539	469	367	662,970	716,490	667,490	474,440	453,063	425,360
Total	58,371	41,078	52,965	2,085,162	2,022,404	1,979,474	1,570,304	1,303,547	1,222,284

Source: Fourteenth and Fifteenth Censuses of the United States, 1920 and 1930.

Table 46

AREA IN FARMS UNDER 500 ACRES, AND PERCENTAGE
TO TOTAL ACREAGE OF EACH MUNICIPALITY

MUNICIPALITIES	TOTAL AREA (IN ACRES)	FARMS LESS THAN 500 ACRES	PERCENT OF TOTAL ACREAGE
Adjuntas	44,021	34,289	77.9
Aguada	17,364	12,336	71.0
Aguadilla	22,387	18,571	83.0
Aguas Buenas	18,787	15,863	84.4
Aibonito	20,099	16,768	83.4
Añasco	24,478	17,116	69.9
Arecibo	77,347	41,653	53.9
Arroyo	10,115	3,170	31.3
Barceloneta	21,543	11,714	54.4
Barranquitas	21,429	18,830	87.9
Bayamon	28,611	18,383	64.3
Cabo Rojo	43,211	23,275	53.9
Caguas	38,093	27,784	72.9
Camuy	28,741	20,808	72.4
Carolina	28,749	14,599	50.8
Catano	3,048	411	13.5
Cayey	31,547	20,622	65.4
Ceiba	13,563	6,879	50.7
Ciales	41,578	36,851	88.6
Cidra	22,673	14,161	62.5
Coamo	48,279	28,086	58.2
Comerio	18,410	14,078	76.5
Corozal	26,328	22,100	83.9
Culebra	5,129	3,077	60.0
Dorado	14,097	5,493	39.0
Fajardo	19,421	7,373	38.0
Guanica	22,171	4,835	21.8
Guayama	39,784	11,478	28.9
Guayanilla	25,411	15,574	61.3
Guaynabo	16,195	12,311	76.0
Gurabo	17,981	10,725	59.6
Hatillo	27,629	17,853	64.6
Hormigueros	6,736	3,364	49.9
Humacao	27,537	9,615	34.9
Isabela	32,208	26,643	82.7
Jayuya	29,572	17,927	60.6
Juana Diaz	36,785	14,735	40.1
Juncos	16,896	9,594	56.8
Lajas	36,196	15,570	43.0
Lares	39,062	35,870	91.8
Las Marias	30,886	25,031	81.0
Las Piedras	19,837	11,795	59.5
Loiza	31,662	14,525	45.9

Table 46 (Continued)

AREA IN FARMS UNDER 500 ACRES, AND PERCENTAGE
TO TOTAL ACREAGE OF EACH MUNICIPALITY

MUNICIPALITIES	TOTAL AREA (IN ACRES)	FARMS LESS THAN 500 ACRES	PERCENT OF TOTAL ACREAGE
Luquillo	16,259	4,734	29.1
Manati	28,396	19,821	69.8
Maricao	22,389	21,661	96.7
Maunabo	11,952	8,091	67.7
Mayagüez	34,463	27,147	78.8
Moca	27,643	24,773	89.6
Morovis	25,297	23,031	91.0
Naguabo	26,903	9,762	36.3
Naranjito	17,011	15,420	90.6
Orocovis	38,297	33,945	88.6
Patillas	28,346	16,367	57.7
Peñuelas	26,693	17,532	65.7
Ponce	71,763	33,517	46.7
Quebradillas	13,093	11,442	87.4
Rincon	8,197	6,733	82.1
Rio Grande	31,417	12,452	39.6
Rio Piedras	23,877	18,679	78.2
Sabana Grande	20,465	17,555	85.8
Salinas	44,364	4,235	9.5
San German	32,296	25,092	77.7
San Juan	640	138	21.6
San Lorenzo	31,731	28,324	89.3
San Sebastian	42,826	38,667	90.3
Santa Isabel	21,805	287	1.3
Toa Alta	16,443	9,713	59.1
Toa Baja	14,747	3,791	25.7
Trujillo Alto	12,496	9,442	75.6
Utua	74,801	65,245	87.5
Vega Alta	16,501	7,952	49.2
Vega Baja	29,458	14,352	48.7
Vieques	31,581	4,796	15.2
Villalba	22,570	16,894	74.9
Yabucoa	32,590	18,277	56.1
Yauco	42,040	30,382	72.3
<i>All Puerto Rico</i>	2,084,746	1,311,984	62.9
Reported by 1930 census	1,979,474	1,311,984	67.3

Sources: Col. I: *Report of the Treasurer of Puerto Rico, 1933-34*, Exhibit No. 19; Col. II: United States Census, 1930.

Table adopted from one compiled by Professor Rafael Picó.

*Table 47***NUMBER OF FARMS AND TOTAL ACREAGE FOR PUERTO RICO,
DISTRIBUTED BY FORM OF TENURE***

TENURE	NUMBER OF FARMS			TOTAL ACREAGE		
	1910	1920	1930	1910	1920	1930
Farms operated by owners	46,779	36,407	43,101	1,457,345	1,485,208	1,166,976
Farms operated by managers	1,170	1,213	3,374	401,747	351,335	676,760
Farms operated by tenants	10,422	3,458	6,490	226,070	185,861	135,738
Total	58,371	41,078	52,965	2,085,162	2,022,404	1,979,474

Source: Fourteenth and Fifteenth Censuses of the United States, 1920 and 1930.

* The decade-to-decade changes in this table need to be interpreted with decided reservations. Some acquaintance with the underlying facts supports the view that the changes are to a considerable degree traceable to different procedures and classifications by census enumerators. To what degree the changes reflect substantive changes in the facts it is impossible to say.

Table 48

A.A.A. DATA ON CANE FARM ACREAGE AND ON BENEFIT PAYMENTS TO
GROWERS RECEIVING OVER \$10,000, BY MILL AREAS

	TOTAL ACRES IN FARMS IN MILL AREA	ACRES IN FARMS OF CONTRACTORS RECEIVING OVER \$10,000	ACRES IN CANE IN MILL AREA	ACRES IN CANE OF CONTRACTORS RECEIVING OVER \$10,000	ACRES IN CANE TROLLED BY MILL INTERESTS ^a	AMOUNT OF BENE- FIT PAY- MENTS OVER \$10,000	NUMBER OF CON- TRACTORS RECEIVING OVER \$10,000
MILL AREA							
Aguirre (3 mills)	42,868	6,928	23,817	3,099	0 ^b	\$ 133,416.80	1
Eastern (5 mills)	84,983	62,804	32,894	25,253	20,287	1,178,175.60	10
Fajardo (2 mills)	66,157	52,837	29,787	22,746	20,622	1,052,858.00	8
Guánica	91,130	43,199	44,236	17,878	11,088	609,064.40	10
Sub-total	285,138	165,768	130,734	68,976	51,997	2,973,514.80	29
Soller	8,894	3,285	2,995	1,782	995	117,700.40	4
Plazuela & Los Caños	43,623	28,032	15,838	9,609	(370)	704,977.20	6
Cambalache	55,916	22,460	19,900	10,468	7,195	556,168.00	8
			(5,265)		(2,117)		
Mon serrate	17,237	7,729	5,191	3,179	2,337	300,321.60	5
			(502)		(269)		
San Vincente	32,856	14,515	13,166	6,250	4,128	365,640.80	9
Carmen	22,070	17,425	5,585	4,365	3,236	187,956.00	3
Constancia (Toa)	19,433	9,273	8,215	4,518	3,426	284,340.00	5
Juanita	18,127	8,503	6,514	3,779	1,390	292,372.40	9
			(928)		(626)		
Vannina	14,890	8,635	7,071	4,987	4,323	201,341.20	3
Victoria	20,079	6,073	6,827	3,144	2,486	144,821.60	4
El Ejemplo	9,173	8,548	3,578	3,410	3,410	106,098.40	1
Roig	13,814	10,976	7,027	5,443	4,668	264,463.60	4
Playa Grande	15,943	11,120 ^d	6,121	3,768 ^d	3,768 ^d	101,443.20 ^d	1

Table 48 (Continued)

Lafayette	21,584	17,043	17,043	9,442	6,523	6,523	328,258.80	1
Guamaní	7,901	7,784	6,470	3,222	2,756	2,107	184,349.60	2
			(1,314)			(649)		
Caribe	1,995	1,677	552	1,476	1,156	412	46,008.40	2
			(1,125)			(744)		
Boca Chica	12,086	6,029	(6,029)	4,140	2,557	(2,557)	178,208.00	1
Mercedita	22,173	8,912	8,912	8,871	4,449	4,449	262,899.60	1
Constancia (Ponce)	3,326	2,978	729	1,952	1,606	382	46,478.80	3
Rufina	34,857	16,550	12,576	13,675	5,224	2,710	348,016.40	7
San Francisco	6,381	2,879	2,395	1,781	777	606	62,467.60	2
			(428)			(240)		
Hermínia	3,324	1,879	1,879	1,246	882	882	24,804.80	1
Santa Bárbara	2,669			1,117				none
Pellejas	1,533			509				none
Eureka	7,002	4,535	4,535	3,536	2,253	2,253	13,555.38	1
Rochelaire	8,353	4,071	4,071	3,854	2,687	2,687	83,160.80	1
Igualdad	8,350	5,131	(5,131)	5,253	4,263	(4,263)	145,746.40	3
Coloso	29,358	11,588	7,497	14,189	5,853	3,730	387,120.40	7
Plata	17,290	3,240	2,760	4,967	1,653	1,376	117,812.80	2
Other areas ^e			(4,133)			(1,622)		
Grand total ^f	765,375	416,638	349,044	317,992	176,317	142,730	\$8,830,046.98	125

Sources: Total acres in farms and acres in cane in mill areas, Sugar Section, Agricultural Adjustment Administration, Photostat release dated August 24, 1936. Other data, Senate Document No. 274, 74th Congress, 2d Session, *Payments Made under Agricultural Administration Program*.

^a Figures in this column are a part of figures in preceding column.

^b Excluded, as Luce and Co. signed no A.A.A. contract and received no benefit payments.

^c All figures within parentheses are private lands of principal owners of sugar companies.

^d From later A.A.A. data, not included in the sources cited.

^e Various tracts lying outside the mill area of the owner.

^f The totals of Senate Document 274 are revised for the inclusion of Playa Grande data.

Table 49. NUMBER AND TOTAL ACREAGE

		UP TO 5 ACRES		FROM 6 TO 10		FROM 11 TO 25		FROM 26 TO 50	
	NAME OF MILL	Total Farms	Total Acreage	Total Farms	Total Acreage	Total Farms	Total Acreage	Total Farms	Total Acreage
1	Aguirre ^b	7	19	1	6	1	15	0	0
2	Boca Chica	16	28	2	14	4	60	1	35
3	Cambalache	353	948	181	1,407	201	3,461	121	4,563
4	Canovanas	30	77	27	215	22	391	22	810
5	Los Caños	31	112	42	331	54	884	29	1,025
6	Carmen	43	109	19	146	15	274	11	410
7	Caribe	3	6	2	14	4	70	0	0
8	Cayey ^c	0	0	2	15	2	39	4	152
9	Coloso	231	660	134	1,061	138	2,290	81	2,830
10	Constancia Ponce	1	3	0	0	1	17	0	0
11	Constancia Toa	16	53	17	140	29	527	18	684
12	Cortada ^d	3	5	1	6	1	13	0	0
13	Defensa and Sta. Juana ^c	2	5	3	25	11	199	13	516
14	Ejemplo	6	23	3	22	10	160	2	59
15	Eureka	60	161	21	163	35	588	10	367
16	Fajardo	37	96	34	260	42	719	22	780
17	Guamani	1	5	2	17	2	32	0	0
18	Guanica	247	728	106	846	190	3,208	102	3,390
19	Victoria	183	508	79	610	91	1,530	40	1,409
20	Vannina	51	155	51	433	36	578	32	1,144
21	Soller	81	252	61	479	40	617	34	1,314
22	San Vicente	153	460	70	565	76	1,321	57	1,993
23	Santa Barbara	0	0	0	0	0	0	1	35
24	San Francisco	10	33	4	28	3	59	5	167
25	Rufina	138	404	62	487	93	1,603	55	2,035
26	Roig	17	39	8	62	8	136	7	261
27	Rochelaise	32	85	17	139	26	433	6	229
28	Plazuela	102	309	44	343	83	1,344	34	1,139
29	Playa Grande	32	98	19	142	21	344	11	361
30	Plata	244	662	79	620	111	1,844	76	2,712
31	Pellejas	0	0	0	0	1	14	2	84
32	Pasto Viejo ^c	3	9	6	49	8	141	5	171
33	Monserate	39	128	32	248	30	559	15	538
34	Mercedita	19	34	1	6	3	47	4	129
35	Machete ^d	0	0	0	0	2	25	0	0
36	Lafayette	267	597	37	280	55	885	23	801
37	Juncos ^c	3	11	6	52	3	56	11	419
38	Juanita	56	169	25	198	48	792	33	1,076
39	Igualdad	41	102	22	173	23	381	6	207
40	Herminia	0	0	2	16	3	48	4	153
	Totals	2,558	7,093	1,222	9,618	1,526	25,704	897	31,998

Source: Sugar Section, A.A.A., Release of August 24, 1936.

^a Basis, 1934-35 grinding season; calculation and compilation by Carlos J. Benitez. Acreage figures are actually "cuerdas."

^b Figures include all lands of Luce and Co.

OF SUGAR-CANE FARMS, BY MILL AREAS*

FROM 51 TO 200		FROM 201 TO 500		FROM 501 TO 1,000		ABOVE 1,000		GRAND TOTAL	
Total Farms	Total Acreage	Total Farms	Total Acreage	Total Farms	Total Acreage	Total Farms	Total Acreage	Farms	Acreage
1	175	0	0	0	0	2	41,755	12	41,970
5	483	4	1,432	3	1,705	2	8,329	37	12,086
140	12,917	11	4,128	7	5,157	6	23,335	1,020	55,916
22	2,161	9	2,602	1	600	2	15,818	135	22,674
35	3,133	4	1,210	1	504	1	9,946	197	17,145
16	1,678	4	1,142	1	886	3	17,425	112	22,070
2	228	0	0	1	552	1	1,125	13	1,995
14	1,517	3	1,041	0	0	1	1,150	26	3,914
52	5,412	15	5,032	5	2,938	2	9,135	658	29,358
0	0	1	327	2	1,630	1	1,349	6	3,326
33	3,899	14	4,127	3	2,267	2	7,736	132	19,433
0	0	0	0	0	0	0	0	5	24
39	4,221	15	4,881	1	554	5	60,569	89	70,970
4	361	0	0	0	0	1	8,548	26	9,173
14	1,057	1	131	0	0	1	4,535	142	7,002
24	2,122	7	2,187	3	1,906	3	35,413	172	43,483
1	80	0	0	0	0	2	7,767	8	7,901
150	15,604	50	15,629	18	11,769	5	39,956	868	91,130
49	4,700	9	2,979	5	3,314	1	5,029	457	20,079
22	2,537	5	1,408	2	1,416	1	7,219	200	14,890
23	2,117	2	535	3	1,959	1	1,621	245	8,894
77	7,394	20	6,749	4	2,285	2	12,089	459	32,856
6	625	1	275	0	0	1	1,734	9	2,669
12	1,324	4	1,334	0	0	2	3,436	40	6,381
57	5,861	21	7,121	6	3,559	2	13,787	434	34,857
11	1,126	6	1,749	1	779	1	9,662	59	13,814
11	1,091	4	1,070	2	1,235	1	4,071	99	8,353
41	3,560	3	819	1	743	3	18,221	311	26,478
6	702	6	1,808	2	1,368	1	11,120	98	15,943
64	5,773	10	2,919	0	0	1	2,760	585	17,290
1	70	0	0	0	0	1	1,365	5	1,533
6	652	1	258	3	2,783	0	0	32	4,063
35	3,447	17	5,027	2	1,499	1	5,791	171	17,237
8	979	3	1,057	2	1,442	2	18,479	42	22,173
2	134	2	715	0	0	0	0	6	874
14	1,150	4	1,079	0	0	1	16,792	401	21,584
10	1,004	2	675	5	3,819	0	0	40	6,036
39	4,043	11	4,003	5	4,373	1	3,473	218	18,127
5	593	5	1,763	1	605	2	4,526	105	8,350
7	711	2	517	0	0	1	1,879	19	3,324
1,058	104,641	276	87,729	90	61,647	66	436,945	7,693	765,375

* Figures do not include lands of Eastern Sugar Associates as they are computed under "Defensa and Sta. Juana."

^d Figures do not include lands of Luce and Co. as they are computed under "Aguirre."

* Figures include all lands of Eastern Sugar Associates.

Table 50. ACREAGE PLANTED TO SUGAR CANE AND AVERAGE

NAME OF MILL	UP TO 2 ACRES			FROM 3 TO 10 ACRES			FROM 11 TO 25 ACRES			FROM 26 TO 100 ACRES		
	Total Farms	Total Acres in Cane	Ave. Sugar per Acre (In Tons)	Total Farms	Total Acres in Cane	Ave. Sugar per Acre (In Tons)	Total Farms	Total Acres in Cane	Ave. Sugar per Acre (In Tons)	Total Farms	Total Acres in Cane	Ave. Sugar per Acre (In Tons)
1 Aguirre ^b	5	8	2.20	4	23	2.00	0	0	0	1	96	4.00
2 Boca Chica	17	22	2.82	7	37	3.71	4	71	3.50	6	307	4.33
3 Cambalache	386	565	2.48	394	2,096	2.29	141	2,318	2.40	87	3,771	2.86
4 Canovanas	39	57	1.90	41	230	2.51	27	435	2.85	18	854	2.94
5 Los Caños	37	62	2.43	98	512	2.88	41	678	3.00	17	769	3.41
6 Carmen	56	74	1.71	29	154	2.28	15	240	2.60	6	290	3.33
7 Caribe	2	2	2.50	4	27	5.00	3	52	5.33	2	170	5.50
8 Cayey ^c	1	1	1.00	4	26	3.25	5	76	2.00	13	645	3.00
9 Coloso	256	368	2.43	277	1,462	2.47	61	979	2.39	41	2,016	3.00
10 Constancia Ponce	1	2	5.00	0	0	0	1	17	6.00	0	0	0
11 Constancia Toa	25	42	1.92	51	294	2.54	22	362	3.36	21	1,157	3.57
12 Cortada ^d	3	5	3.67	2	10	4.50	0	0	0	0	0	0
13 Defensa and Sta. Juana ^e	8	15	2.75	26	162	3.04	11	198	2.73	26	1,312	3.77
14 Ejemplo	10	11	1.90	14	59	3.29	0	0	0	1	93	4.00
15 Eureka	57	79	2.74	59	322	2.24	17	259	2.59	8	494	3.50
16 Fajardo	45	62	3.13	77	430	3.18	22	359	3.77	17	712	3.82
17 Guamani	0	0	0	5	24	4.60	0	0	0	1	62	4.00
18 Guanica	168	261	2.04	333	1,822	1.78	141	2,310	2.02	159	8,036	2.13
19 Victoria	201	281	2.03	174	896	2.18	49	777	2.31	25	1,110	2.72
20 Vannina	79	120	1.86	69	326	2.09	30	473	2.53	18	941	3.00
21 Soller	151	204	2.45	62	329	2.11	19	296	2.95	9	332	3.22
22 San Vicente	136	213	2.46	184	965	2.84	68	1,154	3.17	53	2,604	3.42
23 Santa Barbara	1	1	2.00	5	31	2.20	0	0	0	0	0	0
24 San Francisco	9	16	2.33	10	56	2.40	7	120	1.71	10	538	4.30
25 Rufina	100	161	1.79	170	945	1.69	78	1,290	1.91	63	3,274	2.11
26 Roig	25	31	3.24	10	51	3.40	12	215	4.58	6	379	4.83
27 Rochelaise	28	40	2.18	51	292	2.59	11	198	2.82	7	403	2.86
28 Plazuela	105	153	2.17	125	696	2.14	48	738	2.67	29	1,286	2.38
29 Playa Grande	25	41	1.88	38	211	1.74	17	278	1.65	10	512	2.00
30 Plata	307	425	2.09	224	924	2.40	29	449	3.00	19	822	3.16
31 Pellejas	0	0	0	3	16	1.00	1	20	1.00	0	0	0
32 Pasto Viejo ^c	7	10	2.57	12	71	3.67	7	129	3.86	4	212	3.50
33 Monserrate	67	94	1.66	56	296	2.05	17	264	2.88	25	1,238	2.96
34 Mercedita	20	25	3.55	5	25	6.80	3	50	3.00	9	396	4.33
35 Machete ^d	0	0	0	0	0	0	3	36	4.00	2	81	2.50
36 Lafayette	243	334	2.97	126	631	3.37	25	391	3.68	5	326	3.80
37 Juncos ^c	7	11	2.43	17	87	2.47	5	76	2.60	4	215	4.00
38 Juanita	63	97	2.11	83	455	2.45	36	593	3.19	26	1,442	4.08
39 Igualdad	45	60	2.60	48	242	2.33	4	73	1.75	1	45	4.00
40 Herminia	1	1	2.00	8	50	1.75	6	105	1.33	3	146	1.67
Totals	2,736	3,954	2.41	2,905	15,285	2.77	986	16,079	2.89	752	37,086	3.39

Source: Sugar Section, A.A.A., Release of August 24, 1936.

^a Basis, 1934-35 grinding season; calculation and compilation by Carlos J. Benitez. Acreage figures are actually "cuerdas."

^b Figures include all lands of Luce and Co.

SUGAR PRODUCTION PER ACRE, BY MILL AREAS^a

FROM 101 TO 200 ACRES				FROM 201 TO 500 ACRES				ABOVE 500 ACRES				GRAND TOTAL			
Total Farms	Total Acres in Cane	Ave. per Acre		Total Farms	Total Acres in Cane	Ave. per Acre		Total Farms	Total Acres in Cane	Ave. per Acre		Total Farms	Total Acres in Cane	Average Un- weighted Tons	Average Weighted Tons ^f
		(In Unw. Tons)	(In W. Tons)			(In Unw. Tons)	(In W. Tons)			(In Unw. Tons)	(In W. Tons)				
0	0	0	0	0	0	0	0	2	23,288	5.00	5.00	12	23,415	3.30	5.00
0	0	0	0	2	660	3.50	3.59	1	3,043	7.00	7.00	37	4,140	4.14	6.39
3	385	3.33	3.38	7	2,274	3.00	3.01	2	8,491	3.50	3.85	1,020	19,900	2.84	3.66
5	638	3.80	3.81	3	693	4.33	4.22	2	7,853	5.00	5.00	135	10,760	3.33	4.86
2	302	4.00	4.00	1	245	4.00	4.00	1	3,636	4.00	4.00	197	6,204	3.39	4.00
3	462	3.33	3.27	1	265	3.00	3.00	2	4,100	4.00	4.00	112	5,585	2.89	3.88
0	0	0	0	1	483	7.00	7.00	1	742	6.00	6.00	13	1,476	5.22	6.39
3	434	3.00	3.11	0	0	0	0	0	0	0	0	26	1,182	2.45	3.11
10	1,469	3.20	3.22	11	3,003	3.45	3.52	2	4,892	4.50	4.87	658	14,189	3.06	4.18
0	0	0	0	2	721	7.00	5.92	2	1,212	6.50	6.45	6	1,952	6.12	6.25
9	1,164	3.44	3.51	2	612	4.00	4.00	2	4,584	4.50	4.86	132	8,215	3.33	4.33
0	0	0	0	0	0	0	0	0	0	0	0	5	15	0.00	0
10	1,411	3.20	3.19	4	1,349	3.75	3.78	4	23,553	3.25	3.92	89	28,000	3.21	3.87
0	0	0	0	0	0	0	0	1	3,415	5.00	5.00	26	3,578	3.55	5.00
0	0	0	0	0	0	0	0	1	2,382	4.00	4.00	142	3,536	3.01	4.00
4	622	3.50	3.43	6	2,197	3.33	3.31	1	14,645	5.00	5.00	172	19,027	3.68	4.73
0	0	0	0	0	0	0	0	2	3,136	6.00	6.00	8	3,222	4.86	6.00
35	4,985	2.37	2.41	24	7,849	2.75	2.74	8	18,973	3.25	4.43	868	44,236	2.33	3.70
5	764	3.40	3.41	2	538	3.50	3.14	1	2,461	4.00	4.00	457	6,827	2.88	3.76
2	302	3.00	3.31	1	413	3.00	3.00	1	4,496	3.00	3.00	200	7,071	2.64	3.02
1	150	5.00	5.00	2	647	4.00	4.17	1	1,037	4.00	4.00	245	2,995	3.42	4.14
11	1,668	4.09	4.14	5	1,553	3.60	3.69	2	5,009	3.00	3.80	459	13,166	3.23	3.12
1	118	2.00	2.00	1	260	3.00	3.00	1	707	4.00	4.00	9	1,117	2.64	3.54
3	442	4.00	4.14	0	0	0	0	1	609	6.00	6.00	40	1,781	3.68	5.22
14	1,944	2.29	2.07	7	2,021	3.57	3.57	2	4,040	4.00	5.09	434	13,675	2.48	3.97
2	331	5.50	5.75	3	727	4.33	4.37	1	5,293	6.00	6.00	59	7,027	4.55	5.80
0	0	0	0	1	225	3.00	3.00	1	2,696	3.00	3.00	99	3,854	2.74	3.00
0	0	0	0	2	650	3.50	3.86	2	6,111	4.50	4.17	311	9,634	2.89	4.02
3	430	1.67	1.69	4	929	1.75	1.76	1	3,720	2.00	2.00	98	6,121	1.81	1.93
4	589	3.50	3.53	1	277	5.00	5.00	1	1,481	5.00	5.00	585	4,967	3.45	4.63
0	0	0	0	1	473	2.00	2.00	0	0	0	0	5	509	1.33	2.00
1	116	1.00	1.00	1	350	4.00	4.00	0	0	0	0	32	888	3.10	3.25
3	396	4.00	4.00	2	566	4.50	4.48	1	2,337	4.00	4.00	171	5,191	3.35	4.08
2	267	5.00	5.05	1	264	6.00	6.00	2	7,844	6.50	7.16	42	8,871	5.03	7.06
0	0	0	0	1	270	5.00	5.00	0	0	0	0	6	387	3.83	5.00
0	0	0	0	1	250	5.00	5.00	1	7,510	5.00	5.00	401	9,442	3.97	5.00
2	326	4.00	4.00	4	1,480	4.50	4.45	1	629	4.00	4.00	40	2,824	3.43	4.27
2	220	4.50	4.52	6	1,648	4.17	4.09	2	2,059	4.00	4.00	218	6,514	3.21	4.07
1	163	3.00	3.00	4	1,367	3.25	3.26	2	3,303	3.50	3.32	105	5,253	2.92	3.29
0	0	0	0	0	0	0	0	1	944	3.00	3.00	19	1,246	1.95	3.00
141	20,098	3.43	3.46	114	35,259	3.93	3.90	59	190,231	4.43	4.57	7,693	317,992	3.33	4.27

^a Figures do not include lands of Eastern Sugar Associates as they are computed under "Defensa and Sta. Juana."

^d Figures do not include lands of Luce and Co. as they are computed under "Aguirre."

^e Figures include all lands of Eastern Sugar Associates.

^f Weighted figures cover only farms with over 100 acres in cane.

Table 51
**LAND OWNED BY SUGAR COMPANIES OR ALLIED INTERESTS IN
 EACH MUNICIPALITY, IN RELATION TO TOTAL AREA OF
 MUNICIPALITY***

(In acres)

MUNICIPALITY	TOTAL AREA	AREA OWNED BY SUGAR COMPANIES OR AFFILIATES
Adjuntas	44,003	1,365
Aguada	17,221	3,881
Aguadilla	22,322	1,542
Aguas Buenas	18,764	—
Aibonito	20,083	—
Añasco	24,479	938
Arecibo	77,268	15,897
Arroyo	10,119	3,399
Barceloneta	21,539	6,357
Barranquitas	21,411	—
Bayamon	28,579	1,453
Cabo Rojo	43,203	1,957
Caguas	38,098	1,444
Camuy	28,738	2,746
Carolina	28,741	3,980
Catano	3,040	—
Cayey	31,503	14
Ceiba	13,551	1,102
Ciales	41,576	5
Cidra	22,655	—
Coamo	48,271	—
Comerio	18,402	—
Corozal	26,299	—
Culebra	5,127	300
Dorado	14,091	2,301
Fajardo	19,415	7,313
Guanica	22,176	12,078
Guayama	39,781	14,236
Guayanilla	25,414	7,112
Guaynabo	16,158	1,544
Gurabo	17,937	3,292
Hatillo	27,609	2,076
Hormigueros	6,733	950
Humacao	27,489	13,661
Isabela	32,201	274
Jayuya	29,568	398
Juana Diaz	36,778	16,314
Juncos	16,889	3,889
Lajas	36,199	1,753
Lares	39,039	174

Table 51 (Continued)

Las Marias	30,874	
Las Piedras	19,632	3,468
Loiza	31,657	6,851
Luquillo	16,274	2,062
Manati	28,387	4,403
Maricao	22,376	
Maunabo	11,957	2,994
Mayaguez	34,449	760
Moca	27,631	861
Morovis	25,208	2,478
Naguabo	26,849	5,874
Naranjito	17,002	
Orocovis	37,576	
Patillas	28,317	4,248
Peñuelas	26,667	
Ponce	71,717	16,917
Quebradillas	13,078	858
Rincon	8,139	794
Rio Grande	31,429	5,607
Rio Piedras	23,861	1,449
Sabana Grande	20,375	3
Salinas	44,375	21,226
San German	32,243	494
San Juan	637	
San Lorenzo	31,712	769
San Sebastian	42,809	1,073
Santa Isabel	21,787	7,418
Toa Alta	16,423	1,995
Toa Baja	14,721	4,805
Trujillo Alto	12,484	1,424
Utua	74,466	
Vega Alta	16,469	2,630
Vega Baja	29,451	8,971
Vieques	31,589	9,746
Villalba	22,559	1,519
Yabucoa	32,576	8,124
Yauco	41,972	506
Total	2,082,197	264,072

Source: Total area, *Annual Report of the Treasurer of Puerto Rico, 1934-35*. Area owned, property-tax records of the Treasurer of Puerto Rico.

* Data missing for *centrales* Carmen and Rochelaise, and incomplete for *Central Playa Grande*.

Table 52
**LANDS OWNED BY SUGAR COMPANIES OR ALLIED INTERESTS
DISTRIBUTED BY MUNICIPALITIES
(In Acres)**

MILL	LANDOWNER	TOTAL ^a (IN ACRES)	AREA OWNED, BY MUNICIPALITIES					
Aguirre Cortada Machete	Luce and Co.	24,134	Guayama 6,179	Salinas 5,252	Santa Isabel 7,388	Arroyo 621	Juana Diaz 4,694	
Cayey								
Defensa	United P. R.		Naguabo 975	Culebra 300	Caguas 792	Gurabo 3,292	Juncos 3,889	Trujillo Alto 218
Juncos	Sugar Co.							
Pasto Viejo								
Santa Juana		30,967	Las Piedras 3,457	Humacao 7,955	San Lorenzo 614	Cayey 14	Yabucoa 615	Vieques 8,846
Canóvanas Fajardo	Fajardo Sugar Growers Assn.	29,290	Carolina 1,222 Naguabo 4,870	Loiza 6,851 Caguas 50	Rio Grande 5,605 Humacao 199	Luquillo 2,062 San Lorenzo 155	Fajardo 7,174	Ceiba 1,102
Guánica	Russell and Co.	21,275	San German 418 Lajas 300	Cabo Rojo 887	Juana Diaz 6,059	Ponce 2,538	Yauco 2	Guánica 11,069
American companies sub-total		105,666 ^b						
Soller	Soller Sugar Co.	1,480	Camuy 1,131	Quebradillas 20	San Sebastian 155	Lares 174		

Table 52 (Continued)

Plazuela Los Caños	Cia. Giorgetti	13,008	Arecibo 5,301	Barce- loneta 5,734	Hatillo 1,539	Manati 17	Camuy 417
Cambal- ache	Central Cam- balache Inc. and allied companies	13,378	Arecibo 8,680	Barce- loneta 364	Hatillo 535	Isabela 274	Manati 335 Vega Baja 1,157 Camuy 1,198 Quebra- dillas 838
Monser- rate	J. and F. Calaf Collazo	7,757	Manati 4,051	Vega Baja 1,222	Morovis 2,478	Ciales 5	
San Vicente	Rubert Hnos. Inc.	12,551	Arecibo 1,846	Vega Baja 6,525	Vega Alta 2,000	Toa Baja 2,132	Bayamon 46
Carmen	Carmen Central Inc.º						
Constan- cia (Toa)	Cia. Azuca- rera del Toa	6,805	Dorado 2,301	Toa Baja 2,605	Toa Alta 1,898		
Juanita	Central Juanita Inc.	1,574	Toa Alta 97	Toa Baja 68	Bayamon 1,407		
Vannina	Central Vannina, Inc.	3,944	Guaynabo 1,544	Rio Piedras 1,195	Caguas 602	Trujillo Alto 601	
El Ejemplo Roig	Heirs, Antonio Roig, Yabucoa Sugar Co.	4,992 7,509	Yabucoa 7,509	Humacao 4,992			
Playa Grande	Benitez Sugar Co.	900	Vieques 900				
Lafayette	Sucs. C. Y. J. Fantauzzi	10,300	Maunabo 2,994	Patillas 4,248	Arroyo 2,776	Guayama 281	

Table 52 (Continued)
LANDS OWNED BY SUGAR COMPANIES OR ALLIED INTERESTS
DISTRIBUTED BY MUNICIPALITIES
(In Acres)

MILL	LANDOWNER	TOTAL ^a (IN ACRES)	AREA OWNED, BY MUNICIPALITIES	
Guamaní	Sucs. de J. Gonzales,	5,141	Guayama	Salinas
	G. Cautino	3,147	3,147	535
Caribe	Godreau and Co. Sucs. E. Godreau,	3,953	Salinas	
	C. Godreau		3,953	
Boca Chica Mercedita	Central		Juana Diaz	Ponce
	Boca Chica, Inc.	2,716	1,325	1,391
	Sucs. J. Seralles	10,011	4,197	5,814
Constancia (Ponce)	Corp. Azucarera Sauri y Subira,		Ponce	
	Carmen Sauri Y. Tristani	1,102	1,102	
Victoria	Central	3,618	Carolina	Rio Piedras
	Victoria, Inc.		2,758	254
Rufina	Mario Mercados y Hijos	11,143	Ponce	Trujillo Alto
			6,044	605
San Francisco	Arturo Lluberas and Sobrinos	3,084	Guayanilla	Lajas
			4,528	570
Herminia	Herminia Colon		Guayanilla	
	Vda. de Semidey	1,519	Yauco	2,584
			Villalba	

Table 52 (Continued)

Pellejas	Sucs. L. P. Valdivieso	1,365	Adjuntas	1,365										
Santa Bárbara	Jayuya Development Co.	398	Jayuya	398										
Eureka	Central Eureka, Inc.	3,020	San German	75	Cabo Rojo	866	Hormigueros	620	Añasco	605	Mayagüez	1	Lajas	852
Roche-laise	Mayagüez ^e Sugar Co.													
Igualdad	Central Igualdad, Inc. allied interests	2,293	Mayagüez	741	Anasco	333	Hormigueros	330	Guánica	681	Lajas	25	Cabo Rojo	183
Coloso	Central Coloso, Inc.	6,758	Moca	538	Agua-dilla	1,542	Aguada	3,881	Rincon	794	Arecibo	1		
Plata	Plata Sugar Co.	1,241	Moca	323	San Sebastian	918								
	Sub-total	144,704												
	Undistributed items ^d	13,702												
	Grand total	264,072												

Source: Property tax records of the Treasurer of Puerto Rico.

^a The totals in this column are very slightly out of check with the detailed items due to the rounding of decimals.

^b To this should be added about 1,500 acres of mill sites.

^c Information lacking.

^d Mainly one large estate in Salinas, together with mill sites and other small tracts.

Table 53

LAND HOLDINGS OF THREE AMERICAN-OWNED SUGAR COMPANIES AND ALLIED INTERESTS

(In Acres)

OWNED LANDS	1914	1920	1928	1933	1934	1935	1936
Cane lands							
Fajardo	3,864	5,096	11,123	12,127	12,915	10,366	11,492
Russell and Co.	4,303	4,293	4,607	5,386	5,483	4,846	4,621
Luce and Co.			12,175	12,707	12,822	12,849	12,849
Total	8,167	9,389	27,905	30,220	31,220	28,061	28,962
Other cultivated lands							
Fajardo							
Russell and Co.	1,804	2,492	2,381	1,757	1,737	2,374	2,599
Luce and Co.							
Total	1,804	2,492	2,381	1,757	1,737	2,374	2,599
Pasture							
Fajardo	3,165	5,203	10,575	9,483	9,439	11,502	10,958
Russell and Co.	9,612	9,768	10,715	10,440	10,473	10,470	10,470
Luce and Co.			5,301	5,776	6,131	6,131	6,131
Total	12,777	14,971	26,591	25,699	26,043	28,103	27,559
Other land							
Fajardo	3,460	4,725	4,432	5,010	5,116	5,951	5,372
Russell and Co.	2,455	2,464	2,513	2,628	2,599	2,592	2,592
Luce and Co.			5,969	6,172	6,172	6,172	6,172
Total	5,915	7,189	12,914	13,810	13,887	14,715	14,136
Total owned							
Fajardo	10,489	15,024	26,130	26,620	27,470	27,819	27,822
Russell and Co.	18,174	19,017	20,216	20,211	20,292	20,282	20,282
Luce and Co.			23,445	24,655	25,125	25,152	25,152
Total	28,663	34,041	69,791	71,486	72,887	73,253	73,256

Table 53 (Continued)

LEASED LANDS	1914	1920	1928	1933	1934	1935	1936
Cane lands							
Fajardo	8,399	6,999	7,440	10,125	10,645	8,612	9,439
Russell and Co.	10,677	8,723	7,635	5,261	5,964	4,647	3,569
Luce and Co.			7,729	8,240	8,125	8,098	8,098
Total	19,076	15,722	22,804	23,626	24,734	21,357	21,106
Other cultivated land							
Fajardo							
Russell and Co.	3,843	5,353	2,950	2,951	2,129	3,450	2,988
Luce and Co.							
Total	3,843	5,353	2,950	2,951	2,129	3,450	2,988
Pasture							
Fajardo	8,658	8,207	13,228	8,702	8,660	10,075	8,830
Russell and Co.	6,790	6,081	5,354	3,412	3,415	3,128	1,810
Luce and Co.			10,764	11,107	9,811	9,734	9,734
Total	15,448	14,288	29,346	23,221	21,886	22,937	20,374
Other land							
Fajardo			774	1,510	1,717	1,855	1,708
Russell	4,021	4,494	1,800	1,298	1,298	1,286	1,021
Luce and Co.			3,972	4,452	4,452	4,452	4,452
Total	4,021	4,494	6,546	7,260	7,467	7,593	7,181
Total leased							
Fajardo	17,057	15,206	21,442	20,337	21,022	20,542	19,977
Russell and Co.	25,331	24,651	17,739	12,922	12,806	12,511	9,388
Luce and Co.			22,465	23,799	22,388	22,284	22,284
Total	42,388	39,857	61,646	57,058	56,216	55,337	51,649
Total owned and leased							
	71,051	73,898	131,437	128,544	129,103	128,590	124,905

Source: Privately circulated questionnaire.

Table 54
**LAND HOLDINGS,
 ELEVEN SUGAR COMPANIES AND ALLIED INTERESTS
 (EXCLUDING AMERICAN-OWNED COMPANIES)**
 (In acres)

ACREAGE OWNED	1933	1936
Cane land	23,955	23,244
Other cultivated land	4,978	5,290
Pasture	22,316	27,040
Other land	14,694	14,578
Total	65,943	70,152
Acreage leased		
Cane land	11,913	12,386
Other cultivated land	1,294	1,840
Pasture	7,215	7,987
Other land	5,508	2,081
Total	25,930	24,294
Owned and leased		
Cane land	35,868	35,630
Other cultivated land	6,272	7,130
Pasture	29,531	35,027
Other land	20,202	16,659
Grand total	91,873	94,446

Source: Privately circulated questionnaire.

X

RELATIONS BETWEEN MILL OWNERS AND GROWERS (COLONOS)

THE formal relations between sugar companies and independent cane farmers (*colonos*¹) are covered by the so-called "*colono contract*."² In this contract are set down the terms on which the mill will buy cane from the grower (*colono*), make crop loans to him, and conduct various collateral matters connected with the grower's farming and financial activities. The contract by no means covers the whole range of relations between mills and growers, since there are numerous informal and casual contacts and services between them. Nevertheless, it is in the "*colono contracts*" that one can see the basic pattern of these mill-grower relationships.

1. GENERAL PROVISIONS OF "COLONO CONTRACTS"

The provisions of "*colono contracts*" are substantially similar from mill to mill, except as to details. A composite summary of the main provisions follows, based upon an analysis of a number of contracts. It will be understood that particular contracts need not contain all the provisions listed below: some of the provisions may never appear in the contracts of particular mills. Collectively, however, the following provisions give a correct idea of the general scope of such contracts:

1. The contract may be for only one grinding season or for a period of years.
2. The grower (*colono*) agrees to sell his cane to the mill with which he establishes this contractual relationship.
3. The mill agrees to buy and grind the grower's cane, paying for it on the basis of one of the "liquidation" systems discussed

¹ *Colono* is the term applied to an independent grower of sugar cane under contractual relations with a mill. The term "grower" (meaning cane grower) has been generally used in the text in lieu of the Spanish term.

² More specifically known as a "Contract for the Purchase and Sale, Grinding and Financing of Sugar Cane."

below.³ Most contracts provide for paying the grower in cash on the basis of current sugar prices, but in some instances payment is made in sugar.

4. Liquidation is usually fortnightly or monthly, payment to the grower being made only after the mill has deducted all sums then due it on loans, and any other obligations of the grower for which the mill has assumed responsibility.

5. Where crop loans are made by the mill company to the grower, as is very customary, the terms of these loans are usually an integral part of the contract. In some instances the stipulation is made that the grower cannot undertake any loans or incur any other financial obligations with reference to the cane covered by the contract, except through the mill.

6. The grower cannot sell, give, barter, or mortgage the lands covered by the contract, or the cane thereon, while the contract is in effect, except under the stipulation that any third party involved agrees to all the terms of the grower's contract with the mill.

7. The mill in some contracts has the right to determine what types of cane it will accept from the grower, and also exercises certain supervisory rights over its cultivation and harvesting, the mill's representatives having access to the grower's plantations at any time.

8. All the expenses of planting, cultivating, and harvesting the cane are met by the grower. However, the mill is stated to be "an interested party" in his plantations, "with all the rights and privileges accorded by the law." Any lapse on the part of the grower in the planting, cultivating, or harvesting of his cane, it is agreed, "will cause great and irreparable damage to the *central* [mill]."

9. The mill may prescribe the type of fertilizer the grower is to use, and—in irrigated districts—the time when irrigation of cane must cease before cutting. Special supervision by the mill is usually provided for in the case of *gran cultura*⁴ cane grown by the grower.

³ See sections 2 and 3 of this chapter.

⁴ *Gran cultura* cane is cane planted in August to November in one year, to be harvested in the spring of the second succeeding year—when about eighteen months old.

10. The mill may determine the rate of cutting and of daily deliveries for grinding.

11. The grower pays for all transportation of cane to loading points on the mill's railways or public railways used by the mill. The company bears the transportation costs from there to the mill. Allowances are usually made when the grower delivers his cane directly to the mill by truck or ox wagon.

12. In the case of breakdowns or accidents in the transportation or grinding equipment of the mill, the grower may send his cane to be ground elsewhere, following notification by the mill; but in some contracts only after a waiting period of several days for repairs. In any case, the grower must resume deliveries to the original mill once it is again ready to transport or grind cane. The proceeds the grower may receive from another mill because of such a shift must go first to meet any financial obligations the grower may have to the mill with which he has entered into contract.

13. The mill is authorized to suspend the grinding of cane which shows too low a sugar yield, or to receive such cane for grinding only under special liquidation terms.

14. The mill fixes the grinding period, generally from December to June or July; but this period may be advanced, retarded, or shortened by the mill.

15. The contract may be automatically extended if the value of cane delivered during the season, in terms of sugar produced, does not meet the grower's indebtedness to the mill.

16. Expenses of drawing up, modifying, or canceling the contract are commonly on account of the grower.

17. Subsequent orders, rules, or regulations that the mill may issue relative to the planting, cultivation, cutting, hauling, delivery, grinding, buying, or selling of the cane of its growers become an integral part of the contract.

18. The *colono* is given the right to check the weighing of his cane and the laboratory tests that determine the sucrose content of his cane.

19. The contract may be modified according to government legislation covering crop restrictions.

Examination of contracts as old as 1914 reveals little sub-

stantial modification in the essential terms governing mill-grower relations. Since that date, the most important changes are in the extension of a system of liquidation on the basis of a variable sucrose content and purity of the cane, and in the application of crop-restriction legislation. Certain provisions of the contract are regulated by law as noted below.

2. METHODS OF PAYMENT FOR CANE

The payment to growers is universally predicated on the price of raw sugar. If sugar proceeds are split in shares of, say, 7 and 5, it might be thought possible to say, either that the mill pays the grower for his cane seven-twelfths of the proceeds, or that the grower pays the mill five-twelfths for its grinding services. Legally, the former is the accurate statement, since the grinding contract is a contract of purchase and sale. It also fits the economic facts more closely, since all discretionary control from the mill gate onward is in the hands of the sugar company, and it has all rights to residual income. The contract is best regarded as an advance sale by the grower with no price stated; for, in place of a price, the contract includes a formula for sharing the aggregate proceeds from the sale of sugar between mill owner and farmer. The content of this formula is the basic economic question to be settled between mills and growers.

Considerable variety in the constituent elements of this formula is to be found in various cane-growing areas in the world. Four basic patterns are described in the following quotations:

1. *Payment for each ton of cane delivered, of a price proportional to the value of sugar.*

This is a very primitive method, as it takes no account of the quality of the cane. The same price is paid for wood and water as for sucrose. Although not extinct, it can be considered obsolete.

2. *Payment for each ton of sucrose in the cane (modified by various other factors), of a price proportional to the value of sugar.*

This is an improvement on Method 1, but does not consider directly the amount of sugar recoverable from the sucrose, though arbitrary modifications of the sucrose are made to correspond roughly with this. This is the present method in South Africa.

3. *Payment for each ton of sugar estimated to be recoverable from the cane delivered, of a price corresponding to the value of sugar.*

This is a still further advance on the previous method. It is the method in use in Australia.

4. *Payment for each ton of sugar estimated to have been actually recovered from the cane delivered, of a price corresponding to the value of sugar.*

This is the commonest method in vogue in most parts of the world.⁵

Until relatively recent years, the first of these methods was used at most of the Puerto Rican mills and is still in use in some of them. Latterly, the use of the third and fourth methods has been widely extended, payment for each shipment of cane usually being based on an analysis of the sucrose content and purity of the juice, a sample of which is taken as the cane goes through the crusher. This may be modified by experience in actual recovery.

During the early years of the century, at a time when sugar recovery probably averaged 10 percent or less of the weight of cane, it appears that five pounds of raw sugar for one hundred pounds of cane was the common rate of payment to growers. Thereafter the rate moved upward, and in recent years has been standardized at about seven pounds, with a recovery of around 12 percent. Roughly the method appears to have worked out in practice to yield the grower not far from 60 percent of the sugar content of his cane on the average, both in earlier and later years. The earlier system is one under which gains from improved sugar content of cane accrue entirely to the mill, so long as the rate of payment (percentage of cane weight) remains unchanged. Its natural effect is to deter such improvements, to cause cane to be grown for weight rather than sugar, and to stimulate devices to increase its weight. It is therefore understandable why most mills should have desired to abandon it in the interests of receiving good cane delivered in good condition.

Under the analysis method, which is now dominant, the first requirement is to set up the technical formula for determining the sugar recovery—a subject of much discussion among sugarcane technologists. Formulas have to be to some extent built on local experience and conditions, and those applicable in some cane-producing areas of the world are not applicable in others.

⁵ G. S. Moberly in *Proceedings of the International Society of Sugarcane Technologists*, Fifth Congress, 1935, pp. 134 ff.

The analyses in Puerto Rican mills are administered by company employees. By the law of 1937, the mills are, however, obligated to permit analyses to be checked by representatives of the growers. In the past complaint occasionally arose concerning the discretionary control which the mills possessed, both in adopting formulas and in administering them.⁶ The situation was obviously one into which abuse of power could easily enter if the desire existed. The dissatisfied grower had, of course, the competitive recourse to another mill. A basic weakness of the system was, however, that the grower could not *know* whether he was fairly treated or not, so the suspicion of evil had a breeding-ground. The law of 1937 is at least a first approach to the removal of these grounds of suspicion.⁷

3. RATES OF PAYMENT FOR CANE

Given the methods of determining sugar content, the primary economic relation between grower and mill is concerned with division of the sugar between them. Until the law of 1937, there was in Puerto Rico no standardized scale of payments nor method of computing them. Each mill was free to adopt its own terms, within the limits set by competition from other mills. This is illustrated by the fact that each of the four American companies had its own liquidation system. Under the new law it is provided that "the percentage of the cane yield which shall belong to the *colono* is hereby fixed at 65 per cent." Values are at New York prices, averaged monthly or fortnightly, less a uniform charge for bagging and freight. From this rule, however, several varieties of cane are excepted, and it is optional whether payment shall be in cash or in sugar. Elements of the old bargaining situation are thus still left. On this account and to illustrate the confusing diversity which created the demand for legislation, it therefore seems advisable to retain the description of methods of liquidation from the original manuscript of this re-

⁶ Criticism of the lack of uniformity and recommendations for standardized practice were made in the *Annual Report of the Commissioner of Agriculture and Commerce*, 1933-34, and again in the *Annual Report* for 1935-36.

⁷ The subject is treated more fully in Chapter XIX (The Distribution of Income from Sugar).

port. The tense is changed to the past, though in some degree the facts stated are presumably applicable to the present situation.

In recent years many of the Puerto Rican mills adopted the so-called Guánica table, originated at Central Guánica of the South Porto Rico Sugar Company. A copy of this table is presented as Table 55.

As will be seen by consulting the table, payments of sugar per hundred pounds of cane were calculated on a sliding scale, according to laboratory tests of the juice for purity and sucrose content. Thus juices which tested 85 percent purity and 15 to 15.9 sucrose were paid at the rate of 7 pounds of sugar per 100 pounds of cane. The table made no provision for payment for juices testing below 70 percent purity and 10 percent sucrose, at which point the rate was 2.95 per hundred, though in practice poorer canes were accepted. Poor canes, however, were paid for at a very low rate and some might be received for which nothing would be paid. We were informed that in effect the Guánica table, with its modifications at other mills, caused most cane received to be paid for at from 50 to 60 percent of the value of the total sugar at New York prices. At Central Guánica the top rate was 62 percent and the average 57 percent, with no deduction for ocean freight or other expense of shipment and delivery at the continental market. At 12.5 pounds sugar recovery per 100 pounds of cane, 57 percent worked out at 7.125 pounds for the grower.

The idea behind a table of this sort was, of course, to establish a system of penalizing poor cane and of rewarding good cane, measured above and below some center of "standard" quality, from which the gradations move upward and downward. The principle was undoubtedly a very sound one for stimulating improvement in the quality of cane. The actual gradations used in the table were based upon chemical and mathematical formulas of which the writers had no expert knowledge.⁸

⁸ The following memorandum, supplied by an officer of the South Porto Rico Sugar Co., states the cost-accounting theory upon which the Guánica table is based:

"1. Juices from canes of low sucrose content and purity are difficult to clarify, and a larger portion of the sucrose contained in such juices is lost in the process of manufacture than in the case of juices from high-quality canes. Therefore, the

Table 55. SUCROSE AND PURITY TABLE (GUANICA TABLE)*

Normal Purity (Percent)		PERCENT SUCROSE IN NORMAL JUICE										Normal Purity (Percent)	
		10.0 to 10.9	11.0 to 11.9	12.0 to 12.9	13.0 to 13.9	14.0 to 14.9	15.0 to 15.9	16.0 to 16.9	17.0 to 17.9	18.0 to 18.9	19.0 to 19.9	20.0 to 20.9	21.0 to 21.9
Pounds of 96° Sugar for Each 100 Pounds of Cane													
95									8.33	8.81	9.29	9.77	10.24
94								7.82	8.29	8.77	9.25	9.72	10.19
93							7.32	7.78	8.25	8.73	9.20	9.67	10.14
92							7.28	7.74	8.21	8.69	9.15	9.62	10.09
91							7.24	7.70	8.17	8.65	9.10	9.57	10.04
90						6.73	7.20	7.66	8.13	8.61	9.05	9.52	9.99
89						6.69	7.16	7.62	8.09	8.56	9.00	9.46	9.94
88					6.21	6.66	7.12	7.58	8.05	8.51	8.95	9.41	9.89
87			5.50		6.17	6.62	7.08	7.54	8.01	8.46	8.90	9.36	9.83
86			5.45		6.13	6.58	7.04	7.50	7.96	8.41	8.85	9.31	9.77
85			5.40		6.09	6.54	7.00	7.46	7.91	8.36	8.80	9.25	9.71
84			5.34	4.59	6.05	6.50	6.96	7.41	7.86	8.31	8.75	9.20	
83	3.79	4.54	5.28		6.01	6.46	6.92	7.36	7.81	8.26	8.70	9.15	
82	3.74	4.49	5.22		5.96	6.42	6.88	7.31	7.76	8.21	8.64		
81	3.69	4.43	5.16		5.90	6.38	6.83	7.26	7.71	8.15	8.59		
80	3.64	4.37	5.10		5.83	6.34	6.78	7.21	7.66	8.09	8.53		
79	3.59	4.31	5.03		5.75	6.29	6.72	7.16	7.61	8.02			
78	3.53	4.24	4.96		5.68	6.23	6.66	7.10	7.55	7.95			
77	3.46	4.17	4.88		5.60	6.17	6.60	7.04	7.49	7.88			
76	3.39	4.10	4.80		5.51	6.11	6.54	6.97	7.43				
75	3.32	4.03	4.72		5.42	6.05	6.48	6.91	7.37				
74	3.25	3.95	4.64		5.33	5.99	6.41	6.84	7.31				
73	3.18	3.87	4.55		5.24	5.93	6.35	6.77	7.25				
72	3.11	3.79	4.46		5.15	5.84	6.28	6.70					
71	3.04	3.71	4.37		5.06	5.74	6.21	6.62					
70	2.95	3.63	4.28		4.95	5.62	6.14	6.54					

Source: From original table of South Porto Rico Sugar Company.

* For certain specified canes from certain regions. Others are subject to discounts.

The mills of the Central Aguirre company liquidated growers' cane on a basic rate of 65 percent of anticipated sugar recovery, at New York prices *minus* ocean freight, with adjustments which caused the average to be a somewhat lower rate. This system, of course, gave a varying number of pounds of sugar per hundred pounds of cane, since different shipments of cane yielded differing amounts of sugar; but it did not follow the Guánica sliding-scale principle, under which cane of low sugar content was paid for at lower percentages of the actual sugar recovery. This is substantially the system written into the new law.

The Fajardo system was similar to that of Aguirre, with a basic rate of 62.5 percent at New York prices, *minus* freight.

The mills of Eastern Sugar Associates liquidated a few growers on the 7 percent by weight basis, but in the main they paid 65 percent of sugar recovery at Puerto Rican prices, with a minimum of 3.5 percent by weight of cane for the mill. This penalized poor cane, since no cane extracting less than 10.5 percent sugar could yield as much as 7 percent sugar by weight to the owner. Liquidation was not in cash, but in warehouse receipts in Puerto Rico, and the owner marketed his sugar at his own expense, either independently or through the company.

By way of striking contrast, Central Cambalache liquidated on the 7 percent by weight basis, having reverted to it after

colono's share of the sucrose in juice (or cane) must be lower than in the case of good canes. Experience is the only guide.

"2. The costs of railroad transportation, handling and milling are the same, per ton of cane, for poor canes as for good canes,—and the resulting costs per ton of sugar recovered are considerably higher in the case of poor canes. As these costs are all borne by the mill, it seeks to recoup a part thereof by the retention of a larger percentage of the sugar recovered from poor canes than it retains in the case of good canes.

THAT IS:	GOOD CANES (Percentage)	POOR CANES (Percentage)
Recovery	12½	9
Railroad and other costs	1-¼	1-¼
Balance	11-¼	7-¾
To be divided between mill and <i>colono</i> , say:		
To mill	3-¾	3-¼
To <i>colono</i>	7-½	4
	11-¼	7-¼

trying out the analysis method. This mill had a very large number of small growers, and separate analysis for each small shipment of cane was felt to be impracticable. The writers were told that the weight basis was no barrier to improvements in cane, since the latter mainly came from the aid in cultivation rendered by the mill's field inspectors.

The systems of payment which have been described indicate more or less fully the general bases of "*colono* liquidation" as they existed in the recent past. It is to be understood, however, that they were subject to deviations in particular cases. One of the complaints of some mills was that some competitor "sweetened" the rates or the chemical analyses, to lure growers to its mill; whereas growers complained that some mills found too many occasions for making deductions. The writers had no means of learning the extent to which practice deviated from the stated method of liquidation, nor even whether any substantial amount of deviation existed.

Many very small growers, however, do fail to get the standard rates of payment. Their growths of cane are too small to be transported in separate shipments, and are bought up by contractors who are paid the mill rate. The latter, in turn, pay the "sub-colonos" at a discount from that rate.

Records on payments to growers were secured from 14 mills, accounting for about 50 percent of the sugar production of the Island. It was impossible to reduce most of the data to tabular form, on account of differences in the systems of liquidation. It was, however, possible to reduce actual payments to a percentage basis by weight of cane; and, when this was done, the highest rate during 1935 and 1936 was shown to be 8.37 pounds of sugar per 100 pounds of cane, the lowest rate 6.42 pounds, and the average 7.3 pounds (Table 56).

The narrow range within which payments are concentrated is shown by the fact that out of forty entries for three years (omitting 1914) only four were above 7.5 and one below 6.5. This raises the interesting question of why, under systems of payment based on percentages of sugar extraction, the results uniformly come out so close to 7 pounds of sugar per 100 pounds of cane. It would appear that the latter rate is regarded as "normal,"

Table 56

RANGE OF RATES OF MILL PAYMENTS TO CANE GROWERS
(COLONOS)

(Pounds of Raw Sugar per 100 Pounds of Cane)

	1914 (4 MILLS)	1928 (12 MILLS)	1933 (14 MILLS)	1935 AND 1936 (14 MILLS)
Highest rate	6	7.73	8.01	8.37
Lowest rate	6	6.6	6.7	6.42
Average rate	6	7.16	7.10	7.3
Average, American-owned mills ^a	6	7.09	7.1	7.25
Average, other mills	6	7.22	7.09	7.38

Source: Privately circulated questionnaire.

^a The percentage for American mills is slightly too low, owing to the fact that Guánica liquidation is computed with no deduction for transportation charges to New York.

and that the various systems are devised to average out at about that rate for cane of average good quality. In other words, the more refined methods of liquidation appear to make the older rough-and-ready system their point of departure.

4. CROP LOANS

It is a widespread practice in Puerto Rico for the mills to finance growers through the growing season with crop loans. These loans are regulated by a local law of 1910 (as amended).⁹ As a part of the "*colono* contract," the loan provisions are second in importance only to the liquidation terms.

Information on the extent to which this system of lending is practiced was furnished by a number of mills. These data revealed that in 1934-35 and 1935-36, of 4,089 growers under contractual relations to 18 mills, at the peak of debt 2,768 growers, or 67 percent, were in debt to the amount of \$4,935,000; and at the bottom, 735 growers, or 18 percent, were in debt to the amount of \$1,783,000 (Table 57).¹⁰

⁹ Titled "Contracts of Advances for Agricultural Purposes and Grinding of Cane."

¹⁰ The figures reported on the amount of indebtedness are subject to reservations. A few companies reported their affiliated land companies, and, for each year reported, more than \$2,000,000 at the peak relates to such companies. The minimum figures are also swelled to some unknown amount by the inclusion of like figures for the same companies.

Table 57

COLONO INDEBTEDNESS TO SUGAR COMPANIES

	1927-28	1932-33	1934-35 1935-36
Number of mills reporting	12	16	18
Number of <i>colonos</i> reported	3,122	3,836	4,089
Indebted <i>colonos</i> at peak of debt	1,812	2,177	2,768
Percentage indebted at peak of debt	58	57	67
Indebted <i>colonos</i> at bottom of debt	1,075	908	735
Percentage indebted at bottom of debt	34	23	18
Amount of debt at peak (in thousands)*	\$4,865	\$5,915	\$4,935
Amount of debt at bottom (in thousands)*	\$1,959	\$2,734	\$1,783

Source: Privately circulated questionnaire.

* See footnote 10.

Judging from this large sample—covering nearly half the mills, and over half the *colonos*—about two-thirds of the growers have recently been financed by the mills. Among the mills reporting, one showed as low as 5 percent of borrowing growers and one as high as 88 percent. A few mills in the Island do not make any loans.

It is to be assumed that some growers finance themselves, but most of those not financed by the mills no doubt get loans from other sources. Local banks do some direct lending to cane growers, and a relatively small amount is done through the Production Credit Association, connected with the Intermediate Credit Bank under the Federal Farm Credit Administration. Loans by cane contractors to “sub-colonos” and other private loans complete the picture.

No data are available for a close estimate of the total amount of grower financing. Of the \$4,935,000 indebtedness for 1935 and 1936 reported above,¹¹ about \$2,700,000 appear to have been true “*colono* loans”—that is, to independent growers and not by mills to allied farming interests. Since these figures probably cover at least half the total lending by mills, it may be very roughly estimated that the peak “*colono* debt” to mills was not far from \$5,000,000. If this, in turn, is estimated to be two-thirds¹² of all lending to growers, the total would rise to \$7,500,-

¹¹ Also see Table 57.

¹² The actual ratio of mill lending to total lending is not discoverable, and informed opinions differ. One opinion places it as high as 80 percent, which would make the estimate of total *colono* borrowing considerably too high.

000, which would be not far from \$2.00 per ton on all cane raised by *colonos*. Though these figures are not in any sense close estimates, they probably reflect the general order of magnitude of *colono* borrowing. This supposition is supported by the Intermediate Credit Bank estimate of \$2.70 a ton as a typical figure for the cane expenses which the bank is willing to finance.¹³

The slight extent to which the Intermediate Credit Bank finances cane production is indicated by its figures for January 31, 1936, when 171 "sugar loans," totaling \$451,000, were on the books as rediscounts from the Production Credit Association. Five other such loans, totaling \$540,000, were rediscounted for banks.

Data obtained from several companies indicate that the rates of interest most commonly charged were 8 and 9 percent. The three American companies on which data were secured were currently charging 7 and 8 percent. The highest rate reported was 10 percent. Except for two American companies, the sugar companies commonly secured funds for relending from the banks, usually at 6 or 7 percent.¹⁴ Since these data were collected, some decline in interests rates has been reported.

By Mainland standards of today, rates of interest in Puerto Rico are decidedly high; but whether, as is commonly complained, the rates are "exorbitant" in view of all the circumstances, and especially in comparison with the rates currently charged by the banks on loans to *colonos* and on first mortgages on agricultural land, is open to question.¹⁵ From one angle,

¹³ This figure must not be interpreted either as the bank's estimate of total cane costs or as a routine figure in the making of cane loans. In studying the amount of those out-of-pocket costs which are commonly financed by loans, \$2.70 was arrived at as an informal point of reference, against which to check the direct expense figures of applicants for loans.

¹⁴ In addition to current crop loans, some companies hold mortgages. In the study by Mr. Descartes quoted in Chapter XVIII, footnote 12, the average rates of interest on mortgage loans held by sugar companies was found to be 7.4 percent. This was the lowest rate found for any group of mortgage loans. The average for mortgage loans by private banks was 8.9 percent.

¹⁵ Rates by banks on commercial loans today (1938) average 6-7 percent, on loans to *colonos* 7-8 percent, and on farm mortgages 8 percent or more. Five years ago the corresponding figures were 8-9, 8-10, and 10-12 percent. Recent legislation has established a maximum legal rate of 9 percent on loans under \$3,000 and of 8 percent on loans above that amount. (Information supplied by one of the leading commercial banks in Puerto Rico.)

cane loans look rather guilt-edged, since the mills are in a position to repay themselves out of the proceeds from the cane.¹⁶ However, there are no data to show whether, after their own interest is paid and administrative costs and losses are borne, the mills themselves gain much on their lending activities or not.

5. FURTHER LEGAL REGULATION

In conclusion it is of interest to note a few further features of the law of 1937, mentioned above.

1. The *colono* is relieved of all responsibility for damage to cane, after he has delivered it at the place and in the manner agreed.

2. The mill may stipulate the varieties of cane to be covered by the contract.

3. *Colonos* are required to deliver cane free from trash and earth.

4. The mill is required to grind cane within twenty-four hours after its receipt.

5. A Sugar Board is created, consisting of the Commissioner of Agriculture and Commerce and six members appointed by the Governor, including three mill representatives and three *colono* representatives. It is to act as referee in disputes between mills and *colonos* relative to liquidation of cane. It is served by the inspecting chemical engineer as technical advisor.

¹⁶ In poor years, especially hurricane years, full collection of many loans has to be carried over to the following season.

XI

CAPITAL INVESTMENT AND EARNINGS

PERHAPS no aspect of the Puerto Rican sugar industry suffers from such loose and inaccurate treatment as does the matter of earnings and dividends. Not only are most popular discussions of the subject thoroughly unreliable, but attempts at more serious evaluation of the facts also fall into errors. Thus the Brookings report, in a calculation of earnings for 1927 made on a share-capital basis, does not provide for the entirely dissimilar capital structure of the companies studied; while the Diffies' book on Puerto Rico commits a series of analytical errors.¹

In the present study, a special effort was made to reduce the subject of investment and earnings to precise figures. Unfortunately, this effort was not wholly successful, since only scattering data could be assembled on the profits of companies owned by Spanish or Puerto Rican capital. Few of these companies publish annual reports, and it was found impossible to put the partial information obtained into any general form for publication. Consequently, no figures are presented for these companies.

1. SOURCES OF FINANCIAL DATA

Extensive and accurate figures were collected for three companies (and allied interests) largely owned by continental American interests, and these figures are reported in the present chapter. Since, however, the detail with which the companies answered the request for such data differed, it is necessary to explain exactly the basis upon which the ensuing discussion rests.²

For the Fajardo Sugar Company the figures used are from

¹ *Porto Rico and Its Problems*, p. 641, and B. W. and J. W. Diffie, *Porto Rico: A Broken Pledge*, pp. 62-64. Certain such errors in profit and dividend calculations are analyzed in greater detail below (Section 3).

² No attempt was made to follow the financial history of the fourth American-owned company, the United Porto Rican Sugar Company, now reorganized as Eastern Sugar Associates. This company paid preferred dividends from 1927 to 1931, but has never paid dividends on its common stock. After going through re-

the audited annual statements. These statements are consolidated for all the Fajardo interests—that is, the Fajardo Sugar Company (the parent company), the Loíza Sugar Company, the Fajardo Development Company (which owns the railroad properties), and the Fajardo Sugar Growers Association (which is the landowning and farming company). We accept the assurance of the management that the consolidated statements accurately reflect the financial condition of the whole group of companies, but we have no direct knowledge of the underlying accounts of the constituent companies.

The Central Aguirre Associates supplied in detail all figures requested. Moreover, it was necessary in certain connections to check the figures back to the company records, so that we feel assured of the accuracy of the data, even though we did not ourselves take them off the books in the first instance. After having studied in detail the underlying figures, the public annual statements were accepted as the basis for the general tables shown below, which reflect the consolidated figures for the Central Aguirre Sugar Company, the Central Machete Sugar Company, the Santa Isabel Sugar Company (until dissolved), the Ponce and Guayama Railroad Company, and Luce and Company (the allied agricultural partnership). This usage fails in a very minor degree to reflect the exact situation, since in the consolidated figures only the stock interest of the Central Aguirre Associates in the Central Machete Company is included. The figures for assets and capital and surplus are thus somewhat smaller than the actual facts. On the other hand, earnings of the Central Machete Company are fully reflected, which causes the percentage of earnings to investment to be slightly inexact. Though the consolidated figures furnish the basis, the detailed figures are referred to in one or two connections, as will be seen later.

ceivership and reorganization, it is now reputed to be working its way out from a heavy burden of indebtedness. It differs from the other companies in having been at its inception a merger project of the boom period, whereas each of the other companies has a long history from relatively small beginnings in the first decade of the present century. If the figures of the United Company had been run into the general tables that follow, the average earning percentages for all American-owned companies would obviously be decidedly lower than those presented subsequently for the three companies only. This important circumstance should be borne in mind.

Since the published balance sheets and income statements of the South Porto Rico Sugar Company of New Jersey are consolidated for its subsidiaries' interests in both Puerto Rico and the Dominican Republic (where two large factories are owned and operated), it was necessary to obtain figures applicable only to Puerto Rico. Moreover, the public statements do not include Russell and Company, Sucs. S. en C., a Puerto Rican agricultural partnership the earnings of which accrue to the common stockholders of the New Jersey company. We were therefore furnished with auditors' certified reports for the different entities together with all detailed statements required. The figures presented below are consolidated for the South Porto Rico Sugar Company of Puerto Rico (the Puerto Rican subsidiary of the New Jersey company) and Russell and Company. The earnings reported also include substantial amounts earned by the New Jersey company from Puerto Rican sources. The combined figures are properly comparable with those of the other two companies.

One further point needs to be made for interpreting the figures of the South Porto Rico Sugar Company. For the period 1923 to 1934 an average of 23 percent of the annual output at its Guánica mill consisted of sugar processed from cane imported from the Dominican Republic. A portion of total profits must be attributed to that source.³ In the tables presented, the profits from imported Dominican cane are fully reflected in the annual figures and are later deducted *in gross*, for comparative purposes in showing earnings springing from strictly Puerto Rican sources.

2. THE RECORD OF INVESTMENT AND EARNINGS

No attempt was made to build up a complete financial history of the companies studied. For the period before 1920, only summary figures were requested, and these were furnished by the Central Aguirre and South Porto Rico companies, organized in 1901 and 1902, respectively. Before 1920 the two companies and their allied enterprises earned on their Puerto Rican business an aggregate of about \$26,000,000, an average of about \$800,000

³ Customs duties paid upon the importation of these canes and covered into the Treasury of Puerto Rico amounted to approximately \$3,000,000.

per company per year. Data were not available for computing the earnings as percentages of investment. About \$5,000,000 was retained in the business. Adding the Fajardo figures of 1919, at that date the aggregate capital and surplus of the three companies and allied interests was \$19,000,000.

The following three years, 1920 to 1922, were marked by confused and abnormal conditions in the sugar market. Combined earnings of the three companies reached \$18,000,000 in 1920,⁴ but the two following years showed almost no profit.

Into these earlier periods the present study does not attempt to go in any detail. From 1923 onwards, however, a year-by-year record has been constructed, showing (a) total and fixed assets; (b) capital investment; (c) net and distributed earnings. The facts are displayed in the tables which follow.

Assets

As shown in Table 58, total assets (depreciated) for the three companies and allied interests increased from \$33,000,000 in 1923 to \$42,000,000 in 1935, with a peak of \$45,700,000 in 1929. Fixed assets (depreciated) increased from \$16,100,000 to \$20,600,000 in the same period. The full magnitude of expenditure for plant expansion and improvement is best seen in the increase of *undepreciated* fixed assets from \$19,400,000 to \$31,700,000.

Capital Investment

Net investment⁵ of these three companies and allied interests (shown in Table 59) increased during the period 1923 to 1935 by \$8,000,000, from \$28,400,000 to \$36,500,000. The investment figures for the separate companies show (as do also the total asset figures in Table 58) considerable similarity of size. The fourth American-owned company (Eastern Sugar Associates), for which figures are not given, is within the same

⁴ Before payment of income taxes amounting to over \$3,000,000.

⁵ Net investment includes the capital and surplus of each operating unit plus mortgage debt owed by an operating unit to a parent company. The addition of mortgage debt was made necessary by the capital structure of one company. Interest on the mortgage debt is similarly included in net earnings (Table 60). This treatment makes the figures properly comparable between the three companies, and is necessary for a full showing of the facts.

Table 58
TOTAL ASSETS AND FIXED ASSETS, THREE AMERICAN-OWNED SUGAR COMPANIES
AND ALLIED INTERESTS
(In Dollars, 000 Omitted)

	TOTAL ASSETS, DEPRECIATED				FIXED ASSETS, DEPRECIATED				RESERVE FOR DEPRECIATION, TOTAL
	Aguirre	Fajardo	South Porto Rico	Total	Aguirre	Fajardo	South Porto Rico	Total	
1923	11,915	9,003	12,063	32,981	5,267	3,260	7,559	16,086	3,287
1924	11,756	8,990	12,995	33,741	5,639	3,243	7,300	16,182	3,800
1925	12,239	9,310	14,493	36,042	5,637	3,267	6,672	15,576	4,784
1926	13,554	11,790	13,357	38,701	8,133 ^a	6,027 ^b	6,340	20,500	6,100
1927	13,916	12,027	15,599	41,542	8,084	6,537	5,997	20,618	6,914
1928	14,438	13,621	17,300	45,359	8,641	7,323	5,788	21,752	7,702
1929	15,144	14,657	15,906	45,707	8,857	7,567	5,710	22,134	8,480
1930	13,975	14,703	14,680	43,358	9,083	7,480	5,551	22,114	8,544
1931	16,075	12,510	12,884	41,469	9,225	7,432	5,252	21,909	8,793
1932	14,693	11,980	13,696	40,369	9,195	7,297	5,050	21,542	9,597
1933	15,351	12,515	15,075	42,941	9,090	7,509	4,869	21,488	9,847
1934	16,702	12,789	11,976	41,467	9,005	7,398	4,690	21,093	10,590
1935	16,680	14,911	10,469	42,060	8,833	7,287	4,470	20,590	11,109

Source: Published annual statements, auditors' reports, and privately furnished information.

^a Increase shows assets acquired from Santa Isabel Sugar Co.

^b Increase shows assets of Loíza Sugar Co.

Table 59

NET INVESTMENT, THREE AMERICAN-OWNED SUGAR
COMPANIES AND ALLIED INTERESTS

(In Dollars, 000 Omitted)

	AGUIRRE	FAJARDO	SOUTH PORTO RICO	TOTAL
1923	10,892	7,494	9,984	28,370
1924	10,648	7,853	10,997	29,498
1925	11,128	8,299	11,745	31,172
1926	11,150	9,196	10,525	30,871
1927	12,336	9,357	12,059	33,752
1928	13,649	9,048	13,911	36,608
1929	12,733	8,146	13,651	34,530
1930	13,385	8,359	14,091	35,835
1931	13,399	8,585	12,420	34,404
1932	13,734	9,262	13,311	36,307
1933	13,842	9,166	13,644	36,652
1934	14,936	11,058	8,806	34,800
1935	15,412	12,217	8,835	36,464
Averages 1923-1935	12,865	9,080	11,845	33,790

Source: Published statements, auditors' reports, and privately furnished information.

general size limits. Though this similarity may be only accidental, one is led to ask whether the size attained is not somewhere near the optimum for efficient operation under Puerto Rican conditions.

Earnings

Net earnings⁶ and income taxes are shown in Table 60. These figures are complete for all operations, including all profit on sugar manufacturing, cane growing, railroad operation, and advances to *colonos*. Earnings are first shown before income tax payments, then with income tax deducted, and finally with an adjustment for profits accruing from sugar cane imported from the Dominican Republic. The annual average figures are then computed as percentages of annual investment, showing, first, total earnings and, second, earnings accruing to investors from strictly Puerto Rican operations after deduction of income tax.

Total earnings for all companies in the thirteen years are

⁶ Net earnings include book profit of operating units plus interest on mortgage debt held by a parent company.

shown in Table 60 to have been \$55,100,000 or an annual average of \$4,200,000. Income taxes totaled \$7,200,000, or \$555,000 annually. Profits from imported Dominican cane are shown at \$3,100,000 (after income tax). The net amount accruing to investors from strictly Puerto Rican operations is thus \$44,800,000 or \$3,400,000 annually. Earnings distributed to investors are shown in Table 61. The aggregate amount of such distribution for the thirteen years was just under \$36,000,000, or an annual average of \$2,760,000. In addition to the income payments to investors, capital was withdrawn to the amount of \$2,500,000 by the retirement of mortgage debt.

In computed percentages, total earnings have averaged 12.1 percent annually upon investors' equity.⁷ After deduction of taxes and profits on Dominican cane, the earnings accruing to investors on strictly Puerto Rican operations are shown as 10.2 percent on the average annual investment in Puerto Rico.⁸ Earnings distributed to investors work out at 7.9 percent on the investors' equity.

For proving up the figures presented, it appears that against accrued income of \$55,100,000, the following charges are to be made: (1) increase of net investment, \$8,090,000; (2) income taxes, \$7,720,000; (3) income to investors, \$35,950,000; and (4) retirement of debt capital, \$2,500,000. These items add up to \$53,750,000, leaving an unaccounted margin of \$1,350,000. Sufficient study of the capital accounts to accomplish absolute balancing of accounts was impracticable under the circumstances of the present study.⁹

⁷ For computing this percentage, the average net investment figure in Table 59 was increased by \$1,000,000, an approximately correct figure for investment in Santo Domingo related to producing cane the profits from which are reflected in the earnings column. The same adjustment is made in computing the percentage for the South Porto Rico Sugar Co.

⁸ This computation is approximately correct, but not exactly, since the underlying figures contain two compensating errors the exact size of which could not be shown. On one side, profit on Dominican cane is underestimated since it was computed on the basis of the ratio of such cane to total cane, though the imported cane was in fact considerably cheaper. On the other side, no hypothetical amount is introduced as profit which might have been made by grinding Puerto Rican instead of Dominican cane.

⁹ The discrepancy is raised to over \$2,000,000 when account is taken of the Fajardo stock sale in 1926. The sources could only be discovered by the checking of complex inter-company accounts.

Net earnings have been registered in every year since 1923 for all companies, except for two years of loss by one company, both hurricane years (Table 60). Two companies have distributed earnings in every year, but one has passed dividends for five years, 1930-34 (Table 61). Earnings during the past six years have been a slightly smaller percentage on investment than during the six pre-depression years. Taking the individual companies, Central Aguirre has the best earning record, with 14 percent on net investment before income tax and 12.3 after tax. South Porto Rico is next, with 13.1 percent before tax, 11.3 percent after tax, and 10.3 percent after the further adjustment on account of profits on Dominican cane. Fajardo shows 8.2 percent before tax and 7.1 percent after tax (Table 60).

Agricultural Operations

The figures as presented above are consolidated for all operations, and do not isolate assets and earnings related to manufacturing, farming, and transportation. Detailed figures for agricultural operations were available for only Luce and Company and Russell and Company. The following general information from these figures is of some interest.

The total agricultural assets (depreciation deducted) of the two partnerships have risen from about \$7,000,000 to about \$9,500,000 since 1923, and fixed assets from \$5,600,000 to \$7,500,000. Capital investment has risen from \$5,600,000 to \$8,800,000. Since 1923, earnings, as represented by profits and interest on mortgage debt owned by allied interests, have averaged about \$760,000 per year, or 9.4 percent on investment, before income tax. It is impossible to say that these figures on agricultural earnings have much significance. They are dependent upon contracts for purchase and sale of cane between allied entities, and the profits accrue to the same investors.

Earnings Data on Other Companies

Earnings figures for three northern Puerto Rican-owned mills were analyzed for the period 1928 to 1935. On the same basis of calculation as used for the American companies, total earnings (profit plus interest on long-term debt) equaled 3 percent on investors' equity. The highest rate of the three was 4.7 percent;

Table 60
**NET EARNINGS AND INCOME TAX, THREE AMERICAN-OWNED
 SUGAR COMPANIES AND ALLIED INTERESTS**
 (In Dollars, 000 Omitted)

YEAR	NET EARNINGS				INCOME TAX
	Aguirre	Fajardo	South Porto Rico	Total	Total
1923	2,398	1,120	1,618	5,136	804
1924	1,048	1,344	1,406	3,798	484
1925	1,638	1,303	1,701	4,642	623
1926	1,181	582	1,578	3,341	560
1927	2,711	902	2,263	5,876	628
1928	3,034	502	2,517	6,053	624
1929	437	721 ^a	991	707	284
1930	1,850	223	1,769	3,842	289
1931	1,154	226	898	2,278	241
1932	1,517	702	1,562	3,781	359
1933	2,120	49 ^a	2,159	4,230	793
1934	2,540	1,902	2,004	6,446	810
1935	1,840	1,635	1,519	4,994	714
Total	23,468	9,671	21,985	55,124	7,213
Income Tax	2,890	1,318	3,005	7,213	
Total after income tax	20,578	8,353	18,980	47,911	
Profit from imported cane ^b			3,068	3,068	521
Total after adjustment	20,578	8,353	15,912	44,843	6,692
Annual average total	1,805	744	1,691	4,240	555
Percent on investment	14	8.2	13.1 ^c	12.1 ^c	
Annual average after tax and adjustment	1,583	643	1,224	3,450	515
Percent on investment	12.3	7.1	10.3 ^d	10.2 ^d	

Source: Published statements, auditors' reports, and privately furnished information.

^a Loss

^b See above, Section I of this chapter.

^c See footnote 7 of this chapter.

^d See footnote 8 of this chapter.

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but one of them had a net loss during the period. The present writers have no knowledge as to whether these figures are typical.

Table 61

DISTRIBUTED EARNINGS, THREE AMERICAN-OWNED SUGAR COMPANIES, AND ALLIED INTERESTS

(In Dollars, 000 Omitted)

	AGUIRRE	FAJARDO	SOUTH PORTO RICO	TOTAL
1923	1,660	720	422	2,802
1924	903	936	369	2,208
1925	903	809	893	2,605
1926	1,037	630	575	2,242
1927	1,262	647	560	2,469
1928	1,443	647	353	2,443
1929	1,260	325	1,415	3,000
1930	1,075	—	549	1,624
1931	1,072	—	247	1,319
1932	1,071	—	700	1,771
1933	1,066	—	2,200	3,266
1934	1,119	—	6,591 ^a	7,710
1935	1,119	97	1,277	2,493
Total 1923-35	14,990	4,811	16,151 ^b	35,952 ^b
Annual Average	1,153	370	1,242	2,766
Percent on Investment	8.9	4.0	9.6 ^c	7.9 ^c

Source: Published statements, auditors' reports, and privately furnished information.

^a Distribution of earnings retained in the business in prior years.

^b Not including retirement of \$2,500,000 mortgage debt to parent company.

^c See Footnote 7 of this chapter.

A rough measure of the relative profits of American and Puerto Rican companies in the past two years is found in the tax figures presented in Chapter XVI (Insular Revenues). For 1934-35, the figures of the Treasurer of Puerto Rico show that the four American companies produced under 50 percent of the sugar and paid 60 percent of the total income taxes paid by sugar companies. For 1935-36 the latter percentage was 55.6. These figures indicate relatively good average profits for most companies in these years.

3. METHODS OF CALCULATION

The practice of making profit and dividend calculations as percentages is conducted on many different bases, often result-

ing in confusion, misapprehension, and apparent contradiction. It is necessary, therefore, to make our bases of calculation perfectly clear. For the general base upon which to make calculations in the present instance we have used investors' net equity for the reason that no other base permits proper inter-company comparisons.

If one uses only the share-capital as a base, the percentage results are of course very different and larger. This computation, if used for comparative purposes, can be very misleading if the history of the capital accounts is not clearly displayed. It may have interest in showing the historical earning capacity of some particular past investment, but it furnishes no basis of comparison between companies with different financial structures. This becomes clearly evident in the figures on earnings presented in the Brookings report, referred to earlier in this chapter, where earnings for 1927 are reported as 69.2, 15.7, and 8.1 percent of capital for the Central Aguirre, Fajardo, and South Porto Rico companies, respectively.¹⁰ For comparative purposes, these percentages are entirely worthless because of the entirely dissimilar capital structures of the companies.

Even the capital, surplus, and mortgage debt base which we have used would be inapplicable if there had been arbitrary revaluation of assets. This point was carefully checked and it was found that no such revaluation had taken place in the assets of any of the companies during the period since 1923. The base used is therefore presented with confidence as a substantially accurate investment figure, except for a tentative reservation with respect to the depreciation accounting. It will be noticed in Table 58 that credits to the depreciation reserves have exceeded charges by nearly \$8,000,000 since 1923. Whether or not the depreciation accounts cover some profit is a point upon which no certain opinion can be expressed without a technical knowledge of the properties. The profit figures do not reflect changes in land values.

Another matter which creates confusion of thought is that of

¹⁰ *Porto Rico and Its Problems*, p. 641. The text is in error in speaking of the South Porto Rico Sugar Company of Puerto Rico. The figures are in fact those of the New Jersey, or parent, company and include the profits derived from operations of its two factories in Santo Domingo.

cash and stock dividends. We have put in Table 61 only cash disbursements of earnings, which is the only basis for comparability. To make the record entirely clear in this matter, however, the following information on stock dividends and split-ups is given. In 1919, Central Aguirre split its 30,000 shares of \$100 par into 150,000 shares of \$20 par. In 1926, it declared a 20 percent stock dividend, adjusting the stock account upward \$600,000 and the surplus downward by the same amount. In 1929, the shares were split four ways, making 720,000 shares without par value. In 1934, the number of shares was increased to 753,413.

The Fajardo company maintained \$100 par shares up to the time of the present study.¹¹ In 1920, the number of shares was increased to 57,601 by a 70 percent stock dividend. In 1926, the number of shares was increased to 64,779 by sale of stock.

The common-stock account of the South Porto Rico Company of Puerto Rico has been twice increased by transfer from surplus account without any change in the equity of the parent company which owns all the shares.¹²

None of the above book adjustments affected the aggregate amount of the capital and surplus accounts. Neither do they have any relation to the calculations of earnings and distributed earnings shown earlier in the present chapter.

The misunderstanding as to the rate of dividend payments that can arise from inadequate interpretation of such stock adjustments is illustrated by the statement made in one book on Puerto Rico¹³ to the effect that in a single year the South Porto Rico Sugar Company of New Jersey paid in dividends 115 percent and the Fajardo Sugar Company, 110 percent. In that year, which

¹¹ A split-up of shares was made in 1936.

¹² The parent, or New Jersey, company increased its \$100 par common shares from 56,028 to 112,056 in 1920, and later in that year sold 11,206 shares of such common stock at par. In June, 1927, the capital structure was changed from 123,262 shares of \$100 par value common stock to 493,048 shares without par value. Later in 1927, 184,893 shares of the new common stock were sold to its stockholders at \$30 per share, and in November 67,794 additional shares were issued upon capitalization of accumulated surplus, making a total of 745,735 shares outstanding. The New Jersey company, in addition to being the recipient of all the distributed earnings from Puerto Rican sources, also receives income from factories in Santo Domingo.

¹³ B. W. and J. W. Diffie, *op. cit.*, pp. 63 and 64.

was the bonanza year of 1920, actual cash dividends were 15 and 40 percent, respectively, on par value of stock, and of course much less as a percentage of invested capital. Even the latter percentage comparison between these two companies is meaningless, owing to peculiarities of capital structure.

The preceding digression upon methods of calculating returns is made solely to emphasize the care which must be taken if an accurate and comparable record of earnings is to be presented.

4. CONCLUSION

In concluding the presentation of profit figures, several brief comments may be offered:

1. The most striking fact about the figures is that they are almost as good for recent depression years as for years of prosperity. Of the three companies studied, only Fajardo shows a temporary decline in earnings, due perhaps as much to hurricanes as to the impact of the depression.¹⁴ In view of the downward movement of sugar prices, this ability to make profits can probably be regarded as evidence of three things: first, the excellence of the managerial ability; second, the pursuit of conservative financial policies with respect to capitalization, borrowing, and distribution of earnings; and third, the flexibility—though this factor equally affects all sugar producers—of the principal items of cost, as represented by wages¹⁵ and, especially, the price of cane.¹⁶ An additional factor, noted below, is of course the regulated sugar market on the Mainland.

2. Judging by the available data, it is certain that the showing of average earnings for all other companies would be less favorable. There are a number of reasons for this: (1) In general, production has been more profitable in the south of the Island, where irrigation is practiced and nature is more under control. The Central Aguirre company and (in lesser degree) the South Porto Rico Sugar company have the advantage of this geo-

¹⁴ The exception is the fourth American-owned company—the United Porto Rican Company, which, caught in the midst of its promotional expansion with heavy indebtedness, was seriously discommoded.

¹⁵ See Chapter XIII, on rates of wages, 1929 to 1935.

¹⁶ The price of purchased cane moves automatically with the price of sugar. See Chapter X.

graphical location. (2) The companies reviewed represent a better than average level of technical and managerial proficiency. (3) Some companies have been caught in financial embarrassments because of incautious financial policies, especially in the matter of too freely distributing the earnings of good years. (4) A number of companies were slow in conquering the cane diseases which others had got under control in the early nineteen-twenties.

3. There have been enough weak members to show that profits are not automatic, as might be expected in a country which at intervals is harassed by hurricane, drought, and plant disease, as well as by economic disturbance and the common weaknesses of human judgment. Nevertheless, there appears to be no doubt that all Spanish and Puerto Rican sugar companies enjoying efficient managements and following conservative financial policies have been able—taking one year with another—to make a really good profit showing. The evidence of this is the relative absence of financial embarrassment during the depression, except in the case of companies affected by earlier financial difficulties.

4. The profitable basis of the Puerto Rican sugar industry has long been supported (indeed, to a large degree created) by the American tariff on sugar. This has been of special importance during the depression. As Cuban production dropped off owing to the catastrophic decline of the world price of sugar, Puerto Rican producers (together with producers in other areas within the tariff boundaries) were able to pursue an uninterrupted program of expansion up to 1934. Thereafter they received the offsetting benefits of the A.A.A. program, as represented both by subsidized crop restriction and higher sugar prices. Had the industry been compelled to meet the depression without expansion, subsidization, or price control, there is no doubt that the record would have been different.

5. The record of the American companies surveyed in this chapter covers a period in which expansion was taking place, giving opportunity for reinvestment of earnings. If, as appears not unlikely, the period of expansion is over, there is a prospect that earnings will be more fully paid out to investors, rather than

for capital equipment or land. Whether the earnings continue in undiminished amount will depend, alternatively, upon whether the present Federal sugar restriction policy remains effective, or upon the continued capacity of the factories and plantations to control their costs in the face of the vagaries of sugar prices. There are speculative elements in the situation the outcome of which no one can foresee.

XII

EMPLOYMENT AND HOURS OF LABOR

Two aspects of the sugar industry are of profound significance in the social and economic life of Puerto Rico. First, the industry is the largest employing agency in the Island, accounting (during peak seasons) for a fifth to a quarter of all the gainfully employed. Second, in common with other occupations of an agricultural nature, the sugar industry presents the problem of seasonal fluctuation in employment, attendant on the harvesting-and-planting cycle.

1. NUMBER OF WORKERS EMPLOYED BY THE INDUSTRY

No adequate figures are available as to the number of workers employed by the industry. The United States census of 1930 reported the number of persons ten years old and over, gainfully employed in Puerto Rico as 503,810, of whom 261,789 were employed in agriculture. The census, however, gives no breakdown of the latter figure.¹

Estimates, from various sources, put the number of workers employed by the sugar industry at about 125,000.² The Association of Sugar Producers of Puerto Rico estimated the number of workers earning \$50 or less a month, during the 1933-34 sugar season, at 10,485 in mills and 113,161 in fields, or a total of 123,646 workers (Table 62). The figures are for peak employment.

¹ *Fifteenth Census of the United States: 1930, Occupation Statistics, Puerto Rico*, pp. 5, 6. The breakdown under the category "Manufacturing and Mechanical Industries" also fails to provide data for computing the number of workers employed by sugar mills. See also Table I, Chapter II. A special 1935 census, conducted under the auspices of the Puerto Rico Reconstruction Administration, gives the number of gainfully employed as 522,825, of whom 246,976, or 47.2 percent were engaged in agriculture. Of the latter, 94,718, or 38.4 percent, were employed on sugar cane farms (PRRA release of February 18, 1937).

² The Assistant Commissioner of Labor, William D. López, estimates 150,000 (*The Labor Problem in Puerto Rico* [mimeographed], Department of Labor, San Juan, February 25, 1935).

A study by the Puerto Rico Reconstruction Administration, based on preliminary figures of the 1935 special census for Puerto Rico, reports 100,880 persons employed in the sugar industry, of whom 92,398 are field workers.³ The month of the census is not indicated, and it is conceivable that the difference between the PRRA figure and the estimate of the Association of Sugar Producers is the result of the census' not having covered the month of peak employment, and of variations in the classification of workers not directly employed in sugar production. Furthermore, total sugar production in 1934-35 was 30 percent lower than in 1933-34, as a result of AAA restriction (see Chapter VII, Table 30).

Table 62

ESTIMATED MAXIMUM NUMBER OF WORKERS EARNING \$50
MONTHLY OR LESS EMPLOYED BY THE SUGAR INDUSTRY,
1933-34

REGION	MILL WORKERS	FIELD WORKERS	TOTAL
North coast	2,725	41,708	44,433
South coast	3,677	33,100	36,777
East coast	1,505	16,323	17,828
West coast	750	7,819	8,569
Interior	1,828	14,211	16,039
Total	10,485	113,161	123,646

Source: Association of Sugar Producers of Puerto Rico, on the basis of questionnaires circulated by the Association.

The PRRA figures, based on this special census, give the following percentage distribution, by crops, of agricultural workers ten years of age and over:⁴

	Percent
Sugar cane	48
Coffee	18
Tobacco	16
Minor crops	12
Fruits	2
All others	4
	100

³ *The Sugar Industry in Relation to the Social and Economic System of Puerto Rico*, (mimeographed) by Esteban A. Bird. Puerto Rico Reconstruction Administration, San Juan, January, 1937, p. 9.

⁴ *Op. cit.*, p. 8.

The estimate by the Association of Sugar Producers of 113,161 field workers employed by the sugar industry is 43 percent of the 261,789 workers reported by the 1930 census as engaged in agricultural pursuits.

Although mill workers are a small fraction of the number of workers employed by the sugar industry, the importance of the mills in the industrial life of the Island may be gauged by the fact that a census of all industrial establishments in Puerto Rico, conducted by the Department of Labor,⁵ revealed 48,798 workers, of whom 8,200, or 17 percent, were employed by sugar mills. If only male workers are considered, the figures are 21,494 for all the industrial establishments of the Island, 8,160 for the mills, and the percentage is 38.⁶

Efforts were made in connection with the present study to determine somewhat more exactly the number of workers employed by the sugar industry, but incomplete returns to privately circulated questionnaires made this impossible. The partial figures available from these returns cover 16 sugar companies (three of them American-owned) accounting for 38 percent of the total Island production of sugar cane and 62 percent of the total sugar production that year. Tentative calculations based on these partial returns show total employment of 126,800 for the peak of the season and a monthly average of 81,200, including both field and mill-workers. The estimate assumes an equal amount of labor per ton of cane, with samples chiefly from the sugar-milling companies.⁷

The calculations by which the above estimate of employment was secured are as follows:

⁵ All references to the Department of Labor as a source for data on employment and wages are to the Insular Department in San Juan. Any reference to the Federal Department of Labor in Washington is specifically distinguished.

⁶ The census of the Department of Labor is published in *Tercer informe de la comisión legislativa para investigar el desempleo en Puerto Rico* (San Juan, February 9, 1932), pp. 17-31. The 1930 United States Census reports 109,832 persons (43,986 males and 65,846 females) under the category "Manufacturing and Mechanical Industries," but this total includes homeworkers (excluded in the Department of Labor census) and workers who usually follow a gainful occupation but were unemployed at the time of the census. The Department of Labor census, in other words, was of industrial establishments and their actual employees at the time of the census.

⁷ An effort was made to secure information on the effect of the A.A.A. program on employment, but the data secured were too scattering to serve the purpose.

In 1935, adding together the peak month in each case, field employment of the three reporting American-owned companies gives a total of 20,201^a (Table 74, p. 184). These companies were responsible for 23 percent of all the cane produced. Assuming a uniform number of employees per unit of cane, 0.23 divided into 20,201 gives a total of 87,800.

Taking the reporting Puerto Rican companies as a sample, their peak employment was 23,444 and their percentage of total cane production 15. Dividing through gives a total of 156,300.

When the two calculations are combined, the ensuing total is 114,800.

Using monthly average instead of peak employment figures, the three calculations give 61,000, 93,500 and 73,700 respectively.

For mill employment, the first sample gives a total of 7,600 peak employment, the second 18,600, and the two together 12,000. The two samples combined give a monthly average of 7,500.

When two extensive statistical samples can give such disparate results, one must be chary of stating that the two combined give accurate results. Nevertheless, the combined figures are not far from the estimates of the Association of Sugar Producers, as given in Table 62, above, particularly in view of the fact that different years and different methods are used. The comparison is as follows:

	<i>A. S. P. estimates, 1933-34</i>	<i>Calculation described above, 1934-35</i>
Field	113,161	114,800
Mill	10,485	12,000
Total	123,646	126,800

^a This figure differs from that given in Table 66, as it is the result of adding together the peak month for each company, regardless of the calendar month in which the peak falls, whereas in Table 66 the figures are consolidated by calendar months. The same is true for the figure for the Puerto Rican companies, below.

2. CHARACTERISTICS OF EMPLOYMENT IN THE SUGAR INDUSTRY

The data compiled on employment in the sugar industry (summarized in Tables 63 and 64) reveal certain interesting characteristics. Using the figures for three American-owned companies (because they cover a longer period and, having been compiled on a more uniform basis, are more accurate) we find (Table 63) that:

1. Wage workers in the sugar industry are predominantly adult males. During the peak month of 1935-36, females constituted less than one percent of the total number of workers, and boys less than 3 percent.⁹

2. Seasonal variations in the employment of adult males are very marked. Total employment for the minimum months of 1927-28, 1932-33, and 1935-36 for these three companies was 71 percent, 58 percent, and 45 percent respectively of the total employment in the peak months.¹⁰

Table 63

DISTRIBUTION OF WAGE-WORKERS, THREE AMERICAN-OWNED COMPANIES AND ALLIED ENTERPRISES

CLASS OF WORKER	NUMBER OF WORKERS PEAK MONTH ^a			NUMBER OF WORKERS MINIMUM MONTH ^a		
	1927-28	1932-33	1935-36	1927-28	1932-33	1935-36
<i>Field</i>						
Adult male	21,093	20,227	18,059	15,536	12,254	8,593
Female	197	192	187	153	147	142
Boy	903	670	558	678	535	507
<i>Mill</i>						
Adult male	3,137	2,557	3,000	1,792	911	987
Female	3	7	9	1	9	4
Boy	23	21	31	25	13	23
Total	25,356	23,674	21,844	18,185	13,869	10,256

Source: Privately circulated questionnaire.

^a The peak and minimum figures are not for a particular month in each year, but are the sum of the peak and minimum figures for each reporting company, regardless of the month in which they occur. In this respect the figures are different from those in Table 74.

⁹ In the fields, women and boys perform some of the lighter tasks (planting seed and tending oxtams); in the mills, women do machine sewing on bags, filter-cloths, and so forth, and boys carry juice and syrup samples from the mill to the laboratory, and perform other minor tasks.

¹⁰ See discussion of seasonal variations (section 4, below) for more detailed analysis of these and subsequent statements on seasonal variations.

Table 64

DISTRIBUTION OF WAGE-WORKERS, NINE PUERTO RICAN COMPANIES

CLASS OF WORKER	NUMBER OF WORKERS PEAK MONTH ^a		NUMBER OF WORKERS MINIMUM MONTH ^a	
	1932-33	1935-36	1932-33	1935-36
<i>Field</i>				
Adult male	21,340	18,974	3,892	5,554
Female	55	59	10	55
Boy	473	511	176	133
<i>Mill</i>				
Adult male	2,714	3,455	529	924
Female	4	1	1	1
Boy	1	5	1	5
Total	24,587	23,005	4,609	6,672

Source: Privately circulated questionnaire.

^a The peak and minimum figures are not for a particular month in each year, but are the sum of the peak and minimum figures for each reporting company, regardless of the month in which they occur.

3. Seasonal variations are slight in the case of females and boys.

4. The swing in seasonal variations has been accentuated in recent years.¹¹

5. In the case of milling companies with plantations, the mill workers are usually a small fraction of the total employees. In the three American-owned companies studied, mill workers for the peak months of the three years under review formed 12 percent, 11 percent, and 14 percent respectively of total employment during the peak months.¹²

6. Changes in production methods have effected a drop in employment per ton of cane and per ton of sugar produced.¹³

¹¹ However, the data for the three companies studied here probably exaggerate the trend for the Island as a whole, for reasons discussed below (section 3).

¹² The increase in the proportion of mill workers to total labor in 1935-36 is partly explained by crop restriction under the A.A.A. program (reducing the number of field workers) and the eight-hour day established in mills, requiring three instead of two shifts of workers a day (see section 6, below).

¹³ Discussed in greater detail below, section 5. A summary of essential payroll data for the three American-owned companies and affiliates will be found in Table 74 (end of chapter).

3. PAYROLL OF THE SUGAR INDUSTRY¹⁴

To form an idea of the amount paid out in wages by sugar companies, data on monthly payrolls during 1934-35 were obtained. Unfortunately, the returns to questionnaires on the subject covered only sixteen companies. Three American-owned companies and allied enterprises reported a total of \$3,084,647 paid to field workers and \$779,598 paid to mill workers, or monthly averages of \$257,054 and \$64,967 respectively. The figures for the thirteen other companies were \$2,214,557 for field workers, \$935,537 for mill workers, with monthly averages of \$184,546 and \$77,961. For the sixteen companies total payrolls were \$7,014,339, or \$584,528 for the monthly average (Table 65).

Table 65
MONTHLY PAYROLLS, 1934-35^a

MONTH ^b	AMERICAN-OWNED COMPANIES ^c		OTHER COMPANIES ^d		TOTAL
	Field	Mill	Field	Mill	
Jan.	\$ 290,766	\$ 94,055	\$ 153,896	\$ 94,916	\$ 633,633
Feb.	355,764	96,903	231,910	119,108	803,685
March	388,441	105,862	259,575	127,580	881,458
April	380,649	107,212	227,982	116,990	832,833
May	336,023	94,265	279,665	125,576	835,529
June	229,919	39,283	269,445	74,455	613,102
July	200,995	30,720	162,571	36,629	430,915
Aug.	255,886	36,613	157,319	33,402	483,220
Sept.	181,623	34,483	145,951	33,649	395,706
Oct.	183,337	49,451	145,990	50,063	428,841
Nov.	135,962	40,627	97,619	55,898	330,106
Dec.	145,282	50,124	82,634	67,271	345,311
Annual total	\$3,084,647	\$779,598	\$2,214,557	\$935,537	\$7,014,339
Monthly average	\$ 257,054	\$ 64,967	\$ 184,546	\$ 77,961	\$ 584,528

Source: Privately circulated questionnaire.

^a See footnote 19 for account of probable inaccuracies.

^b Though given in the usual order, the months reported are the late months of 1934 and the early ones of 1935.

^c Three American-owned companies and allied enterprises reporting, representing 23 percent of cane production and 37.3 percent of sugar production of the Island.

^d Thirteen companies reporting, representing 15 percent of cane production and 25 percent of sugar production of the Island.

¹⁴ Wages are fully discussed in Chapter XIII.

These figures show mill payrolls of the three American-owned companies and allied enterprises to be about 20 percent of the total payroll, and 29 percent in the case of the "other companies."¹⁵

The PRRA study already cited estimates the total payroll of the sugar industry as about \$30,000,000 a year, which is "over one-third the average value of imports in the Island and not less than 40 percent of the total wages paid to all agricultural laborers in Puerto Rico."¹⁶ The present writers know of no data which support this estimate, nor do the PRRA figures seem to be internally consistent. If, as the PRRA study reports, the sugar industry employs 48 percent of all agricultural workers, and pays average wages higher than those in other agricultural occupations,¹⁷ its percentage share of the total payroll should be higher than the figure given by PRRA.

However, no accurate estimate is possible on this basis, as irregularity of employment in the different industries and other factors must be taken into account. For what interest it may have, a calculation of the total payroll of the industry was made, on the basis of the payroll data in Table 65. Using the annual payroll for sixteen companies producing 38 percent of all cane and 62 percent of all sugar, the result for the whole industry is \$13,945,300 for field labor, \$2,605,000 for mill, and \$16,550,300 total. This calculation of course assumes a uniform payroll per unit of cane or sugar. Furthermore, it covers only mill and field work, and not other activities collateral to sugar making.¹⁸

4. SEASONAL VARIATIONS IN EMPLOYMENT

As with all operations of an agricultural nature, sugar production is a seasonal process. Its cycle is perhaps more marked,

¹⁵ The difference is due in part to variables, such as the size of plantations owned by mills. However, the two sets of figures are not strictly comparable, as the data for the "American-owned companies" are believed to have been reported on a more uniform and accurate basis than was the case for some of the data for the "other companies."

¹⁶ *Op. cit.*, p. 12.

¹⁷ *Op. cit.*, p. 9.

¹⁸ The Association of Sugar Producers has recently estimated the annual payroll of the sugar industry as averaging \$25,000,000 annually during the last seven years (*The Facts about the Sugar Industry in Puerto Rico*, Washington, D. C., n.d., p. 5). This estimate undoubtedly includes all activities of the sugar industry, not just field and mill payrolls as is the case with the estimates made above.

in some ways, than that of many other activities based on agriculture, as the perishable nature of the raw product makes the cycle of sugar manufacturing synchronize closely with the cycle of cane growing and harvesting. It thus presents the serious social-economic problem of intensive employment during the cutting and grinding season, followed by a slack season when large numbers of workers must seek work elsewhere.

An effort was made by the present writers to determine the extent of seasonal swings in employment in the sugar industry; and the data obtained, although incomplete, and subject to the reservations noted below,¹⁹ throw some interesting light on the problem.

Effects on Employment. Employment figures for three American-owned companies and allied agricultural enterprises and for thirteen other companies, representing 38 percent of cane production and 62 percent of sugar production of the Island, showed a maximum employment in 1934-35 of 44,266 workers in both fields and mills, and a minimum employment of 21,411 (Table 66). The drop of 22,855 workers is 51 percent from the peak month.

The figures in Table 66 are of special interest in displaying

¹⁹ As tabulated, the figures in Table 66, below, raise some questions. The monthly average field employment is very nearly the same for "American" and "other" companies, in spite of the fact that the former raise 50 percent more cane than the latter. Similarly, "other"-company monthly average mill employment runs more than 50 percent above the "American" companies, in spite of the fact that these mills produce only two-thirds as much sugar. These discrepancies seem greater than can reasonably be assigned to any possible differences in labor-saving efficiency. It may therefore be supposed that errors occurred in the reporting, which make the aggregate figures somewhat inaccurate. Since the "American" figures are believed to have been reported on a uniform and accurate basis, it may be assumed that the "other" figures are too large.

No company could give complete figures on the number of separate persons on its payroll in a given month, without excessive labor in cross-checking the weekly payrolls. What was expected for the questionnaire was that each company should give a complete count of one week's payroll in each month, but we are unable to say to what extent reporting companies deviated from this method. Since there is considerable labor turnover from day to day and week to week, the method of one weekly payroll per month understates the number of persons actually on the payroll during the course of a month. Another source of inaccuracy is the existence of contract labor. This is supposed to have been done away with by the labor *convencios* (see Chapter XV) but still is somewhat prevalent at harvest time. It may be that the size of the "other-companies" figures is due to attempts by some companies to estimate labor turnover or the number of contract laborers, or both.

Table 66
MONTHLY EMPLOYMENT, 1934-35^a

MONTH ^b	AMERICAN-OWNED COMPANIES ^c		OTHER COMPANIES ^d		TOTAL
	Field	Mill	Field	Mill	
Jan.	13,745	2,352	10,626	3,234	29,957
Feb.	17,253	2,463	17,496	4,168	41,380
March	19,064	2,675	18,270	4,257	44,266
April	17,032	2,715	16,732	4,045	40,524
May	17,761	2,251	20,086	3,883	43,981
June	13,981	1,339	20,064	2,598	37,982
July	12,613	938	12,891	1,459	27,901
Aug.	14,341	1,117	13,060	1,327	29,845
Sept.	11,975	1,172	11,725	1,542	26,414
Oct.	11,943	1,551	10,979	1,993	26,466
Nov.	9,445	1,463	8,516	2,554	21,978
Dec.	9,440	1,745	7,177	3,049	21,411
Monthly average	14,049	1,815	13,968	2,842	32,675

Source: Privately circulated questionnaire.

^a See footnote 19 for account of probable inaccuracies.

^b Though given in the usual order, the months reported are the late months of 1934 and the early ones of 1935.

^c Three American-owned companies and allied enterprises reporting, representing 23 percent of cane production and 37.3 percent of sugar production of the Island.

^d Thirteen companies reporting, representing 15 percent of cane production and 25 percent of sugar production of the Island.

the magnitude of the seasonal swings of employment. The composite table, however, must be interpreted with some care, since it understates irregularity of employment as it affects the ordinary worker. This is because the peaks and valleys occur in different months for different companies, and as a result some of the irregularity has been ironed out. According to Table 67, field employment in the slackest month drops by over 50 percent from peak employment; but for some companies (according to individual questionnaire returns) it drops by as much as 75 percent. Similarly, the table shows "dead-season" mill employment to drop by 67 percent from the peak, but in some cases it actually drops by as much as 80 percent.

A significant feature that emerges from the compilation of employment figures over a period of years is the apparent progressive increase in the swing of seasonal variations. Thus, while in 1927-28 employment in three American-owned companies

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and allied enterprises dropped 28 percent in the slack season, in 1932-33 it dropped 41 percent, and in 1935-36 53 percent (Table 67).

Table 67
SEASONAL VARIATIONS IN EMPLOYMENT^a

CLASS OF WORKER		PEAK ^b	BOTTOM ^b	DIFFERENCE	PERCENT DECLINE
All workers	1927-28	25,356	18,185	7,173	28.2
	1932-33	23,674	13,869	9,805	41.4
	1935-36	21,844	10,256	11,588	53.0
Field adult male workers	1927-28	21,093	15,536	5,557	26.3
	1932-33	20,227	12,254	7,973	39.4
	1935-36	18,059	8,593	9,466	52.4
Mill adult male workers	1927-28	3,137	1,792	1,345	42.8
	1932-33	2,557	911	1,646	64.3
	1935-36	3,000	987	2,013	67.1

Source: Privately circulated questionnaire.

^a Three American-owned companies and allied enterprises.

^b See footnote, Table 63.

Evidence of this progressive accentuation of the slack season is also apparent in the payroll data for three American-owned companies and allied enterprises, displayed in Table 74 (end of chapter). These show declines of 16 and 13 percent respectively in field payrolls and field workers in the peak month of 1934-35, as compared with the peak month of 1927-28; but declines in the slackest month were 43 and 45 percent respectively from the slack month of 1927-28. The accentuated decline during the slack month is also evident in the mill-payroll data in this same table.

As the declines in recent years are successively larger for field workers than for mill workers (Table 67), it would seem that labor-saving devices have been an important factor in bringing about this situation; for their development and application are more feasible in the type of work carried on in the field in the slack season (plowing, cultivating, and so forth), than that performed in the cutting of cane, where hand work still prevails.²⁰

²⁰ The recently developed "gyro-tiller," for example, performs in one operation the plowing and preparation of the soil that previously required several distinct processes and tools.

The reduction of output under the sugar quota has also been a factor influencing the situation.

While the successive drops in employment during slack seasons for the companies and years given in Table 67 are true for the periods and areas covered, it is obvious that no deductions as to long-term trends can be made from the above data alone. Analysis of such trends would require the accumulation of materials that could not be gathered with the time and facilities at the disposal of the writers. There are numerous variables affecting the situation from year to year—for example, the manner in which cycles of twelve-month or eighteen-month cane may synchronize, affecting employment at planting and harvesting seasons; emergency work done as a result of hurricanes or other climatic factors; and, in recent years, cane left standing as a result of quota restrictions.

Other factors affecting any accurate determination of employment trends are those involving methods of reporting men on payrolls and the extent to which "contract labor" is employed. If, for instance, a company should make variations in its use of "contract labor," such changes would affect the computation of the number of workers employed, for under the "contract system" only the contractor, and not his workers, is carried on the company payroll.

These variables, however, the authors feel, while important in determining a more accurate long-term trend, do not substantially affect the trend given above for the periods and companies studied, particularly as an effort was made to select "normal" years, in so far as the effects of hurricanes or the labor situation are concerned.

Effects on Earnings. Data from payrolls are of interest in connection with the problem of seasonal employment. Sixteen companies reported payrolls in 1934-35 totaling \$7,014,339 (Table 65). The figure for the peak month was \$881,458, that for the bottom month \$330,106, and the drop \$551,352, or 62 percent, from the peak month.²¹

²¹ This is for total payrolls, regardless of months where individual peaks fall, which has the effect of smoothing out individual cycles somewhat. Compare Table 68, where a separation of two groups of companies and two groups of activities changes the percentage of drop.

As the drop in employment from peak to bottom month was 51 percent (Table 66), it is apparent that wages drop more severely than employment in the slack season. This may be due to (1) the laying-off of higher-paid workers because lower-paid tasks prevail in the slack season; or (2) the cutting of wages; or to both factors.

The drop in payrolls for the three American-owned companies and thirteen other companies is tabulated in Table 68. As may be seen, the drop is more severe in the mill payroll than in the field payroll.

Table 68

PAYROLLS AT PEAK AND BOTTOM MONTHS, 1934-35^a

	AMERICAN-OWNED COMPANIES		OTHER COMPANIES	
	Field	Mill	Field	Mill
Peak month	\$388,441 ^b	\$107,212 ^c	\$279,665 ^d	\$127,580 ^e
Bottom month	135,962 ^f	30,720 ^g	82,634 ^h	33,402 ⁱ
Difference	\$252,479	\$ 76,492	\$197,031	\$ 94,178
Percent drop from peak	64.9	71.3	70.4	73.8

Source: Table 65.

^a See Table 65 for explanatory data. ^b March. ^c April ^d May. ^e March. ^f November. ^g July. ^h December. ⁱ August.

Suggestive information on the effect of seasonal variation on labor earnings is also partially available from data on wages. A distribution of wages of adult male workers in three American-owned companies and allied enterprises shows that in the minimum (slack) months the percentage of field workers receiving the most common wage (and under) increases as shown in Table 69.²²

Labor income during the slack season consequently is adversely affected in two ways: by the release of large numbers of workers from employment, and by the fact that those workers who remain on the payroll are largely in the lower-income brackets.

²² See discussion of wages, Chapter XIII, for further details.

Table 69

PERCENT OF ADULT MALE WORKERS RECEIVING MOST COMMON
WAGE AND UNDER (50 TO 99 CENTS A DAY),
MAXIMUM AND MINIMUM MONTHS*

CLASS OF WORKER	1927-28	1932-33	1935-36
<i>Field Workers</i>			
Maximum month	72.3	78.3	55.7
Minimum month	84.6	87.8	82.1
<i>Mill Workers</i>			
Maximum month	43.6	40.0	40.3
Minimum month	65.6	42.5	43.6

Source: Tables 80 and 81, Chapter XIII.

* Three American-owned companies and allied enterprises.

5. WORKERS PER TON OF CANE AND SUGAR

Reference has been made in the discussion of seasonal variations in employment to the progressively increasing swing in recent years between maximum and minimum employment figures; and it was conjectured that labor-saving devices might in part be responsible for such a trend. Calculations made on the basis of data obtained from three American-owned companies and allied enterprises tend to confirm this hypothesis, for they show decided decreases in the number of workers per ton of cane and sugar produced. Thus, whereas in 1927-28 the tons of cane produced per worker were 83.1, in 1934-35 the figure was 117, or an increase of 41 percent; and in mills, the tons of sugar per worker were 120 and 159 respectively, an increase of 33 percent (Table 70).²³

It should be noted, however, that payrolls per ton of cane or sugar during this period dropped less than employment—30 and 24 percent respectively.

²³ Compare, also, evidence of lower labor costs in recent years, displayed in Chapter VIII. The recent PRRA study already cited reports labor costs per ton of sugar in one "important sugar mill" as having dropped from \$2.407 in 1926 to \$1.0991 in 1936 (Table 9, Appendix I). The source of the PRRA data is given as confidential.

Table 70

EMPLOYMENT DATA PER TON OF SUGAR OR CANE PRODUCED,
1927-28 and 1934-35^a

	1927-28	1934-35	PERCENT CHANGE
1. Sugar-Cane Plantations			
Annual wage payroll	\$4,237,428	\$3,084,647	-27
Employees, monthly average	18,989	14,073	-26
Cane grown, tons	1,578,000	1,647,000	+ 5 ^b
Payroll per ton of cane	\$2.69	\$1.87	-30
Tons of cane per worker	83.1	117	+41
2. Mills			
Annual wage payroll	\$1,089,994	\$ 779,598	-29
Employees, monthly average	2,605	1,835	-30
Sugar manufactured, tons	312,000	291,000	- 7 ^b
Payroll per ton of sugar	\$3.49	\$2.66	-24
Tons of sugar per worker	120	159	+33

Source: Privately circulated questionnaire. See also Table 74 (end of chapter).

^a Three American-owned companies and allied enterprises, producing 23 percent of all cane.^b The A.A.A. program affected the production of sugar more drastically than the production of cane, as cane could be left standing or used for the manufacture of molasses.

6. THE EIGHT-HOUR DAY LAW

An eight-hour day law was enacted by the Puerto Rican legislature in 1935, and went into effect in November of that year.²⁴ As working hours in sugar mills were an important factor in the agitation for a shorter working day; and as the acquiescence of the sugar industry in an eight-hour day in field work did much to prepare the way for an Insular law regulating working hours, a brief summary of the law's background is given here.²⁵

²⁴ *Ley No. 49, Para regular las horas de trabajo de las personas empleadas en los establecimientos comerciales, industriales y en otros negocios lucrativos, y para otros fines.* Approved August 7, 1935.

²⁵ Some of the measures antecedent to the eight-hour day act are the following:

Law approved March 12, 1908, regulating hours of work on railroads.

Law approved August 19, 1913, regulating hours of work in public works.

Law No. 73, approved June 21, 1919, regulating female and child labor.

Joint Resolution No. 35 of June 11, 1921, regulating the working hours of employees of the Insular telegraph system.

Law No. 75, approved July 20, 1921, regulating child labor.

Law No. 54, approved April 28, 1930, amending the Penal Code and providing for Sunday closing, or one day of rest each week and for certain holidays.

Law No. 80, approved May 5, 1931, granting the Commissioner of Labor authority to permit overtime work in cases of emergency, at double pay for such overtime.

Executive Order of July 22, 1935, regulating hours of work in government offices during summer months.

The average working week in the 1932-33 season was one of 50.4 hours on plantations and 79.8 in mills. For field workers, the most common working week that year was the 48-hour week, with 69 percent of the workers studied by the Department of Labor at the mode. The 84-hour week was the maximum. For mill workers, the most common working week was the 84-hour week, which was also the maximum working week. Of the mill workers studied by the Department of Labor, 86 percent were at the mode.²⁶ These data are presented in Table 71.

Table 71

COMPARATIVE MODES AND AVERAGES IN WORKING HOURS IN
SELECTED OCCUPATIONS, ADULT MALES,
1932-33, 1934-35, and 1935-36

OCCUPATION	1932-33 ^a			AVERAGE FULL-TIME HOURS PER WEEK		
	Mode (Hours per Week)	Maximum Hours per Week	Percent Workers at Mode	1932-33	1934-35	1935-36
Sugar-cane cultivation	48	84	69	50.4	52.9	49.9
Sugar mills	84	84	86	79.8	77.3	53.4
Tobacco cultivation	48	60	73	49.7	48.8	47.8
Tobacco stripping	54	84	65	53.8	53.6	48.2
Fruit cultivation	60 ^b	70 ^b	53 ^b	60.4 ^b	50.5	49.0
Fruit packing	60 ^b	70 ^b	50 ^b	62.7 ^b	51.4	48.0
Transportation	56 ^c	70 ^c	69 ^c	58.2 ^c	56.1	^d
Cigar manufacturing	48 ^c	54 ^c	36 ^c	46.1 ^c	47.4	45.2
Coffee cultivation	54 ^c	70 ^c	58 ^c	52.0 ^c	49.0	48.2
Wharf workers	60 ^c	84 ^c	99 ^c	60.2 ^c	67.6	^d

Source: Compiled from *Annual Reports of the Commissioner of Labor* for years cited.

^a Modes not available for years after 1933-34; 1932-33 is given as a pre-*convenio* norm.

^b Males and females.

^c 1933-34. Data for 1932-33 not available.

^d Data not available.

The first general collective agreement (*convenio*)²⁷ between employers and labor, covering the entire sugar industry (1933-34), called for an eight-hour day in the fields. This agreement did not affect the situation of mill workers in regard to working hours, which consisted of two twelve-hour shifts. In most cases

²⁶ *Annual Report of the Commissioner of Labor*, 1932-33, pp. 83, 87.

²⁷ See discussion of the *convenios*, Chapter XV.

it was argued that, as the grinding season had already started when the agreement was signed, readjustment of working conditions and the training of added men to furnish three shifts a day instead of two was not feasible. The result was a series of strikes affecting chiefly the large mills.

When the 1934-35 *convenio* was being negotiated, organized labor insisted that the eight-hour day be made effective in mills as well as on plantations—a demand that encountered opposition on the part of many employers and for a while paralyzed the negotiations, and threatened to interfere with the oncoming grinding season. Intervention of the Governor finally effected agreement on the disputed points, and the 1934-35 *convenio* was signed on January 29, 1935. With regard to the eight-hour day in sugar mills, the agreement provided for a joint committee to study the manner in which the working day in mills might be reduced.²⁸

Subsequently, however, the Legislature by enacting the eight-hour day law, gave statutory force to the provisions of the *convenios* on working hours for field labor, and extended it not only to the mills but to all commercial, industrial, and agricultural activities in Puerto Rico.²⁹

Provisions of the Act. The principal provisions of this act are: the eight-hour day is established in all "commercial, industrial or agricultural establishments or in any other lucrative business," with the understanding that such a working period may be extended to nine hours, provided double pay is furnished for overtime (Section 1). In cases of emergency, or where there is danger of losing a crop or perishable products owing to lack of sufficient labor, the Governor of Puerto Rico, on recommendation of the Commissioner of Labor, can temporarily

²⁸ *Thirty-Fifth Annual Report of the Governor of Puerto Rico* 1935, pp. 15-16.

²⁹ The constitutionality of the eight-hour day act was questioned in the District Court of San Juan in a suit brought against the Commissioner of Labor by the Centro de Detallistas de Provisiones de Puerto Rico (Association of Retail Provision Merchants), M. Taboada y Cia., and A. Fernandez Hermano y Cia., October 29, 1935. The court, in a sentence handed down January 20, 1936, denied the plea of complainants. Vicente Géigel Polanco, *Legislación Social de Puerto Rico*, (Department of Labor, San Juan, P. R., 1936) pp. 252-54. Legislative sanction has not been extended to the minimum-wage provision of the *convenios*—as was done in the case of the eight-hour day—because of adverse rulings by the courts on the constitutionality of minimum-wage acts.

suspend the provisions of the law in regard to limitation of hours but not in regard to double pay for the hours worked in excess of the eight (Sections 1 and 2). Employers must post in a visible place in their plants or properties a printed notice stating the number of hours of work required daily of the employees during each day of the week, the hours for beginning and ending work, and the hour when the lunch period begins and ends, which lunch period cannot be less than one hour (Section 3). The Commissioner of Labor, with the approval of the Governor of Puerto Rico, shall determine what constitutes an emergency or special circumstance or other condition justifying temporary suspension of any provisions of the Act (Section 6).

As the act establishing the eight-hour day did not go into effect until November, 1935, its definite results cannot be appraised at the time of writing. In so far as the sugar industry is concerned, its chief effects have been, of course, in the mills. The average full-time hours per week in thirty-nine sugar mills, during 1935-36, were 53.4, as compared to 77.3 in 1934-35 (Table 71).

In so far as field workers are concerned, the act merely gives statutory force to a situation already regulated by the *convenios*—important, however, to secure the enforcement of the eight-hour day in those sections of the Island where the organized strength of labor was not sufficient to press for compliance with the collective agreement, or where employers had refused to adhere to the *convenio*.

Representatives of the sugar industry report the eight-hour day as working out satisfactorily in practice; and in several instances it was stated that three shifts instead of two, in the mills, had increased the efficiency of the workers. Certain beneficial results should also manifest themselves in the records covering workmen's accident compensation, given the well-known correlation between fatigue and accident frequency.

On the other hand, it should be observed that the eight-hour day has reduced individual earnings for workers who previous to its enactment had put in a longer day. This result is particularly noticeable in the sugar mills, average weekly earnings in

the 1935-36 season having dropped to \$6.78 from an average of \$7.53 the previous year.³⁰

7. EXTENT OF FULL-TIME EMPLOYMENT

It is not to be supposed, of course, that data on hours of work, as presented in Table 71, are indicative of the hours actually and regularly put in by all the various categories of workers employed in the occupations cited. Irregularity of employment—within the larger fluctuations caused by seasonal variations—is a characteristic of the sugar industry, due to weather conditions and numerous other factors. The nature and extent of this irregularity is in part revealed by figures compiled by the Department of Labor. These show that in 1935-36 field workers in sugar-cane plantations averaged 30.8 working hours per week of a scheduled full-time week averaging 49.9 hours, or 61.8 percent of possible full time, while mill workers averaged 42.3 working hours out of a scheduled average of 53.4 hours, or 79.2 percent (Table 72).³¹

Irregularity of employment is a highly significant social factor, and it is unfortunate that more adequate data have not been compiled on this aspect of the labor problem in Puerto Rico. The data given in Table 72, while suggestive, are not conclusive, as they are based on averages and cover only one week during the busy season. Studies covering longer periods and based on modal distributions are needed, together with an analysis of the factors responsible for reductions in full-time employment, in an effort to determine to what degree they are due to forces beyond the control of worker and employer. Nevertheless, these data are presented here as partial evidence of the extent of this form of irregularity in employment in the sugar industry during the busy season. The effects of this situation on individual earnings are discussed in Chapter XIII.

³⁰ See Table 98, Chapter XIII.

³¹ Table 73 (end of chapter) gives similar data for a few other selected occupations. They are not on a strictly comparable basis, however, as they are not necessarily for similar working periods of the year, they cover too brief a span, and they do not take into account the relief aid extended by PRRA to certain agricultural activities, such as coffee farming.

Table 72

EXTENT OF FULL-TIME EMPLOYMENT IN SUGAR PLANTATIONS AND MILLS, ADULT MALES, 1932-33 to 1935-36^a

	NUMBER OF PLANTA- TIONS OR MILLS	NUMBER OF WORKERS	AVERAGE PER WEEK			
			Starts	Full- time hours	Hours actually worked	PERCENTAGE OF FULL TIME ACTUALLY WORKED IN ONE WEEK
<i>Plantations</i>						
1932-33	46	6,776	4.6	50.4	36.8	72.9
1933-34	74	18,463	4.4	48.6	37.9	77.9
1934-35	170 ^b	16,627	3.9	52.9	30.4	57.4
1935-36	25	9,123	4.1	49.9	30.8	61.8
<i>Mills</i>						
1932-33	31	6,687	5.8	79.8	66.6	83.6
1933-34	39	8,582	5.8	76.1	64.4	84.6
1934-35	40	11,267	5.5	77.3	61.4	79.4
1935-36	39	13,739	5.3	53.4	42.3	79.2

Source: *Annual Report of the Commissioner of Labor* for years cited.

^a See Table 86, Chapter XIII, for effects on earnings.

^b If this figure is correct, it would appear that this year agents of the Department visited an unusually large number of small sugar-cane farms, and judging by the number of workers, omitted some of the large plantations. Otherwise, it is a typographical error in the reports from which this table was compiled.

8. SUMMARY

The essential facts regarding employment in the sugar industry may be summarized as follows:

It is estimated that the sugar industry employs about 125,000 workers at the peak of the season, or about a quarter of the persons gainfully employed in Puerto Rico as reported by the 1930 census. The majority of these—about 114,000—are field workers, and represent from 40 to 50 percent of the agricultural workers of the Island.

Although mill workers are but a fraction of the total number of workers employed in the Island, they represent at least 10 percent of all the workers in manufacturing and mechanical industries reported by the 1930 census, and a much higher percentage if only employed adult males are considered.

Seasonal variation in employment is an outstanding characteristic of the sugar industry. The number of workers during

the slackest month drops by over 50 percent from the peak month in the case of field workers, and 67 percent in the case of mill workers, with greater drops in certain individual cases.

During recent years, the trend has been toward successively greater drops in employment during the slack months, particularly in field labor. This is probably the result of labor-saving devices, which are more feasible in plowing and planting operations, conducted during the slack months, than in the harvesting activities of the busy season.

Payrolls during the slack season drop from 65 to 75 percent from the peak month. Workers' individual earnings suffer from the fact that lower-paid tasks prevail during the slack months. This is particularly true of field work. In 1935-36, 55 percent of field workers received the most common wage, and under, during the peak month, but, during the slack month, 82 percent of those employed moved into this category.

The number of workers per ton of cane and per ton of sugar produced has been declining. In 1934-35 the tons of cane produced per field worker by three American-owned companies had increased 41 percent over the figure for 1927-28; and the tons of sugar per mill worker had increased by 33 percent over the same period.

Individual earnings of workers are adversely affected not only by seasonal variations of employment, but also by irregularity of employment within this seasonal cycle. According to data of the Department of Labor, during the busy season of 1935-36 field workers averaged 62 percent, and mill workers 80 percent of the scheduled full-time week.³²

In conclusion, the sugar industry is the largest employer of labor in the Island; but, in common with other activities based on agriculture, it presents the social problem of marked seasonal variations in employment, a problem which apparently is being accentuated as improved methods of production are developed. As this seasonal variation is inherent in the nature of sugar production, it appears that palliative measures are to be sought chiefly in the development of gainful occupations that will

³² A discussion of this problem in terms of earnings will be found in Chapter XIII.

absorb sugar workers during the slack season. In the past the coffee industry—with a cycle counter to that of sugar—in part supplied such a need.

Table 73

EXTENT OF FULL-TIME EMPLOYMENT IN SELECTED
OCCUPATIONS, ADULT MALES, 1935-36

OCCUPATION	NUMBER OF WORKERS	AVERAGE PER WEEK			PERCENTAGE OF FULL-TIME ACTUALLY WORKED IN ONE WEEK
		Starts	Full- Time Hours	Hours Actually Worked	
Sugar-cane cultivation	9,123	4.1	49.9	30.8	61.8*
Sugar mills	13,739	5.3	53.4	42.3	79.2*
Tobacco cultivation	1,034	4.8	47.8	38.5	80.6
Tobacco stripping	626	4.9	48.2	38.1	78.9
Fruit cultivation	964	3.5	49.0	26.4	53.8
Fruit packing	107	3.2	48.0	23.5	48.9
Coffee cultivation	1,491	4.7	48.2	36.8	76.3

Source: Compiled from data in *Annual Report of the Commissioner of Labor, 1935-36*, pp. 50-55.

* See Table 86, Chapter XIII, for effects on earnings of workers.

Table 74
COMPARATIVE PAYROLL DATA, THREE AMERICAN-OWNED COMPANIES AND ALLIED ENTERPRISES

	FIELD PAYROLL				PERCENT DECLINE 1928 TO 1935	MILL PAYROLL				PERCENT DECLINE, 1928 TO 1935
	1927-28	1932-33	1934-35			1927-28	1932-33	1934-35		
Annual wage payroll	\$4,237,428	\$3,566,040	\$3,084,647		27	\$1,089,994	\$802,611	\$779,598		29
Payroll, maximum month	\$ 493,185	\$ 481,778	\$ 415,506		16	\$ 134,170	\$109,144	\$112,895		18
Employees, maximum month	23,170	21,724	20,201		13	3,227	2,727	2,836		12
Payroll, minimum month	\$ 223,153	\$ 175,451	\$ 130,365		42	\$ 47,322	\$ 30,905	\$ 28,330		40
Employees, minimum month	15,580	13,241	8,658		44	1,479	995	886		40
Payroll, monthly average	\$ 353,119	\$ 297,170	\$ 257,054		27	\$ 90,832	\$ 66,884	\$ 64,967		29
Employees, monthly average	18,989	16,917	14,073		26	2,605	1,907	1,835		30

Source: Privately circulated questionnaire.

XIII

WAGES AND EARNINGS IN THE SUGAR INDUSTRY

WHILE the problem of the adequacy of wages paid in Puerto Rico is a highly important one, the statistical data available are rather limited. The lack is particularly apparent in the absence of norms of appraisal related to the actual and potential circumstances of the Island. Unfortunately, in connection with the present study it was not possible to conduct any of the original research into family incomes and expenditures that would be prerequisite to determining the adequacy of present wages. Neither were the authors in a position to accumulate the extensive data essential for informed judgment upon the possibilities of improving labor income. Consequently, the present chapter is restricted to a factual presentation of wage data in the sugar industry, not to appraisals. The first group of data was obtained directly from sugar companies by the present authors. Following this is a comparison of wages in the sugar industry with wages in other agricultural industries of the Island, compiled from Department of Labor data.

It should be noted in reading the ensuing discussion that the latest statistical data here presented relate to the crop year 1935-36. Since then wages in the sugar industry have risen materially. Under the new *convenios* (see Chapter XV) an increase of some 10 percent for field labor and of 5 percent for mill labor over the 1936-37 level (which in turn represented an increase over the 1935-36 scales—see Chapter XV, Table 102) has been in effect during the current crop year (1937-38). Furthermore, recent AAA provisions stipulate a general minimum wage of a dollar a day for field labor, as a condition for the receipt of benefit payments by cane growers.¹

¹ The data from questionnaires in this discussion of wages refer almost exclusively to company plantations and mills. The Department of Labor data, including small

1. HOURLY AND DAILY WAGE RATES IN THE SUGAR INDUSTRY

The private questionnaire circulated to the sugar companies elicited extensive and interesting information on various aspects of the labor situation. In the pages that follow the data are, for the most part, summarized separately for the companies controlled by continental Americans and by Puerto Ricans, respectively. The reason for this is that the former reported more fully, a fact which makes possible a more accurate picture of developments for successive years. There is no intention of making comparisons between the two sets of companies. If the data for the American companies are referred to more frequently, it is because of their greater completeness.²

Hourly Wage Distribution. The data furnished by these questionnaires show the most common average hourly wage during the 1935-36 crop season as 11.5 cents for field workers and 11.6 cents for mill workers, in the American-owned companies and allied enterprises; and 10.7 cents and 13.2 cents for field and mill workers respectively in eleven Puerto Rican companies.³ These rates show increases over the 1932-33 and the 1927-28 seasons (the two comparative periods for which data were requested). The maximum, minimum, and most common average rates for these periods for the three American-owned companies and allied enterprises are given in Table 75.⁴

independent cane growers, tend to result in Island-wide averages lower than those from data of the larger companies. Data as to wages paid by *colonos* are scant. While *colonos* presumably adhere to the wage provisions of the collective agreements known as *convenios* (see Chapter XV), the writers were informed that exceptions exist, dependent on local conditions.

The writers wish to express their appreciation to P. Rivera Martínez, Commissioner of Labor, and Artemio P. Rodríguez, Chief of the Division of Accounts, Property, and Statistics of the Department of Labor, for their kind coöperation in making accessible to them wage data compiled by the department.

² The averages for "other companies" shown in some of the tables in the present chapter fail to show the extraordinary diversity that occurs in some of the actual rates reported, particularly among certain of the smaller companies. Some of the maximum deviations in the data may be the result of bookkeeping factors or of a misunderstanding as to the interpretation of "most common" wage.

³ Throughout this discussion of wages, adult male workers only are considered, for, as can be seen by the distribution of wage workers in Tables 63 and 64, Chapter XII, female workers and boys are employed in the sugar industry in negligible numbers.

⁴ See Table 91, (end of chapter) for data on women and boy workers, and Tables 92 and 93 for data on Puerto Rican companies.

Table 75
HOURLY WAGES, ADULT MALE WORKERS*
(In Dollars)

WAGES	1927-28	1932-33	1935-36
<i>Field wages</i>			
Maximum	.292	.278	.30
Minimum	.073	.078	.091
Most common	.097	.095	.115
<i>Mill wages</i>			
Maximum	.401	.379	.476
Minimum	.074	.072	.096
Most common	.096	.095	.116

Source: Table 91 (end of chapter).

* Three American-owned companies and allied enterprises.

As some check, comparable data obtained from Department of Labor sources were laid against the figures compiled by the present writers. The results, presented in Table 76, show but slight differences.

Table 76
AVERAGE MODAL WAGES
(In Cents)

	THREE AMERICAN- OWNED COMPANIES AND AFFILIATES		OTHER COMPANIES ^a		DEPARTMENT OF LABOR FIGURES ^b	
	1932-33	1935-36	1932-33	1935-36	1932-33	1935-36
<i>Field wages</i>						
Most common	9.5	11.5	9.5	10.7	9 to 10	12.1 ^c
<i>Mill wages</i>						
Most common	9.5	11.6	10.7	13.2	8 to 9	16 ^c

Source: Tables 91, 92, and 98.

^a Nine companies reporting for 1932-33, 11 for 1935-36. See text for discussion of possible errors.

^b Twenty-five plantations and 39 mills.

^c Average hourly wage, not mode.

As the modal rates for the Department of Labor data for 1935-36 are not available, the average hourly wage has been given instead. This figure, in this type of data, is almost invariably higher than the mode, particularly in the case of mill wages, where the range extends into much higher brackets than in field wages.

The data for the "other companies" has also been included in this table, although the accuracy of these figures, in view of the less uniform methods of reporting already referred to, is subject to question. The figure of 13.2 cents as the most common wage in mills in the 1935-36 period appears more likely to be an average than a mode.

Daily Wage Distribution. The figures for the three American-owned companies and allied enterprises for 1935-36 show a concentration of daily wages in the 75-to-99-cent bracket, in the case of both field and mill workers (Tables 80 and 81, below). In that year 52.5 of the field workers and 39.9 of the mill workers received from 75 to 99 cents a day during the month of peak employment. The figures for the other companies reporting were 41.7 and 29.8 percent respectively (Table 93, end of chapter). Taking all reporting companies, the figures are 48.0 and 35.3 percent respectively (Table 78, below).

2. SHIFTS IN CONCENTRATION DURING RECENT YEARS

The data for workers of the three American-owned companies and allied enterprises reveal a shifting of the percentage distribution in recent years, toward the higher brackets.⁵ The increases in the groups receiving higher wages in 1935-36, as compared to the two previous periods studied, are clearly evident in the data presented in Table 77.

Table 77

DISTRIBUTION OF ADULT MALE FIELD WORKERS ACCORDING TO DAILY WAGE, PEAK MONTH*

DAILY RATE (IN DOLLARS)	PERCENT DISTRIBUTION PEAK MONTH		
	1927-28	1932-33	1935-36
.50 to .74	28.4	28.4	3.2
.75 to .99	43.9	49.7	52.5
1.00 to 1.49	21.4	16.3	37.5

Source: Table 80, below.

* Three American-owned companies and allied enterprises.

⁵ Complete data were not available for the other companies, particularly for 1927-28; consequently only the figures for American-owned companies are used here.

A similar trend, though not so pronounced, is evident in the data for mill workers (Table 81, below). Mill workers, being more largely in the nature of skilled labor, show less extensive fluctuations in wage rates. The most marked change revealed since 1927-28 in this group is the increase in those receiving over \$2 a day, from 6.8 percent in 1927-28 to 15.4 percent in 1935-36.

Aside from the greater stability that came to the sugar industry with the passing of the worst of the depression, two factors were operative in the 1935-36 picture: the collective agreements between employers and labor, known as *convenios*, designed to raise wages; and the enactment of the eight-hour day law. The effects of these are taken up in greater detail elsewhere.⁶ Here it may be observed that because of the eight-hour day the higher wage rates do not always represent correspondingly substantial increases in daily *earnings* for the worker.⁷

A consolidation of wage data for the three American companies and allied interests and all other reporting companies is given in Table 78. Because of the inability of many companies to furnish data for 1927-28, that year is omitted. The concentration in higher wage intervals in 1935-36, as compared to 1932-33, is clearly evident.

Table 78

DISTRIBUTION OF ADULT MALE WORKERS, IN PEAK MONTH,
ACCORDING TO DAILY WAGES, ALL REPORTING COMPANIES
(In Percentages)

DAILY RATE (IN DOLLARS)	FIELD WORKERS		MILL WORKERS	
	1932-33 ^a	1935-36 ^b	1932-33 ^c	1935-36 ^d
Under .50	1.2	0.7	—	^e
.50 to .74	38.1	10.1	10.4	1.9
.75 to .99	43.4	48.0	33.1	35.3
1.00 to 1.49	13.4	36.0	28.1	40.0
1.50 and over	3.9	5.2	28.4	22.8
Total	100.0	100.0	100.0	100.0

Source: Privately circulated questionnaire. ^a Total of 34,332 workers. ^b Total of 31,374 workers. ^c Total of 4,160 workers. ^d Total of 5,546 workers. ^e 0.03 percent.

⁶ See Chapter XII, section 6, and Chapter XV.

⁷ See discussion of earnings, section 5, below.

WAGES AND EARNINGS

Table 79

DISTRIBUTION OF WORKERS ACCORDING TO DAILY WAGE
(BROOKINGS REPORT)

(In Percentages)

DAILY RATE (IN DOLLARS)	FIELD WORKERS ^a		MILL WORKERS	
	1914 ^b	1929 ^a	1914 ^b	1929 ^a
Less than .50	8.3	0.9	1.8	—
.50 to .74	43.4	13.9	33.1	5.7
.75 to .99	31.4	41.9	23.7	22.4
1.00 to 1.49	8.3	37.9	28.3	40.5
1.50 to 1.99	3.5	5.1	6.4	20.3
2.00 or over	5.1	0.3	6.7	11.1

Source: *Porto Rico and Its Problems*, pp. 638, 639. ^a Includes boys. ^b Whole year.^a Grinding season only.

The wage distribution tables used in this study were set up to carry forward the data in the Brookings Institution study,⁸ with the hope of being able to gather information on wage trends since 1914. Only very general conclusions are possible, however, as the data have not proved strictly comparable.

The distribution of workers according to the Brookings report is given in Table 79.⁹

Table 80

DISTRIBUTION OF ADULT MALE FIELD WORKERS ACCORDING
TO DAILY WAGES^a

(In Percentages)

DAILY RATES (IN DOLLARS)	PEAK MONTH			MINIMUM MONTH		
	1927-28	1932-33	1935-36	1927-28	1932-33	1935-36
Under .50	—	0.2	—	0.2	0.2	—
.50 to .74	28.4	28.4	3.2	32.9	31.5	8.2
.75 to .99	43.9	49.7	52.5	51.5	56.1	73.9
1.00 to 1.49	21.4	16.3	37.5	12.3	8.9	14.4
1.50 to 1.99	4.9	4.3	5.5	1.9	1.6	1.8
2.00 and over	1.4	1.1	1.3	1.2	1.7	1.7

Source: Privately circulated questionnaire.

^a Three American-owned companies and allied enterprises.

The present figures for 1928 make a somewhat different showing from those of the Brookings report for 1929. According

⁸ *Porto Rico and Its Problems*, pp. 638, 639.

⁹ In that study the wage distribution tables for 1929 covered 8,284 field workers and 3,481 mill workers. In the present tables the 1927-28 figures cover 18,077 field and 2,827 mill workers, the 1932-33 figures cover 34,332 field and 4,160 mill workers, and the 1935-36 figures cover 31,374 field and 5,546 mill workers.

to the latter, 14.8 percent of field workers received below 75 cents, and 56.7 percent below one dollar. According to Table 80, the percentages are 28.4 and 72.3 respectively, for the peak season, and 33.1 and 84.6 for the slack season. The Brookings report shows 28.1 percent of mill workers receiving below one dollar, while the present figures for 1928 (Table 81) show 43.6 for the peak season and 65.6 for the slack season.

Table 81

DISTRIBUTION OF ADULT MALE MILL WORKERS ACCORDING TO DAILY WAGES*

(In Percentages)

DAILY RATE (IN DOLLARS)	PEAK MONTH			MINIMUM MONTH		
	1927-28	1932-33	1935-36	1927-28	1932-33	1935-36
Under .50	—	—	—	—	—	—
.50 to .74	2.8	7.7	0.4	20.6	9.7	3.9
.75 to .99	40.8	32.3	39.9	45.0	32.8	39.7
1.00 to 1.49	30.0	28.9	32.8	17.0	29.3	27.2
1.50 to 1.99	19.6	17.1	11.5	8.7	13.6	12.4
2.00 and over	6.8	14.0	15.4	8.7	14.6	16.8

Source: Privately circulated questionnaire.

* Three American-owned companies and allied enterprises.

According to the present figures, there was a decided decline of wages before 1933, and since then a rise which placed them somewhat above 1928 levels.

3. SHIFTS RESULTING FROM SEASONAL VARIATIONS

Seasonality of employment is an outstanding characteristic of labor conditions in the sugar industry. Because of its social significance, the present writers attempted where possible to accumulate such data as were available on the effects of seasonal variation on employment and wages. In the previous chapter, data as to the drop in numbers of workers during the slack season were presented.¹⁰ Here some partial evidence offered by wage data will be examined.

Comparing the percentage distributions for the peak and minimum months, we find that, during the slack months, con-

¹⁰ Chapter XII, section 4.

centration in the lower brackets increases, and in the intermediary upper brackets decreases, as compared with the peak months. In other words, the relative number of workers earning lower wages is greater during the slack months than during the busy season. This shift may be due to the laying-off of higher-paid workers or to a moving down into lower brackets through wage cuts. These data are summarized in Table 82.

Table 82

DISTRIBUTION OF ADULT MALE FIELD WORKERS
ACCORDING TO DAILY WAGES, PEAK AND MINIMUM MONTHS^a
(In Percentages)

DAILY RATE (IN DOLLARS)	1927-28		1932-33		1935-36	
	Peak Month	Minimum Month	Peak Month	Minimum Month	Peak Month	Minimum Month
.50 to .74	28.4	32.9	28.4	31.5	3.2	8.2
.75 to .99	43.9	51.5	49.7	56.1	52.5	73.9
1.00 to 1.49	21.4	12.3	16.3	8.9	37.5	14.4

Source: Tables 80 and 81, above.

^a Three American-owned companies and allied enterprises.

It will be noted that the minimum month in 1935-36 shows a greater concentration in the 75-to-99-cent interval than in the two previous years studied. This is undoubtedly largely the result of the collective agreements (*convenios*) between employer and labor.¹¹

As was true in the case of variations from year to year in the peak month, wages of mill workers, in percentage distribution, also show less marked changes between peak and minimum months than do those of field workers. In other words, lay-offs in mills during the slack season seem to affect all categories of workers more equably (Table 81, above).

4. PAYROLL DATA

In Chapter XII the payrolls of three American-owned companies and allied enterprises in 1934-35 were given as \$3,084,-647 for field workers and \$779,598 for mill workers; and those

¹¹ See Chapter XV for discussion of *convenios*.

of thirteen other companies as \$2,214,557 for field workers and \$935,537 for mill workers.¹²

These figures are presumably complete for all day labor; but since the employment figures are not always accurate, and cover irregular workers or contract labor, it is not possible to get a close estimate of average monthly individual income by dividing the number of workers into the amount of the payroll. For whatever interest the calculation may have, however, it is noted that the total of the average monthly employment of "American-owned" companies divided into the sum of the average monthly payroll gives \$18.00 and \$35.00 for field and mill workers respectively. A similar calculation for "other" companies gives \$13.00 and \$27.00. The averages for the two sets of figures are \$15.50 for field and \$31.00 for mill workers.

Against these, the Department of Labor reports average individual *earnings* in 1934-35 to have been \$3.34 a week for field workers, or (multiplying by 4) \$13.36 a month; and \$7.53 for mill workers in forty mills, or \$30.12 a month. The rather close correspondence between the two sets of figures is of interest, especially as they were arrived at by entirely different methods.

5. RANGE OF EARNINGS IN THE SUGAR INDUSTRY

Adequate data on workers' earnings are not available, but for the purpose of obtaining a rough idea of the range of earnings in the sugar industry, as well as some comparative data covering earnings in other agricultural occupations in the Island, the reports of the Insular Department of Labor have been utilized.

Certain limitations of these data must be borne in mind. In the first place, the Department of Labor statistics are based on sample runs taken in a single week of a given year, and are subject to all the variables that may operate in that week.¹³

Second, the Department of Labor data include numerous small mills and *colonos*, and the resulting averages tend to be lower than those for the larger mills and plantations.

¹² Table 65, Chapter XII.

¹³ This factor is to a degree offset by the fact that the data for the whole Island are not compiled simultaneously, but represent successive visits to different mills and plantations. The aggregates thus cover a series of weeks spread over the whole grinding season.

Third, the distributions by occupations cited here are for 1933-34, the last year for which such detailed breakdowns are available. Since then, wages have increased substantially.

These breakdowns show actual average weekly earnings of 18,463 workers in seventy-four cane plantations, ranging from \$2.05 for embankment raisers to \$19.62 for overseers (Table 94, end of chapter). The most common earnings are listed in Table 83.¹⁴

Table 83
MOST COMMON AVERAGE ACTUAL WEEKLY EARNINGS
IN 74 SUGAR-CANE PLANTATIONS, 1933-34

OCCUPATION	NUMBER OF WORKERS	PERCENT OF TOTAL WORKERS	EARNINGS PER HOUR (IN CENTS)	ACTUAL WEEKLY EARNINGS
Cane cutters	5,680	30.8	11.3	\$4.25
Weeders	3,489	18.9	10.4	3.66
Wagon loaders	1,154	6.3	14.9	6.13
Totals for 74 plantations	18,463	100.0	11.7	\$4.44

Source: Table 94 (end of chapter).

In the mills, the range of actual average weekly earnings during the same 1933-34 crop season for 8,582 workers in thirty-nine establishments was from \$3.31 for bag-menders to \$44.08 for sugar-chemists, a range which, as may be seen, includes unskilled, semiskilled, and skilled labor (Table 95, end of chapter). The most common earnings are given in Table 84.

Table 84
MOST COMMON AVERAGE ACTUAL WEEKLY EARNINGS
IN 39 SUGAR MILLS, 1933-34

OCCUPATION	NUMBER OF WORKERS	PERCENT OF TOTAL WORKERS	EARNINGS PER HOUR (IN CENTS)	ACTUAL WEEKLY EARNINGS
Common laborers	1,079	12.6	10.0	\$5.02
Track repairers	469	5.5	10.6	5.51
Bagasse men	447	5.3	11.7	7.47
Totals for 39 sugar mills	8,582	100.0	14.0	\$9.04

Source: Table 95 (end of chapter).

¹⁴ It is reported that the fact that one laborer not infrequently appears on more than one payroll during a given week tends to lower these averages.

While detailed occupational figures are not available for later years, average earnings have been computed by the Department of Labor and show increases in the *hourly* rates in recent years, reflecting the wage-rate increases reported in a previous section of this chapter. However, average *weekly* earnings move somewhat differently. Thus average earnings per hour in cane fields declined in 1934-35 from 11.7 to 10.9 cents and rose in 1935-36 to 12.1 cents; while the average weekly earnings for these three years are \$4.44, \$3.34, and \$3.75 respectively. With regard to the mills, the average earnings per hour fell in 1934-35 from 14.0 to 12.2 cents, and rose in 1935-36 to 16 cents, while average actual earnings fell from the figure \$9.04, given above for 1933-34, to \$7.53 in 1934-35, and \$6.78 in 1935-36 (Tables 85 and 98, end of chapter). The explanation lies largely in the gradual extension of the eight-hour day, first through the *convénios* (as discussed in Chapter XV), and in 1935-36 through the enactment of the eight-hour day act (Chapter XII). As a twelve-hour day used to prevail in mills, the fall in earnings is more pronounced among mill workers than among field workers. Variations in the percentage of full-time actually worked by individual workers also are a factor affecting earnings (compare Table 86).

Table 85

AVERAGE HOURLY AND WEEKLY EARNINGS IN SUGAR-CANE
FIELDS AND SUGAR MILLS*

YEAR	FIELDS		MILLS	
	Average Hourly Earnings (In Cents)	Average Actual Weekly Earnings	Average Hourly Earnings (In Cents)	Average Actual Weekly Earnings
1932-33	9.8	\$3.60	11.3	\$7.52
1933-34	11.7	4.44	14.0	9.04
1934-35	10.9	3.34	12.2	7.53
1935-36	12.1	3.75	16.0	6.78

Source: Table 98 (end of chapter), which see for further explanatory data.

* Compare Table 86, for potential average full-time earnings.

The actual distribution of 18,463 workers according to hourly wages, in seventy-four sugar-cane plantations in 1933-34 (the latest year for which such detailed data are available) is given

in Table 96, (end of chapter) and similar data for 8,582 workers in thirty-nine sugar mills appear in Table 97. Table 96 shows that in the sugar-cane plantations investigated, the majority of the workers (15,913 of the 18,463 workers, or 86 percent) received a wage of from 8 to under 14 cents an hour.

In sugar mills, given the greater predominance of skilled and semiskilled labor, the distribution is somewhat more even, only 5,781 of a total 8,582 workers, or 67 percent, falling between the intervals of 7 to under 14 cents an hour (Table 97).

Effects of Irregularity of Employment on Earnings. A factor affecting individual earnings is irregularity of employment within seasonal variations. No adequate data are available on this point, but some suggestive figures have been compiled from data in the reports of the Department of Labor, showing actual average earnings, contrasted with potential average earnings if full-time employment were available. These reveal that in 1935-36 field workers in the plantations studied averaged 61.8 percent of full-time work, with average weekly earnings of \$3.75 against a potential \$6.04; and mill workers averaged 79.2 percent of full-time work, with average weekly earnings of \$6.78 against a potential \$8.54 (Table 86).

Table 86

EFFECTS OF IRREGULARITY OF EMPLOYMENT ON POTENTIAL AVERAGE EARNINGS, ADULT MALES, 1932-33 TO 1935-36^a

	NUMBER OF PLANTATIONS OR MILLS	NUMBER OF WORKERS	PERCENT OF FULL-TIME ACTUALLY WORKED	AVERAGE FULL-TIME EARNINGS PER WEEK	AVERAGE ACTUAL EARNINGS PER WEEK
<i>Plantations</i>					
1932-33	46	6,776	72.9	\$4.94	\$3.60
1933-34	74	18,463	77.9	5.68	4.44
1934-35	170 ^b	16,627	57.4	5.76	3.34
1935-36	25	9,123	61.8	6.04	3.75
<i>Mills</i>					
1932-33	31	6,687	83.6	\$9.01	\$7.52
1933-34	39	8,582	84.6	10.65	9.04
1934-35	40	11,267	79.4	9.43	7.53
1935-36	39	13,739	79.2	8.54	6.78

Source: *Annual Report of the Commissioner of Labor* for years cited.

^a See also Table 72, Chapter XII.

^b See note ^b to Table 72, Chapter XII.

The data in this table, being made up from averages for all workers, do not accurately reveal the true situation. Thus in 1933-34 (the last year for which the underlying compilations by occupations are available) the range of full-time work in field occupations ran from 45.2 percent for rakers to 100 percent for timekeepers; and in mill occupations, from 39.7 percent for ashmen to 103.6 percent for locomotive engineers.

The most that can be said on the basis of this partial evidence is that the earnings of the "average" field and mill worker, because of irregularity of employment, were in 1935-36 about 60 and 80 percent respectively of potential earnings on a basis of full-time employment. To what extent this situation is amenable to changes of a positive nature cannot be determined from the evidence at hand. Irregularity of employment is an inherent characteristic of most agricultural occupations. It is a particularly prominent feature in any situation where an over-supply of labor exists. On the other hand, neither is it evident that changing such a situation—if it is subject to control—would necessarily imply benefits to the labor population as a whole, as increasing the amount of full-time work put in by individual workers might well result in a reduction in the total number of workers employed.

6. COMPARATIVE WAGE DATA

The figures of average hourly wages and weekly earnings compiled by the Department of Labor show that of the major agricultural industries of Puerto Rico, sugar generally pays the highest wages and also offers the highest earnings during a crop season. The ranking, as to average actual weekly earnings of adult males in 1935-36, is, in descending order: (1) sugar mills; (2) tobacco stripping; (3) sugar-cane plantations; (4) coffee cultivation; (5) fruit cultivation; (6) tobacco cultivation; and (7) fruit packing (Table 87). Of these, only the sugar mills and plantations and the tobacco-stripping industry showed *average hourly wages* above the *modal wage* for the entire Island—16 cents, 12.1 cents, and 12.5 cents an hour respectively against an Island mode of 11.4 cents (Table 98, end of chapter).¹⁵

¹⁵ The modal wages for the different industries for 1935-36 were not available at the time of preparing this report.

Table 87

COMPARATIVE AVERAGE EARNINGS, ADULT MALES,
IN SELECTED OCCUPATIONS, 1935-36

OCCUPATION	NUMBER OF WORKERS	AVERAGE HOURLY EARNINGS (IN CENTS)	AVERAGE ACTUAL WEEKLY EARNINGS
Sugar mills	13,739	16.0	\$6.78
Tobacco stripping	626	12.5	4.76
Sugar-cane cultivation	9,123	12.1	3.75
Coffee cultivation	1,491	6.3	2.33
Fruit cultivation	964	8.7	2.31
Tobacco cultivation	1,034	5.7	2.18
Fruit packing	107	8.9	2.10

Source: *Annual Report of the Commissioner of Labor*, 1935-36, pp. 50-55. See also Table 98 (end of chapter), for further data.

These figures, of course, are not strictly comparable. For one thing, the tobacco, fruit, and coffee industries have been experiencing abnormal conditions, due to the effects of the 1928 and 1930 hurricanes and the depression. Indeed, a good part of the present wage income of plantation workers of some of the industries most affected by the hurricane and depression (especially coffee and tobacco) comes from Federal relief and reconstruction sources.

Furthermore, while the sugar industry employs a negligible number of female workers and minors, the other agricultural industries here used for comparative purposes employ considerable numbers of women. Thus in tobacco stripping the great majority of the workers are women; and their average actual weekly earning of \$2.59 for 1935-36 lowers the average actual weekly earnings in this occupation for males and females from the figure of \$4.76, the average given in the table, to \$2.79. While tobacco stripping is the only industry of those under consideration where women workers are definitely in the majority, the number of women employed in all except sugar manufacture serves to lower the actual average earnings for all workers. Also in industries such as tobacco stripping, where a large majority of the workers are women, the male workers tend to be skilled or semiskilled workers, and not comparable with the unskilled labor that prevails in the sugar fields. Wages in industries such as tobacco also show extensive fluctuations

from year to year according to crops and prices, whereas the sugar industry and sugar markets are apt to exhibit much more relative stability.

It must also be borne in mind that the sugar industry is the largest employer of labor and thus not only covers more people with its higher modal wage, but offers a wider coverage with its higher-bracket incomes. The number of workers covered by the modal wages in the agricultural occupations cited for 1933-34 (the latest available) is 31,592, of which 27,045 were employed by the sugar industry (Table 88).

Table 88

MODAL WAGES AND NUMBER OF MALE WORKERS IN
SELECTED OCCUPATIONS, 1933-34*

OCCUPATION	TOTAL NUMBER OF MALE WORKERS COVERED	MODAL WAGE (CENTS PER HOUR)	NUMBER OF WORKERS AT MODAL WAGE	PERCENT OF TOTAL WORKERS AT MODE
Sugar-cane cultivation	18,463	10 and under 11	5,466	29.6
Fruit packing	343	9 and under 10	92	26.8
Tobacco stripping	980	8 and under 9	149	15.2
Sugar mills	8,582	7 and under 8	1,029	11.9
(secondary mode)	8,582	9 and under 10	1,017	11.8
Fruit cultivation	994	6 and under 7	242	24.3
Coffee cultivation	792	5 and under 6	448	56.5
Tobacco cultivation	1,438	Under 5	730	50.8

Source: Compiled from data in *Annual Report of the Commissioner of Labor, 1933-34*.

* Latest year for which modes are available.

This table also reveals that whereas only 11.9 percent of the total workers in sugar mills and 29.6 percent of those in cane plantations received the modal wage, in tobacco cultivation 50.8 percent of the workers, and in coffee cultivation 56.5 percent, received the modal wage. Tables 96 and 97 give the detailed distribution of these workers in sugar-cane plantations and sugar mills according to hourly wages, from which it will be seen that the wages of the majority of the workers in these activities are above the modes cited.

The position of the sugar industry in the general Island picture of earnings is shown by Table 99 (end of chapter), which ranks certain representative Puerto Rican industrial and agricultural

occupations by the average actual weekly earnings of workers reported by the Department of Labor for 1935-36. The top is \$26.50 in refrigerator plants (the highest average weekly earning reported in the survey of the Department of Labor), the bottom \$2.10 in fruit packing (the lowest figure reported). These figures are for male workers only, the earnings of females being lower. The position of the sugar-cane industry, as to the average earnings of its workers, is below the majority of the industrial occupations and above the other agricultural ones. This ranking does not, of course, take into account the relative number of workers employed by the various industries, the sugar industry being the largest employer. Moreover, earnings computed on an annual basis would effect important changes in such a ranking, because of the seasonal nature of most agricultural activities.

7. LONG-TERM TRENDS IN WAGE RATES AND EARNINGS

An effort was made by the present writers to secure data on wage trends over a period of years, but it was found that wage data available before the present statistical work of the Department of Labor was inaugurated (1931) were on a basis that permitted only very rough comparisons. The most satisfactory source prior to 1931 is the Brookings report, which gives some figures running back to 1914.¹⁶ The data for 1914 and 1929 have been cited in Table 79, above; but here it may be of interest to reproduce the most common daily wage for the entire 1914-29

Table 89
MOST COMMON DAILY WAGE, 1914-28^a

Period	Mill	Field
1914-17	\$0.50 to \$0.74	\$0.50 to \$0.74
1918	0.75 to 0.99	0.75 to 0.99
1919	1.00 to 1.49	1.00 to 1.49
1920 ^b	1.50 to 1.99	1.50 to 1.99
1921	1.50 to 1.99	1.00 to 1.49
1922-28	1.00 to 1.49	0.75 to 0.99

Source: *Porto Rico and Its Problems*, p. 635.

^a From payrolls of one mill and one plantation, grinding season, adult males only.

^b Peak year of abnormal sugar prices.

¹⁶ *Porto Rico and Its Problems*, pp. 635-49.

period. This gives a rough indication of the post-War trend, including the period of abnormal sugar prices around 1920 (Table 89). These computations are from the payrolls of one mill and one plantation during the grinding season.

For whatever interest the presentation may have, daily wages prevailing around 1900 are given in Table 90.

Table 90
PREVAILING DAILY WAGES IN THE SUGAR INDUSTRY,
CIRCA 1900^a

OCCUPATION	PREVAILING WAGES REPORTED 1900	
	Ames Report ^b (In Cents)	Carroll Report ^c (In Centavos)
Field	30 to 50	35 to 50
Mill	50 to 100	60 to 75

^a See text for discussion of limitations in comparability of data.

^b Anzel Ames, "Labor Condition in Porto Rico," in *Bulletin of the Department of Labor* (Washington, D. C.), No. 34, May, 1901. *Centavos* converted to United States currency.

^c Henry K. Carroll, *Report on the Island of Porto Rico* (Washington, D. C. 1899), p.48.

The figures displayed in the above table must be interpreted with care. The Carroll data are in *centavos* and cover the situation immediately after occupation. The Ames figures are about two years later, and are of centavos converted into United States currency at the rate of 60 United States cents per 100 centavos. There is a substantial discrepancy between the two sets of figures, the Ames data reporting higher wages, and very likely those established in scattered instances by American enterprises.

Furthermore, it appears that the Ames and the Carroll figures report *ranges* of wages for "common labor," a term that apparently includes the semiskilled labor in mills, and for a ten- or twelve-hour day.

From various discussions of labor conditions around 1900, it would appear that the most common wage in the sugar industry was then not over 50 cents for a ten- or a twelve-hour day.

In 1935-36 the number of adult males receiving less than 50 cents a day (in the companies replying to the questionnaire)

was negligible.¹⁷ The wage range in 1935-36 was from 50 cents to over \$2, with almost 42 percent of the workers on the field payrolls of the reporting companies receiving over \$1 a day, and 63 percent of the workers on the mill payrolls earning over \$1 a day.¹⁸

A satisfactory study of long-term trends would have to include data on cost of living trends, in order to ascertain the adequacy of wages at different periods. No such materials have been available to the present writers.

8. SUMMARY¹⁹

The data obtained directly from sugar companies show that during the peak month of 1935-36, the most common daily wage in the plantations and mills reporting was in the 75-to-99-cent bracket. About half of all field workers covered, and over a third of all mill workers, fell within this interval.

About 36 percent of field workers and 40 percent of mill workers fell within the \$1 to \$1.49 interval.

Wage rates have shown increases since 1932, the average hourly rates in 1932-33 having been 9.8 cents for field workers and 11.3 cents for mill workers, whereas in 1935-36 they were 12.1 cents for field workers and 16 cents for mill workers.²⁰

Individual earnings, however, have not necessarily increased correspondingly, owing to the establishment of the eight-hour day, or to variations in regularity of employment, which affect full-time earnings.

Wage increases during recent years have cut down sharply the number of workers earning less than 75 cents a day. Thus, whereas in 1932-33 almost 40 percent of the field labor employed by the reporting companies worked for a wage rates of less than 75 cents a day, the percentage in 1935-36 was only 11. The

¹⁷ Only 0.03 percent. See Table 78, above.

¹⁸ See Table 78, above.

¹⁹ In the preceding discussion, attention has been repeatedly called to the difficulty of drawing satisfactory conclusions from averages in wage data that cover a relatively short space of time, or in making comparisons between categories or occupations involving many variables. This section, consequently, must be read with such limitations in mind.

²⁰ The 1936-37 *convenio* increased wages about 10 percent.

Table 91
HOURLY WAGES, THREE AMERICAN-OWNED COMPANIES AND ALLIED ENTERPRISES,^a
1927-28, 1932-33, 1935-36
(In Dollars)

	MALE			FEMALE			BOY		
	1927-28	1932-33	1935-36	1927-28	1932-33	1935-36	1927-28	1932-33	1935-36
<i>Field wages</i>									
Maximum	.292	.278	.30	.099	.094	.114	.08	.08	.093
Minimum	.073	.078	.091	.055	.055	.079	.046	.046	.053
Most common ^b	.097	.095	.115	.072	.072	.093	.065	.06	.086
<i>Mill wages</i>									
Maximum	.401	.379	.476	.10	.11	.13	.068	.064	.098
Minimum	.074	.072	.096	.057	.06	.06	.049	.042	.068
Most common ^b	.096	.095	.116	.10	.10	.13	.055	.065	.084

Source: Privately circulated questionnaire.

^a The figures are averages of the rates reported.

^b The range of such rates for field work was 6 to 14 cents in 1928, 5.5 to 14 in 1933, 10 to 14 cents in 1936; for mill work 8.3 to 15 cents in 1928, 7.2 to 18 cents in 1933, 10 to 16 cents in 1936.

corresponding figures for mill workers are 10 percent for 1932-33 and 2 percent for 1935-36.

Concentration of field workers at the most common wage bracket increases sharply during the slack season. In 1935-36, in the plantations reporting, the proportion of field laborers earning the most common wage (from 75 to 99 cents) during the peak month was 52 percent; during the slackest month it was 74 percent. In mills, the percentage was virtually unchanged.

On the basis of compilations of actual average weekly earnings made by the Department of Labor, the sugar industry offers agricultural labor some of the highest earnings in the

Table 92
HOURLY WAGES OF ADULT MALES, OTHER COMPANIES*
(In Dollars)

	1927-28 ^b	1932-33 ^c	1935-36 ^d
<i>Field wages</i>			
Maximum	.14	.19	.235
Minimum	.07	.081	.093
Most common	.08	.095	.107
<i>Mill wages</i>			
Maximum	.373	.29	.44
Minimum	.09	.092	.103
Most common	.11	.107	.132

Source: Privately circulated questionnaire.

* Rates recorded are averages of those reported by companies.

^b Four companies reporting.

^c Nine companies reporting.

^d Eleven companies reporting.

Table 93
DISTRIBUTION OF ADULT MALE WORKERS ACCORDING TO
DAILY WAGES IN PEAK MONTH, OTHER COMPANIES*
(In Percentages)

DAILY RATE (IN DOLLARS)	FIELD WORKERS		MILL WORKERS	
	1932-33	1935-36	1932-33	1935-36
Less than .50	2.5	1.7	—	—
.50 to .74	52.2	19.5	14.7	3.8
.75 to .99	33.7	41.7	34.3	29.8
1.00 to 1.49	9.2	33.8	26.9	48.4
1.50 to 1.99	2.0	2.9	17.0	11.4
2.00 and over	0.4	0.4	7.1	6.6
Total	100.0	100.0	100.0	100.0

Source: Privately circulated questionnaire.

* Six companies reporting for 1932-33, eight for 1935-36. The companies reporting for 1935-36 showed employment of over 15,000 at the peak season.

Island.²¹ The average wages offered by these occupations in 1935-36 were also higher than the Island mode. The importance of these higher earnings to the economy of the Island is increased by the fact that sugar payrolls cover a much larger number of workers than those of other agricultural activities.

Table 94

RANGE OF AVERAGE HOURLY AND WEEKLY EARNINGS IN
74 SUGAR-CANE PLANTATIONS, 1933-34^a

OCCUPATIONS ^b	NUMBER OF PLANTATIONS	NUMBER OF WORKERS	AVERAGE EARNINGS PER HOUR (IN CENTS)	AVERAGE ACTUAL EARNINGS PER WEEK
Overseers	46	101	35.9	\$19.62
Timekeepers	36	66	20.6	11.22
Plowers (tractors)	18	64	20.0	8.63
Cane weighers	26	49	16.0	8.09
Foremen	54	429	15.5	6.97
Cartmen	52	761	15.2	6.49
Wagon loaders	38	1,154	14.9	6.13
Stablemen	23	59	10.5	5.57
Plowers	22	95	13.3	5.20
Cattlemen	44	196	9.9	5.00
Ditchdiggers	27	685	13.6	4.81
Common laborers	25	734	11.4	4.58
Sprinklers	15	612	10.3	4.52
Mowers	10	233	12.5	4.38
Cart loaders	6	72	12.6	4.34
Cane cutters	54	5,680	11.3	4.25
Rakers	4	7	19.1	4.16
Replanters	38	908	10.4	3.91
Cross plowers	2	11	12.8	3.82
Strawheapers	38	651	9.9	3.69
Weeders	51	3,489	10.4	3.66
Furrowmakers	4	60	9.2	3.62
Planters	21	497	10.6	3.50
Yoke drivers	26	153	8.9	3.50
Cane dumpers	27	454	10.0	3.38
Water carriers	27	365	8.9	3.38
Fertilizer spreaders	31	673	9.0	3.33
Cultivators	20	193	10.7	3.09
Lime sprayers	2	4	9.7	2.89
Embankment raisers	2	8	8.7	2.05
Totals	74	18,463	11.7	\$4.44

Source: *Annual Report of the Commissioner of Labor, 1933-34*, p. 133.

^a Latest date for which such breakdowns are available. Wages have increased since. See text for limitations on interpretations of average earnings.

^b Ranked by average actual weekly earnings.

²¹ Tobacco stripping is an exception, but gives employment to a relatively small number of adult males.

Table 95
**RANGE OF AVERAGE HOURLY AND WEEKLY EARNINGS
 IN 39 SUGAR MILLS, 1933-34^a**

OCCUPATIONS ^b	NUMBER OF MILLS	NUMBER OF WORKERS	AVERAGE EARNINGS PER HOUR (IN CENTS)	AVERAGE ACTUAL EARNINGS PER WEEK
Sugar chemists	26	56	53.0	\$44.08
Overseers	16	31	25.0	19.68
Electricians	28	55	25.4	19.66
Annalists	27	70	23.9	19.58
Smelters	3	4	39.3	18.88
Mechanics	36	202	31.0	18.12
Lathe operators	29	60	27.1	17.02
Blacksmiths	31	66	29.3	15.81
Engineers	24	184	20.8	15.80
Bricklayers	18	22	30.2	15.76
Solderers	19	30	25.1	14.66
Sugar-evaporator operators	20	80	18.9	14.55
Pump mechanics	2	2	18.5	14.25
Plumbers	5	6	30.1	13.96
Time keepers	24	35	16.3	13.41
Carpenters	33	107	28.5	13.12
Foremen	32	232	17.5	12.67
Triplers	32	109	16.3	12.63
Tinsmiths	8	9	19.1	11.79
Iceplant attendants	3	5	13.5	11.03
Sugar, syrup & cane weighers	33	193	15.0	10.85
Engine stokers	20	146	14.0	10.76
Centrifugalers	36	527	14.5	10.22
Electricians' assts.	22	64	13.8	10.12
Mill operators	32	244	14.6	10.10
Chauffeurs	25	107	15.8	10.04
Bag fillers	24	238	14.2	10.00
Engine drivers	17	117	13.9	9.96
Crane operators	28	141	14.4	9.94
Bag stampers	26	56	13.8	9.90
Machine operators	18	103	15.4	9.79
Boiler-feeders	32	163	13.6	9.77
Bag sewers	28	98	14.1	9.73
Asst. sugar chemists	23	96	13.2	9.66
Power plant operators	2	6	14.7	9.44
Store clerks	9	45	14.1	9.37
Pump attendants	28	103	11.7	9.04
Brakemen	9	58	11.0	9.02
Cane-receiving clerks	3	17	11.6	8.86

Table 95 (Continued)

Heater operators	23	73	11.7	8.18
Watchmen	29	117	10.4	8.02
Switchmen	18	101	10.6	7.97
Stokers	23	152	11.6	7.90
Crystallizers	26	76	10.4	7.82
Filter operators	27	190	10.7	7.67
Laundrymen	6	11	10.6	7.55
Laboratory attendants	25	143	10.1	7.50
Bagassemen	31	447	11.7	7.47
Lubricators	32	138	10.9	7.47
Defecating-pan operators	25	94	10.4	7.34
Lime applicers	25	66	9.7	7.19
Asst. mechanics	30	252	13.2	7.16
Painters	7	13	16.1	7.09
Sulphuring-machine operators	2	3	12.7	6.86
Carters	22	215	10.3	6.62
Water pump attendants	15	42	10.6	6.58
Messengers	16	22	8.9	6.40
Syrup press operators	6	64	12.0	6.38
Ditch diggers	1	1	11.2	6.30
Crane chain attendants	20	284	10.0	6.28
Frother-pan attendants	26	108	9.3	6.27
Sugar mixers	6	14	10.6	6.12
Lime mixers	13	36	9.3	5.70
Carpenters' assts.	25	97	12.5	5.60
Asst. smelters	3	7	12.6	5.55
Water tank attendants	4	25	10.4	5.54
Track repairers	23	469	10.6	5.51
Waiters	8	46	10.5	5.27
Mill and press washers	9	56	9.3	5.22
Gate keepers	10	57	6.4	5.15
Sieve cleaners	12	46	9.1	5.08
Janitors	11	22	7.7	5.04
Cattlemen	5	7	7.2	5.03
Common laborers	27	1,079	10.0	5.02
Stablemen	5	14	7.8	4.87
Lime makers	2	35	9.5	4.81
Ashmen	5	45	12.8	4.15
Pipe drillers	3	7	5.3	3.60
Bag menders	2	21	9.0	3.31
Totals	39	8,582	14.0	\$9.04

Source: *Annual Report of the Commissioner of Labor, 1933-34*, pp. 138-9.

^a Latest date for which such breakdowns are available. Wages have increased since. See text for limitations on interpretations of average earnings.

^b Ranked by average weekly earnings.

Table 96

DISTRIBUTION OF MALE WORKERS IN SEVENTY-FOUR
SUGAR-CANE PLANTATIONS ACCORDING TO
HOURLY WAGES, 1933-34

(Mode: 10 Cents and under 11 Cents per Hour)

DISTRIBUTION (IN CENTS)	NUMBER OF WORKERS
Under 5	64
5 and under 6	60
6 and under 7	82
7 and under 8	100
8 and under 9	1,474
9 and under 10	678
10 and under 11	5,466
11 and under 12	4,244
12 and under 13	2,469
13 and under 14	1,582
14 and under 15	587
15 and under 16	668
16 and under 17	144
17 and under 18	194
18 and under 19	299
19 and under 20	32
20 and under 22	128
22 and under 24	41
24 and under 26	50
26 and under 28	12
28 and under 30	18
30 and under 32	13
32 and under 34	11
34 and under 36	7
36 and under 38	7
38 and under 40	—
40 and under 42	4
42 and under 45	3
45 and under 50	2
50 and over	24
Total number of laborers	18,463

Source: *Annual Report of the Commissioner of Labor, 1933-34*, p. 135.

Table 97
**DISTRIBUTION OF MALE WORKERS IN THIRTY-NINE
 SUGAR MILLS ACCORDING TO
 HOURLY WAGES, 1933-34**

(Mode: 7 Cents and under 8 Cents per Hour)
 (Secondary Mode: 9 Cents and under 10 Cents per Hour)

WAGE INTERVALS (IN CENTS)	NUMBER OF WORKERS
Under 5	48
5 and under 6	61
6 and under 7	120
7 and under 8	1,029
8 and under 9	696
9 and under 10	1,017
10 and under 11	845
11 and under 12	861
12 and under 13	654
13 and under 14	679
14 and under 15	305
15 and under 16	265
16 and under 17	240
17 and under 18	188
18 and under 19	227
19 and under 20	139
20 and under 22	256
22 and under 24	198
24 and under 26	163
26 and under 28	87
28 and under 30	81
30 and under 32	84
32 and under 34	63
34 and under 36	67
36 and under 38	45
38 and under 40	18
40 and under 42	32
42 and under 45	26
45 and under 50	34
50 and over	54
Total number of laborers	8,582

Source: *Annual Report of the Commissioner of Labor, 1933-34*, p. 141.

Table 98

COMPARATIVE AVERAGE AND MODAL HOURLY WAGES, AND
AVERAGE ACTUAL WEEKLY EARNINGS OF ADULT
MALES, IN SELECTED AGRICULTURAL
OCCUPATIONS, 1932-33 TO 1935-36

(Mode for 70,395 workers in all occupations of Island 1934-35: 12 cents and under
13 cents an hour)

(Mode for 42,112 workers in all occupations of Island 1935-36: 11.4 cents per hour)

CROP YEAR	SUGAR-CANE CULTIVATION			SUGAR MILLS		
	Average Hourly Earnings (In Cents)	Mode ^a (Cents per Hour)	Average Actual Weekly Earnings	Average Hourly Earnings (In Cents)	Mode ^a (Cents per Hour)	Average Actual Weekly Earnings
1932-33 ^b	9.8	9-10	\$3.60	11.3	8-9	\$7.52
1933-34	11.7	10-11	4.44	14.0	7-8*	9.04
1934-35	10.9	^f	3.34*	12.2	^f	7.53*
1935-36	12.1	^f	3.75*	16.0	^f	6.78*

TOBACCO CULTIVATION			TOBACCO STRIPPING		
Average Hourly Earnings (In Cents)	Mode ^a (Cents per Hour)	Average Actual Weekly Earnings	Average Hourly Earnings (In Cents)	Mode ^a (Cents per Hour)	Average Actual Weekly Earnings
4.7	5-6	\$1.46	10.4	8-9	\$4.90
5.3	0-5	2.10	10.3	8-9	5.39
5.1	^f	2.14	11.1	^f	5.32
5.7	^f	2.18	12.5	^f	4.76

FRUIT CULTIVATION		FRUIT PACKING		COFFEE CULTIVATION	
Average Hourly Earnings (In Cents)	Mode ^a (Cents per Hour)	Average Actual Weekly Earnings (In Cents)	Mode ^a (Cents per Hour)	Average Hourly Earnings (In Cents)	Mode ^a (Cents per Hour)
5.9*	5-6*	\$2.93*	8.7*	7-8*	\$3.94*
8.3	6-7	2.93	8.2	9-10	1.68
8.3	^f	2.89	11.6	^f	3.13
8.7	^f	2.31	8.9	^f	2.10

Source: Compiled from data in the *Annual Report of the Commissioner of Labor* 1932-33, 1933-34, 1934-35, and 1935-36.

^a Read modes "9 cents and under 10 cents," and so forth.

^b Earliest such data available.

^c Includes females.

^d Data not available.

^e Secondary mode at 9 cents and under 10 cents.

^f Modes not available.

* Weekly earnings reduced as a result of eight-hour day.

Table 99

ACTUAL AVERAGE EARNINGS PER WEEK (MALES) IN SELECTED
OCCUPATIONS, 1935-36

OCCUPATIONS	NUMBER OF WORKERS	AVERAGE EARNINGS PER WEEK
<i>Industrial Occupations</i>		
Refrigerating plants	2	\$26.50 ^a
Electric plants	199	13.54
Printing and typography	282	11.60
Button factories	239	8.62
Hat factories	134	7.92
Bed and bedspring factories	96	6.84
Sugar mills	13,739	6.78
Sugar refineries	389	6.76
Cigar factories	397	6.60
Manganese mining	151	6.60
Men's clothing (suits)	114	6.52
Cracker factories	153	5.94
Ice-manufacturing plants	155	5.74
Needlework (children's garments)	71	4.82
<i>Agricultural Occupations</i>		
Tobacco stripping	626	4.76
Fruit canning	118	3.80
Sugar-cane cultivation	9,123	3.75
Coffee cultivation	1,491	2.33
Fruit cultivation	964	2.31
Tobacco cultivation	1,034	2.18
Fruit packing	107	2.10 ^b

Source: *Annual Report of the Commissioner of Labor*, 1935-36, pp. 50-55.

^a Highest average weekly earning reported.

^b Lowest average weekly earning reported.

XIV

SUPPLEMENTAL INCOMES

ANY attempt to appraise individual earnings of workers should take into account indirect forms of wage payments, such as bonuses, housing, medical and welfare services, and so forth. Unfortunately, the time available for the present study did not permit an extensive original survey of such supplemental incomes of wage earners in the sugar industry. Such data as could be accumulated, however, are presented here as a partial contribution to the study of the problem.

1. HOUSING IN THE SUGAR REGIONS

Housing Problems. With plantation headquarters and mills usually located in the center of large tracts devoted to sugar-cane growing—tracts which in many cases are unbroken except for roads or irrigation ditches—the housing of workers employed by the sugar industry is often an acute problem. Puerto Rico's limited land resources naturally foster the intensive utilization of all available land suitable for the cultivation of cane. Consequently, in the sugar regions, the tendency is to reduce to a minimum all land devoted to other purposes. Such concentration on one crop—particularly given Puerto Rico's topographical features, which offer little choice between the two extremes of flat lands and steeply mountainous country—also leads to congestion in the towns and villages in the sugar zone; and as work in this industry is highly seasonal, the cumulative result is a serious housing problem during harvest time, when thousands of workers migrate to the cane fields.

Number of Workers in Company Houses. These factors have made it necessary for the sugar companies to provide dwellings for at least those workers who are steadily employed the whole year. Yet even though such dwellings may, on a large plantation, number several hundred, they can shelter only a part of the

workers employed at the peak of the season. Thus a study of housing conditions in eighteen sugar-milling companies and one large plantation revealed that at the peak of the grinding season the estimated number of workers in company houses was 22 percent of the total number of workers employed; and in the slack season 46 percent. Eliminating the figures for one plantation, which showed no change in the number of workers housed at the peak or the low point of the year, the percentages are 19 and 41 respectively¹ (Table 100).

Table 100

LABORERS HOUSED IN COMPANY HOUSES OF 19 SUGAR COMPANIES,
AT PEAK AND LOW POINT OF SEASON, 1935-36

NUMBER OF COMPANIES	ESTIMATED NUMBER OF WORKERS IN COMPANY HOUSES		ESTIMATED TOTAL WORKERS ON PAYROLLS		PERCENT OF WORKERS IN COMPANY HOUSES	
	Peak	Low Point	Peak	Low Point	Peak	Low Point
19 ^a	9,298	7,029	42,407	15,047	22	46
18 ^b	6,606	4,337	35,401	10,530	19	41

Source: Privately circulated questionnaire.

^a Eighteen milling companies and one large plantation which showed no change in number of workers housed at peak and low point.

^b Eighteen milling companies only.

The number of workers housed, in relation to the total number of workers on the payroll, varies widely from company to company. The range, during the peak month, was from 6 percent in one milling company to 109 percent in another; and during the slack month, from 9 percent to 265 percent. As these calculations are based on actual payroll figures and estimated tenants, they cannot be taken as reflecting (in the case of percentages over 100) the extent to which temporarily unemployed workers are allowed to remain in company houses. Judging from a fair number of the cases reported, however, it seems that in so far as sugar mills are concerned, during the slack months 50 or 60 percent of the workers in company houses may not be on the payrolls.

¹ As only one or two companies keep accurate records of labor tenancy in company houses, the data used in this discussion of housing are based on estimates furnished by individual companies.

The explanation for this high percentage in the case of mills is probably to be found in the fact that (1) as mill workers are a smaller and more compact group than field workers, a larger portion of them enjoy the benefits of company housing than do scattered field workers; and (2) being more in the nature of semiskilled or skilled labor, they continue living in company houses during the slack season, even if not on the payroll. For example, the figure of 265 percent given above as the number of workers in company houses, in relation to the total workers on the payroll, refers to a company engaged in sugar-milling only.

As to the decline in the number of workers in company houses during the slack season, the estimated figures for the eighteen companies reported in Table 100, above, show a drop of 34 percent. Extensive variations occur, however, from company to company. One reported no change in tenancy from the peak to the most slack month, while the drop in another case was as great as 50 percent.

Families or relatives increase the labor population in company houses, estimates of the total labor population housed usually being three times the number of workers. In addition, the nineteen companies studied reported an estimate of 18,000 squatters, or twice the number of workers housed.

Number of Workers per House. The estimates of the number of workers in company houses, furnished by the sugar companies reporting, reveal that the workers per house run from 1.3 to 15 during the peak months. The latter figure, however, is obviously explained by a failure to discriminate between "houses" and "barracks." The estimates of four mills, made with some care, show an average of 1.8 workers per house, and 6.2 total population per house, during the peak season; while one large plantation, also reporting as accurately as possible, showed 2.1 workers and 5.7 total population per house, again during the peak season. The authors feel the latter figures are reasonably accurate.

For a true picture of the situation, these figures should be computed on the basis of workers per room or per unit of floor space, something it was not possible to do. It may be mentioned, however, that in three of the mills and on the plantation referred

to above, three-room houses were the most common. In the fourth mill, two-room houses were in the majority.

The topographical and technological factors in sugar production, referred to at the opening of this chapter, naturally make some degree of housing congestion inevitable. The figures of 6.2 persons per house in the four mills cited, and 5.7 in the plantation, during the peak months, are not, however, substantially higher than the housing density reported for the whole Island by the census, which showed 5.7 persons to a dwelling in 1920 and 5.9 in 1930.² Indeed, the closeness of this average in a strictly labor population to the average for the Island indicates a condition of less congestion in company houses (at least in so far as the larger companies are concerned) than is general in workers' homes throughout Puerto Rico. This assumption is confirmed by fragmentary studies of the housing situation made by various groups. Thus the Brookings Institution, in a survey of 4,263 rural homes, reported an average of 7.4 persons per dwelling in two-room houses.³ "More than 50 per cent of the single-room shacks," this report stated, "house eight or more people, and in 4 per cent of the cases as many as 13 people occupy the hut."⁴ Smaller companies, of course, report greater congestion in their houses during the peak months; and congestion undoubtedly is serious in the case of non-company houses used by workers who migrate to the cane fields for the harvest.

The tendency toward congestion in the sugar zones is reflected in the findings of a study of the size of rural workers' homes in various agricultural zones of the Island. This survey showed that 25 percent of the houses studied in the sugar-cane areas had less than 100 square feet of floor space, as against 12 percent for the fruit, 8 percent for the coffee, and 2 percent for the tobacco regions.⁵

Greater congestion in the sugar regions than in other agri-

² *Fifteenth Census of the United States: 1930, Population, Second Series*, p. 38.

³ *Porto Rico and Its Problems*, p. 19. "The 'two-room' merely means a single room with a partition wall of palm bark or boards that seldom extends high enough to afford real privacy or quiet" (pp. 19-20).

⁴ *Op. cit.*, p. 20.

⁵ *The Development of the Puerto Rican Jibaro and His Present Attitude towards Society*, by José C. Rosario (Monographs of the University of Puerto Rico, Series C, No. 1, San Juan, P.R., 1935), p. 42. This study was made about 1929.

cultural areas is also revealed by a study of sleeping accommodations in rural homes. The ratio of persons to sleeping accommodations as shown by this investigation was 2.09 in the sugar, 1.95 in the tobacco and 1.53 in the fruit regions. The highest ratio was found in the coffee region—2.48—but account must be taken of abnormal conditions at the time the study was made, the result of the 1928 hurricane, which was particularly disastrous in the coffee areas.⁶

Value Received by Workers. Company estimates as to the rental value of houses furnished free to laborers run from \$2.00 to \$6.00 a month per worker, or \$24.00 to \$72.00 a year. The average for the four mills already referred to is \$4.50 a month, and \$2.00 a month per worker on the plantation cited. In addition, there are items such as upkeep of houses, and free services (water, sanitation, or welfare facilities, and so forth), estimated by the four mills at \$21.00 a year per worker, and on the plantation at \$6.00.

Only one of the reporting companies (a mill) indicated that rent was charged for houses. In this case, 23 percent of the workers housed were paying an average of \$15.00 a year per worker in rent. Rent was charged only on three- or four-room houses, and only when the worker was on the payroll.

As to other payments by labor tenants, the only common one was for electric light, where such was furnished.

2. MEDICAL AND WELFARE SERVICES

Medical Services. Sugar companies provide medical and hospital services for their workers, today regulated by the provisions of the Workmen's Accident Compensation Law. Accident compensation is of course compulsory for all agricultural and industrial activities in the Island; but the resources of the sugar industry, economic and otherwise, and the concentration of large numbers of workers in plantations and mills, offer labor better medical and hospital facilities than do smaller, more dispersed agricultural activities. These factors also furnish the

⁶ *Op. cit.*, p. 44. Professor Rosario is engaged at present in a new study of rural living conditions in Puerto Rico, the findings of which are expected to be available shortly.

State Workmen's Compensation Fund greater assurance of prompt payment of premiums and claims; particularly as the Fund arranges with the mills—through the grinding contracts drawn up with *colonos*—for the deduction from *colono* credits of premium payments.

A study made in 1928 estimated that workers in the sugar industry enjoyed an indirect wage payment of \$2 a year per worker in the form of medical services, a benefit not then enjoyed by workers in the coffee, tobacco, and fruit regions.⁷ The present Workmen's Accident Compensation Law has aimed to increase and equalize such benefits all over the Island; yet it seems reasonable to assume that the economic situation of the sugar companies, and the concentration of workers, offer laborers in the sugar industry more ample medical services, at least where the larger companies are concerned, than do conditions in many other industries. Evidence tending to support this assumption is found in the fact that the State Fund utilizes the medical facilities of some of the larger companies for the treatment of workers requiring hospitalization under the provisions of the act. While accurate data could not be secured as to the amounts of indirect wage payment represented by medical services, the following calculation was made. A representative sample of ten sugar companies reported an estimated total of \$55,500 spent annually in medical services. As the employment figures of these companies at the peak and the slackest months of 1935-36 gave an average employment of 11,500, the resulting expenditure per worker would be \$4.78 a year. The method of calculation, however, makes this estimate little more than a rough approximation.

Welfare Services. Another indirect wage payment is found in certain welfare services offered by sugar companies, such as recreation halls, playgrounds, and so forth. These, however, are not extensive. Educational facilities show a special deficiency, which has not as yet been met by either private initiative or government action.

Using the same ten sample companies employed in the estimate made above for medical expenditures per worker, the

⁷ Study by Professor José C. Rosario, cited in *Porto Rico and Its Problems*, p. 560.

figure for expenditures on welfare activities (which includes such various items as "school expenses," "pensions," "charity," "funerals," and so forth) is \$17,590 annually, or \$1.53 per worker per year.

3. FOOD INCOMES

The most serious deficiency affecting workers in the sugar regions is in the matter of food incomes. Scarcity of cultivable land, concentration on sugar-cane production, the congestion of workers during the harvest season, and the seasonal migrations of workers, combine to produce a situation which encourages neither the production of minor crops nor the development of subsistence plots.

It was not possible to obtain any adequate data on food incomes in the sugar regions. The only study of this problem thus far made is Professor Rosario's (*c.* 1928), which estimated supplemental incomes of \$12 a year per worker in the coffee, tobacco, and fruit zones, consisting of food derived from garden plots provided by the employers, a form of income he reported not available in the sugar regions except in rare cases.⁸

4. CONCLUSION

Earnings of workers in the sugar industry, as we have seen, are generally higher than those of workers in the other major agricultural activities—tobacco, coffee, fruit—although in recent years hurricanes and the depression caused abnormal conditions in the latter.⁹ Consequently, workers in the sugar industry, at least during the harvest and grinding season, are in a position to spend somewhat more on food than those in the other major agricultural occupations. They also enjoy larger indirect wage payments, chief of which are housing (for those living in company houses), medical services, and certain welfare services.

⁸ Cited in *Porto Rico and Its Problems*, p. 560. Bird, in *The Sugar Industry in Relation to the Social and Economic System of Puerto Rico*, reports the average number of acres per family cultivated in subsistence crops as 0.342 in tobacco and coffee plantations, and 0.076 in sugar plantations (p. 32). These figures are for 1924-25.

⁹ See discussions on wages, Chapter XIII. As women are not employed in the sugar industry, however, earnings per family must be taken into account in drawing comparisons with the tobacco, coffee, and fruit industries where female labor is an important factor.

In the case of the larger companies, the facilities of company stores—particularly the credit offered to workers to tide them over periods of low earnings—may also be included among these non-wage benefits.

Company stores, where they exist, furnish a worker in the sugar industry with good quality products at prices no higher than those he would pay elsewhere for similar products,¹⁰ and in many cases at lower prices. But the worker in the sugar regions suffers decidedly from the difficulty of obtaining products to supplement his purchased diet. As the land where he works and lives is devoted almost exclusively to the raising and processing of sugar cane, the sugar worker lacks the wild fruits and small garden plots to be found in other agricultural zones. In the coffee regions, for example, the banana or orange trees, often used to shade coffee shrubs, supply workers with an easily available supplementary diet.

But the comparison of the different agricultural areas, in so far as supplemental incomes are concerned, is not a simple one. There are many elements to be balanced against one another. Family earnings, for example, may be more important than individual earnings in determining the well-being of the rural population. If so, the sugar regions show up disadvantageously, in that they provide but few gainful occupations for women and children. On the other hand, openings for men, and particularly for skilled and semiskilled male labor—which means higher wage rates—are much more numerous than in other agricultural regions.

Again, prices of commodities also vary, being generally lower in the sugar-cane regions and higher, say, on tobacco farms, situated in mountainous regions where transportation adds to the cost. But against such a factor, it might be pointed out that share-cropping is practiced on many tobacco farms; and this offers the worker an opportunity for greater earnings and the chance of becoming a small independent farmer.

Then there is the problem of malaria, a hazard to be contended with in certain sugar regions, but relatively absent in

¹⁰ This was the conclusion formed by the authors, following inquiries on the subject.

other areas. Or seasonal variations in employment—which are more acute in some agricultural activities than in others—might be a factor in throwing the scales one way or another.

The fact is that adequate comparisons between different industries are not possible except after careful study of the specific elements to be weighed against one another. A few years ago observers were generally inclined to feel that the balance was in favor of the non-sugar regions, believing that the opportunities offered the worker in the nature of supplemental incomes, garden plots, and so forth, offset the benefits of higher individual money earnings in the sugar industry.¹¹ Today, however, the situation has changed considerably. The coffee industry, for example, has suffered acutely as a result of hurricanes and of lost world markets, while the sugar industry is now, in terms of economic well-being, the best situated large employer of labor in the Island. However, it is precisely this favorable economic situation of the sugar industry that in the opinion of many makes more striking its shortages in housing, welfare and educational activities, and the lack of opportunities for labor to supplement its income through garden plots.¹²

¹¹ Cf. *Porto Rico and Its Problems*, pp. 21–29, 559–62.

¹² As already pointed out, discussion of labor in Puerto Rico must take into account the problems peculiar to any economy predominantly agricultural. In this connection, it is of interest to note that Puerto Rico has a body of social legislation of a type usually associated with highly industrialized communities. Among the legislative measures benefiting labor are the eight-hour day law, the workmen's accident compensation act, legislation requiring that all wages be paid in legal tender, regulation of the employment of women and children (not a problem in the sugar industry, as the employment of women and children is negligible) and others. See Vicente Géigel Polanco, *Legislación social de Puerto Rico*, Department of Labor, San Juan, 1936.

XV

COLLECTIVE LABOR AGREEMENTS

CERTAIN aspects of employer-employee relations in the sugar industry, such as minimum wages and working conditions, have of late been regulated by annual collective agreements known as *convenios*. Because of the importance of such a move by the largest groups of employers and workmen in Puerto Rico, and its effects on present and future social-economic trends in the Island, it has been thought desirable to sketch in this chapter the origin and rôle of the *convenios*.

1. ORIGIN OF THE CONVENIOS

The recent history of employer-labor relations in the sugar industry showed a period of increasing labor unrest beginning around 1930, usually occurring at the start of the grinding season (that is, in December and January), and affecting both large plantations and small growers.

The 1931-32 grinding season was ushered in under particularly tense conditions. The depression had brought about a reduction in wages in most plantations, and in some instances the earnings of field workers had dropped from 90 cents for a nine or ten-hour day, to 60 and 50 cents.¹ That is, the wage level in such extreme cases had returned to approximately what it was early in the century.²

While it is true that the price of sugar had been declining, this factor can scarcely be held the sole reason for the fall in wages. The depression merely accelerated a trend in sugar prices, that since 1924 had been consistently downward. Production of sugar in Puerto Rico, on the other hand, had been almost consistently upward.³ Expanding production, together

¹ *Informe Anual del Comisionado del Trabajo*, 1931-32, p. 42.

² See "Labor Conditions in Porto Rico," in *Bulletin of the Department of Labor* (Washington, D. C.), No. 34, May, 1901, p. 400.

³ See Chapters VII and VIII.

with increased efficiency in growing and processing methods, had tended to offset the fall in sugar prices in terms of profitable operations.

It is more likely that the cause was to be found in the release of an unusually large number of workers from other agricultural activities (particularly coffee and tobacco) as a result of the 1928 hurricanes and the depression; and, given a free labor market, this situation served to depress wages in all industries.

It was also explained by some officials of the sugar industry that uncertainty as to future economic developments affecting sugar had made a policy of retrenchment advisable.

The Mediation and Conciliation Commission of the Department of Labor was called on by either labor or employers to intervene in most of the labor disputes that arose; and it became a practice, when a settlement was effected, to embody it in a written agreement governing wages, hours, general working conditions, or other disputed points. These written agreements between employers and workers came to be known as *convenios*.⁴

The most important of these, in so far as the sugar industry is concerned, was the one signed in 1932 between the United Porto Rican Sugar Co. (today Eastern Sugar Associates) and its field workers. Minimum daily wages, ranging from 75 cents to \$1.25, were agreed on, and an eight-hour day was established for field work.⁵ The comprehensiveness of this agreement singled it out as a model for future negotiations.

However, as these agreements were of only one-season duration, and covered but a few of the plantations, the subsequent harvest was inevitably ushered in with new conflicts, particularly as the depression and the San Ciprián hurricane in September, 1932, intensified economic maladjustments, and caused further wage cuts.⁶ In the 1931-32 season, there had been ten strikes in the sugar industry, involving 3,355 workers; the 1932-33 sugar season saw fourteen strikes involving 13,594 workers; and

⁴ Spanish for "agreement" or "pact."

⁵ *Convenio entre la United Porto Rican Sugar Company y sus trabajadores*, Enero de 1932 (Department of Labor, San Juan, P. R., 1932). See also *Informe Anual del Comisionado del Trabajo*, 1931-32, pp. 56-64.

⁶ *Annual Report of the Commissioner of Labor*, 1932-33, p. 42.

the 1933-34 season eighteen strikes involving 33,333 workers (Table 101).⁷

Table 101

STRIKES AND CONTROVERSIES IN THE SUGAR INDUSTRY AND ALL OCCUPATIONS, PUERTO RICO, 1931-1936, REPORTED TO THE MEDIATION AND CONCILIATION COMMISSION OF THE DEPARTMENT OF LABOR

	SUGAR				ALL OCCUPATIONS				
	Number of Strikes	Number of Workers Involved	Con-tro-versies	Number of Workers Involved	Number of Strikes	Con-tro-versies	Lock-outs	Total	Number of Workers Involved
1931-32	10	3,355	10	267 ^a	23	20	1	44	6,566 ^b
1932-33	14	13,594	5	9,660	34	11	1	46	29,168
1933-34	18	33,333 ^c	2	653	91	26		117	72,675
1934-35	10	6,845	6	51,480 ^d	33	20		53	66,119
1935-36	5	2,250	6	61,062 ^e	26	19		45	68,578
Totals	57	59,377	29	123,122	207	96	2	305	243,106
Percent sugar industry of total for Island					27.53	30.2		28.19	75.06

Source: Compiled from data in annual reports of the Department of Labor, 1931-32 to 1935-36.

^a Number of workers not reported in 8 controversies.

^b Number of workers not reported in 14 cases.

^c Most of the strikes occurred before adoption of the *Convenio* (January, 1934).

^d Fifty thousand sugar workers involved in controversy over 1935 sugar *convenio*. Ended by signing of collective agreement, January 29, 1935.

^e Sixty thousand sugar workers involved in controversy over 1936 sugar *convenio*. Ended by signing of collective agreement, January 21, 1936.

2. THE FIRST GENERAL CONVENIO

In 1933 a new factor had entered the situation—the enactment of the National Industrial Recovery Act. This statute, promising improvements to labor on the Mainland in the form of minimum wages, shorter working days, and recognition of unions, evoked in Puerto Rican labor, as the Mediation and Conciliation Commission expressed it, “great hopes which they wished to see fulfilled without delay.”⁸ Organized labor (represented by the Federación Libre de los Trabajadores de Puerto

⁷ The figures on strikes and labor disputes quoted here include only those in which the Mediation and Conciliation Commission of the Department of Labor was called upon to intervene. Señor Luis Villaronga, Chairman of the Commission, was very helpful in furnishing data.

⁸ *Annual Report of the Commissioner of Labor, 1933-34*, p. 40.

Rico) sought to take advantage of this step toward collective bargaining by replacing the many separate contracts signed between various employers and their workers with one comprehensive agreement for the entire industry.⁹ Through such an Island-wide agreement, the workers in the smaller plantations and mills could share the benefits of higher wages and shorter hours enjoyed by groups with greater bargaining power.

So threatening was the unrest at the opening of the 1933–34 grinding season, aggravated by delay in the extension of relief measures to Puerto Rico and the rise in food prices due to the recovery measures on the Mainland,¹⁰ that employers, through the Association of Sugar Producers of Puerto Rico, eventually acceded to the demand of the Federación Libre; and in December, 1933, the first *convenio* covering the entire sugar industry was signed between these two groups.¹¹

This first general *convenio* virtually lapsed with the close of the 1933–34 grinding season. Wages during the “dead” season fell, and strikes once more disturbed employer-employee relations.¹²

Labor, anxious to consolidate its gains, demanded a new agreement on wages, the extension of the eight-hour day to mill workers, and the abolition of various forms of piece and contract

⁹ Negotiations were also entered into for similar agreements of wide coverage for dock workers and needlework labor, but were successful only in the first instance. Here, however, we are concerned with the agreements relative to the sugar industry only.

¹⁰ Increases in wages in agriculture during 1933–34 above those of 1932–33 raised average earnings from 20 to 69 percent; but the cost of a minimum ideal diet for workers engaged in agricultural occupations was estimated in 1933–34 to have increased 58 percent (*Annual Report of the Commissioner of Labor, 1933–34*, pp. 77–78).

¹¹ In a letter to its members announcing the signing of this *convenio*, the Sugar Producers Association called attention to the fact that Puerto Rico had “not been able to escape the rise in prices experienced by the goods we buy from the Mainland” and that “the movement that was under way among the laboring element, with the purpose of bringing wages into agreement with the rise in the cost of living . . . would undoubtedly have acquired such proportions that the work of the present crop season would have met with serious difficulties, had it not been for the just desire of both parties—employers and labor—to come to an agreement” (letter of January 24, 1934).

¹² A reason given by employers, in many instances, for the new drop in wages was the changed situation resulting from the sugar-quota and crop-restriction legislation enacted in Washington since the adoption of the *convenio*. That such measures justified avoidance of the provisions of the agreement was disputed by the Commissioner of Labor, Prudencio Rivera Martínez, in an interview in *El Mundo*, August 5, 1934.

labor. These last two demands, coupled with the opposition offered by some of the smaller mills and *colonos* to wage scales and working hours which they felt could be maintained by the larger establishments but not by themselves, threatened at one time to wreck the negotiations for the 1934-35 *convenio* and to precipitate a general strike.

With regard to the eight-hour day in the mills, employers finally agreed that a joint committee be appointed to study the manner in which the working day in sugar mills might be reduced during the subsequent grinding year (1935-36).¹³ Eventually, however, the Legislature enacted a bill making the eight-hour day compulsory throughout the Island.¹⁴

The problem of piece and contract work presented a particularly stubborn issue in the negotiations. Several forms of such non-day-wage systems have been practiced in Puerto Rico. What was known as *trabajo por ajuste* involved payment to cane cutters on the basis of the number of square yards cut per unit of time; or on the basis of the weight of the cane cut; or on the basis of a combination of both factors (yardage and weight). Contract labor involved substantially the same variable elements as piece work, except that the relation between the plantation and the worker was not a direct one, but operated through the medium of a third party, the contractor.

Criticisms by labor of these systems were based on several alleged injustices to which the practices gave rise. It was claimed that discrepancies emerged as to measurements or weights; or that the variations in the rate of cane-cutting, due to factors beyond the control of the worker (such as topographical conditions or the species of cane), were variables the worker had to underwrite from his compensation. As to contract labor through an intermediary, it was alleged that proportionally the greater share of the compensation remained in the hands of the contractor.

Piece and contract work were defended by employers as measures to stimulate workers to greater efficiency, and which

¹³ *Thirty-Fifth Annual Report of the Governor of Puerto Rico*, 1935, pp. 15-16.

¹⁴ Act No. 49, approved August 7, 1935. See discussion of the eight-hour day, Chapter XII, section 6.

at the same time would offer them fairer remuneration and possibilities of greater earnings, as compensation was in direct relation to actual output. Whatever the merits of this argument in particular cases, actual practice had exposed the susceptibility of these systems to abuses. The basic rates for piece work, it was claimed by labor, were so low, or cutting conditions so unfavorable, that earnings were the equivalent of day wages ranging from 30 to 45 cents;¹⁵ while with contract work, the share retained by the contractor left the worker with a residue equally low.¹⁶

Although piece work had been abolished on some plantations following the 1934 strikes,¹⁷ opposition on the part of many employers to its general abolition was too strong to permit the inclusion of a clause providing for this in the *convenio* under discussion. There was also resistance by some employers—particularly *colonos*—to participation in any collective agreement raising wages; for, as already stated, many of the smaller mills or plantations felt they could not maintain a wage scale equal to that of the larger companies. As a result, the impasse in the negotiations continued well into January, 1935, with harvesting and grinding getting under way with difficulty. The threat of a general strike finally brought the intervention of the Governor,¹⁸ and a *convenio* was signed eliminating piece work.¹⁹ Since then the *convenios* have been adopted regularly.²⁰

¹⁵ *Annual Report of the Commissioner of Labor*, 1933–34, p. 42.

¹⁶ The existence of this evil was admitted in a letter from the committee of the Association of Sugar Producers in charge of negotiating the *convenio*, recognizing "situations where the 'encabezado' or 'contractor' enjoyed the major part of the profits, to the detriment of the laborer who in fact did the work" (letter of December 24, 1934). The position of organized labor on contract or piece work is stated in a letter of the Secretary of the Federación Libre, R. Alfonso Torres, to the Association of Sugar Producers, December 25, 1934; and the position of employers is similarly outlined in a replying letter from R. A. Veve, chairman of the Convenio Committee of the Association, December 29, 1934 (*El Mundo*, January 12, 1936).

¹⁷ *Annual Report of the Commissioner of Labor*, 1934–35, p. 36.

¹⁸ *El Mundo*, January 21, 1935.

¹⁹ *Thirty-Fifth Annual Report of the Governor of Puerto Rico*, 1935, p. 70.

²⁰ Under pending AAA provisions, minimum wages for field labor will virtually be set in the future by the Federal Government (see Chapter XIX, below). A recent study reports that labor on sugar-cane plantations in Puerto Rico under recent *convenios* receives higher hourly wages than agricultural labor in southern states. A survey of 109 sugar-cane plantations covering 20,196 laborers, made by the Insular Department of Labor in 1937, showed an average wage of 12.8 cents per hour. The

3. GENERAL RESULTS UNDER THE *CONVENIOS*

The *convenios* in general have been effective in lifting wages from the low points to which they had fallen around 1932 and 1933. Average hourly wages in sugar-cane plantations during the 1932-33 crop season, according to the studies made by the Department of Labor, were 9.8 cents, and in the 1935-36 season had risen to 12.1 cents. In sugar mills the corresponding figures were 11.3 and 16 cents.²¹

It is arguable, however, whether the *convenios* alone achieved these improvements, for other agricultural activities in the Island have also shown rises in wages as general business conditions have improved since 1932.²² What the *convenios* have effected is perhaps more in the nature of holding wage increases, granted in certain plantations following a strike by the workers, and extending these benefits to the industry as a whole. Without them, wages in sections where labor was in a position to demand improvements might have been no lower; but workers in other regions would not have enjoyed these benefits. Furthermore, judging by the strike history of the Island of late, strikes might have been called at the beginning of each harvesting and grinding season to maintain the increases gained the previous year. The *convenios* since the one of 1933-34 have undoubtedly contributed toward the elimination of serious strikes.²³

On the other hand, the reduction in working hours, brought

average wage rate for agricultural labor in continental United States for 1937 was 13.9 cents per hour and in the 14 southern states it was less than 10 cents per hour. See Dudley Smith and William M. Requa, *The Facts about the Sugar Industry in Puerto Rico*, Association of Sugar Producers of Puerto Rico, Washington, D. C., n.d.

²¹ See discussion of wages, Chapter XIII above, and Table 102 (end of chapter). Note that the most recent crop year for which wage data are here given is 1936-37 (Table 102). For the current crop year (1937-38), a further increase of some 10 percent for field labor and of 5 percent for mill labor has been in effect under the latest *convenio*. Furthermore, under recent AAA provisions, minimum wages of a dollar a day for field labor must be paid by recipients of benefit payments.

²² Drawing inferences by comparisons with other agricultural occupations is hazardous, however, considering the different factors affecting different industries. Recovery has been uneven in the various major economic activities; and frequently increases in wages in industries seriously affected by the depression and by recent hurricanes, have been the result not so much of intrinsic economic improvement as of relief measures extended to these industries. Of the major agricultural activities, sugar is perhaps the only one that has been operating independently of such factors.

²³ See *Annual Report of the Commissioner of Labor*, 1935-36, pp. 42-43.

about first by the *convenios* and subsequently by the eight-hour day act, has affected individual earnings. Thus while the hourly wage rate increased between 1932 and 1936, actual average weekly earnings on plantations were \$3.60 in the 1932-33 season and \$3.75 in the 1935-36 season; and for sugar mills, the figures are \$7.52 and \$6.78 respectively.²⁴ The effect is more noticeable in the mills than on the plantations, as in the mills the reduction was from a twelve-hour to an eight-hour day; whereas in the fields the cut in working hours was much less. Furthermore, a full-time day in the mills is normal, whereas the nature of field work introduces variations that are the result of crop conditions, weather, and so forth.

Other results of the *convenios* are to be found in improved working conditions, in the establishment of representative groups to arbitrate differences, and in the general recognition of the labor organizations and the consequent impetus to organized labor in Puerto Rico. Local committees, and the Mediation and Conciliation Commission of the Department of Labor have provided the machinery through which workers with grievances today feel they can reach their employer and receive a fair hearing.

As to compliance with the provisions of the *convenios*, it is obvious from the statistics on wages that the rates fixed by the *convenios* are not always adhered to. However, the widely varying economic resources of the component elements of the sugar industry, as well as the varying local conditions, have resulted in labor's using discretion in exacting full discharge of the obligations that the employers nominally assume through the *convenio*. After all, the extent to which infractions may be remedied depends, in the last resort, on the effectiveness with which labor in any particular locality can maintain its demands through concerted action; and in the case of small, isolated plantations this may be neither feasible nor wise.

There is also the question of the extent to which an agreement, negotiated and signed through an organization representing all the industry, is binding on all members of that industry, the

²⁴ See discussion of eight-hour law, Chapter XII, section 6; and Table 86, Chapter XIII.

point that was raised by labor during the negotiation of the 1934-35 *convenio*, and one which has never been fully tested.²⁵

The answer to this point, in the last analysis, may lie only in the effectiveness of collective action by labor in bringing pressure on a recalcitrant employer. Here again, the course followed has been a discretionary one. One of the larger plantations did not subscribe to the 1935-36 *convenio* because of its unwillingness to do away with piece work; but as its treatment of labor was held satisfactory, no labor troubles resulted.

4. THE CONVENIOS AND THE COLONOS

It is with the *colono*, rather than with the large plantation or mill, that labor may experience difficulty in exacting fulfillment of the stipulations of the *convenios*. Here the triple stratification of the sugar industry—labor, *colonos*, mills and large plantations—is a complicating factor, as it is in other social and economic aspects of the sugar economy.

The *colono*, from the first, has generally shown reluctance to participate in the collective agreements with labor.²⁶ There are several reasons for this. In the first place, the *colono* has viewed the *convenio* as dictated primarily by the interests of the milling group in the sugar industry; and, as such, an agreement that establishes wage scales beyond the financial capacity of the independent growers. When the 1934-35 *convenio* was being negotiated, the representative of the *colonos* stated their position as follows:

With regard to *colonos* who are members of the Association of Agriculturists of Puerto Rico, I wish to make it clear that they are in no wise obligated to accept the clauses of any *convenio* that the Association of Sugar Producers may enter into with workers of the sugar mills.

Neither do I believe that *colonos* should attend the meetings held by *centrales* and workers to fix wages and working conditions. These matters, if they are to obligate the *colonos* in their relations with their workers, should be dealt with exclusively by their representatives, in order to arrive at reasonable solutions compatible with the special

²⁵ One of the issues raised by labor in negotiating the 1936 *convenio* was that the statutes of the Association of Sugar Producers contained a clause relieving individual members from accepting as binding the obligations entered into by the Association (Article 7, Section b of the Statutes).

²⁶ *Annual Report of the Commissioner of Labor, 1932-33*, pp. 42-43.

conditions that prevail in the cane regions from the growers' point of view, and without ties to the sugar industry proper.²⁷

As a result of this position, the *colonos*, when the *convenio* was signed, accepted it "only in principle."²⁸

It is undoubtedly a fact that there are small *colonos* raising poor cane on marginal land who are not in a position to meet wage scales acceptable to large mills growing cane. But it is also a fact that there are prosperous *colonos*; and consequently the official position of the *colono* group, to the effect that "no *colono*" is able to meet the field wages paid by large plantations or mills,²⁹ is scarcely sound.

It would appear that an equally important factor in the situation is the old grievance of the *colonos* against the mills,³⁰ and the desire to make increased benefits to labor dependent on increased benefits to *colonos*. Thus the president of the Colonos' Association of Arecibo, following the drafting of the 1934-35 *convenio*, stated:

The Colonos' Association of Arecibo has no further objections to make to the collective agreement about to be signed by employers and workers. The wages asked are reasonable, and the conditions acceptable, and *colonos* and labor can easily work in peace and harmony during the harvest. . . . Logically, *colonos* will have to pay workers what they demand; but the mills will have to pay the *colono* a reasonable return, so that the product of his cane will be sufficient to pay the just wages of the workers.³¹

The problems relative to the effective working of the *convenios* are thus complicated by factors inherent in the structure of the sugar industry in Puerto Rico. In the first place, there is the triple stratification to which we have already referred—labor, *colonos*, mills—which often tends to make collective bargaining a three-way, rather than a two-way, process. Secondly, there is the disparity in the economic resources of large plantations and small growers, large mills and small mills. Effective enforcement of minimum wage scales might possibly imply the elimination of the weaker units of the system; although on this score

²⁷ Statement of José L. Pesquera, President of the Association of Agriculturists of Puerto Rico, *El Mundo*, November 28, 1934.

²⁸ *El Mundo*, January 28, 1935.

²⁹ José L. Pesquera in *El Mundo*, January 17, 1935.

³⁰ Discussed in Chapters X and XIX.

³¹ *El Mundo*, January 31, 1935.

the present writers are not in a position to express any opinion as to the actual or potential capacity of any employers in the sugar industry with regard to wage payments.³²

However, the proposed A.A.A. regulations—which would make benefit payments contingent on the acceptance of an established minimum wage to field labor by both mills and *colonos*, and on the application of a minimum return to *colonos* by mills³³—may change the rôle of the *convenios* considerably. The problem of achieving a minimum wage is removed from the field of bargaining, except in those unlikely cases where a grower may refuse to adhere to A.A.A. contracts; and recourse to the wage argument by *colonos* seeking better terms with mills can scarcely be as well justified, when mill-*colono* contracts are based on a minimum return established by the Federal Government. This does not mean to say, however, that some of these factors may not arise as the three groups in the situation bargain for returns above the minima accepted under A.A.A. contracts.

5. SUMMARY

The collective agreements known as *convenios*, entered into between employers and workers in the sugar industry, have been generally effective in eliminating serious strikes during recent years, in raising wages, and in maintaining wage rates during the slack season. Before the *convenios*, instances were reported of daily wages as low as 50 cents, the rate that prevailed in the sugar industry in Puerto Rico early in the century. The *convenios* have established 80 cents as a minimum in field work and 90 cents as a minimum in mill work. They have also contributed to the enactment of the eight-hour day law, improved working conditions in plantations and mills, and the reduction in piece and contract work.

While wage rates lower than the minimum established by the *convenios* are still reported, the information available indicates general adherence to the terms of the *convenios* by the majority of mills and plantations. It is understood that labor

³² See further discussion of this problem in Chapter XIX.

³³ See Chapter XIX, section 2.

uses "discretion" as to the enforcement of the stipulations in regions where local factors seem to warrant certain deviations.³⁴

Table 102

SCALE OF MINIMUM DAILY WAGES ESTABLISHED FOR WORKERS IN
SUGAR INDUSTRY BY CONVENIOS, 1935-36 AND 1936-37

OCCUPATION	LOWEST MINIMUM WAGE				HIGHEST MINIMUM WAGE			
	Interior		Coast		Interior		Coast	
	1935- 36	1936- 37	1935- 36	1936- 37	1935- 36	1936- 37	1935- 36	1936- 37
1. <i>Plantations</i>								
Water carriers, fertilizer spreaders, etc.	\$0.70	\$0.80	\$0.75	\$0.85				
Tractor-plow operators					\$1.25	\$1.40	\$1.40	\$1.55
2. <i>Sugar Mills</i>								
Unskilled labor	0.80	0.90	0.90	1.00				
Skilled workers					2.40	2.65	2.65	2.90
3. <i>Railways</i>								
Trackmen	\$0.85	\$0.95	\$0.95	\$1.05				
Engineers of locomotives of over 20 tons					\$2.40	\$2.65	\$2.70	\$3.00

Source: *Convenios* for 1935-36 and 1936-37.

³⁴ Since this chapter was written, increases are reported in the minimum daily wages discussed here, the result of new *convenios* and the A.A.A. provisions already referred to (see p. 185 above).

XVI

SUGAR'S CONTRIBUTION TO INSULAR REVENUES

IN VIEW of the prominent place occupied by the sugar industry in the Puerto Rican economy, its contribution to Insular revenues is a matter of importance. Critics often assert that sugar contributes less than its fair share to the Insular treasury, while others point out that it is by far the most important source of Insular revenues. No statistical analysis, however, has hitherto been made of just how much the sugar industry does actually contribute directly and indirectly to the revenues of the Insular government. This chapter attempts to present and analyze the basic data on the problem.

Three important features of the analysis should be borne in mind in reading the ensuing discussion. First, all calculations relate wholly to revenues derived *directly* from the sugar industry. The latter's indirect contribution to the Insular treasury, through taxes paid by the recipients of incomes from the sugar industry, cannot be estimated, but is clearly of much importance. This indirect contribution, furthermore, is characterized by a peculiar feature; for between sugar and other Puerto Rican industries, the secondary effects operate not reciprocally, but almost entirely in one direction. Payments made by the sugar industry to workers, managers, cane growers, merchants, and so forth are expended by the recipients on a great variety of products in Puerto Rico, from which the Insular government derives revenue in a number of ways—income and excise taxes, customs duties, and so forth. But the payments made by other industries are expended by the recipients in Puerto Rico only to a negligible extent on the product of the sugar industry. Thus the *direct* contribution of the sugar industry to Insular revenues greatly understates its true total contribution.

In the second place, the direct contribution itself is somewhat

under-represented by the figures cited below. In certain cases (for example, income tax receipts) the estimates of sugar's contribution refer for the most part to the tax or other payments made by the sugar-producing entities only, and omit contributions of landholding subsidiaries, railroads, and other affiliates of sugar companies. They also omit the contributions of cane growers and all taxes on individual incomes, though many of the latter are derived wholly from the sugar industry. Because of these factors, the qualifying footnotes to the various tables should be carefully noted.

Third, in the case of some sources of revenue receipts—such as excise taxes and customs duties—it has not been possible to segregate fully the respective amounts derived from the sugar and other industries. Consequently, it is not justifiable to compare those taxes paid by the sugar industry which *can* be estimated with the total receipts of the Insular government from *all* sources, since the latter also include revenues derived from the sugar industry which cannot be estimated.

1. SOURCES OF INSULAR REVENUES

The Department of Finance, through which the Treasurer acts, collects practically all the revenues of the Insular government. It also collects the major portion of municipal revenues, represented by taxes on real and personal property.¹ Thus it is possible to present a condensed comprehensive statement of virtually all the revenue receipts for all purposes in the Island, by broad sources of origin.

Revenues of the Insular government for the year 1934–35 totaled \$31,236,000 (Table 103). From this sum, however, \$3,798,000 should be deducted as not representing true revenue receipts, for it is the product of "Repayments" and "Transfers."²

¹ The Insular government retains a very small part of the revenue which it collects in property taxes. Almost all of the proceeds from this source go to the municipalities (see Table 103). This revenue constitutes three-quarters of municipal income, and is applied to defraying the ordinary expenses of municipal governments as well as to paying interest and to amortization of the bonded debt, both Insular and municipal.

² Items 11 and 12 of Table 103. "Repayments" are chiefly by the Bureau of Supplies, Printing and Transportation, and "Transfers" refers to movements between the two funds.

Table 103

CASH RECEIPTS OF THE INSULAR GOVERNMENT, FISCAL YEAR
1934-35

(In Thousands)

	GENERAL FUNDS	TRUST FUNDS	TOTAL
1. Cash balance as of July 1, 1934	\$ 145	\$ 5,284	\$ 5,429
2. U. S. Internal Revenues	139	—	139
3. Customs	1,690	—	1,690
4. Excise	8,224	—	8,224
5. Property taxes for municipalities	—	4,714	4,714
6. Property taxes: Insular government	346	—	346
7. Other property taxes ^a	—	1,558	1,558
8. Income tax	1,786	—	1,786
9. Inheritance tax	50	—	50
10. Miscellaneous	1,338	7,592	8,930
11. Repayments	1,787	—	1,787
12. Transfers	121	1,890	2,011
13. Total Insular government receipts ^b	\$15,483	\$15,753	\$31,236
14. Total ^b	\$15,627	\$21,037	\$36,665

Source: *Report of the Treasurer of Puerto Rico* for 1934-35.^a Mostly Insular bond redemption and university taxes.^b Slight differences from sum of individual items explained by rounding-out of latter in thousands.

The main sources of the remaining—or true—Insular revenues, totaling \$27,438,000, are the following: among General Funds, customs (\$1,690,000), excise (\$8,224,000), income tax (\$1,786,000), and miscellaneous (\$1,338,000); among Trust Funds, property taxes (\$6,272,000) and miscellaneous (\$7,592,000). Totalling both funds, \$1,690,000 was derived from customs duties, \$8,224,000 from excise taxes, \$6,618,000 from property taxes, \$1,786,000 from income taxes, and \$8,930,000 represented miscellaneous receipts, altogether aggregating over 99 percent of all true revenue receipts. These various sources of revenue will be examined in succession with the object of determining the proportion of each derived directly from the sugar industry.

2. MISCELLANEOUS RECEIPTS

The large “miscellaneous” category in both funds can be quickly explained. The chief items composing the total of \$1,-

338,000 for this item in the General Funds were the following: temporary loans in anticipation of taxes, \$900,000; surplus from the special insurance fund credited to general funds, \$19,000; municipal bonds redeemed, \$13,000; telegraph and telephone receipts, \$132,000; court fees and fines, \$23,000; harbor and dock fees, \$47,000. The balance was represented by a variety of small items such as royalties and franchises, interest, and rent and sale of government property. In none of these cases can the direct contribution of the sugar industry be isolated. In most of them the revenue derived represented payments made for specific services.

Nor can the miscellaneous receipts in the Trust Funds be allocated to specific industries. The chief items comprising the total of \$7,592,000 were the following: court fees and fines, \$72,000; harbor and dock funds, \$43,000; interest, \$91,000; irrigation funds, \$651,000; special fund for the development and use of water power, \$913,000; savings and loan funds, \$805,000; retirement fund for Insular government employees, \$305,000; teachers' pension fund, \$138,000; Federal emergency relief funds, \$566,000; special deposits, \$322,000; university funds, \$841,000.³ Many of these items are revolving, self-liquidating funds; others are derived largely from the sugar industry, such as the irrigation and water funds; while Federal emergency relief funds are not raised in Puerto Rico.

3. CUSTOMS DUTIES

Since nine-tenths of Puerto Rico's external trade is with the continental United States, customs duties on imports of foreign origin do not constitute a large source of Insular revenue. Total duties collected in 1934-35 amounted to \$1,690,000. This sum was levied on total imports from foreign countries amounting to \$6,412,000. Nearly four-fifths of this latter sum was accounted for by imports of some fifteen individual items, as follows (in thousands of dollars):⁴

³ The balance is not broken down in the Treasurer's reports.

⁴ *Annual Book of Statistics*, 1934-35.

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1. Cod, haddock, etc., pickled and salted	\$1,003	9. Roasted coffee	\$134
2. Corn	192	10. Jute bags	637
3. Chick peas	163	11. Flax, hemp, etc., manufactures	225
4. Olive oils	117	12. Cordage and twine	109
5. Cocoa and cacao beans	200	13. Fuel oil	752
6. Liquor and other beverages	475	14. Agricultural machinery	97
7. U. S. containers returned	194	15. Fertilizers	561
8. U. S. articles returned	154	Total	<u>\$5,013</u>

For the first nine of the above imports, mostly consumers' goods, the sugar industry was not directly responsible and therefore contributed nothing directly in payment of import duties. Together they total \$2,632,000. The remaining six items (10 to 15), however, totaling \$2,381,000 in value, were imports partly used by the sugar industry, and in some cases very largely so. For instance, duties paid by sugar mills on sugar bags in 1934-35 are estimated to have amounted to nearly \$200,000.⁶

4. EXCISE TAXES

Excise taxes constitute the most important sources of Insular revenue. Of these, tax collections on cigarettes (\$1,950,400) and cigars (\$105,400) made up the largest single item and represented one-fourth of total collections (Table 104). The gasoline tax was the second largest single item of collection (\$1,696,000). Together with automobile licenses (\$512,000) and taxes on motor vehicles, tires, and so forth (\$232,000), it accounted for one-fourth to one-third of collections. Taxes on distilled spirits, alcohol, beer and wines, and licenses yielded \$1,184,000, or one-seventh of the total. The other three items in the table yielding over half a million dollars each were the 2 percent sales tax (\$544,000), the sugar-production tax (\$646,000), and the miscellaneous class (\$540,000). The last-mentioned includes a great

⁶ On the basis of a large and representative sample of mills. In 1933 a substantial amount was collected in duties on sugar cane imports, discontinued in 1934 owing to U. S. quotas established by A.A.A. legislation.

The PRRA estimates that duty payments on products which were presumably imported by the sugar industry amounted in 1934-35 to \$265,000. Allowance for estimated expenses of collection would reduce this figure to \$232,000. The former figure represents 16 percent of all customs collections, as compared with 19 percent as calculated below, Table 111. (PRRA, Planning Division, *The Sugar Industry in Relation to the Social and Economic System in Puerto Rico*, by Esteban A. Bird, preliminary mimeographed report, San Juan, 1937.)

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variety of individually small items each yielding less than \$50,000, such as electric fans, court fees, perfumery, phonographs, radios, moving pictures, cement, lubricating oils, fertilizers, and so forth.

The sugar production tax (a manufacturing tax of 4 cents per *quintal* [hundredweight]), is of course paid wholly by the sugar industry. Since almost all Puerto Rico's sugar output is exported, the tax is virtually tantamount to an export duty. The income from this tax was considerably reduced in 1934-35 as a result of crop limitation brought about by the A.A.A. program. In the preceding year, the tax had yielded over \$905,000.

Table 104
COLLECTIONS OF EXCISE TAXES, FISCAL YEAR 1934-35
(In Thousands)

1. Cigarettes and cigars	\$2,056	8. Notarial instruments	\$245
2. Beverage law	1,184	9. Occupational licenses	240
3. Sugar production tax	646	10. Horse races, pools, etc.	136
4. Two percent sales tax	544	11. Kerosene	100
5. Auto licenses	512	12. Matches	93
6. Gasoline	1,696	13. Other items	540
7. Vehicles, tires, etc.	232	14. Total	\$8,224

Source: *Report of the Treasurer of Puerto Rico* for 1934-35.

The sugar industry directly contributed nothing to revenues derived from taxes on cigarettes, cigars, or beverages. The share which it contributed to the income yielded by the sales tax and taxes on auto licenses, gasoline, motor vehicles, and tires was probably substantial, but its magnitude cannot be estimated. To the remaining items of excise revenue, sugar's direct contribution must have been slight.

To sum up: out of total excise tax collections of \$8,224,000, sugar's direct contribution under items 1 and 2 of Table 104, totaling \$3,240,000, was nothing; item 3, \$646,000, was derived wholly from that industry; items 4 to 7, totaling \$2,984,000, were paid partly by it; and its direct contribution to the remainder, \$1,354,000, was probably relatively negligible. Its indirect contributions, through wages, and so forth, cannot, of course, be estimated.⁶

⁶ The PRRA estimates that total local excise levies on *imports* of the sugar industry amounted to \$247,400 in 1934-35. "Materials employed in the planting and proc-

5. PROPERTY TAXES

Property taxes rank second in importance to excise taxes as a source of Insular revenue. The municipal governments derive most of their income from the proceeds of these taxes. Their total yield in 1934-35 was \$6,618,000.⁷

The general property tax is assessed and collected by the Insular government. Tax rates vary by municipalities from a minimum of 1.75 percent to a legal maximum of 2.65 percent, the average for 1934-35 being 2.19 percent. The same rate is applicable to all classes of taxable property, and the prescribed rule for its assessment is the "actual value, without looking to a forced sale."⁸

Land Taxes Paid by Sugar-Cane Growers

Of the \$2,338,000 paid in rural land taxes⁹ in the fiscal year

essing of sugar cane are not locally produced in any degree of importance. Therefore import statistics have been employed to estimate the probable share of items imported by the sugar industry. From these estimates the levies of excise taxes were calculated." (PRRA, *Op. cit.*, unpublished report on the sugar industry).

The most important sources of the above excise taxes were the following (the figures in brackets show the percentages of total imports, from both the United States and foreign countries, for which the sugar industry was responsible): railroad ties (90), gasoline (10), gas and fuel oil (30), lubricating oil (15), railway track material (90), sugar-mill material (100), agricultural machinery and implements (80), automobiles and other vehicles (10), industrial chemicals (15), fertilizers and materials (80), jute bags (90), railway bars and plates (90), tools (15).

There are no direct excise levies on molasses; the 2 percent sales tax has not been applied to this product. The PRRA estimates, however (*op. cit.*, unpublished report on the sugar industry), that in 1934-35 \$52,000 were indirectly derived from this source in excise taxes (and hence from the sugar industry) through levies on the production and sale of alcohol. The estimate is stated to be "exceedingly conservative."

⁷ See Table 103. The distribution of the proceeds of the property tax in the fiscal year 1934-35 was as follows (in thousands): Insular government, \$346; Insular bond redemption taxes, \$987; development of water resources, \$7; university fund, \$564; municipalities, \$4,714; total \$6,618 (Treasurer's Report, p. 73). As can be seen, the major portion (71 percent) goes to the municipalities, and constitutes their chief source of income. Other sources of municipal income in 1934-35 were as follows (in thousands): operation of public utilities, \$1,007; other taxes, \$336; use of municipal property, \$239; Insular lottery, \$7; other receipts, \$113 (*Annual Report of the Treasurer*, 1934-35, p. 39). For the most part these latter sources of revenue are not tax receipts in the strict sense, but rather payments for services. The amount derived from the sugar industry cannot be segregated.

⁸ The rates, by purposes, are as follows: Insular, .10 (in 4 first-class municipalities, .20); municipal, .90; schools, .10; road loan, .15; municipal loan, .15 to .85; special insular, .10; university, .20; bonds floating debt, .10.

⁹ Urban lots and buildings and other real property excluded.

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1934-35, sugar-cane growers were responsible for \$1,395,000 or 60 percent. Of this sum, \$1,079,000 represents taxes on 317,000 acres of cane lands, \$42,000 on 50,000 acres of other crop lands, and \$274,000 on 404,000 acres of pasture and idle lands (Table 105).

The importance of the contribution of sugar-cane lands to land taxes is stressed by the fact that the 317,000 acres actually in sugar cane represent only 15 percent of the 2,082,000 acres of all farm lands of all types in the Island. The explanation, of course, is that cane land is one of the most valuable types of farm lands in Puerto Rico, the assessed value of these 317,000 acres being

Table 105

ESTIMATED LAND TAXES PAID BY CANE GROWERS* COMPARED WITH ALL FARM LAND TAXES, 1934-35

(Amounts in Thousands)

CLASS	CANE	OTHER CROPS	PASTURE AND IDLE	TOTAL
All Puerto Rican Farms				
1. Acres ^b	317	320	1,445	2,082
2. Assessed values ^c	\$49,068	\$12,128	\$45,095	\$106,293
3. Taxes ^d	\$ 1,079	\$ 267	\$ 992	\$ 2,338
Cane Growers				
4. Acres ^e	317	50	404	771
5. Assessed values ^f	\$49,068	\$ 1,895	\$12,457	\$ 63,420
6. Taxes ^f	\$ 1,079	\$ 42	\$ 274	\$ 1,395
7 Percent line 6 is of line 3	100	16	28	60

* Assessments and taxes on rural *land* only; urban lots and buildings and other real property excluded.

^b *Report of the Treasurer of Puerto Rico, 1934-35, corrected figures.*

^c *Report of the Treasurer of Puerto Rico, 1934-35.*

^d Estimated on basis of figures of Treasurer's office for all property taxes.

^e A.A.A., Sugar Section, Puerto Rico, photostat release.

^f Property Tax Bureau, Treasury Dept. Partly estimated.

\$49,068,000, or 46 percent of the \$106,293,000 valuation given all farm lands in the Island in 1935. (Including farm land not devoted to sugar cane, the valuation of land of sugar-cane growers totaled \$63,420,000, or 60 percent of the Island total.) The highest assessed average values of the most important crop lands in 1935 were, per acre, \$187 for citrus fruits, \$164 for sugar cane, and \$135 for pineapples (Table 106). The average value

of all farm lands, including timber and marsh lands, was \$51 per acre.

Table 106

ASSESSED VALUES OF FARM LAND BY CLASSES, 1935

CLASS	ACRES (IN THOUSANDS)	ASSESSED VALUES (IN THOUSANDS)	AVERAGE VALUE PER ACRE
Cane	299*	\$49,068	\$164
Coffee	149	2,835	19
Tobacco	20	1,458	72
Pineapples	4	599	135
Citrus fruits	9	1,674	187
Coconuts	10	962	97
Minor crops	128	4,600	36
Pasture	1,017	38,655	38
Timber and brush	384	5,219	14
Marshland	19	326	17
Other	43	897	21
Total	2,082	\$106,293	\$51

Source: *Report of the Treasurer of Puerto Rico, 1934-35*, pp. 80, 86, 88.

* Slight difference from figure of Table 105 explained by different source.

It will be seen from the data given above (Table 105) that farms owned by cane growers included more acres of pasture, idle, and other lands than acres in sugar cane (317,000 acres in sugar cane, 50,000 acres in other crops, and 404,000 acres in pasture and idle lands). Although, as noted in previous chapters, sugar-cane lands constitute 15 percent of total farm lands in Puerto Rico, all farm lands of sugar-cane growers in 1935 represented over one-third of the Island total (37 percent). These cane growers paid 60 percent of the total taxes on all land in farms (Table 105).

Assessments and Taxes of Sugar Milling Companies

Personal property and rural real property (excluding land) in all the Island were assessed in 1934-35 at \$82,810,000. Of this, \$38,909,000 was for personal property and \$43,901,000 for rural real property.¹⁰

¹⁰ *Report of the Treasurer of Puerto Rico, 1934-35*, pp. 74 and 82-83. Composition of the latter total was as follows (in millions of dollars): rural houses, 5; buildings and machinery, including electric plants, 30; telephone, 1; track and railroad structures, 5; other improvements, 2.

Of the assessment on personal property, the share of the sugar-milling companies was \$6,702,000 or 17 percent; and the tax paid was \$147,000 (Table 107).

Of the assessment on rural real property (excluding land), the share of sugar-milling companies was \$34,610,000, or 78 percent. The chief item of this category was sugar mills and buildings, assessed at \$25,907,000, other real property totaling \$8,703,000. Taxes paid amounted to \$570,000 on the first, and \$191,000 on other real property, or a total of \$908,000 (Table 107).

Table 107

ASSESSMENTS AND TAXES OF SUGAR MILLING COMPANIES, FISCAL YEAR 1935^a

(In Thousands)

MILLS ^b	ASSESSED VALUES	TAXES
Mills and sugar buildings	\$25,907	\$570
Other real property ^c	8,703	191
Total real property	\$34,610	\$761
Personal property	6,702	147
Total	\$41,312	\$908

Source: Calculated from individual property-tax returns to the Property Tax Bureau of the Puerto Rico Department of Finance.

^a Includes affiliates of sugar companies.

^b Does not include independent *colonos*.

^c Except land, for which separate figures are presented in Table 105, above.

The above figures include affiliates of the milling companies, but as they do not include *colonos*, the total taxes of \$908,000 paid by the mills somewhat understates the true full payments on these types of property made by the sugar industry as a whole.

The salient feature of the above data, of course, is the fact that the assessed value of the real property (except land) of sugar milling companies constituted almost 80 percent of the total of all rural real property (again except land). With regard to land, we have already seen above that the assessed values of farm lands of sugar-cane growers represented 60 percent of the valuation of all farm lands in the Island. Since the same rate of property tax is applied to all classes of taxable property, these figures of

relative assessments accurately reflect the relative taxes paid by the sugar industry and all other owners of taxable property in Puerto Rico.

Over half the total assessments and taxes of sugar mills is accounted for by those owned by or allied with the four largest milling concerns—the American-owned companies. Of the \$41,312,000 assessed value of all mills and other real and personal property of milling companies, the share of these four constituted \$21,290,000, or 51 percent. Of the total \$908,000 paid in taxes on such property, these four companies were responsible for \$468,000 or 52 percent (Table 108).

Table 108

ASSESSMENTS AND TAXES OF SUGAR MILLS, FOUR AMERICAN-OWNED COMPANIES, FISCAL YEAR 1935^a

(In Thousands)

FOUR AMERICAN-OWNED COMPANIES ^b	ASSESSED VALUES	PERCENTAGE TAXES ARE OF SIMILAR TAXES OF ALL SUGAR MILLS	
Mills and sugar buildings	\$11,995	\$264	46
Other real property ^c	5,170	114	60
Total real property	\$17,165	\$378	50
Personal property	4,125	91	62
Total	\$21,290	\$468	52

Source: Calculated from individual property-tax returns to the Property Tax Bureau of the Department of Finance.

^a Includes affiliates.

^b Aguirre, Eastern, Fajardo, South Porto Rico.

^c Except land.

To sum up, the sugar industry paid the following property taxes in 1934-35: land, \$1,395,000 (Table 105); other real property and personal property, \$908,000 (Table 107); total, \$2,303,000. This represents 35 percent of the total property tax receipts (6,618,000) of that year. Sugar's true percentage share is really somewhat higher, however, by reason of the omissions noted above—taxes on all personal property and on real property other than land in the case of sugar producers other than milling companies.

6. INCOME TAXES

The total amount of income tax assessed in Puerto Rico in 1934-35 was \$1,591,000, and the amount actually collected was \$1,786,000 (see Table 103). The amount collected was distributed as follows: corporations, \$1,190,000; partnerships, \$231,000; individual returns, \$316,000; withheld at source, \$49,000.

Corporate and Partnership Income Taxes

The income tax of 1935 was assessed against 122 of the 409 corporations which submitted income tax returns (Table 109). The majority reported either net income within the legal exemption, or losses. Analysis of the returns as to taxes derived from the sugar and all other industries, respectively, shows that sugar-milling companies organized as corporations, exclusive of their landholding and other affiliates,¹¹ were assessed—though only 14 companies paid taxes—at \$657,000, while all other corporations of every kind in Puerto Rico were assessed at \$491,000. Amongst corporations, therefore, sugar-milling companies accounted for 57 percent of the total taxes assessed. Over half the corporation income tax was thus paid by 14 companies engaged in manufacturing sugar.

Partnerships show the same situation in an equally pronounced manner. Three hundred and eighty-one partnerships submitted income tax returns for the year 1935, and of these only 134 showed taxable income. Amongst the latter, two sugar-milling concerns accounted for 43 percent of the total amount of income taxes assessed.

Adding together income taxes of both corporations and partnerships, 16 sugar-milling concerns accounted for \$758,000, and all other business in Puerto Rico for \$623,000. The 16 sugar concerns reporting net income were responsible for 55 percent of all tax assessments on corporate and partnership income.

Furthermore, of these 16 sugar concerns, three American-owned corporations (controlling six centrals) paid \$460,000 in taxes, and the remaining 13, \$298,000. These three companies

¹¹ It should be noted, however, that most of the sugar corporations hold their lands in the corporate name.

Table 109

INCOME TAXES OF CORPORATIONS AND PARTNERSHIPS, SUGAR AND ALL BUSINESSES, FISCAL YEAR 1934-35^a

BUSINESS	NUMBER OF RETURNS	NUMBER PAYING TAXES	NUMBER EXEMPT	TOTAL NET INCOME (In Thousands)	TOTAL TAX ASSESSED ^b
Corporations^c					
Sugar mills ^d	21	14	7	\$5,225	\$ 657
All other business	388	108	280	3,943	491
Total returns	409	122	287	\$9,168	\$1,148
Partnerships					
Sugar mills ^d ^e	5	2	3	\$ 805	\$ 101
All other business	376	132	244	963	132
Total returns	381	134	247	\$1,768	\$ 233
Corporations & Partnerships					
Four American-owned sugar companies ^f	4	3	1	\$3,677	\$ 460
Other milling companies	22	13	9	2,353	298
Total milling companies ^g	26	16	10	\$6,030	\$ 758
All other business	764	240	324	\$4,906	\$ 623
Total returns	790	256	534	\$10,936	\$1,381

Source: Income Tax Bureau, Department of Finance, Government of Puerto Rico.

^a All figures are for amounts of taxes assessed and thus differ slightly from actual collections.

^b Difference as compared with figure given in Table 103 above explained partly by note ^a, but chiefly by the omission here of individual income taxes.

^c The sugar returns are of mills and do not indicate the number of corporations owning these mills.

^d Note that mills only are included: landholding subsidiaries, railroads, etc., and other affiliates of sugar concerns are not included.

^e Partnerships: Guamani, Lafayette, Mercedita, Rufina, and San Francisco.

^f South Porto Rico (Guánica) Aguirre (Aguirre, Cortada and Machete), Fajardo (Fajardo and Canovanas) and Eastern Associates (Cayey, Defensa, Santa Juana, Juncos, Pasto Viejo.)

^g Mills which are organized as corporations and partnerships only included; thus Herminia, Monserate, and Pellejas are not included.

in 1935 were assessed for almost exactly one-third of all income taxes of all corporations and partnerships in Puerto Rico, despite the omission in the calculation above of taxes paid by affiliated companies controlled by them.

For the year 1935-36, the comparable percentages which

sugar concerns formed of total tax assessments of all kinds are as follows: corporations, 58; partnerships, 51; corporations and partnerships combined, 57; four largest sugar companies (controlling 11 centrals), 56 percent of all centrals and 32 percent of all Puerto Rican corporations and partnerships (Table 110).

Individual Income Taxes

Individual income taxes assessed in 1934-35 were \$227,000 in amount. The proportion of this sum levied on incomes derived wholly or in part from the sugar industry, through cane growing, employment by mills, and so forth, cannot be determined. It should be borne in mind, consequently, in evaluating the figures presented above and those given below showing the portion of total income taxes paid by the sugar industry, that they represent minimum estimates of sugar's contribution, and that taxes derived from the following groups are omitted for lack of the necessary data: landholding, railroad, and other subsidiaries of certain sugar concerns; milling companies not organized as either corporations or partnerships (three in number, all small); *colonos*; and all other individual incomes.

7. SUMMARY

Table 111 sets forth the main true sources of Insular revenue receipts, the amounts of each which can be determined in respect of their sources of derivation, whether from the sugar or other industries, the amount of the sugar industry's direct contribution, and the proportion which the latter forms of revenues identifiable in incidence in each case.¹²

Table 111 is based on the tables previously presented in this chapter. The figures should be read, however, only in the light of the following important explanations and qualifications. As

¹² The PRRA estimates (*op. cit.*, note 5, above, unpublished report on the sugar industry, by E. A. Bird) that the sugar industry paid the following proportions of the main types of insular public revenues in the fiscal year 1934-35: customs duties, 16 percent; excise, 11 percent; property taxes, 35 percent; income taxes, 45 percent; total, 23 percent. These estimates closely agree with those given in Table 111. The agreement is remarkable in light of the fact that they were reached, in almost every case, by entirely different methods. This circumstance would seem to indicate the substantial accuracy of both estimates. The two were made entirely independently, and the PRRA calculations were seen by the authors of the present report only after its final draft had been completed.

Table 110

INCOME TAXES OF CORPORATIONS AND PARTNERSHIPS, SUGAR
AND ALL BUSINESSES, FISCAL YEAR 1935-36^a

BUSINESS	NUMBER OF RETURNS	NUMBER PAYING TAXES	NUMBER EXEMPT	TOTAL NET INCOME (In Thousands)	TOTAL TAX ASSESSED ^b
Corporations^c					
Sugar mills ^d	31	20	11	\$5,237	\$ 655
All other business	415	119	296	3,787	473
Total returns	446	139	307	\$9,024	\$1,128
Partnerships					
Sugar mills ^d	5	3	2	\$1,004	\$ 125
All other business	394	132	262	958	120
Total returns	399	135	264	\$1,962	\$ 245
Corporations & Partnerships					
Four American-owned sugar companies ^f	4	4	—	\$3,479	\$ 435
Other milling companies	32	19	13	2,762	345
Total milling companies ^g	36	23	13	\$6,241	\$ 780
All other business	809	251	558	\$4,745	\$ 593
Total returns	845	274	571	\$10,986	\$1,373

Source: Income Tax Bureau, Department of Finance, Government of Puerto Rico.

Footnotes: As in Table 109 above.

they stand, the figures understate sugar's true contribution to Insular revenues.

In column 2 all sources of revenue are excluded which do not represent true current tax receipts, such as repayments, transfers between funds, and the item "miscellaneous," all explained above. In column 3 all items are further excluded which were derived partly, but in amounts impossible to estimate, from the sugar industry and partly from other sources (the detailed figures have been given above). The remaining amounts, presented in this column, represent revenues which can be definitely allocated as to origin, to the sugar or other industries. Column 4 shows sugar's direct share of these taxes, and column 5 the percentage they represented.

Table 111

SOURCES OF INSULAR REVENUE IDENTIFIABLE AS FROM SUGAR

(1) SOURCE OF REVENUE	(2) TOTAL RECEIPTS (\$000)	(3) AMOUNT IDENTIFIABLE IN INCIDENCE (\$000)	(4) SUGAR'S DIRECT CONTRIBUTION (\$000)	(5) PERCENT THAT COLUMN 4 FORMS OF COLUMN 3
Customs duties	\$1,690	\$1,077	\$ 200	19
Excise	8,224	5,240	646	12
Property taxes	6,618	6,618 ^a	2,303 ^{b c}	35 ^b
Income taxes	1,786	1,786 ^a	758 ^{b d}	42 ^b
Total	\$18,318	\$14,721^a	\$3,907^b	27^b

^a Not completely identifiable.

^b Underestimate.

^c The PRRA estimates (Bird, *op. cit.*) that in 1934-35 the sugar industry paid \$2,320,000 in property taxes, or 35 percent of all property taxes.

^d The PRRA estimates (Bird, *op. cit.*) that in 1934-35 the sugar industry paid \$800,000 in income taxes, or 45 percent of total collections on account of income tax.

The figures in column 4 (sugar's contribution) are minimum estimates and in all cases understate—in some unquestionably seriously so—the real direct contribution of the sugar industry, and accordingly make the percentages of column 5 lower than they should be. Thus, the important item “property taxes” includes, in property-tax receipts other than those on land, only those paid by the centrals, and omits taxes on the buildings, and so forth, and the personal property owned by *colonos* and others not centrals. Similarly, under “income taxes” only the receipts from the sugar mills themselves are included, their landholding, railroad, and other subsidiaries being omitted, as are also, more importantly, all *individual* income tax receipts, though many of these incomes were derived *directly* from the sugar industry, through cane-growing, employment by the centrals, and so forth; also, receipts from Public Railroad and other transportation agencies carrying canes from the fields to the factories.

Had it been possible to include these and other omitted items, the proportion of all identifiable revenues derived from the sugar industry would unquestionably have been not 27 percent, but probably at least one-third and possibly as much as two-fifths. Furthermore, if the indirect “secondary” effects upon Insular

revenues of payments by the sugar industry could be estimated, the total contribution would be likely to amount to a half or possibly more of all Insular revenues.¹³

¹³ It was originally the intention of the present writers to include in this study a discussion of the fairness of the tax assessments of the property of the sugar industry, in relation to those of other property in the Island. The charge is frequently made that sugar property is underassessed, while cane growers and millowners often complain that their assessments are excessive. Unfortunately in the present state of available information, no really scientific judgment can be passed on this important problem. The basic data on the true current relative values of different types and pieces of property are not accurately known. Nor even have truly scientific criteria for measuring values been established.

An act of 1931, establishing a Division of Property Classification in the Department of Finance, directed that "the Treasurer prepare a scientific and equitable classification of real property for the purpose of property appraisal." Lack of funds delayed the starting of this work in earnest until 1934, since which date it has been under the able direction of Edmundo D. Colón, formerly Commissioner of Agriculture and Labor. As to its rural aspects, a beginning has been made with the compilation of basic data relative to the Soil Survey of the Island. For the rest, efforts have been mainly concentrated on the formulation of the general concepts on which the valuation of rural and urban lands should be based. When this work and the Soil Survey have been completed, the way should be clear for a consideration of a general revision of property assessments. The final desideratum would be the making of a cadastral map, rural and urban, preceded by a topographic map of Puerto Rico. (*Report of the Treasurer of Puerto Rico, 1934-35*, pp. 43-46). Until all this work is completed, the Insular government will not be in possession of all the means and data required to assess property fairly and indispensable for equalizing such assessments. It is to be hoped that every needed facility will be afforded Dr. Colón to carry his valuable and necessary work to a successful and early conclusion. In the absence of such knowledge, both the discussion of the problem and its practical handling must necessarily continue to be conducted on an unsatisfactory plane.

XVII

THE LAFAYETTE PROJECT

THE rehabilitation plans of the Puerto Rican Reconstruction Administration (PRRA) have included projects for experimentation with new forms of ownership and operation of sugar-cane lands and sugar mills, on the assumption that the present structure of the sugar industry is not the best from the point of view, in particular, of Puerto Rican small farmers and labor, or of the Island economy in general.

The plans involving the production of sugar have taken concrete shape in the so-called "Lafayette Project." This comprises the purchase of a privately owned mill, Central Lafayette, with 10,000 acres of land; and the operation of mill and plantations on a semicoöperative basis for the benefit of workers and small cane growers.¹ Because of the relevance of the Lafayette project to discussions of Puerto Rican sugar problems, a brief account of its origin, set-up, and objectives is given here, though any critical evaluation of the experiment at the present early stage would clearly be out of place.

1. ORIGIN OF THE PROJECT

The Lafayette project springs from one of the original recommendations of the Puerto Rico Policy Commission (Chardón Report).² From its analysis of the Puerto Rican situation, the Commission had concluded that the chief shortcomings of the current sugar economy of the Island, in so far as the public welfare was concerned, were: (1) "inadequate returns" to farmers and workers from the operation of the sugar industry; (2) the

¹ Long-drawn-out negotiations for the purchase of these properties were completed December 23, 1936, and grinding in the mill began January 10, 1937.

² The report was the work of Carlos E. Chardón, then Chancellor of the University of Puerto Rico; R. Menéndez Ramos, Commissioner of Agriculture and Commerce; and R. Fernández García, then head of the Department of Chemistry of the University of Puerto Rico.

outflow of "several million dollars annually as a result of large absentee holdings"; (3) the "rapid disappearance of the small farmer group," which was "being absorbed by the large corporations"; and (4) overemphasis on sugar production and consequent "insufficient production of foodstuffs."³ The validity of these charges is examined elsewhere in this study, *passim*. The present chapter is purely descriptive.

To remedy these alleged shortcomings, the Commission proposed: (1) the acquisition of an unspecified number of sugar mills and their cane lands, with a total production capacity of over 250,000 tons; (2) the leasing of the mills to a semipublic corporation which would operate them as processors of sugar cane; (3) exchange of the mill cane lands for marginal cane lands owned by *colonos* in all parts of the Island, the good cane lands to be divided up into small holdings of from forty to one hundred acres; (4) integration of these small cane growers, together with independent *colonos* in the various mill areas, into production, credit, and marketing coöperatives; (5) the establishment of "colonia centers," to serve the farming and recreational needs of the small growers; and (6) the development of subsistence farms for the workers. All "profits" from the processing of sugar were to be "a permanent source of funds for social improvement."⁴

With regard to the general orientation of the Commission's recommendations, it should be noted that they pointed definitely in the direction of: (1) public or semipublic ownership of sugar mills; (2) emphasis on the rehabilitation of one class in particular, the small farmer, or *colono*, group; (3) promotion of greater Insular self-sufficiency, through subsistence farming and the cultivation of minor crops on lands considered marginal for sugar-cane cultivation; (4) retention in the Island of funds now going to external owners of sugar mills and plantations.

The present Lafayette project has deviated considerably from the original proposals of the "sugar plan" of the Commission. Practical considerations of a social, economic, and technical

³ *Report of the Puerto Rico Policy Commission* (Chardón Report, 146 pp., mimeographed, Washington, D. C., June 14, 1934), p. 11.

⁴ *Op. cit.*, pp. 11-17.

nature have apparently restricted the experiment to one mill and its cane lands; have brought the idea of coöperative ownership and control to the fore; and have eliminated the possibility of the plan being used as a general means of rehabilitating the *colono* class. While the difficulties encountered in carrying out the original proposals of the "sugar plan," or the factors that have led to the changes, have not been revealed by any authoritative sources, the nature of the changes effected make it reasonable to assume that some of the major obstacles have been the following: (1) the questionable wisdom of embarking on large-scale purchases of milling properties without smaller-scale preliminary experimentation; (2) the unlikelihood of finding sugar mills and cane lands on the market at prices that would make the scheme economically sound, at a time when the Puerto Rican sugar industry was recovering from the depression; (3) the inadvisability of having the United States Government or the local Insular Government directly own sugar mills and plantations; (4) the difficulty of securing clear titles to farms, where so large a proportion are mortgaged or their owners are in debt; (5) general opposition, or lack of enthusiasm, on the part of the *colonos*, except for a small dissident group.⁵

The indifferent or critical attitude of *colonos* can be explained in part by the stress that the proposals laid on small landholdings, a feature not attractive to *colonos* with large holdings; and their reluctance to relinquish a tangible relationship with existing milling companies for an experimental one, the outcome of which was uncertain.⁶

⁵ The difficulty of obtaining, at short notice, land free of encumbrances was given by Carlos E. Chardón, then Regional Administrator of the PRRA, as the chief reason for abandoning the original "sugar plan" (PRRA release of September 17, 1936, in reply to statements of a group of *colonos* criticizing the new sugar project.)

⁶ The small group of *colonos* who had been supporting the development of the "Chardón sugar plan" definitely broke with PRRA in the summer of 1936, when the present Lafayette project was adopted in place of the earlier plan. Mr. Jesús T. Piñero, President of the Asociación de Colonos de Caña de Puerto Rico (a minority group, as most of the *colonos* are members of the Puerto Rico Association of Agriculturists), who had been active in support of the "Chardón Plan," resigned from the Executive Committee of the PRRA and publicly criticized the new project as neglecting the *colono*, who was pictured as the chief sufferer under present economic conditions in the Island. The establishment of the Lafayette coöperatives, he argued, "tends to show that the *colono* is a superfluous factor, easily to be eliminated by

2. THE PRESENT PROJECT

The "sugar plan" of the PRRA, as it is now in operation at Lafayette, involves the following features, as described by the Director of the Division of Territories and Island Possessions.

The Central Lafayette with properties covering three municipalities in the southeastern part of the island, under French ownership for almost a century, was acquired in December 1936. . . . The property includes a modern raw sugar factory of 2,500 tons daily grinding capacity, 10,040 acres of land owned and approximately 8,000 additional acres under lease, leases also acquired. The property includes also railroads, rolling stock, work cattle, and other material and equipment essential for operation. To achieve the objectives of the sugar program, the following general set-up was adopted:

(a) Distribution of the land among laborer's cooperatives, and to resettled colonos.

(b) Operation of the mill on a cooperative basis, membership of which was to be the land cooperatives and *colonos* who had formerly ground their cane in this mill. This group numbered more than 300, the great majority of whom cultivated less than 10 acres each.

To carry out the above, a cooperative, the Asociación Azucarera Cooperativa Lafayette, was organized by a group of the farmer-colonos on November 19, 1936, and a month later, simultaneously with the purchase of the sugar properties, this cooperative assumed title, and obligated itself to pay to the Puerto Rico Reconstruction Administration the full purchase price of the mill properties. \$1,363,-199.40 was the amount paid for the mill property which will be amortized over a period of 20 years with payment of principal to begin in 1940 and with interest at 3 percent. The Puerto Rico Reconstruction Administration holds a first mortgage on all property as security for this loan. An additional advance of \$261,841.12, secured by a lien on the industrial benefits of operations, was extended to the cooperative for initial operating expenses.

On December 11, 1936, eight land cooperatives were organized from among the agricultural workmen. A total of 3,006.91 cuerdas of land has been transferred to these eight land cooperatives, together with the

means of a coöperative of laborers, who exploit the soil for their own and exclusive benefit." The proposed coöperatives, he added, "were frankly communistic in character." In reply, Dr. Chardón pointed out that *colonos* in the Lafayette area were being benefited as much as workers, and stated: "We do not understand how the *colonos* wish to appear on record in a public document alleging that to solve or improve the economic status of 1,500 workers constitutes a 'minor aspect of the problem.' Workers are as important as *colonos* in the development and distribution of industrial profits." (PRRA release, September 17, 1936).

cane growing at the time of the transaction, representing a total value of \$1,543,741.51. These land cooperatives also purchased and hold in joint ownership the livestock, agricultural implements, and other movable property necessary for the field operations. The Puerto Rico Reconstruction Administration holds as security for these loans a first mortgage on all this property, and in addition the mill cooperative and the several land cooperatives have entered into a management agreement with the administrator of the Puerto Rico Reconstruction Administration whereby their interests will be handled by the manager of the mill cooperative, who is a P.R.R.A. employee, thus securing a central and efficient management. The balance of the land is being held by the administration for organizing additional land cooperatives so that every worker's family in the Lafayette area may be given the opportunity to participate in the enterprise and to become a small home owner. Meanwhile this land, destined for future cooperatives, is being cultivated for the account of the administration by the centralized management.

As an integral part of membership in the land cooperatives, a resettlement program, designed to give better living conditions to the labor members, has been inaugurated by the P.R.R.A. and land has been set aside for the building of approximately 1,000 laborers' homes. The first 300 houses are under construction. Each family will be given sufficient land for gardening and for raising small livestock and poultry. Payment will be amortized over a period of years. A central service farm has been established to assist the resettled laborers, as well as the *colonos* who are members of the mill cooperative, with their agricultural problems. The first buildings have been erected. Three vocational schools, to be operated by the insular government, have been erected within the district and a new modern hospital is being built at the Central for the benefit of the laborers, the other employees, and their families. At the end of the first year's operations, June 30, 1937, the cooperative ground 257,110.27 tons of cane and manufactured 258,308 bags, 250 pounds each, of raw sugar. The average yield was 12.69 percent. Of this amount, 76,383.27 tons of cane were delivered from the land of the agricultural cooperatives, the balance from the lands held by the Reconstruction Administration and by independent *colonos* on their own property. . . .

In the rehabilitation program as first proposed in Puerto Rico, as presented to the Reconstruction Administration and widely publicized, the purchase of a number of mills simultaneously was recommended, as well as their transfer to the hands of *colonos*. The Reconstruction Administration after careful consideration modified both proposals. It limited itself, for the present, to the acquisition of one mill in behalf of cooperatives, in the belief that prudence dictates a careful ex-

ploration of the possibilities of operation of one such enterprise before any wholesale embarkation on a program obviously so administratively difficult and fraught with important consequences. Second, it rejected the idea of loaning substantial sums of public money solely for the rehabilitation of a relatively limited group of farmers, some of them substantially well-to-do, to the exclusion of a great body of landless and indigent agricultural workers whose distressed condition under this plan would have remained virtually unmodified. The fundamental objectives—the correction of social weaknesses inherent in the rapid development of Puerto Rico's indispensable part-sugar economy—are, however, maintained unqualifiedly.⁷

3. OBJECTIVES SOUGHT

The general objectives are two-fold: (1) the establishment of a "yardstick" by which the functioning of privately owned mills and plantations can be judged, for purposes of public policy; (2) direct attack on the problem of improving the standards of living of Puerto Rican workers and farmers.

Consequently, the problem facing the managers is also two-fold. Operation, in the first place, is to be along strictly business lines, in the hope that profitable and efficient operation will furnish evidence to substantiate the belief that new forms of ownership are feasible in the sugar industry. Secondly, such efficient operation must not conflict with the social-welfare goals of the plan, that is, the desire to improve the economic conditions of workers and farmers. It is hoped to demonstrate that efficient operation is possible, even with greater economic returns to these groups than at present prevail.

Numerous problems can of course be envisioned. In particular, since the project has been widely heralded as one directed primarily at the second objective, namely, improvement of the economic status of workers and farmers, the intended beneficiaries are not unlikely to expect immediate rather than remote rewards. As wages and payments for cane are to be at the rates prevailing in other sugar mills and plantations, and as profits for a period of some twenty-five or thirty years will have to go largely to interest and amortization charges on the original

⁷ *Annual Report of the Secretary of the Interior* for the fiscal year ending June 30, 1937, pp. 327-30.

investment made by the United States Government through PRRA, the members of the coöperative may perhaps express impatience at the lapse of time before effective profit-sharing becomes an accomplished fact. During the interval they will have to be satisfied with other benefits that are, or may be, offered, such as subsistence plots, homes, a certain sense of proprietorship, and so forth.

The objectives and the problems they involve were stated as follows by Dr. Ernest H. Gruening, in a letter to a group of workers, who wrote to him regarding their aspirations in connection with the Lafayette project:

I have transmitted to Mr. W. D. Hymers, Administrator of the mill, your petition regarding better working conditions, and undoubtedly he will give them his most careful and favorable consideration, within the limitations in which perforce the Lafayette program must be developed if it is to be a success.

I say limitations, because in order that the activities of Lafayette may be a success from the economic point of view, and also serve as a model or form for the rest of the industry, these activities must be conducted on the strictly commercial bases of efficiency and economy, adopting, in general terms, the wages, hours of labor, and other conditions prevailing in other *centrales*. The fundamental difference between private *centrales* and Lafayette will be that the latter will make workers and *colonos* sharers in the profits accruing from its operation, and which until now have gone into the hands of absentee owners. . . .

Before there can be profits to be distributed it will be essential to take such protective measures as will assure the permanent life of the Central, such as the establishment of reserve funds for the replacement of equipment and machinery, and to meet losses occasioned by hurricanes or other eventualities. That is, the finances of the Central will have to follow, as those of any other enterprise, conservative norms that will guarantee the stability of the institution, as otherwise we would be exposed at any moment to a failure that would harm the whole Island and especially the workers of that region.

I have wanted to extend myself in explaining to you the purpose pursued by the Puerto Rico Reconstruction Administration in Lafayette and the procedures it intends to follow in order to make them a reality because being, as I am, in complete sympathy with the aspirations you entertain for economic betterment, and which are contained fundamentally in the objectives of our program at Lafayette, it appears to be fitting that the workers of the Central possess a clear comprehension of the plan, and are aware of its limitations and the impossibility

of obtaining immediately all the benefits that the plan will bring in the future.⁸

Judgment as to the feasibility of the project must be suspended until there has been opportunity for testing theory in practice. The present grinding season (January-June, 1937) may furnish partial evidence on the practicability of the scheme set up; but it would in any case be chiefly on the processing or industrial aspects of the project. The more complicated agricultural phases, involving the harmonious functioning of numerous small-scale farmers, will, it is admitted, require considerable time before the test can be considered complete. This is particularly true if the ultimate objective of the project—a thorough-going coöperative—is to be attained.

⁸ These excerpts are translated from the Spanish version released by PRRA, December 9, 1936.

Part Three
CONCLUSIONS

XVIII

PROSPECTS OF ECONOMIC EXPANSION IN PUERTO RICO

THE remaining chapters, making up Part Three of this book, are to be devoted mainly to discussing the problems and controversies connected with the sugar industry's position in Puerto Rico. It is, however, impossible to see these problems in perspective without reviewing the more general problems of the Puerto Rican economy. The present chapter is therefore devoted to a discussion of economic questions *not* specifically related to sugar. Against this background, the final observations upon the "sugar economy" will be made in succeeding chapters.

1. FUNDAMENTAL WEAKNESSES OF THE PUERTO RICAN ECONOMY

The correct diagnosis of Puerto Rico's economic illness has been made over and over again for a generation by competent observers. Puerto Rico possesses only seven-tenths of an acre of arable land and pasture per inhabitant; its people are almost wholly dependent on agricultural occupations for a livelihood; much of its land is ineffectively utilized; its marketing system for most products is poorly developed; and the obstacles to improvement in land utilization and marketing are serious.

Moreover, even under the best of agricultural circumstances, the level of income would necessarily be low, in the absence of supplementary industrial occupations. Industries, however, are little developed; natural resources for industries are few; and industrial skills and executive experience are largely lacking. Puerto Rico, a territory urgently needing industrial expansion, finds itself in a weak position to promote such expansion in competition with the techniques and competitive methods of industrial producers of more advanced industrial areas.

It is to these basic weaknesses that any plans for improving Puerto Rico's economic situation must address themselves.

2. PROSPECTS FOR THE COFFEE INDUSTRY

Since in present planning for the economic improvement of Puerto Rico the future of the coffee industry commonly takes first place, it may be well to consider this product first.

Coffee-growing has in the past been second only to cane-growing in the agriculture of the Island. It is still officially credited with an acreage almost as large as cane acreage. It has, however, been disastrously undermined in recent years by hurricanes, low prices, and loss of markets.¹ This decline has been the greatest single source of loss of general employment and consequent economic distress.

In the report of the "technical committee"² set up to report on the feasibility of the Chardón Plan, the rehabilitation of the coffee industry was made the focus of emphasis. The same view is widely entertained in various Puerto Rican circles. On the other hand, some of the best-informed persons doubt that the obstacles to rehabilitation of the industry can be successfully overcome.

It seems quite likely, however, that, given the economic interests involved in coffee, this important industry will not be permitted to remain in a state of collapse without a struggle. The Insular Department of Agriculture and Commerce is making efforts to establish new outlets, improve marketing practices, and effect coöperative organization of the growers. The PRRA also has allocated funds to assist in the physical rehabilitation of coffee farms, in conjunction with promotion of subsistence farms for workers in the coffee-producing areas. But the prospects for the industry are so problematical that no serious consideration of Puerto Rico's economic future can rest solely, or even mainly, on the hope of rehabilitating this industry.

¹ Puerto Rican coffee has in the past been sold at premium prices. Its principal markets were Spain, Germany, and Italy, but these markets almost completely disappeared during the depression, and seem very unlikely to be restored in the near future. Production declined from 30,000,000 pounds in 1927 to 7,000,000 pounds in 1935, and exports from 19,000,000 to 800,000 pounds for the same years.

² An interdepartmental committee, representing several Federal agencies, was set up in 1934 to study proposals for Puerto Rican economic reconstruction. This committee appointed a so-called "technical committee," to make a detailed report. The latter committee wrote a report which never became a public document, but its summary conclusions are of public record by having been read into the *Congressional Record*, (Appendix, 1935, pp. 11570-71, July 12, 1935).

3. NEW POSSIBILITIES FOR ECONOMIC EXPANSION

Skeptics begin their solution of Puerto Rico's economic problem by imaginarily decimating the population. It is no doubt true that there are too many mouths to feed. In serious discussion, however, a heavy pressure of population upon the means of livelihood has to be taken for granted as one of the conditions of the problem. The problem itself is how to increase the means of livelihood while holding the population pressure in check.

In its most trite form, the prescription for the inadequate Island income is the obvious one of utilizing land resources more fully, improving the marketing structure, and introducing industrial occupations. Though essentially sound in nature, this prescription requires to be reduced to a bill of particulars. And first of all it must be freed from a misapprehension which commonly attaches to its first element, land utilization.

Better land utilization, in any interpretation, means both the creation of more wealth per acre on land already cultivated, and the cultivation of land not now cultivated. But there may be difference of opinion concerning the crops to which land should be cultivated. A widespread but superficial view looks mainly to the direct cultivation of food crops for home consumption. It cannot be gainsaid that there is room for development in that direction. But the idea that Puerto Rico should largely feed itself is the most illusory of objectives. The fact is that the policy of concentrating on food production would represent the poorest possible approach to the problem of raising the standard of living.

The intelligent economic policy would be to concentrate on crops which have a high value per acre, and among these preferably on the ones which can be processed in the Island. By maximizing the income created, Puerto Ricans could command larger amounts of those things of which they stand in need, whether food or other products. Larger exports and larger imports, rather than a considerable degree of self-sufficiency, would be the outcome of such a policy.³

³ Nothing in the preceding statement should be interpreted to question the wisdom, also, of expanding food-crop production for domestic consumption where this is economically feasible.

It is impossible in the present context to survey the possibilities for promoting the policy just outlined. These possibilities may be illustrated, however, by the work of the two agricultural experiment stations, both of which orient their activities according to the logic of this policy. In the annual report of the federally supported Puerto Rico Experiment Station (Mayagüez) for 1935, the Director, Dr. Atherton Lee, reveals three guiding principles as the basis of his work: (1) "studies . . . toward finding and developing crops of high value per acre"; (2) "studies toward industrializing or processing in Puerto Rico some of its agricultural products"; (3) studies for increasing the area of arable land by introducing new economic plants from other tropical areas, adaptable to lands which cannot be used for ordinary field or orchard crops. In all cases probable marketability on profitable terms, especially in the continental American market, is a condition to the introduction of the experiment.

On this basis, Dr. Lee reports upon hopeful current experiments in connection with sweet corn for winter marketing; bamboo propagation and fabrication; improved growing conditions for coffee; manufacture of table sirups; and the introduction of mangosteen trees, palm chestnuts, and decorative tropical flowers and plants. Further plans are under way in connection with the development of insecticidal plants, long-staple cotton, truck crops, vanilla and mangoes, the elimination of animal parasites, the prevention of soil erosion, and other matters.

In Dr. Lee's view,⁴ Puerto Rico's efforts to expand food crops for home consumption should be mainly confined to off-season periods for commercial crops. Concentration must be mainly on commercial crops, especially those protected by the American tariff and those for which there is, or can be created, a good continental market. He thinks very good industrial prospects exist for bamboo and perfume, and spices such as cinnamon, nutmegs, cloves, and vanilla. He discards many tropical crops which would grow well in Puerto Rico—such as cassava and tapioca—because of inability of the Island to compete with Java and other very low-cost countries.

⁴ Expressed in private conversation.

The Agricultural Experiment Station of the University of Puerto Rico conducts its work on almost precisely the same postulates as the Federal station.⁵ Its Director, Mr. F. A. López Domínguez, looks forward to the eventuality that Puerto Rico may come to use more home-grown and home-made products, but only in conjunction with an expansion of export trade which would make possible a readjustment in types of import trade. He points out that food is imported because this can be done more cheaply than growing acceptable substitutes; and that Puerto Rican production of food for domestic use is as large as the market will absorb under existing conditions of income and consumers' preference.⁶

It is with such assumptions, as a basis, that the work of the Station is being directed to the improvement of agricultural methods, plant-breeding, introduction of new crop plants, and related improvements in land utilization. In addition, attention is given to possible industrial development based on by-products of Puerto Rico's present crops. Mr. López Domínguez expresses the opinion that "the possibilities of biological processes applied to the industries in the tropics are practically unexplored,"⁷ and upon this view bases a considerable hopefulness. Special attention is being paid to the unexploited by-product possibilities of the sugar industry, such as butyric acid, acetone, cane wax, and fabricated bagasse products.

Other investigations of agricultural and industrial possibilities were carried forward by the Bureau of Agricultural and Industrial Research of the Emergency Relief Administration, during the life of the latter. Such matters are also routine procedure in the Department of Agriculture and Commerce.

Recently the Puerto Rico Reconstruction Administration has undertaken an exhaustive survey of the industrial possibilities of the Island. Among the possibilities listed⁸ are the refining of sugar and the development of sugar by-products; increased

⁵ The Experiment Station was originally founded by sugar interests and formerly concerned itself mainly with improvements in sugar cane. Lately, however, it has much extended its scope of activities.

⁶ The writers are indebted to Mr. F. A. López Domínguez for memoranda and materials made available to them.

⁷ From an unpublished memorandum.

⁸ In an unpublished memorandum kindly made available to the present writers.

manufacture or processing in connection with tobacco, coffee, fruits and vegetables, coconuts, cotton, bamboo, straws and fibers (hats, baskets, and so forth), silkworms, vanilla, cocoa, cassava, medicinal plants, tropical woods, meat and fish, limestone (cement), clay (earthenware), and building stone. Taken together, the possible products from these sources make up an imposing list.⁹

It is the existence of these many agricultural and industrial possibilities that permits some degree of hopefulness, in the face of Puerto Rico's present economic problems, even though the economic feasibility of extensive development in any of the fields mentioned is still highly problematical. Exploratory studies are going forward on a wide front, but there is still much difference of opinion as to the selection of particular areas upon which to focus public attention, energy, and funds.¹⁰

4. OBSTACLES TO ECONOMIC EXPANSION

All hopes for improved utilization of economic resources in Puerto Rico have to be tempered by a realistic view of the obstacles. Of these, the burden of mortgage debt in agriculture, and production and marketing problems, are probably the more important.

Mortgage debt. In the field of agriculture, one of the most serious obstacles is the existing mortgage debt. While the degree of this burden, because of misleading official figures, is commonly exaggerated, there is no doubt of its seriousness.¹¹ Some indica-

⁹ Another proposal advanced for fostering Puerto Rico's national income is the suggestion that the Island be made an important tourist center and winter resort.

¹⁰ In addition to the sources cited, various constructive proposals are listed in Senate Concurrent Resolution No. 1, San Juan, 1935, and in the *Hearings of the Economy Commission of the Legislature of Puerto Rico*, which formulated the terms of the Concurrent Resolution. The *Report of the Puerto Rico Policy Commission* (the so-called Chardón Plan) goes over the ground at length, as does also the unofficial report of the "technical committee" appointed by the interdepartmental committee set up by the A.A.A. to report on the Chardón Plan.

¹¹ The source of the exaggeration is the official summary of recorded mortgages. As given for 1935, the recorded mortgages on rural property almost exactly equaled in amount the total assessed value of rural property, \$106,000,000. The mortgage figure, however, contains a variety of duplications and fictitious or paid-off amounts which would have to be subtracted to get a true figure. No one knows the correct total; but one of the best-informed Puerto Ricans on matters of rural credit gave the writers his opinion that the figures should be discounted by perhaps one-third.

tion of the situation is presented in a study of 1,731 farms, which revealed that, while recorded mortgages were outstanding against only 906 of the farms studied, mortgages on these constituted 83 percent of the estimated actual value of the farms, and that 43 out of every 100 mortgaged farms were mortgaged for more than 100 percent of estimated value.¹² The percent which the mortgage was of the estimated value for different types of farms was as follows:

TYPE OF FARM	PERCENT MORTGAGE IS OF ESTIMATED VALUE
Coffee	102
Cane	68
Tobacco	98
Small produce	89
Fruits	79
Unclassified	96

These figures reflect the special severity of the problem in the coffee-producing regions, and the relatively more favorable situation of cane growers. All students of the coffee industry regard the present debt problem as an almost complete barrier to rehabilitation of that industry, unless ameliorative steps are taken. The burden is largely the outgrowth of the hurricanes of 1928 and 1932.¹³

Other forms of debt, not reflected in the preceding figures, further complicate the situation. Under the conditions shown, there is little basis for further and essential private credits, without the refinancing of mortgages and drastic changes in the system of rural credit.

Related to the debt situation is the shortage of funds for financing, and the existence of high rates of interest. Except for Federal loans, the rates on the mortgages examined, in the study of farms cited above, averaged from 7.4 percent on mortgages held by sugar mills to 8.9 percent on those held by private banks.

¹² *La situación hipotecaria rural en Puerto Rico*, by S. L. Descartes. Bulletin 42, Agricultural Economics Section, Agricultural Experiment Station, University of Puerto Rico, 1936.

¹³ A large fraction of coffee growers are in debt to the Post-Hurricane Rehabilitation Commission, and these debts are widely regarded as dead letters. An analysis by the Farm Credit Administration of its loans on coffee properties showed a large portion of them to be in arrears.

Agricultural Marketing and Production. Marketing problems—sugar excepted—stubbornly resist solution. Many of these are technical, being related to the need for special handling of agricultural products in warm climates, while others are the result of inadequate means of transportation. Some reflect the dependence of individual farmers upon brokers. Still others have to do with the creation of specialized Mainland demand for present or potential products of the Island. In the case of sugar, the marketing problem does not exist.

Back of the marketing problems lie those of production. Here the human element is naturally an important factor, old habits and lack of experience running hand in hand with financial and technical troubles. As the Brookings report observed, while the Puerto Rican farmers and rural laborers “are able to work . . . patiently and upon the whole effectively,” they require education in modern methods of cultivation.¹⁴ Any economic improvement implies extensive educational work, leading to more effective production, especially as too often the relative inefficiency of the simpler sort of farmers is matched and abetted by lack of interest in farming occupations by many of the more educated landowners. Intense effort to change habits and proclivities is perhaps not something that one likes to envisage, in the midst of a leisurely, though industrious, tropical people. It smacks too much of Yankee energy let loose. Yet it is fundamental to any measures looking toward permanent improvement.

The production problem has technical aspects tied up to the marketing problem. Products grown have to be of a quality and form that will attract the consuming public of the Mainland. The specifications not only have to be drawn up by marketing specialists, but have to be accepted and followed by individual producers. In this connection, the personal equation can be a source of difficulty.

Industrial Expansion. The expansion of manufacturing faces comparable, even more difficult, problems. It faces lack of experience, lack of specialized skills, lack of adventurous funds for speculative industrial experiments. But beyond this there lies the fact that new fields in Puerto Rico are old fields elsewhere,

¹⁴ *Porto Rico and Its Problems*, p. 501.

and new products have to face the competition of well-established and financially strong rivals. It is a common complaint in Puerto Rico that the industries most suited to Puerto Rican conditions are subject to "unfair competition" from continental rivals, which will undersell them to whatever extent necessary to encompass their failure.

In so far as industrial development is projected for the purpose of supplying the local market, Puerto Rican thought almost universally echoes the long-standing American argument for the protection of infant industries. Without knowing how much actual evidence there is on the point, one must concede that infant Puerto Rican industries, producing for the local market, are in a vulnerable position for attack along the lines of local price discrimination.

Any considerable development of Puerto Rican industries would require large investment of external funds. Under existing circumstances, the risks in most cases have hitherto been rather extreme, a fact which explains the relatively very slight adventuring of American funds for industrial development. Unless Puerto Rico is permitted tariff autonomy (which is extremely unlikely so long as she has free access to Mainland markets) or achieves similar ends under the guise of special excise taxes, the prospect must remain highly problematical that private external funds for industrial development will be forthcoming in considerable amounts. This state of affairs poses two alternatives. Either conditions in Puerto Rico for the investment of external capital must be made more attractive; or programs of further industrialization must devolve upon and be carried out by government itself. The existing difficulties confronting the first course have been mentioned above. It is these difficulties that partly explain the advocacy, in certain influential quarters, of the second alternative. But this course is, in turn, beset by two dangers: first, that public authority may not succeed in its experiments, in economic terms; and second that, irrespective of the success or failure of the latter, these experiments are not unlikely, by virtue of their very existence, to injure the prospects, such as they are, of attracting new external private capital to the Island.

5. NEW PATHS TO ECONOMIC IMPROVEMENT

Are the hopes of economic improvement, then, almost wholly illusory? Are the technical possibilities, reviewed earlier, neutralized by the shortcomings of producers, the defectiveness of the Island market structure, the weakness of the credit situation, and the barriers to industrial enterprise? The outlook is not quite so gloomy.

The blocked paths are as evident to well-informed Puerto Ricans as to anyone else. When, therefore, one sees them turning an exploratory eye toward new methods of action, it is not because of any doctrinaire preference on their part, but because of refusal to admit that there are no paths except the old paths. The quality, so honored in the American tradition, of refusing to acknowledge defeat, is a particular grace of the Puerto Rican temperament.

The alternative avenues involve publicly promoted economic development and therefore recourse to political action. For this reason it is held by many that the *status quo*, such as it is, is preferable to the possibly more unpleasant alternative which might be delivered from the political machine. Puerto Ricans, such observers point out, are decidedly politically minded. The relative paucity of positions for educated persons creates strong rivalry for place and preferment in the field of public office. The relative ignorance of an important part of the electorate lends itself to forms of political strategy that appeal to the emotions rather than to economic fact. Distinctions of economic class interest are rather sharply drawn, in ways which affect political cleavages. Moreover, political controversy has been largely shaped with reference to the peculiar status of Puerto Rico within the United States system of government. Consequently, such observers charge, the political background provides small grounds for optimism with respect to greater political supervision of economic affairs.

Such considerations must clearly carry great weight in appraising prospects along these lines of possible action. They are not, however, necessarily decisive. Other factors, favorable and unfavorable, also enter in. In the first place, programs of public

stimulation of economic development must obviously be contingent upon the provision of Federal funds. On the one hand, this means dependence upon an outside source—the administration in office at the moment in Washington—that may not always be sympathetic to projects of public enterprise. On the other hand, it would presumably imply Federal supervision, with the accompanying possibility of Congress and the President setting up safeguards against mismanagement and selecting the supervisory personnel. Again, Puerto Rico has men of intelligence, ability, and probity, many of whom have already been called into public service in technical capacities. The very smallness of the Island community is itself some safeguard against overlooking competent persons; and Federal supervision reinforces such a safeguard. There is consequently no reason for necessarily assuming that an expanded public service for promoting economic ends could not conceivably be composed of relatively competent personnel, fairly well insulated against political pressures. But to achieve such a state of affairs would require most careful drawing up of plans of action.

It is impossible, in the present context, to explore the possible lines of action. The character of the problems has been made sufficiently clear in the preceding pages. For practically all fields of agriculture, sugar excepted, the building up of efficient marketing organizations, whether along coöperative or other lines, is a prime essential, for the purpose of improving the rewards of production for farmers, relieving their exigent financial troubles, and—what is even more important—furnishing the medium for educating producers to the requirements of their markets and in improved agricultural methods. Furthermore, coöperative organization must necessarily underlie any conceivable extension of Federal credit facilities.

No one acquainted with experiences in coöperative marketing organization elsewhere can suppose that progress along these lines can be either easy or rapid, or that such a movement can make much headway under its own momentum. In Puerto Rico—as in many other places—the human basis does not exist for a purely voluntary coöperative movement of large proportions. It is therefore impossible to disagree with the conclusion of

the Brookings report, to the effect that in Puerto Rico "agriculture cannot be put upon the most productive and efficient basis unless intensive public attention is applied to the problem."¹⁵

What has just been said applies equally to all the forms of commercial agriculture in Puerto Rico (except sugar cane, as noted below). A somewhat different problem arises in the case of new products which it is hoped to develop, such as those now being tried out at the agricultural experiment stations. Here new bodies of producers will have to be educated, experimental commercial operation will have to be conducted, choice of appropriate localities will have to be made—all of which implies a willingness to finance developments through an experimental period with public funds. In other words, in the case of new products, the process of educating and organizing producers appears to require the nursing of a variety of developments, from planting seeds to finding markets.

With respect to the industrial development of the Island, the fact seems to be that under present conditions new private capital to finance it is not easily forthcoming. The prospects for returns are too problematical, the risks rather large—though under more favorable prospects, it would doubtless be available. This situation furnishes the explanation of the variety of proposals for establishing semi-public corporations to promote new undertakings. Concerning the merits of specific proposals, the present writers are in no position to express informed opinions. The implications of any considerable experimental expansion in the calculable future, on the basis of public enterprise and public risk-bearing, should, however, be recognized. The public finances of Puerto Rico at present are scarcely strong enough to support such developments. Access to Federal funds, and possibly, also, extensive refunding of debt at lower interest rates, therefore appear to be prerequisite for expanding public enterprise. Whether on such a foundation a successful superstructure of more or less coöperative industry can be built is a matter upon which the present writers are unable to speak with confidence.

¹⁵ *Porto Rico and Its Problems*, p. 514.

XIX

THE DISTRIBUTION OF INCOME FROM SUGAR

WHEN one looks at the sugar industry against the background of Puerto Rican agriculture and industry presented in the preceding chapter, it becomes clear that the public questions relating to it must be sharply differentiated. The industry has passed through all those preliminary phases which still face most other lines of activity. It includes the one large field of agriculture in which relatively efficient land utilization has been attained.¹ Cane fulfills the basic economic specifications of high value per acre and large employment per acre. Industrial employment has been created. A ready market exists for the product of the industry. The record is one of accomplishment along all the lines that are regarded as essential to the economic well-being of Puerto Rico. The industry has progressively contributed to increased means of livelihood in the Island. Only after these facts are recognized can the controversial points of discussion be set in proper perspective.

There are two levels upon which to discuss the problems connected with the Puerto Rican sugar industry. At one level, the present general features of the industry may be accepted as given, and discussion is limited to adjustments which might take place within that framework. At the other level, the possibilities of far-reaching deviation from the present situation may be explored. In the chapters that follow, the discussion will proceed in part upon each of these levels.

1. THE DISTRIBUTIVE PROBLEM

Within the industry itself, the primary problem is the conflict of interest over sharing in the gross proceeds from the sale of sugar. The industry is stratified into the three levels of (1) sugar

¹ The existence of some highly efficient farms in other fields, especially fruit and tobacco, is not to be overlooked.

companies and closely allied agricultural enterprises, (2) independent cane growers, and (3) wage laborers. Those who are dissatisfied express themselves mainly to the effect that the mill-owners profit unduly at the expense of the other two, but the conflict of interest extends also to the relations between growers and their laborers.

The essential nature of the conflict of interests is no different from that which exists wherever economic activity takes place on the plane of private enterprise. Distributive outcome is predicated on the exercise of bargaining power. The rewards of parties to the process are not necessarily based upon needs or deserts. When ethical considerations are put forward, the issue takes the form of what collective rules to apply to change the bargaining situation or the results of the situation. The question is whether there are potential rules which can benefit particular classes without damaging the economy as a whole.

What has to be recognized at the outset is that the limits of improvement for *colonos* and workers at the expense of owners are rather narrow. A dollar a week added to wages and a dollar a ton added to the price of purchased cane would probably eat up almost the whole profit of good years and create large losses in poor years.² Assuming (unwarrantedly) that this could be done without impairing the industry, it would still leave rates of remuneration low by Mainland standards (except as compared with agricultural workers in the Southern States), and not greatly improved by Puerto Rican standards. Nevertheless, where standards of living are as low as in Puerto Rico, almost any increase of remuneration is important, so that their meagerness does not make the possibilities of improvement futile to discuss.

Looking at the specific facts of the organization of the sugar industry, it would seem unquestionable that bargaining advantage has hitherto been definitely on the side of the mills, as a result of an over-abundant labor supply, a favorable position with respect to purchasing cane from the growers, and the partially dependent position of the latter by reason of the credit system. The whole situation is, however, surrounded by many com-

² At a rough calculation the two increases mentioned would mean an outlay of \$7,000,000.

plexities of relationship which are very perplexing when the means of improvement are sought. The following pages will explore the situation further.

2. THE COLONO SITUATION

In an earlier chapter³ the general scheme of relations between mills and *colonos* was described at some length. The present pages are therefore devoted strictly to the canvassing of controversial issues.

Two recent developments of prime importance must be mentioned at the start. First is the law passed by the Puerto Rican legislature in 1937 which provides that in all future *colono* contracts the *colono* must receive, subject to certain necessary minor adjustments needed to meet special conditions, 65 percent of the yield of his cane.⁴ Second, pending regulations of the A.A.A. would make the payment of benefits to sugar producers contingent upon the application of a minimum percentage not only to future but also to outstanding *colono* contracts. Furthermore, benefit payments are to be conditional upon the adherence by cane growers and sugar companies to certain minimum wages for workers.⁵ These developments mean that as long as Federal benefit payments continue, the burden of responsibility for the establishment of minima in respect of the payment of *colonos* and workers in the sugar industry will be very largely at the door of the Federal Government rather than be, as in the past, wholly a bone of contention as between the various elements *within* the sugar industry. Discussion of hitherto controversial issues is now accordingly modified by this fact.

Discontent on the part of *colonos* with the economic effects of mill-colono relations ultimately reduces to two related contentions: first, that the *colonos* receive too small a share of the value of the sugar produced; and second, that the *colonos* are in a state of economic dependency which makes them unable to bargain effectively for better terms.

The millowners, on the other hand, point to their large plant

³ See Chapter X (The Relations between Mill Owners and Growers).

⁴ Act of the P. R. Legislature approved May 13, 1937.

⁵ See Chapter XIII, Introduction.

investment and to the advantages which have come to *colonos* through their improved education in cane cultivation, higher rates of liquidation, and lower rates of interest. They are also prepared to argue that the economic powers, including financing, now administered by the mills are necessary in the absence of any alternative agencies for performing administrative and financial functions.

The points of controversy may be commented upon briefly under a series of headings, in an ascending order of importance.

Minor Administrative Questions

Upon two points of administrative procedure complaints are sometimes expressed; these are the weighing of cane and the making of cane analyses. These functions are both entirely administered by company employees with no external checking by either *colono* representatives or public officials. The mill-owners express complete willingness that *colonos* should exercise a check, but, perhaps because of the absence of effective *colono* organization, such a check has not yet been put into effect.⁶

There is no way of knowing whether the powers of the companies are anywhere seriously abused. The power of abuse exists, nevertheless, and its very existence can be the source of suspicion of unfair dealing and discrimination. Since the suspicion now exists, all mills interested in good feeling and fair play have reason to explore the possibilities of improvement, as some have already done separately.

Cane Analysis

Until the law of 1937, each mill was perfectly free to adopt its own formula for estimating the sugar content of cane. There were no doubt many reasons for the maintenance of different formulas, including different local experience, difference of opinion among chemists, and mere inertia. Whatever the reasons, they had certain unfortunate results. The existence of different formulas furnished a basis for popular suspicion, whether justified or not, that they did not always operate to do strict justice to growers. More important was the presumption that some formulas were

⁶ A new law of 1937 gives to *colonos* a legal right to check the weighings and analyses.

scientifically superior to others, and that careful technical study would favor one as against all others, subject perhaps to permissible adjustments to peculiar local experience.

How economically important the matter was, one does not know. At least it was of some importance psychologically in the relations between mills and *colonos*. It is to be hoped that the new official formulas will sufficiently command a consensus of support that will remove this question from the sphere of controversy.

Liquidation System

The law of 1937 is equally an appropriate approach in remedying a very unsatisfactory situation in relation to systems of liquidation. The ordinary small *colono* was in a poor position to judge whether he would fare better under one or another of the systems used by the mills on either side of him. Uniformity needed to be achieved so that the liquidation rates offered by the mills would stand out clearly as the basis of competition for cane.

Since this issue has been largely resolved by the law of 1937, there is no need to include the comments on this subject which were included in the first draft of this manuscript, written before the passage of the act. The conclusion reached there was that if the various matters mentioned to this point—weighing, analysis, and methods of payment—which are all non-economic and technical in character, could be reduced to relative uniformity, there would be removed a large part of the air of suspicion which tended to cloud the relations of mills and *colonos*. The clearcut issue of economic interest would then be definitely in focus.

Rates of Payment for Cane

The rates of payment for cane present the direct conflict of economic interest between mills and *colonos*. The purchase and sale of cane takes place in Puerto Rico under circumstances varying from rather active competition to almost complete lack of competition. In general, *colonos* appear to have been in a weak bargaining position relatively to the mills through financial dependence and absence of collective-bargaining machinery, and in some cases through geographical location. This situation has been a source of complaint, and in the first draft of this manuscript there was included the following passage:

So long as the question remains in the sphere of bargaining, the practical question for *colonos* is that of strengthening their bargaining position. Since *colonos* appear to be unable to effect a strong bargaining organization unaided, the matter presents itself very clearly, therefore, as the question whether the government of Puerto Rico wishes to follow a public policy of reënforcing the competitive strength of *colonos*. Such a policy would involve either public fostering of co-operative organization or public regulation of the rates of payment for cane. There are further possibilities of public action, such as setting up competitive mills, both as "yardsticks" and to intensify mill competition.

Since that date, the new law of 1937 states that "the percentage of the cane yield which shall belong to the *colonos* is hereby fixed at 65%," with excepting provisos for free contract in the case of certain varieties of cane. It is impossible to foretell the exact economic effect of this provision, but if effectively administered it gives promise of increasing the returns to many cane growers. This law makes obsolete much of the earlier form of discussion, but one may at least repeat a further passage from the original manuscript as follows:

It is entirely reasonable that Puerto Rican farmers should explore the possibilities of improving their economic status. What is perfectly clear is that all proposed roads imply a broad exercise of public intervention. There is at present no consensus in Puerto Rico upon proposed lines of intervention in the *colono* interest. Nor is there even a firm factual knowledge of the economic limits within which improvement of the *colonos'* revenues is feasible.

A legislative consensus upon partial fixing of liquidation rates has been reached at least, though it still remains to be seen just how this works out in practice. A representative Sugar Board for mediating in cases of dispute over liquidation has also been set up. The existence of this new machinery should facilitate the orderly exploration of solutions for the conflicts of interest which will no doubt continue to present themselves. Whether the results of the law to the *colonos* or to the industry as a whole prove as beneficial as its framers hope can only be shown by a period of trial.

Crop Loans

The financing of *colonos* by mills, as it historically developed, was at once a great service to the former and necessity for the

latter, faced with assuring themselves of a cane supply from *colonos* unable to finance themselves elsewhere. The extensive development of this system of financing took place when United States and other capital came into the Island to develop modern mills, yet depending upon a plantation system composed of thousands of growers of limited resources. The relation has been buttressed by the continued absence of adequate sources of credit in other quarters. The question at issue is whether there is any feasible alternative which can perform the same economic functions adequately and more cheaply.

The economic situation of *colonos* would undoubtedly be eased if the services of the Intermediate Credit Banks could be widely extended. But at present the possibilities of extending this system seem decidedly limited. This is partly due to the human factor, the absence of any decidedly coöperative bent plus the relatively reckless borrowing propensities of Puerto Rican farmers. Crop loans have to be rather minutely supervised to insure proper use of funds. The present system of lending by the mills accomplishes this necessary check, and no other existent system does.

It is sometimes charged in Puerto Rico that banks and sugar companies actively oppose the development of the Federal agricultural credit agencies. The writers have no evidence as to whether this is the case or not. The loan market is certainly a profitable one for the banks, and no doubt lending activities are an important adjunct to some of the mills, not so much because of interest revenues as because of the effect upon the quality and regularity of cane supplies.

The matter of establishing cheap credit goes a good deal deeper than this, however. The fact is that the experience of the Farm Credit Administration has not been very happy in its Puerto Rican lending. Its troubles, it is true, have mainly been in the coffee industry. But there is a long road to go before a coöperative credit system can be widely established, quite apart from the attitude of banks or mills.

One aspect of financing of which one hears in Puerto Rico is its alleged connection with concentration of control over the land. This may mean either abuse of creditor's power or the disappearance of *colonos* on account of high financing costs. On the

former point evidence naturally is not easily accessible. There is in any case no doubt that the movement toward concentration of land control is something entirely independent of the possible abuse of creditors' powers; and in whatever degree abuse may possibly have arisen, it can have but a minor significance in this connection. With respect to costs, high interest rates are no doubt a serious hurdle for growers, but whether they have caused the disappearance of many it is impossible to say. There is, in fact, no clear evidence that the number of small growers has declined. One can certainly say that high interest is only one among many and complex reasons for the sale or lease of farms to large proprietors.

One of the points commonly made with respect to the credit situation is that the financial dependency of *colonos* has prevented their effective organization for collective bargaining. The present writers have no way of knowing what weight should be given to this claim.

Conclusion

Vaguely underlying all the matters mentioned above lies a general sentiment that it is undesirable for the farming class to be "dependent" upon the mills. This is a matter which is discussed elsewhere (see Chapter XX). The effort to place the *colono* class in a position of greater dignity and power is a reasonable social policy. Such a policy is, however, only one of the possible alternatives. If social policy were oriented specifically toward improvement of labor conditions, the destiny of the *colono* class might be made even worse.

Until some clear direction of public policy in the *colono* interest takes shape, there is little that can be said except about the simple matter of removing the sources of minor grievances. Concerning the special grievances and grounds for suspicion one would suppose the millowners themselves would be among the persons most anxious to remedy the situation. By overcoming the inertia of custom it would seem possible to negotiate away many of the grounds of ill-feeling on the basis of mutual interest in a joint endeavor. In some mill areas much has been accomplished in this direction, and there is little that can be said which is both just

and accurate about conditions in the Island as a whole. On the larger questions of class interest, much depends both upon the capacity for coöperative organization and upon questions of social policy yet to be determined.

3. THE WAGE PROBLEM

The situation of wage earners raises general questions somewhat similar to those arising in the case of *colonos*. There is, first, the question of the capacity of the industry to meet higher wage bills; second, the question of the bargaining capacity of wage earners; and third, the question of public policy supporting the wage earners' efforts at self-betterment. The available facts about wages and the forms of collective bargaining have been reviewed at earlier points in Chapters XII to XV. Taking these facts as given, comment will be confined to certain general aspects relating to the prospects for improvement.

Direct Money Wages

In a rough way wages in the sugar industry tend to reflect changes in the value of sugar. During the early years of the depression, they declined severely, but during the past few years of comparatively prosperous conditions they have increased annually. In a general way it has been true in the past that the mills were sufficiently at an advantage in the labor market to keep wage costs down to a level which permitted profits to most companies except under the most severe conditions of rapid price decline. In recent years there has been a more general recourse to collective bargaining and wage advances have been substantial year by year. In spite of this, profits have been substantial, but one can hardly express an opinion as to the degree in which wages might still be increased without seriously impairing employment. One may be sure that, since Puerto Rico is a relatively high-cost sugar-producing area, the limits for improvement are somewhat narrow.

The bargaining situation is markedly affected by the greatly varying capacity of different employers to meet higher wage scales. Employers range from mills producing a thousand tons of sugar a season to at least one with an output a hundred times

as large; and from sugar-cane farms of under twenty acres to those of many thousand acres. They range from highly profitable organizations to petty farmers who themselves hardly earn a modest livelihood. Under these conditions, and with a plethora of available labor, it has been customary for wages to vary considerably from one employer to another, though showing considerable uniformity among the larger employers. Organized labor, through the *convenios*, has attempted to establish uniform wage scales throughout the sugar industry, but the situation described has resulted in opposition to wage increases on the part of small millers and cane growers. It is understood that some of these small employers do not meet the wage rates established by the *convenios*, and that labor leaders in such cases have used discretion in seeking enforcement of the collective agreements.

Application of a really uniform wage scale would probably mean that at the lower end of the productive range of the industry the small employer would be paying higher wages than his economic situation justified. The emphasis in wage discussions has generally been on a uniform wage scale for the industry, on the grounds that wages graduated according to individual paying ability would introduce a lack of balance, with undesirable social and economic connotations. Nevertheless, an uneven distribution of the wage burden, through imposition of a uniform wage scale, would probably involve the elimination of some of the small producers because of their inability to meet a strictly enforced standard; or alternatively the need for measures by public agencies to assist small producers in paying established wage rates.

As matters now stand, wages in the sugar industry tend to stand well above those available in most employments in the Island. They represent neither the lowest price for which labor might be available, nor yet the highest which might conceivably be secured. The whole labor market is everywhere a very queer market indeed, with considerable variations in pay for what seem to be relatively similar grades of work. The general effort of the leaders of organized labor is to overcome the bargaining disadvantage of the latent labor supply and to impose standards based upon "what the traffic will bear." In this effort, as has been

stated, there occurs a conflict between the end of definite standards on the one hand and the varying capacity to pay of employers on the other. As commonly happens in bargaining situations, the most serious resistance to higher wage standards does not come from the stronger producers, but rather occurs at the level of marginal employers.

Benefits from Indirect Wages

Apart from money wage increases, there is extensive possibility for providing the workers with benefits through improvements in diet, housing, educational and recreational facilities, medical attention, and living and working conditions in general. Such forms of supplemental income possess the advantage of effecting a twofold contribution to improved standards of living—through the earnings and the education of the workers. Workmen's accident compensation and the housing provided by most companies are existing steps in this direction.

The sums at present spent by the sugar industry on welfare activities are low. As was pointed out in a previous chapter, housing facilities are inadequate. Malnutrition, malaria, and tuberculosis are too prevalent. Rural educational facilities are not conveniently provided for the families of many workers. Recreational centers, except for salaried employees, are virtually non-existent. Few places are available in the sugar regions where laborers away from home may obtain at least one substantial meal a day at low cost, despite the experience of sugar companies that providing meals to their sugar loaders keeps these workers physically capable of performing their specially heavy tasks efficiently. With but rare exceptions, garden plots are not fostered among workers who live on company land. Except for the laborers housed by companies, workers must live, sleep, and eat as best they may.

It may be plausibly argued, of course, that the sugar industry discharges its obligations to the worker when his wage is paid. On the other hand, it must be borne in mind that the development of large cane plantations has effected substantial changes in the old agrarian economy of the Island, which in its primitive paternalistic manner did furnish the laborer with elements of

security that in part offset low wages. The sugar economy has brought new opportunities for employment and higher earned wages. But, by breaking up the old patterns, it has also created new problems. For these problems, it seems reasonable to hold, the industry might assume more responsibility, in order to improve the lot of the worker and to lessen social friction.

It has been pointed out that one of the most acute shortages in the sugar regions is in the matter of supplemental incomes in the form of food products. On various occasions the proposal has been advanced that sugar companies should devote some of their land to garden plots for workers. Objections raised against this plan usually argue that Puerto Rican workers are unwilling to engage in such occupations, or that the sugar companies do not wish to compete with existing suppliers of food products. Some companies, nevertheless, have reported success in fostering garden plots. However this may be, the problems of cheap and nutritious food are so serious among sugar workers who move into the sugar regions for the harvest season alone that it would appear desirable for the industry to give thought to the problem of alleviating this need. Suggested solutions might include, in addition to the fostering of garden plots, the providing of establishments to furnish adequate meals at low prices. This type of suggestion, of course, runs afoul of the vested interests of those now engaged in food supply.

The Larger Problem

As has been intimated, the labor problem is one for which a complete solution does not lie within the resources of the industry itself. Many of its aspects derive from the broader problems of the Puerto Rican economy. Consequently, extensive amelioration can come only through concerted social action.

It is axiomatic to point out that current wage levels in the Island are determined largely by the play of market forces, modified to a degree by social pressure; and that these forces in Puerto Rico reflect population pressure and under-employment. This situation has long developed unchecked—in fact it has been aggravated by continued growth in population, the deterioration of certain employing agencies, such as the coffee indus-

try, and, in the case of sugar, by technological improvements which have led to the employment of fewer men per ton of cane grown and per ton of sugar produced.

The two requirements, consequently, for any permanent and substantial improvement in the condition of the laboring classes are those reiterated so frequently, (a) reducing the rate of population growth, and (b) providing additional sources of employment. These constitute an objective toward which the Island economy can advance only with the assistance of public agencies. It is a problem beyond the scope of any one industry or of purely private agencies. A start has already been made by the enactment of legislation designed to curb the growth of population, and by the PRRA rehabilitation program aimed at expanding opportunities for employment. Efforts to create a new balance will of course be slow in accomplishing positive results. The present generation will benefit only slightly from the wider programs being started.

Narrowing down the larger problem, we find that many proposals for remedying certain ills in the Puerto Rican economy would reflect benefits on the labor population dependent on the sugar industry. Such measures include the development of more abundant food supplies, either through increased domestic production or through adjustments resulting in lower-cost imports; the promotion of health, dietary, recreational and educational facilities; and new sources of employment. Perhaps steps taken to improve the situation of *colonos* would operate in the same direction. *Colonos* have frequently maintained they are not in an economic position to pay the wages stipulated in the *convenios*. Any betterment in their financial position, consequently, should eventually be reflected in better cash and supplemental incomes for the labor they employ.

Increased Stability of Employment

Finally, one must note the irregularity of employment common to most Puerto Rican workers and grounded in the seasonal character of agricultural operations. This problem may be discussed briefly in relation to the migrant labor supply of the sugar industry. The bulk of the workers during the busy season

constitute a floating population that moves into the sugar regions as harvesting and grinding begin, to move out again, or remain as squatters, when these operations cease. Some are from near-by towns, others from the interior. So long as this floating population exists, it will be difficult to bring to it any basic non-wage improvements of a permanent nature translatable into positive contributions to better standards of living.

Accomplishment of any reduction of the migratory characteristics of the present transient group of laborers would facilitate the drafting of programs designed to increase the opportunities for garden plots, educational and recreational activities, and supplemental earnings during the slack season. The probable answer appears to be along the lines of an extensive resettlement program in the sugar zones, coupled with the development of local activities that will provide for earnings during the slack season.

The writers were informed by PRRA officials that that agency had sought the coöperation of sugar producers in the utilization of marginal cane lands for subsistence plots and minor crops. The scheme was not successful, chiefly, the writers understand, because of certain visionary aspects of the plan. It is likely, however, that tracts of marginal land might be acquired for the purpose of developing a stable and efficient labor supply for the industry.

Mitigation of instability has in the past been partly accomplished by migrations between sugar and coffee areas, since the harvesting cycles run counter to one another. Future fostering of the coffee industry is frequently proposed as the most hopeful alleviative. The evidence unfortunately tends to indicate that, under the best possible outlook for coffee, there is ample labor supply for both the coffee and the sugar industries without the need for any considerable movements of labor from one agricultural region to another. Even if such movements on a large scale were necessary, the Island must consider the social effects of large floating populations. The objective, it would seem, should be to bring new forms of earnings to a settled population, rather than to perpetuate or aggravate existing migratory movements.

If all that could be done were done, it is to be supposed that there would continue to be a considerable migratory movement from the towns and the hills into the sugar fields. The well-being of this population of course must depend upon improved opportunities of counter-seasonal employment at their native domiciles.

The *status quo* of the sugar industry is nowhere being currently challenged more than in its relation to the laboring population. Legislative intervention is gaining ground, coöperative profit-sharing has been introduced at Lafayette, and labor organization is proceeding. Since the strength of its position is so closely tied up with improvements in the well-being of the labor population, the sugar industry will presumably seek its own self-interest in a broader interest in measures to that end. Regardless of the ultimate results of the Lafayette experiment or of legislative enactments, there is much that could be done under the present set-up to improve labor conditions, especially in building the framework for a more satisfactory state of affairs in the future.

4. COMPANY PROFITS

What has been said in the preceding sections about the bargaining situation of *colonos* and workers indirectly presents most of the points connected with company earnings. Until corporations become philanthropists, they will naturally function to make what they can out of market situations, with profits following efficiency and luck, and losses their absence. If there is fault to be found, it is properly with the rules under which they operate, and not with the fact that they operate under the rules. It is beyond the scope of this study to examine the justice of these "rules." Under prevailing circumstances, the present authors, the Puerto Rican sugar industry, and Puerto Rico itself, have to take them largely for granted as their given frame of reference. There are, however, a few special points that may be made in this connection.

General Aspects of the Profit Situation

At present the discussion of profits proceeds in something of a void. There are no comprehensive statistics on profits, and

consequently no one knows how much slack there is for experiments in higher compensation to other productive agents. Concerning the so-called American-owned companies, information is now available⁷ and will be referred to below. Comprehensive information for the whole Island, however, still remains fragmentary.

The power of the companies to make profits is predicated upon certain factors. Particular mills are the sole market for many cane growers and the sole source of possible employment for many workers. Even where this is not the case, the geographical spacing of the mills often presents to most growers and workers a somewhat narrow range of alternatives. In the second place, the mills collectively are the gateway to a livelihood for a considerable fraction of the Island's population. On these accounts it has been argued that there exists a reasonable public interest in the manner of their distribution of livelihoods to the dependent population.

Another fact, however, is that the relative earnings of the several companies are based upon differences of operative efficiency. In consequence, general measures of control, such as would increase the cost of cane or labor, would bear down with very unequal weight upon the different companies. What some could bear with ease would break the backs of others. Consequently, public intervention to direct the distributive flow is a matter which would require extraordinarily good judgment. It is a matter of opinion whether the processes of Puerto Rican politics could create supervisory agencies of that quality.

It may quite well be that within limits public regulation involving higher costs might be conducive to efficiency, since it would probably force the least efficient companies to the wall. But it would also probably diminish employment, and it becomes a nice question how far Puerto Rico can be interested in the pursuit of efficiency and higher compensation for some at the expense of a diminished field of employment.

Absentee Profits

In a strictly economic sense the only difference between the American-owned companies and other companies is that the

⁷ See Chapter XI (Capital Investment and Earnings).

original investment in the former came from the Mainland and the corporate earnings largely flow back to the Mainland. These companies, however, attract special attention in Puerto Rico for three reasons: in the first place, they are the largest companies; in the second place, they have applied impersonal methods of corporate management in the highest degree and have therefore departed most markedly from the old agrarian traditions; and in the third place, they are subject to certain emotional reactions in the Island that spring from the inevitable friction between different cultures. The single point to be discussed below is the economic one, the movement of profits out of the Island.

At an earlier point (Chapter XI) it was noted that the net earnings, from Puerto Rican sources, of the three profitable American-owned companies, after taxes, average about \$3,500,-000 over the period since 1923. Of these earnings, about \$2,750,-000 annually were distributed to investors, most of whom do not live on the Island. It is only the latter item of distributed earnings that, due to removal from the Island, is in any way differentiated from earnings of other companies.

Looked at historically, there are two clear points to be made: first, the investment would not have been made except for an anticipated outward flow of earnings; and second, the investment has led to a creation of wealth much larger than the withdrawals, so that the flow has not, historically speaking, been a "drain" upon the Puerto Rican economy. The only moot point in the historical process is whether the flow has been larger than was necessary to induce the economic services rendered by the investment. There is little point in arguing the historical point, since the whole issue can be focused more clearly by looking forward rather than backward.

The function of profits, socially speaking, is to induce the investment and management necessary for economic production. So long as foreign investment is regarded as desirable, the "necessary" outflow of earnings is the amount required to induce investors to keep their properties in operation. Looking *solely* at the *present* plants of the externally-owned companies, it can be argued that, these plants not being removable, they will continue to operate so long as there is prospect of *any* returns on them.

This view of the matter, however, which is substantially true of fixed plants in any industry in any country, still does not answer the question whether the flow is "too large."

The critical question for Puerto Rico is whether *further* external investment for *future* industrial expansion is desired, not merely in the sugar industry but in other fields. Both the possible size of yield obtainable and the public policy toward *old* investments will condition the making of new ones. Public policy toward the outward flow on old investments, therefore, has to be considered in relation to the terms necessary to induce new investments.

The outflow of sugar earnings may be looked at from another angle. Let it be supposed that Federal funds are to be secured for a long-run policy of financing coöperative acquisition of the sugar industry. Presumably interest would have to be paid on such funds. Let as little as 3 percent be taken as a hypothetical rate—it would probably be higher. If the four American-owned companies could be acquired at their book value, the annual outflow of interest would approach \$1,500,000 annually. If the loan were amortized over a period of fifty years, the annual outflow would even so be about \$1,750,000. If the properties were purchased at present market values, the amount would be much more.

It is only when reduced to the calculation of alternative costs that the discussion of "absentee profits" has any meaning. Mathematically, the question is how much the flow could be diminished by any feasible alternative. Practically, the question is what, if any, alternatives are feasible.

Assuming a public determination to penalize the withdrawal of earnings from the Island, one sees only two methods available: to prevent the profits from accruing, or to prevent them from being "exported." The former could hardly be done without also affecting the Island companies; the latter is beset with obvious difficulties. The present writers have seen no proposals by critics of absentee profits for limiting their withdrawal for payment to Mainland investors.

The preceding remarks are so elementary in character as hardly to be worth making, except that discussions of "absentee"

profits commonly lose sight of the points raised. To the present writers it appears that the "drain" of absentee profits, as compared with the "drain" from any available alternatives, is, economically speaking, not a matter of importance.⁸ It is not here argued that the present level of earnings is "necessary" for the continued effective operation of the American-owned companies, but only that the alternative of acquisition by local interests, public or private, would presumably involve external payments on borrowed funds which in the calculable future could hardly be much less than now goes to private investors. The significance of "absenteeism" lies elsewhere. The American-owned companies are the largest and have therefore bulked large in the picture of the trend toward land concentration.⁹ They have introduced Mainland standards of corporate management and have thus disturbed the *mores* of the aristocratic agrarian tradition. And finally, they are "foreign." These are important matters for Puerto Rican social policy. But all important aspects of profits, technically considered, are the same for all companies.

5. CONCLUSION

There is little to be added to what has already been said about the three-cornered struggle for shares in the proceeds of sugar. The struggle is one which arouses much feeling, because of the low level of life imposed by present rates of pay for cane and for labor which exist in present conditions. The margin for improvement is at present relatively narrow, but none the less important to the parties concerned. Within the limits of a free market system, there is little prospect that the present allocation of income will be much altered. Any firm policy to alter the distributive situation in any important degree would necessarily imply a readiness and competence of the government to intervene to an extensive degree in new modes of economic control. No benefit is, however, thereby promised unless this can be done without loss of operating efficiency within the industry. The present writers have no disposition to offer good advice on the issues presented. They cannot undertake to judge the merits of lines of policy not yet formed and projects of action not drawn up.

⁸ See also the discussion in Chapter V of the Puerto Rican balance of external payments.

⁹ This problem is discussed in Chapter XX.

XX

THE LAND QUESTION

THE facts concerning the degree of concentration of land in sugar cane farms have been presented in Chapter IX. What is the significance of these facts? Do they point any clear direction of public policy toward land tenure? These are questions which no study of Puerto Rican affairs can overlook or evade. The present chapter will be devoted to setting forth the elements of the problem.

1. PUERTO RICAN ATTITUDES TOWARD LARGE-SCALE LANDHOLDING

In Puerto Rico, the attitudes which exist toward the land question are naturally colored by emotion. A common feeling is a reaction against control of large tracts by a few persons in a situation where land scarcity—in relation to the present population—is pronounced. This attitude runs vaguely over into a feeling that too much land is devoted to an export crop instead of to growing more food for local consumption. These sentiments, however, are seldom found in a pure form, since most of the strong feelings on the land situation spring from some explicit economic interest, either traditional or current.

The traditional element is important, since a large majority of prominent Puerto Ricans are members of families, or are closely connected with families, that are or have been landed proprietors. Some fall within the circle of the mill families, and some outside; and they split on these lines. Those who are outside are frequently of families who have sold or leased their lands. Or they are of present landed families who raise and sell cane, and consider themselves at a bargaining disadvantage in relation to the mills.

The loss of landed status, or the impairment of the benefits of such status, in addition to its strictly economic aspects, has pro-

found emotional repercussions in a country where proprietorship and social status have historically been so closely linked. Such emotions are common to all environments in which rapid economic change disturbs established social relation; but they are especially keen where, as in Puerto Rico, the alternative routes to wealth and status are few. These emotional elements are reinforced in some cases by a sense of grievance—whether justified or not the present writers are not in a position to judge—connected with the historical circumstances under which the transition in proprietorship to the consolidation of the great sugar company estates was effected.

One gets closer to a strictly economic aspect in considering the attitude of independent sugar-cane growers (*colonos*). To them the existence of large company estates means that the mills are relatively more independent in so far as their supply of cane is concerned, with a consequent lessening of competition between the mills for *colono* cane. This situation also implies greater economic power on the part of the mills, making more difficult any active combination among growers to strengthen their bargaining positions.

Another strain of opinion to be found in the Island is a reflection of anti-capitalistic views today current in certain circles in all countries. On the land question, this type of opinion expresses itself against the so-called “exploitation” of agricultural workers for the benefit of a capitalist class, whether resident or absentee, with a special emphasis against the absentee class when cultural elements are added to the economic factors.

Finally, there are also found in the Island two other interconnected strains of opinion. One of these voices the charge that large landholders do not concern themselves actively in advancing the general economic interests of the Island in a degree correlative to their power and wealth. The second is that the concentration of economic power, which is currently given to the sugar interests by the combined control over manufacturing and agriculture, is incompatible with a healthy social and political situation.

Among all these types of opinion, the ones that carry the greatest practical weight in current political action are those

most closely associated with direct conflicts of economic interest—that is, conflicts between the *colonos* and the sugar companies, and between agricultural workers and all cane growers, whether *colono* or “administration.” In a fundamental view of the problem of public policy, however, the most important considerations are probably those in which the direct conflicts are subordinate.

The answer which the sugar companies give to complaints against their landed status is the conventional defense of business enterprise, simple in outline and not unimpressive in content. It runs on economic and technical grounds somewhat as follows: Cane cultivation represents the most economical use of the heavy, low-lying lands, creating more wealth and supporting more people than any alternative use of the same lands. The most effective cane culture calls for large-scale agriculture, involving expensive equipment and special technical knowledge. Milling companies must grow cane in order to regularize the operation of mills during the grinding season and to experiment with appropriate types of cane and methods of cane growing. Great technical improvement in cane cultivation has taken place under the existing system of tenure. And finally, it is contended, current proposals for changes in land tenure policy would, if put into effect, diminish the wealth created in the Island and therefore undermine its already inadequate capacity to support its population.

2. CONTROVERSIAL ISSUES

With so much for background, we may proceed to bring the issues of public policy directly into focus by stating a series of questions.

(a) Would Puerto Rico be economically better off if some of the land now devoted to sugar cane were diverted to other crops?

(b) Is it necessary that land be held in large holdings for the most effective utilization of the land devoted to cane culture?

(c) How are large landholdings by the sugar companies related to efficient operation of the mills?

(d) Do the large landholdings of the companies place other landholders at an economic disadvantage?

(e) Does large-scale land tenure involve the “exploitation” of workers?

(f) Are large landholdings as fully utilized as might reasonably be expected?

(g) Are there non-economic considerations which dictate that the system of land tenure be radically revised?

(h) And finally, are there feasible means of changing the land-tenure situation to the advantage of the Island?

These questions may be taken up in the order stated.

(a) *Would Puerto Rico be economically better off if some of the land now devoted to sugar cane were diverted to other crops?*

The primary need in Puerto Rican agriculture is for crops which have a high value per acre and which utilize a large amount of labor in production. Sugar cane meets these specifications more fully than any other of the Island crops. Simply on this ground alone there is a presumption against transferring from cane to other crops. This presumption is strengthened by the fact that, in general, cane cultivation represents the branch of agriculture in which the best technical methods are utilized. No economic case can be made under present circumstances for extensive diversion of cane lands.

The opposite argument commonly relies upon the assertion that historically the increase of cane acreage has crowded out food crops; and the further assumption that this has decreased the food supply of the population. The historical evidence is not altogether complete, but it supports the view that cane culture spread mainly to what were formerly grazing lands. No doubt some food-crop land has been turned to cane; but this cannot, without further evidence, be considered to have undermined the food supply of the population. Generally speaking, there is no doubt that the income from growing cane feeds more mouths than would be possible from putting any considerable part of cane land to growing food for home consumption.

Two outstanding facts about Puerto Rican agriculture are the limited extent to which arable lands are now utilized at all and the poor technical quality of agriculture for other crops than cane. The basic problem is not at all that of transferring cane lands, but rather the effective utilization of other lands. Improvement in this respect would no doubt lead to increased home food pro-

duction; but as was seen in preceding chapters, the best opinion is that the livelihood of Puerto Ricans must largely depend on extensive production of cash crops for export.

No informed person seriously contends that the general economic advantage of Puerto Ricans would be served by any extensive diversion of cane lands to other uses. The persons who wish to see sugar occupy a progressively smaller place in the Island economy have to base their argument upon other than strictly economic grounds.

The answer to question (a) is thus that there is a strong economic presumption against transferring cane land to other crops.

(b) *Is it necessary that land be held in large holdings for the most effective utilization of the land devoted to cane culture?*

This question needs to be approached both historically and analytically. As a matter of history there is no doubt that cane yields have improved as lands have been taken over by large operators. Evidence was presented at an earlier point which showed a progressive increase in the yield as the size of farm increased.

There are no doubt a number of reasons for this fact. As lands have changed over from small to large farmers, the quality of the farming has improved. The level of technical knowledge and managerial ability are on the average higher on the larger estates, and no doubt reaches its peak on some of the lands farmed by interests allied with mills. Second, the best methods of cane cultivation require heavy fertilization and deep mechanical plowing, and frequently also expensive outlays upon irrigation and drainage. The small farmers ordinarily possess neither the knowledge nor the means to attain the highest productive results. Doubtless also there are differences in the average quality of the soil cultivated.

Granted the preceding historical facts, it is still a controversial question just how large a farm is needed for efficient cane cultivation. There are farms of quite modest size which have achieved rather impressive results under intelligent operators. Consequently one cannot say that large yields on the largest plantations are due wholly or primarily to the fact that the plantations

are themselves of the most economical size. But the large yields are clearly due to technically competent farming, which is found mostly on the larger estates. Thus, though conclusive evidence is lacking on the optimum size of sugar plantations, there is no doubt that quite small-scale farming is poorly adapted to cane culture. The effective enforcement of the 500-acre law, could it be accomplished, would in itself solve no present problems, and would create a host of new ones.

In its original purpose the law represented less an economic policy than, more broadly, a social policy. Had it been effective it would have prevented some of the concentration which has taken place and it would have retained more of the essentially aristocratic agrarian economy of the Spanish regime by permitting large personal holdings. Whatever the effects might have been, what now exists is a state of fact imbedded in the whole economy of the Island. It is the effects of applying a policy to the present facts, not a consideration of *might-have-beens*, that have to be kept in the forefront of attention. One must agree with the opinion expressed in the Brookings report nearly a decade ago that the enforcement of the law would have unfortunate economic effects and that it "tends to confuse the whole question of corporation control by diverting attention into sterile channels."¹ "The application (of the law) to Porto Rico has never been fruitful of results. Under the circumstances the desirability of retaining this futile act upon the statute books may be questioned. Nor is it at all certain that it would be a beneficial enactment could it be enforced." These observations in the Brookings report are as compelling today as at the time when the report was written.

When the question arises whether the breaking up of large estates would decrease the efficiency of Puerto Rican agriculture, the answer has to run as much in terms of competent farmers as in terms of size of farm. There can hardly be doubt that if the present great plantations were to be rapidly broken up, an immediate effect would be a deterioration in the quality of farming on much of the land. If the new units were quite small, the probable deterioration would be greater, both because of

¹ *Porto Rico and Its Problems*, App. E., Sec. 3, pp. 629-30.

the poorer quality of farmers and the technical inferiority of small-scale operation. The feasibility of proposed alternatives are conditioned by this prospect.

Many persons in Puerto Rico think that the social structure of Puerto Rico would derive certain benefits if built upon a wide base of small-scale landed proprietorship, if this were feasible. It seems obvious, however, that these non-economic advantages could scarcely be attained without serious economic sacrifices. Wishful thinking will not effect some sort of economic magic entirely at variance with knowledge and experience.

(c) How are large landholdings by the sugar companies related to efficient operation of the mills?

Strictly as a matter of business, landholdings have increased in the hands of persons who found it profitable to acquire them, even at the high prices which competition for good lands brought. A considerable degree of concentration would no doubt have taken place on this basis even if sugar companies had been permitted to own no lands whatever. But the present degree of concentration cannot be explained simply in terms of *agricultural* efficiency.

The profits from landholding do not accrue to sugar companies simply because the latter are good farmers. They also come from the relationship between a controlled cane supply and the operation of the mill, inasmuch as to operate profitably, mills require two things: first, an adequate supply of good cane at not too high a cost; and second, proper timing in the arrival of cane at the mill. Milling capacity can be utilized most profitably on a 24-hour-a-day basis during the grinding season. This fact reinforces the tendency to concentration due to agricultural efficiency. Without it the size of the mill-controlled estates would probably never have attained anything like their present size.

Plantations associated with mills tend to achieve a size which will give a mill a substantial portion of its annual grind. The largest mills accordingly have the largest associated plantations. The mill is thus insured against the possibility that competitors will bid away a vital part of its cane supply. It can also adjust its own harvesting to the flow of independent cane, so that the

milling process follows a well-timed sequence. It is perfectly obvious that the business of running a mill is made much simpler and more efficient if the mill controls a large part of its cane supply. The situation is definitely favorable to economical operation, and if mills were to lose their estates, factory costs would no doubt rise until some alternative method of assuring a sufficient and regular supply of cane had been devised.

Whether the cost of their cane would increase is a matter upon which an opinion would be foolhardy. The mills would, of course, have to go into the market for the whole of their supply, and on this ground it is often asserted that competition would bring the growers a better price. Whether this would be so is entirely unpredictable in terms of economic theory on account of all the collateral changes in circumstances which would supervene in such a development. One cannot in imagination visualize in advance the situation to show what the balance of bargaining advantage would be under the changed circumstances.

In conclusion, in answer to question (c), it may be reiterated that the magnitude of company plantations is not due wholly to superior technical advantages of large-scale agriculture, but is closely bound up with considerations of regular cane supply and convenient mill operation.

(d) *Do the large landholdings of the companies place other landholders at an economic disadvantage?*

In reviewing the relations between mills and *colonos* in Chapter XIX we noted that the latter have hitherto been in a somewhat inferior bargaining position. This, however, has been due to a composite set of circumstances which have been relatively unrelated to the farming activities of the companies. Such bargaining advantages as the mills possessed came from imperfect market organization, from the strategic location of the mills in relation to many farms so that competition was limited, and from the financial dependence of many *colonos*. These are circumstances which might equally have existed even if there had been no company-grown cane. Some of these disadvantages have possibly been mitigated by the new law of 1937 relating to liquidation terms.

It is easier to see ways in which company farming has benefited

independent growers than the contrary. All growers have benefited through the pioneering of the companies in cane varieties, methods of cultivation, and control of cane diseases and pests; and many have had the advantage of irrigation and drainage facilities and of farm equipment placed at their disposal.

What has just been said refers of course to the effect upon present farmers. The real, usually unexpressed, complaint against company landholding lies rather in a feeling that if the companies did not farm the lands other persons would, and to them would go the advantages of making a livelihood from farming. It is the *exclusion* of potential farmers from the lands, rather than any damage to present farmers from company farming, that constitutes the focus of much agitation against the system.

Such sentiments are not peculiar to Puerto Rico. Nor are the questions raised by them susceptible of strictly economic answers.

(e) *Does large-scale land tenure involve the "exploitation" of workers?*

As is shown elsewhere in this report, Puerto Rican workers in general receive low wages by reason of the superabundance of labor and low creation of wealth per capita. Given this general situation, it also appears that labor in the cane fields is better paid than in other branches of Puerto Rican agriculture, and that workers on "administration" lands are somewhat better paid than those on *colono* farms. Therefore nothing in the situation points to concentrated landholding as having any relevance to the matter of "exploitation" of labor. There is no ground for supposing that workers would fare better in a material way under a system of independent farming. From the economic viewpoint this is the answer to the question posed above.

Having said so much, one or two further observations are in order. Wages in Puerto Rico have necessarily in the circumstances been set primarily by economic, not by ethical, standards. The sugar companies have acted along the lines customary to employers everywhere, that is, paying what was necessary to get the kind of labor they wanted, adding certain "welfare" measures to insure the relative health and contentment of the labor force; though in many instances the older

agrarian tradition still survives in a further non-economic concern for the workers' well-being. So long as the present system is followed, this situation is not likely to change much, and any improvement in the workers' material well-being will depend upon their own bargaining power, subject to Government regulation as under the pending A.A.A. minimum wage provisions, and within the limits set by the economic resources of employers. The more efficient plantations could no doubt pay higher wages, if they had to, without being put out of business altogether. But it is a point worth emphasizing that if a strong labor movement should impose higher costs, the tendency toward land concentration would be strengthened rather than the contrary, since the financially weaker farmers would be forced to sell or lease to the stronger—unless, of course, public agencies should undertake the acquiring of land; even in the latter case, wage limits would still be related to the efficiency of agriculture.

As a final point, the land concentration has effected a considerable change in the social structure of the Island, by substituting direct money wages for the dependency of *peons* upon a landed *patron*. The latter status gave a sort of insurance that the *peon* would eat, whatever his wages or the amount of his labor. The loss of this element of security no doubt modifies in some degree the gain from higher money wages and non-wage benefits.

One concludes that the term "exploitation" is very inapt for discussing the situation. It is used almost solely as a term of opprobrium, and is of no use either in describing the economic situation of workers on large plantations or in searching for means by which to improve their lot. Relatively, they are better off than most other workers in the Island. The long-run improvement of the wages of agricultural workers generally must be based upon improvements in agriculture and in the financial capacity of the weaker farmers. It is in this marginal area that the most stubborn resistance to higher wage rates is encountered.

The problems of labor are discussed in other sections of this study and need not be recanvassed here. All that is relevant here is that land concentration cannot justifiably be claimed to have depressed wages, and that prospects for improvement lie in read-

justments in the economy largely unrelated to the question of land concentration.

(f) *Are large landholdings as fully utilized as might reasonably be expected?*

The opinion was expressed above that relatively little cane land could be diverted to other uses without economic detriment to Puerto Rico. This is, however, far from saying that all the land controlled by the sugar companies is fully exploited for the greatest general economic advantage of the Island. Upon this question the writers encountered marked differences of informed opinion in Puerto Rico. One opinion which was strongly advanced was that, so long as the companies controlled so much land, the duty should be laid upon them of devoting a substantial part of it to growing food crops. This need not necessarily call for diversion of cane lands, since uncultivated lands might be brought into use, or inter-seasonal cropping introduced. An argument from impartial sources was brought to bear against this suggestion, to the effect that any considerable increase of food production for sale in local markets would undercut the interests of those already producing for these markets. The fact appears to be that no one has devised any plan along the line suggested which would not have highly disturbing repercussions in other areas of agriculture.

It would nevertheless be possible for the companies to do more than they have done to explore the experimental possibilities of Puerto Rican agriculture other than sugar cane. A few of them, it is true, have carried out investigations to see whether one crop or another was commercially feasible. But the instances have been few and restricted in scope. In general, the view of the managements has been that they were engaged strictly in the sugar business, and were not interested in exploring other possibilities. This is a perfectly understandable business viewpoint; but it may be suggested that the sugar companies, so long as they occupy their important and powerful position, might well, in their own interests as well as to the public advantage, explore the possibilities in this direction.

The present writers have no opinion as to whether the results

of experiments would be fruitful or not. In this connection it is disappointing to record that the persons who were most critical of the sugar companies on the grounds of failing to advance the broader interests of Puerto Rican agriculture were entirely lacking in definite proposals. One of the few proposals advanced which seemed feasible was that the sugar companies should carry the weight of organized experimentation in agricultural possibilities in other lines as they have done with cane. The best informed opinion inclined to the view that no advantage could accrue merely from their production of the ordinary food crops. The need of the Island, as has been pointed out frequently, is a search for things which, like cane, will have especially high value per acre, employ much labor, and have a ready export market. The specifications are easy to draw, but not to fill. The further exploitation of the land waits upon research and experiments, some of which are under way at the experiment stations. Sugar companies could usefully coöperate with them.

(g) *Are there non-economic considerations which are related to questions of land tenure?*

From what has been said above, it may be seen how many-sided is the problem of the economic effects of large scale proprietorship. The land question cannot, however, be discussed wholly in economic terms. As was seen earlier, there is a land hunger in the Island which creates resentment, quite independently of either the economic merits of the case or the business behavior of the companies. But more important still, the state of landholding gives to much of the Island its typical social structure with its large landowners, its large dependent population, and its relatively small middle class.

The problem spills over into the political sphere. The present situation is creating a form of political controversy of which the long-run consequences are not pleasant to contemplate. On the one hand, in the very nature of the case an established vested interest will naturally attempt to protect its position; and where it is of dominant economic importance must necessarily have great power to do so without any exercise of what would be called corrupt practice. On the other hand, the *peon* population

provides an untutored clientele for political agitation against the sugar interests which could in the outcome be infinitely damaging to the well-being of both the Island and the sugar industry. One observes these signs of growing political tension with alarm.

Persons who do not like the land situation are prone to condemn it on primarily economic grounds, implying that concentration adds to the economic poverty of the Island. This is a loose charge, and one of the most undemonstrable propositions that can be made about Puerto Rico. What they seem really to object to is the scheme of social relations which it entails, and merely assume the economic damage without investigation or analysis.

It is a reasonable objective for Puerto Ricans to concern themselves with the question whether they should try gradually to reverse the trend toward concentration, with a long-range objective of developing the capacities of the people in agricultural pursuits, broadening the base of responsible citizenship, and diminishing the contrasts between the great and small. But it is hardly just to support this quest with a program of recrimination against the sugar industry for progressively impoverishing the people, when the opposite is the case.

3. PROPOSALS FOR REFORM

We come then to the final question: *Are there feasible means of changing the land tenure situation to the advantage of the Island?*

The present situation is the response to the play of economic factors in a situation where the principle of private enterprise has operated freely. No serious effort has ever been made by any political group to limit freedom in acquiring lands. What agitation there has been has centered around enforcement of the 500-acre law. This agitation has been fruitless, partly perhaps because of a lack of conviction in Puerto Rico that the law itself was either desirable or enforceable.

The discussion of public policy clearly needs to dissociate itself from the 500-acre formula and to consider the situation anew. When discussion is attempted on this plane, however, it becomes perfectly clear that no consensus of thought exists among those

who wish to change the land tenure situation. Nothing could make this clearer than the attempt to formulate a land policy for the Central Lafayette experiment of the Puerto Rico Reconstruction Administration.² Here was an opportunity for land reformers to formulate a policy independently of the processes of politics, and the result was irreconcilable differences of opinion. Not only is there no consensus; none of the groups who agitate against the present land-tenure situation has any plan of alternative organization which could be practicably applied without the most catastrophic effects unless applied very gradually over a long period of time.

The alternative proposals for reform, as commonly heard, are basically three: One is the effective application of a new 500-acre law applied to corporations and private individuals alike, with or without the supplement of coöperative organization for purposes of owning proper equipment and controlling marketing. The second is the enforcement of the present law applicable to corporations only. This is the typical program of the larger independent growers and would not stand in the way of relatively large landed estates. It might be said to represent the aristocratic principle. The third is that embodied in the present plans for Lafayette, which represents a quasi-socialistic, quasi-coöperative scheme for profit-sharing among workers, with the ultimate objective of coöperative ownership of mills and land by the workers. Under this program, the present system of large landholdings attached to *centrales* and large-scale agriculture is retained,³ but the private individual ownership and profit making is eliminated. In connection with all these proposals, the increase of small farm or garden plots is commonly proposed.

Each of these programs represents a definite class interest; and it is easy to understand why no agreement is possible between them. If enforcement of the present 500-acre law should be effected against corporations and allied interests, the imme-

² For an account of the Lafayette project, see Chapter XVII.

³ In the Lafayette project each of the so-called "coöperatives" controls not to exceed 500 acres. This is, however, a mere gesture toward the 500-acre law. The principle of management is large-scale, under the supervision of a management "coöperative." In the present stage of development all the coöperatives are under the effective control of the Administrator of the PRRA.

diat consequence would be far-reaching economic disturbance, leading eventually to the consolidation of the second or aristocratic principle. If that were to be the outcome, nothing would have been accomplished toward securing for the worker larger fruits from his labor. The chief result would be the creation in Puerto Rico of *two* small, powerful, and opposed groups in the sugar industry, the mill owners and the large landowners. If a program oriented on labor coöperatives is followed, the prospect is for a far-reaching reconstruction of the economic and social structure of the Island inimical to the interests of both sugar companies and landed proprietors.

Ideal solutions are perhaps easy to conceive, but usually lie within the realm of fancy and not of practical discussions. Any proposals for rapid and radical change, we feel, are unrealistic, since a satisfactory substitute for the present situation, if any is possible, would have to be gradual and progressive and built on coöperative organization—for which a groundwork is now almost non-existent—to be effected in ways which do not undercut the present efficiency of agriculture. Consequently, it must involve a broader dissemination of agricultural knowledge, new forms of financing, and new organization of production and marketing. The process would necessarily be slow, and unsatisfactory to impatient reformers.

The exact character of the difficulties can be seen if one imagines a very modest start by requiring that control of present company-leased lands revert to their owners. Who will take over their management? Are there qualified persons who can farm them without loss of agricultural efficiency? These questions become more critical if one imagines a requirement that the companies progressively divest themselves of owned land; they would be magnified many-fold if the 500-acre law were effectively enforced. Who will buy the lands and manage them? Such questions are not presented as being unanswerable. But the unfortunate thing is that those in Puerto Rico most critical of the land tenure situation do not ask them, or at least do not keep them in the forefront of their attention.

It appears to us axiomatic that a mere negative policy of breaking up estates would be both futile and economically

damaging. A dependence upon individual, small-scale agriculture would set the Island backward. Any revision of the system which would avoid impoverishing the Island would have to be built upon a slowly developing alternative system, fostered by public agencies and financed with public money. It is a problem for Puerto Ricans whether it is desirable and possible to unite on such a policy, and within the realm of practicability to carry it through on a plane of efficient economic administration. To move hastily and without a well-thought-out program, well insulated against political manipulation, could only be calamitous.

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