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A NEW ESTIMATE OF THE NATIONAL INCOME AND PRODUCT OF CUBA IN 1953†

In the national accounts of most underdeveloped countries, agricultural production is one of the largest, often the largest, component of the national product, and food consumption is typically the largest single object of consumers' expenditure. But farm production, coming as it customarily does from a large number of small units, is not easy to measure; production of food-stuffs for home consumption is an extremely elusive magnitude to estimate. Far too often the production of food crops for domestic consumption is seriously underestimated in national accounts of such countries even when the production of crops for export may be known with some accuracy.

In this construction of Cuban national accounts an intensive effort was made to arrive at valid estimates of all farm output and of all consumer expenditures, with special emphasis on consumption of food. By utilizing a wide range of information, both quantitative and qualitative, we believe that we have achieved much closer approximations to these two major items in the accounts than were previously available. As a part of our estimation process we have also constructed a new food balance sheet for Cuba.

The study was undertaken in 1956-57 when results of the 1953 Cuban census of population had just become available. This census provided the necessary controls for a complete estimation, and its statistics on the labor force also made possible allocations and estimates that could not be made on the basis of previously existing data.

We believe that the venture was successful. The aggregate values obtained vary considerably from the standing official estimates, and they are based on much the most detailed study of Cuba's national income that has been made for any year, so far as we have been able to determine. We hope that these estimates can be used as a bench mark from which it will be possible to extrapolate magnitudes for other years with the help of the official estimates.

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FINDINGS OF THE STUDY

The per capita income of Cuba in 1953 was not less than \$430,¹ or about the same as that of Puerto Rico for the three years 1952-54 (3, p. 7). It was one-fourth that reported by the United States Department of Commerce for Hawaii (\$1,700) and the United States (\$1,870) for the same period.² A crude computation of retail price levels in 1953³ indicates that prices were 10 to 20 per cent higher in Puerto Rico than in Cuba, and 40 to 50 per cent higher in Hawaii. Real per capita income in Cuba, therefore, was higher than in Puerto Rico and about one-third that of Hawaii. It was of the same order of magnitude as the per capita incomes found for Italy and the Soviet Union by Gilbert and Kravis (2) and Bornstein (6). International comparisons of national income are of course subject to large unknown margins of error, but figures for Hawaii, Italy, and the Soviet Union suggest very roughly the place of Cuba. The year 1953 was one of depression in Cuba and income was at its lowest for the decade. It was about 25 per cent higher in the peak year 1957, just before Castro came into power. Although Cuba's potentials for development clearly have not been fully utilized, these comparisons show that it is a mistake to think of Cuba as a seriously underdeveloped country.

Our estimates of Cuban net domestic income are shown in Table 1. They are 25 to 35 per cent higher than the official estimates prepared by the Banco Nacional de Cuba (Table 2). The difference is mainly due to the incomplete coverage of the BNC estimates, which are prepared without the use of dependable *controlling totals* (7). The official figures rely on reports of production, social security data, taxes on income, sales, and property, and other direct estimates. These statistics are incomplete in their coverage, and they do not, therefore, provide adequate controlling totals. In our estimates we have depended mainly on labor force statistics compiled in the 1953 Census of Population (10) to make our coverage as complete as possible.

The deficiency of the official estimates is easily revealed by a comparison of incomes per family. A survey of budgets of 1,365 families throughout Cuba carried on by the BNC in the period March 1952 to February 1953 showed an average family income of \$2,280 (8). But the BNC's national income estimates would allow only \$1,500 for each of the 1,191,000 families reported by the 1953 census. Our income estimate would provide \$2,000 per family. The BNC estimate of income in the non-agricultural sector of the economy works out at \$1,100 for each of the 1,153,000 members of the non-agricultural labor force (including employers) reported in the 1953 census. A wage survey conducted by the Ministerio de Trabajo in *DATE*, however, reported average earnings of \$1,500 for wage and salary earners in manufacturing, mining, and public utilities, and \$1,400 for government employees, many of whom are on a half-time basis. Our estimate of annual average income for the non-agricultural labor force in 1953 is \$1,600.

The estimate of net national income by the Tribunal de Cuentas (9; 11) of \$1,675 millions, slightly below the BNC estimate, was also prepared without comparison with the labor force statistics of the census. The Tribunal relied almost exclusively on replies to questionnaires sent out to registered firms. The list of

¹ The peso was at par with the dollar.

² Data for Hawaii are from 4 and 5.

³ Based on retail prices given in 1, Table 23.

TABLE 1.—SUMMARY OF NATIONAL ACCOUNTS, CUBA, 1953*

Account	Million pesos	Per cent of total
Expenditure on Gross National Product		
Private consumption expenditure	2,263.8	79.8
Government consumption expenditure.....	299.5	10.5
Gross domestic investment	237.5	8.4
Net foreign investment	36.6	1.3
Gross national product at market prices....	2,837.4	100.0
Less indirect taxes and depreciation	-326.6	
Net domestic income at factor prices....	2,510.8	
Income by Industrial Origin		
Agriculture, forestry, fishing	533.4	22.7
Mining and quarrying	28.4	1.2
Manufacturing	517.0	22.0
Construction	81.2	3.5
Electricity, gas, water, sanitary services.....	32.2	1.4
Transportation, storage, communication	120.7	5.1
Wholesale and retail trade	347.9	14.8
Banking, insurance, real estate	56.9	2.4
Ownership of dwellings	102.1	4.3
Public administration and defense.....	140.1	6.0
Services, unspecified activities	389.4	16.6
Net domestic income at factor cost.....	2,349.3	100.0
Less net factor incomes paid abroad.....	-30.0	
Plus indirect taxes net of subsidies.....	223.2	
Plus depreciation	103.4	
Gross national product at market prices	2,645.9	

* Author's estimates.

registered firms, prepared originally for tax purposes, is of course inadequate as a controlling total; furthermore, in their replies to the questionnaire firms tended to underestimate earnings.

Our computation of net domestic income based on estimates of industrial production at factor cost is \$161.5 millions less than the comparable aggregate derived from estimates of expenditures. Since our estimates could undoubtedly be improved if we had access to certain sources of information available to statisticians in Cuba, we have made no attempt to reconcile the two totals. We believe that total income by industrial origins is significantly understated; property incomes, especially profit estimates, were taken from tables prepared by the Tribunal de Cuentas, and appear to be much too low. Better statistics of profits would probably show that our estimate based on expenditure is also on the low side.

OBJECTIVES AND PROCEDURES OF THE STUDY

Two primary objectives were sought in this study: to make good so far as possible obvious deficiencies in coverage of the official estimates prepared by a Banco Nacional staff operating with inadequate funds; and to estimate the

TABLE 2.—OFFICIAL ESTIMATES OF GROSS NATIONAL PRODUCT AND NATIONAL INCOME OF CUBA, 1953*

Account	Million pesos	Per cent of total
EXPENDITURE ON GROSS NATIONAL PRODUCT		
AT CURRENT MARKET PRICES		
Private consumption expenditure ^a	1,581	75
General government consumption expenditure.....	291	14
Gross domestic fixed capital formation	240	11
Increase in stocks	-49	-2
Export of goods and services	710	34
Less imports of goods and services	-642	-31
Expenditure on gross domestic product.....	2,131	101
Net factor income from abroad	-28	-1
Expenditure on gross national product.....	2,103	100
DISTRIBUTION OF THE NATIONAL INCOME		
AT CURRENT FACTOR COST		
Compensation of employees	1,177	67
Income from unincorporated enterprises.....	329	19
Income from property ^b	161	9
Gross corporate income and direct taxes on corporations	117	7
Net factor income from abroad	-28	-2
National income	1,756	100

* Source: United Nations, *Yearbook of National Accounts Statistics, 1959* (N.Y., 1960), p. 63.

^a Obtained as residual.

^b This item does not include dividends which are shown in gross corporate income.

components of private consumption expenditure by means of production data, which tend to be better than expenditure data in most countries with deficient statistical services. A by-product of this estimate of expenditures is a food balance sheet for Cuba: it is valuable in itself and also provides a check on the reasonableness of our estimates of expenditures on food, the largest single item of consumption expenditures.

In general, we started with estimates of total output of each commodity, adjusted for net trade and very rough estimates of waste and non-food use up to the retail level. Production statistics were believed to provide better coverage than wholesale or retail sales because of the large amount of foodstuffs that are consumed on the farm.⁴ Sales information was found to be satisfactory for the products of large-scale industries (e.g., electricity). Employment totals were the basis for estimating expenditures on services.

The numerous difficult problems encountered in using production data as the starting point in estimating consumption are discussed in detail in the appendix.⁵

⁴ The extensive use of statistics of output and employment in the computation of consumption is convenient and appropriate for the direct estimation of consumption over time at constant prices. Deflation of wholesale or retail sales by means of price indexes may not give valid notions of real income trends because of imperfections in the indexes—those few that extend over a number of years often apply to only one or two cities—and to imperfections in the local marketing system which result in excessive regional variation in prices.

⁵ Available on request from the Food Research Institute.

The United Nations' system of accounts was used extensively in defining and estimating each item. But no attempt was made to work out and present the accounts of households and private non-profit institutions, the domestic capital formation account, and the general government account. It was felt that the residual in the household account, personal saving, was not firm enough to warrant the presentation of this account. Similarly, some of the items in the domestic capital formation account were too shaky to justify its presentation. Since the details of the consolidated government accounts were not fully disclosed and since the extent of financial irregularities by the Batista government was not known, it was difficult to assess the adequacy of the residual in the government saving account. Whenever possible we have sought to supply estimates from other data sources, mainly as a check on ours. Such checks are especially useful for testing estimates that seem to be based on dubious data and methods. They add a little to the confidence with which the estimates may be used. And frequently they give some rough notion of the order of magnitude of error.

BASIC TABLES AND SUMMARY COMMENTS

Tables 3-7 show details of the summary estimates set forth in Table 1. Each table is accompanied by a brief description of the salient features of the procedures employed in constructing it and a general evaluation of the major sources used. Detailed notes describing each step in the estimation of every item in the table and the specific sources used have been mimeographed as "Appendix on Notes and Sources, National Income and Expenditures, Cuba 1953," and interested readers may write for copies to the Food Research Institute, Stanford University. The general evaluation of basic sources may be useful for statisticians in other Latin American countries who wish to orient data collection in the basic surveys and censuses to the needs of national income computation, since some of the limitations mentioned below may inhere in the basic data of other Latin American countries. One general limitation should be stressed. None of the basic data are published with sufficient details for national income work, although the necessary information is often collected in the schedules. The problem is mainly a matter of tabulation and presentation. Even mimeographed reproduction of the data, sufficient for the purposes envisaged here, too often is not undertaken. Emphasis is placed on the limitations of the sources of data mainly so that readers may be fully aware of the shortcomings of both the total and components of our estimate. Nevertheless, we believe that our estimates for Cuba are as good as can be found for any Latin American country except Puerto Rico, where United States statistical services apply.

AGRICULTURAL PRODUCTION AND FOOD CONSUMPTION

In Table 3 the quantity of food available for consumption is computed from farm output less net exports and rough allowances for seed, feed, industrial use, waste, and changes in inventories. The physical quantities obtained are then multiplied by farm prices to obtain total farm value of goods moving into consumption. Farm value so derived forms the basis for estimating consumer expenditures on food, a major component of private consumption expenditures, and for computing income originating in agriculture, a component of national income. Conversion of the physical quantities into food calories also provides a summary food balance sheet.

TABLE 3.—AGRICULTURAL PRODUCTION AND FOOD CONSUMPTION, CUBA, 1953*

Commodity	Unit	Supply and utilization (thousand units)				Farm price (\$ per unit)	Farm value (million \$)		Food use		
		Pro-duction	Net exports	Non-food use ^a	Consump-tion ^b		Pro-duction	Con-sumption	Total (thousand metric tons)	Per capita Kg per year	Calories per day
Maize	Sp. quintals	6,500	79	1,755	4,666	3.54	23.0	16.5	215	36.8	359
Rice, rough	Sp. quintals	2,800	(8,284) ^c	— ^d	11,084	10.00	28.0	110.8	340 ^e	58.3 ^e	575
Wheat flour	Metric tons	—	(89) ^c	—	89	110.00	—	9.3	89	15.2	139
Total cereals .....		...	...	...	...	...	51.0	136.6	644	110.3	1,073
Sugar cane	Sp. long tons	39,566	42,297	(5,040) ^f	2,299	5.35	211.9	12.3	300 ^g	51.4	494
Bananas, cooking	Sp. quintals	1,359	9	136	1,214	9.20	12.5	11.2	56	9.6	20
Malanga (Yautia)	Sp. quintals	6,770	—	1,000	5,770	3.22	21.8	18.6	265	45.5	136
Potatoes	Sp. quintals	2,935	(550) ^c	554	2,931	3.04	8.9	8.9	135	23.1	44
Sweet potatoes	Sp. quintals	6,000	—	900	5,100	1.84	11.0	9.4	235	40.2	107
Yams	Sp. quintals	480	—	70	410	2.90	1.4	1.2	19	3.2	8
Yuca (manioc)	Sp. quintals	7,608	10	1,522	6,076	1.38	10.5	8.4	279	48.0	143
Total starches .....		...	...	...	...	...	66.1	57.7	989	169.6	458
Beans	Sp. quintals	1,250	(1,229) ^c	188	2,291	10.21	12.8	23.4	105	18.1	166
Peanuts	Sp. quintals	196	—	—	196	6.90	1.4	1.4	9	1.5	16
Ajies (chillies)	Sp. quintals	55	—	—	55	6.00	.3	.3	3	.4	—
Cucumbers	Sp. quintals	87	21	5	61	13.79	1.2	.8	3	.5	—
Garlic	Sp. quintals	14	(140) ^c	—	154	13.03	0.2	2.0	7	1.2	3
Green pepper	Sp. quintals	175	—	—	175	6.90	1.2	1.2	8	1.4	1
Onions	Sp. quintals	113	(460) ^c	—	573	4.18	0.6	2.4	26	4.5	5
Pumpkin	Sp. quintals	202	—	—	202	23.00	4.4	4.4	9	1.6	1
Tomatoes	Sp. quintals	576	(229) ^c	29	776	7.36	4.2	5.7	36	6.1	3
Other vegetables	Sp. quintals	126	(1,335) ^c	—	1,461	3.22	0.4	4.7	67	11.5 ^h	18 ^h
Total vegetables .....		...	...	...	...	...	12.5	21.5	159	27.2	31
Avocado	Thousand fruits	145	19	8	118	6.90	1.0	0.8	24	4.0	12
Banana	Sp. quintals	400	7	40	353	6.44	2.6	2.3	16	2.8	5
Breadfruit	Sp. quintals	272	—	14	258	3.68	1.0	0.9	12	2.0	4
Citrus fruit	Thousand fruits	610	25	30	555	3.68	2.0	2.0	11	1.9	2
Guava	Sp. quintals	565	—	—	565	1.38	0.8	0.8	26	4.5	7
Pineapple	Sp. quintals	1,848	1,000	92	756	3.22	6.0	2.4	35	6.0	5
Other fruits	Sp. quintals	1,108	(2,500) ^c	—	1,608	1.23	1.5	6.4	312	5.2	17

TABLE 3.—AGRICULTURAL PRODUCTION AND FOOD CONSUMPTION, CUBA, 1955—Continued

Commodity	Unit	Supply and utilization (thousand units)				Farm price (\$ per unit)	Farm value (million \$)		Food use		
		Pro-duction	Net exports	Non-food use ^a	Consump-tion ^b		Pro-duction	Con-sumption	Total (thousand metric tons)	Per capita	
										Kg per year	Calories per day
Cocoa	Sp. quintals	54	—	—	54	20.00	1.1	1.1	2	.4	5
Coffee	Sp. quintals	741	—	—	741	40.47	30.0	30.0	34	5.8	—
Beef	Metric tons	168	(3) ^c	—	178	540.00	90.7	92.2	178	30.5	188
Chickens	Thousand libras	27	—	—	27	400.00	10.8	10.8	12	2.1	7
Mutton and lamb	Metric tons	1	—	—	1	540.00	0.5	0.5	1	.2	1
Offals	Metric tons	12	—	—	12	100.00	0.1	0.1	12	2.1	8
Total meat .....		...	...	...	...	...	102.1	103.6	203	34.9	204
Fish	Thousand libras	77	(55) ^c	—	132	110.00	8.5	14.5	61	10.4	18
Lard	Metric tons	42	(14) ^c	—	56	620.00	26.0	34.7	56	9.6	223
Milk	Thousand liters	605	(61) ^c	—	666	120.00	72.9	79.9	686	117.8	210
Eggs	Dozen	7,500	(4,900) ^c	—	12,400	.48	3.6	6.0	8	1.5	6
Total food .....		...	...	...	...	...	615.1	538.3	3,592	616.1	2,980
Salt	Thousand libras	112	(20) ^c	—	133	13.00	1.5	1.7	...	...	...
Beverages	Dollars	128,200	(6,500) ^c	—	134,700	...	128.2	134.7	...	...	...
Miscellaneous	Dollars	1,000	(17,100) ^c	—	16,100	...	1.0	16.1	...	...	...
Hennequin	Metric quintals	116	—	—	...	13.20	1.5	...	...	...	...
Tobacco	Sp. quintals	761	—	—	...	52.16	39.7	...	...	...	...
Forestry	Thousand board feet	225	—	—	...	...	16.2	...	...	...	...
Hunting .....		...	...	...	...	...	1.0	1.0	...	...	...
Grand total .....		...	...	...	...	...	804.2	691.8	...	...	...

* A mimeographed supplement giving sources and details of computation is available on request. The Spanish weights used are based on the libra of .46009 kg; 1 Spanish quintal equals 100 libras, and 1 Spanish long ton equals 2,240 libras, or 1.034 metric tons. Since the Cuban peso was at par with the U.S. dollar, the \$ sign stands for both pesos and dollars. Prices are import, rather than farm prices for some commodities.

^a Seed, feed, and waste; for rice and sugar also includes change in stocks.

^b For food items, consumed as food only.

^c Net imports.

^d Non-food use offset by draft on stocks.

^e As milled rice at 66⅔ per cent of rough.

^f Decline in stocks.

^g In raw sugar equivalent.

^h Imports include olive oil, which represents approximately .5 kg per capita and 11 calories per day.

The main sources of the production data in Table 3 are estimates of the Cuban Ministerio de Agricultura reported in *Estimados de la Producción Agrícola Nacional y Relación de Sus Valores con la Mano de Obra, 1953-1955* (mimeographed), and that of the Agricultural Attaché, United States Embassy, as reported in various unpublished and published sources. For most products, the estimates of the two are fairly close. For the highly commercialized crops, both sources depend largely on the compilation of data by specialized institutes, such as the Instituto Cubano de Estabilización del Azúcar, which obtain their data as a by-product of administrative controls or surveys, or from marketing specialists or trade sources, which employ various devices and techniques—production of potatoes, for example, is estimated from reported imports of seed potatoes. For some crops, reports of inspectors stationed in each district are the basis of the estimate. Although estimates of commercial crop production are tolerably adequate, estimates by both the Ministerio de Agricultura and the United States Embassy of production of subsistence crops such as malanga, maize, yuca, and certain fruits and livestock products are weak. These estimates seem to depend heavily on the 1946 Census of Agriculture.

Besides being out of date, the 1946 Census of Agriculture presented many problems in the computation. The data on subsistence crops do not appear to have been collected with sufficient care, and the definitions and concepts used were not adequately described.⁶ Data on livestock products were not collected in the 1952 Livestock Census. Annual reports from slaughterhouses, large dairies, etc., on livestock products were not representative of the rates of yield obtained in the average farm households in Cuba, most of which kept livestock and poultry for work animals and home consumption.

Data on farm prices are largely from the Ministerio de Agricultura. These appear to be taken from their retail price survey adjusted for the difference between retail and farm prices on the basis of farm price data in the 1946 Census of Agriculture.

Data for seed, feed, and waste are taken from the report of the United States Agricultural Attaché; they are based on the advice of agronomists and specialists in the Ministerio de Agricultura, who in turn base their views on experience and surveys.

In using the results of this table, other limitations than the roughness of the basic data should be kept in mind. The units measured for each crop are not standardized, except for a few items like sugar and salt. They vary as to size, grade, varieties, degree of processing, etc. Average prices are only approximations since the physical units to which they refer are extremely heterogeneous. Despite every attempt to define the dimensions of the units, it is in the nature of agricultural crops that these dimensions are valid only to a limited degree.

This table is also a food balance sheet, showing total consumption at the retail level of 2,980 calories per person per day, or of the same order as in the

⁶ Thus, the unit of physical measurement (e.g., husked corn or corn on the cob), the price unit (e.g., farm or wholesale prices), the duration of the crop year, etc., are not adequately described. Since crop years overlap both fiscal and calendar years, an adequate description of each crop's year for each region is necessary for national income work. A somewhat different problem relates to livestock, trees, and orchards with gestation periods of more than one year. Perhaps the years before maturity should be treated as works in progress.

United States. A noteworthy feature of the Cuban dietary is the high consumption of sugar, in most countries an indication of a wealthy population, but here simply a reflection of large domestic production throughout the island. The starchy staple ratio⁷ (excluding sugar) stands at 50 per cent, but when sugar is included it rises to 67 per cent, or about the same as in all Italy, although total calories are higher than in Italy by about the amount of the difference in sugar consumption (12). An extremely crude calculation of food consumption in the USSR in 1953 suggests that the starchy staple ratio there was of about the same magnitude.⁸

The consumption figures are not inconsistent with those obtained by the FAO for 1948/49 and by the United States Department of Agriculture for 1959 (13, p. 206a; 14, p. 9). Some significant values from the three estimates are shown below (in calories per person per day):

Foodstuff	1948/49 (FAO)	1953 (Our estimate)	1958 (USDA)
Grains	1,047	1,073	1,065
Roots and tubers	251	438	355
Sugar	428	494	425
Meat	143	204	275
Milk and products	185	210	185
Total from specified foodstuffs.....	2,054	2,419	2,305
Total from all foodstuffs.....	2,730	2,980	2,870
Starchy-staple ratio (ex-sugar)	48%	51%	49%
Starchy-staple ratio plus sugar	63%	67%	64%

The most noteworthy difference in the three estimates is the high value we found for roots and tubers, presumably resulting from more complete coverage of production for home consumption;⁹ our high value for sugar, which may result from better coverage but may also result from underestimate of waste; and the low value we found for meat compared with the 1958 estimate. In view of the many uncertainties involved and the different individual years represented, the differences among the three total calorie estimates cannot be considered significant. The important feature for judging the national income estimate here presented is that the differences are no greater even with respect to suggested dietary composition; figures here used mean only a very small addition to the national income estimate.

PRIVATE CONSUMPTION EXPENDITURES

A variety of methods was used in the computation of Table 4. Food expenditures are based on the total value of food at producers' prices from Table 3, to which are added margins for manufacturing and wholesale and retail trade. For a large number of manufactured items, the commodity flow method was used, whereby sales at factory are allocated between consumers and business on the basis of the 1953 Census of Population, and other data and margins are added. For another group of items, final expenditure data or retail sales data

⁷ Per cent of all calories derived from cereals and starchy roots and fruit.

⁸ Computed by applying ratio given in 15 to calorie values in 16.

⁹ The U.S. Dept. Agric. estimate includes only potatoes, sweet potatoes, and manioc.

TABLE 4.—PRIVATE CONSUMPTION EXPENDITURES

Expenditure	Million pesos	Per cent of total
1. Food		
a) Value of food consumed at producer prices....	\$529.5	
b) "Gross value added" by manufacturing.....	159.4	
c) "Gross value added" by wholesale trade.....	50.0	
d) "Gross value added" by retail trade.....	<u>101.0</u>	
	839.9	37.1
2. Beverages	134.0	5.9
3. Tobacco	102.4	4.5
4. Clothing and other personal effects		
a) Footwear	41.2	
b) Clothing	114.0	
c) Other personal effects	<u>5.0</u>	
	160.2	7.1
5. Rent and water charges		
a) Imputed	58.2	
b) Cash	<u>123.6</u>	
	181.8	8.0
6. Fuel and light	37.1	6.1
7. Furniture, furnishings, and household equipment		
a) Furniture and furnishings	31.5	
b) Household equipment	<u>78.3</u>	
	109.8	4.9
8. Household operation		
a) Domestic servants	56.4	
b) Other	<u>50.0</u>	
	106.4	4.7
9. Personal care and health expenses		
a) Personal care	55.4	
b) Health expenses	<u>200.0</u>	
	255.4	11.3
10. Transportation and communications		
a) Personal transportation	19.2	
b) Operation of transportation equipment.....	13.0	
c) Purchased transportation	55.1	
d) Communication	<u>9.4</u>	
	96.7	4.3
11. Recreation and entertainment		
a) Entertainment	47.0	
b) Hotels, restaurants, cafes	47.4	
c) Books, magazines, newspapers	43.0	
d) Other recreation	<u>10.0</u>	
	147.4	6.3
12. Miscellaneous services		
a) Financial services	14.3	
b) Education (private)	32.8	
c) All other	<u>34.4</u>	
	81.5	3.6
13. Expenditure of residents abroad	30.8	1.4
14. Less expenditure of non-residents in the country...	-19.6	- .9
15. Less value of gifts sent abroad .....	...
Total consumption expenditures	<u>2,263.8</u>	<u>100.0</u>

were available from tax sources, trade associations reports, import statistics, family budget surveys, etc. For a few commodities, total quantities sold at retail were obtained from trade association sources and multiplied by the retail price. Finally, most service expenditures were built up from labor force data on occupations plus average wages and margins. This method was used also for sales by small production units for which no other data were available.

The 1953 Census of Population was the source for occupational and industrial affiliation data of the labor force. The industrial classification was needed mainly for allocation of purchases between consumers and business purchase and for margin estimates. The main difficulty was the lack of sufficiently detailed tables of industrial and occupational classification. (These tables would be more useful if they were as detailed as the three-digit classification of the U.N. *International Standard Industrial Classification of All Economic Activities*, and in industries where establishments with mixed businesses predominate, a mixed category should be added.¹⁰ A further difficulty was the lack of information on secondary and subsidiary occupations and industrial attachments. For example, the 1953 Census reported 5,814 fishermen, the survey of the Bank of Agricultural and Industrial Development counted 12,930; this suggests that many were fishermen only part of the year.

Some information about income originating in each industry was compiled for the Tribunal de Cuentas by CP. Rodolfo Villegas (11) on the basis of replies to questionnaires sent to a large number of firms in Cuba requesting data on sales, materials purchased, incomes paid out, taxes, other expenses, profits, depreciation, and inventories. They are known to be substantially understated, especially the data on profits, and though some attempt was made to correct for this, the lack of data on the number of employees and establishments in each industry made it difficult to check the completeness of coverage and the degree of understatement of the part covered.¹¹ In the various checks employed in preparing Table 7 below, the Tribunal data were found to be deficient in their coverage of small firms.

Cuban family budget studies which might be of great value as checks to estimates of major expenditure categories or as sources of information on a host of minor items such as fees to labor unions, fees to lawyers, expenditures on telephones, postage, etc., fail to give necessary detail.

Import statistics are generally adequate for our purpose. On such items as automobiles and other durables some understatement is to be expected because of attempts at evasion of import duties. Trade association data are tolerably

¹⁰ Even better than I.S.I.C. tables for national income purposes would be a cross-classification of industrial, occupational, and status classification. Such a table (found in the excellent 1930 Japanese census) may comprise an entire volume; it is virtually an inventory of labor-power resources, so necessary in the planning of development. A table of this sort makes possible more precise computation of wages and entrepreneurial incomes, allocation, mark-ups and margins, separation of private and public sectors, etc.

¹¹ Payroll data from Cuba's very extensive social security system were virtually worthless for our purpose since they were reported with hardly any details. Each month a payroll aggregate for the economy as a whole was reported by the Junta Central de Salud y Maternidad. Although the social security law was purported to cover nearly all firms, there was extensive evasion by small firms which did not bother to report to the Government. In 1953, the per capita wage computed from social security data was \$675, using the non-agricultural labor force data of the 1953 Census. This figure is only one-half of the average reported in the Labor Ministry's wage survey or the Agricultural Ministry's *Industrial Statistics Survey*.

adequate for industries where small units of production do not predominate. Sales data from sales tax and other tax administration, however, grossly understate the universe, and various adjustments are required.

GROSS INVESTMENT

Two methods were used in arriving at each component in Table 5. One method was to take the information from the purchasers of investment goods. The other was to start with data from producers of investment goods and to add margins based on reports of various intermediaries through which goods pass—from their origin to their ultimate destination.

TABLE 5.—GROSS INVESTMENT

Account	Million pesos	Per cent
Private		
1. Dwellings	46.0	26.9
2. Other construction	30.5	17.9
3. Equipment	126.1	73.9
Imported	90.8	
Domestically made	35.3	
4. Inventory increase	-24.2	-14.1
Total	178.4	104.5
Public		
5. Construction	54.1	31.7
6. Equipment	5.0	2.9
Total	59.1	34.6
Private and public total	237.5	139.1
7. Net foreign investment	36.6	21.4
Total private, public, and foreign investment	274.1	160.6
8. Less depreciation	-103.4	-60.6
Net investment	170.7	100.0

The total of gross domestic investment, \$237 million, is considerably larger than the \$191 million reported by the Banco Nacional or the \$195 million reported by the Tribunal de Cuentas. The Banco estimates are restrictive in coverage, while the Tribunal estimates are understated, especially for small units. On the whole, our estimates are also on the low side, especially with respect to capital formation by the smaller units of production. We have confined our adjustments for non-coverage and understatement to very conservative magnitudes, being reluctant to make large adjustments in the absence of adequate information.

The estimate of dwelling construction by the Tribunal is limited to Havana Province, which contains only one-fourth of the population of Cuba and one-third of the total number of dwellings. In our estimate, the Tribunal total was raised 10 per cent to take account of dwelling construction outside of Havana Province.¹² The BNC estimates of equipment are derived from import data

¹² In most countries building-permit data cover only a limited segment of the country, mainly big cities; there is a need for population censuses to include a question as to whether the house occupied was constructed in the last twelve months or not. This information can provide for adjusting building-permit data.

plus domestically produced equipment. They appear to be too low when compared with sales of manufacturing firms in basic metallurgy, metal products, machinery production, and transport equipment, as reported by the Tribunal.

The inventory figure in this table is extremely dubious; it is taken from the Tribunal tables, which probably miss a large segment of small firms, especially in trade. It is not clear how much *physical* change is measured. The public investment data are from budget statistics and are probably adequate.

THE CONSOLIDATED GENERAL GOVERNMENT ACCOUNT

No attempt was made to construct an independent consolidation of the government account in Table 6 since details of the settled accounts of local governments were not available. We have taken, as the best available, the consolidated account published by the Tribunal, which is the accounting office of the government. In view of the disclosures of widespread graft and irregularities in the Batista regime, it would have been pointless to attempt detailed and precise work on the consolidated government budget. The Tribunal consolidation is an elaborate effort to include not only the local governments but also the numerous special accounts which were a special characteristic of Cuban budgetary structure. It follows the recommendations of the United Nations.

TABLE 6.—CONSOLIDATED GENERAL GOVERNMENT (CURRENT) ACCOUNT

Account	Million pesos	Per cent
Current Revenue		
Income from property and entrepreneurship.....	8.6	2.0
Less interest on the public debt	-10.5	-2.5
Indirect taxes	283.9	66.7
Direct taxes on corporations	28.2	6.6
Direct taxes on households	86.6	20.3
Social security contributions	59.5	
Other direct taxes	27.1	
Other current transfer from households.....	29.0	6.8
Total current revenue	425.7	100.0
Disposition of Current Revenue		
Consumption expenditures	299.5	70.4
Employee compensation	246.4	
Purchases from enterprises, abroad.....	53.2	
Subsidies	15.6	3.7
Current transfers to households	77.2	18.1
Savings	33.4	7.8
Total current disposition	425.7	100.0

INCOME BY INDUSTRIAL ORIGIN

The method of estimation is either to take gross value of production and deduct inputs, as in agriculture, or to take total employees and work out their compensation adding other factor costs, as in most non-agricultural industries. In estimating non-agricultural incomes, labor force data from the census, wage surveys by the Labor Ministry, and incomes reported by the Tribunal were used in Table 7.

TABLE 7.—INCOME BY INDUSTRIAL ORIGIN
(Millions of pesos)

Industry	Gross value	Ex-penses	Depre-ciation	Net value	Employee compensation	Rent, interest	Net profits	Indirect taxes
1. Agriculture	652.3	99.2	13.0	540.1	238.8	30.2	264.4	6.7
2. Mining	46.5	12.3	4.7	29.5	12.3	0.1	16.0	1.1
3. Manufacturing	769.8	122.7	25.5	621.6	358.8	35.5	122.7	104.6
4. Construction	147.3	60.7	3.2	83.4	75.4	3.5	2.3	2.2
5. Utilities	59.1	19.9	2.8	36.4	20.6	3.8	7.8	4.2
6. Transportation	221.2	81.6	10.6	129.0	88.9	3.7	28.1	8.3
7. Trade	2,467.6	2,005.2	14.0	448.4	224.3	31.9	91.7	100.5
8. Finance	141.9	77.3	2.8	61.8	38.7	—	18.2	4.9
9. Ownership of dwellings.....	181.8	30.9	21.8	129.1	—	129.1	—	—
10. Public administration	—	—	—	140.1	140.1	—	—	—
11. Services	—	—	3.1	376.0	340.0	27.0	5.3	3.7
12. Activities not specified.....	149.5	127.9	1.9	19.7	14.0	0.2	2.9	2.6
13. Less duplications for imputed net rent in 9.....				—27.0		—27.0		
14. Less net factor incomes paid abroad				—30.0			—30.0	
Total			103.4	2,558.1	1,551.9	238.0	529.4	238.8

The Tribunal coverage of small firms was seriously deficient, and substantial adjustments were necessary for industries where small units prevailed. Generally, the adjustments were made by comparing our estimated total payroll (as obtained by using Census labor force figures and Labor Ministry monthly wage data) and Tribunal payroll. The proportion of the former to the latter was used to correct Tribunal estimates of property incomes. Where Census details on industrial labor force were lacking, trade association estimates were used. They are said to be special tabulations of original census schedules. Since small units of production are of major significance in Cuba, adjustments to the Tribunal figures were considerable.

CITATIONS

- 1 International Labour Office, *Yearbook of Labour Statistics*, 1955 (Geneva, 1955).
- 2 Milton Gilbert and Irving Kravis, *International Comparison of National Products and the Purchasing Power of Currencies* (Organization for European Economic Cooperation, Paris, 1954).
- 3 United Nations, *Per Capita National Product of Fifty-five Countries: 1952-54* (U.N. Stat. Papers, Series E, No. 4, New York, 1957).
- 4 U.S. Dept. Comm., *Income of Hawaii* (Supplement to the *Survey of Current Business*, 1953).
- 5 U.S. Dept. of Comm., *Survey of Current Business*, various issues.
- 6 U.S. 86th Cong., *Comparison of the United States and Soviet Economies*, Hearings before the Joint Economic Committee, First Session, 1960.
- 7 Simon Kuznets, *National Income and its Composition, 1919-1938*, I (Nat'l. Bur. Econ. Res., New York, 1941).
- 8 Banco Nacional de Cuba, mimeographed tables from Family Budget Survey, March 1952-February 1953.
- 9 Tribunal de Cuentas, National Income Estimate, mimeographed tables.
- 10 Cuba, Tribunal Superior Electoral, Oficina Nacional de los Censos Demografica y Electoral, *Censos de Población, Viviendas y Electoral. Informe General, Enero 28 de 1953* (Havana, 1953).
- 11 CP. Rodolfo Villegas, *Análisis de los Sectores Económicos en Cuba y su Tributación* (Cuba, Dirección de Fiscalización Preventiva y Control de Presupuestos del Estado).
- 12 Food and Agriculture Organization of the United Nations (FAO), *Food Balance Sheets* (Rome), March 1961.
- 13 FAO, *Food Balance Sheets* (Washington), April 1949.
- 14 U.S. Dept. Agr., For. Agr. Serv., *Food Balances in Foreign Countries: Pt. III: Estimates for 20 Republics of Latin America*, November 1960.
- 15 USSR, Central Statistical Office, *National Economy of the USSR in 1959* [in Russian] (Moscow, 1960).
- 16 M. K. Bennett, *The World's Food* (New York, 1954).

