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PHILIPPINE DEATH RATE
COMPUTED FROM CENSUS DATA **

By Dr. Enrique T. Virata *

INTRODUCTION

The study of the population growth of the countries of Asia and South East Asia is receiving considerable attention. The reasons for this are not difficult to find if we keep in mind the fact that these portions of the world contain the greater part of the total world population as well as the fact that in the various economic development programs envisioned for the countries in the region population growth is a fundamental factor. Since the Philippines is one of the countries in the region, it is receiving its share of this unusual attention to the growth of its population. The United Nations had already sent to Manila several demographers for this study, using the data gathered in the various censuses and the surveys made by the Philippine Statistical Survey of Households. These demographers had reached the conclusion that the annual rate of increase of population in the Philippines for 1959 is 29 per thousand with a birth rate of 49 and death rate of 20 per thousand. The forecast for the next decade and a half is a continuous rise in the rate of growth of the population. The purpose of this study is to test the validity of these results. The Philippine Census for 1903, 1918, 1939 and 1948 were used as bases.

PROCEDURE

1. The population count for each of the censuses was adjusted to what it should be on December 31 of the same year or the year previous.

2. The population for 1918, 1938 and 1948 were divided into two parts each. The first part consists of the persons who were born during the intervening years between two censuses and had survived in the following census year. The second part consists of the persons in the previous census who had survived in the following census.

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* Executive Vice-President, University of the Philippines
** Paper presented during the seventh annual conference of the Philippine Statistical Association held on July 11, 1959.

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3. The rate of decrease of each of the two parts of the census population was computed.

4. The rate of decrease of the persons born during the intercensal years was computed by the use of the mortality table of the Bureau of the Census and Statistics for the year 1939 and 1948.

5. The annual rate of decrease of the total population during the period between two censuses was computed, using the results obtained in steps 3 and 4.

6. The effects of emigration and immigration on the rates of decrease and increase were considered.

7. The rate of increase was obtained by adding the rate of decrease of the total population and the rate of increase of the population obtained from the census counts.

PHILIPPINE CENSUS DATA

During the last 60 years, the Philippines has taken four censuses and the following results were obtained:

Average Annual Rate of Population Growth
of the Philippines: 1903-1948

		Population in thousands	Intercensal average annual rate of growth
March	1, 1903	7,635	
December 31, 1918		10,314	19 per thousand
January	1, 1939	16,000	22 per thousand
October	1, 1948	19,234	19 per thousand

It will be noticed that the growth of Philippine population up to 1949 had been well below 29 per thousand.

Adjustment of Census Figures

For convenience in the computation of rates, the census data cited above were adjusted so that instead of taking the actual census figures, we estimated the population as of December 31 of the years 1903, 1938 and 1948. The results are as follows:

December 31, 1903	6,953,561*
December 31, 1918	10,314,310
December 31, 1938	15,998,355
December 31, 1948	19,372,418

* In 1903 the death rate was higher than the birth rate because of the cholera epidemic during that year.

Taking into consideration the breakdown of the population by age groups, the progressive decrease of population for each census year is as follows:

	1903	1918	1938	1948
1903	6,953,561			
1918	5,343,058	10,314,310		
1938		7,460,201	15,998,355	
1948			13,392,634	19,372,418

Annual Rate of Decrease

The above figures show that during the period 1903 to 1918, the 1903 population of 6,953,561 had decreased to 5,343,058 in 1918. This means that on the basis of a uniform decrease the rate of decrease is 18 per thousand. The same figures also indicate that for the period 1918 to 1938 the rate of decrease of the 1918 population is 12 per thousand and for the period 1938 to 1948, the rate of decrease of the 1938 population is 18 per thousand.

These rates of decrease computed for the periods 1903 to 1918, 1918 to 1939 and 1939 to 1948 do not represent annual decrease for the total population because they do not include the rates of decrease of that portion of the population that were added to the census population during the intervening years. As an example, let us take the case of the 1903 population. The 1903 population had decreased from 6,953,561 in 1903 to 5,343,058 in 1918, resulting in a uniform decrease of 18 per thousand per year during the period. The annual decrease of that portion of the total population which was added to the census population in 1903 on account of subsequent birth and immigration in the years following 1903 up to 1918 was not included in the computation. To obtain the annual decrease for the entire population from 1903 to 1918, the annual decrease of the population added during all the years in between has to be computed. This was obtained by the use of two mortality tables of the Philippine population—one in 1939 and another in 1948.

The mortality table for 1939 gives an average death rate of 44 per thousand for persons from age 0 to age 14 while the 1948 mortality table gives an average of 41 per thousand for the same group.

PHILIPPINE DEATH RATE FROM CENSUS DATA

The portions of these mortality tables pertinent to our study are the following:

Rates of Mortality by Single Years of Age
(per thousand)

A g e	Both sexes	
	1939	1948
Under 1 year	121.5520	116.260
1 year	49.8624	45.501
2 years	33.7367	33.560
3 years	22.1892	21.550
4 years	13.6700	8.150
5 years	10.2336	4.111
6 years	7.52291	3.793
7 years	5.46826	3.142
8 years	3.99821	2.112
9 years	3.03970	2.502
10 years	2.51853	2.226
11 years	2.35968	2.003
12 years	2.48764	1.850
13 years	2.82663	1.871
14 years	3.30082	1.997
15 years	3.83442	2.201
16 years	4.35179	2.457
17 years	4.85446	2.740
18 years	5.29412	3.072
19 years	5.69570	3.472
20 years	6.15926	3.903
21 years	6.66663	4.331
22 years	7.11212	4.720
23 years	7.43952	5.073
24 years	6.7834	5.413
25 years	7.92706	5.737

Actual Death Rate for the Entire Population
from 1903 to 1918

By projecting these values backward to 1911, the middle year of the period 1903 to 1918, I get the figure 54 as the annual rate of decrease per thousand for the period 1903 to 1918 for the age group 0 to 14.

The census population for 1918 shows that there were 5,343,058 persons of the 1903 population who had survived up to 1918. This means that in the 1918 population there were 4,971,252 persons who remained alive in 1918 out of all those that were born or had immigrated into the Philippines from 1903 to 1918. Using these figures, 4,971,252 and 5,343,058 as weights to get the average of 18 and 54, we get 34 per thousand as the annual rate of decrease of the total population.

The same procedure was applied to the periods 1918 to 1938 and 1938 to 1948 and the following results were obtained:

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1903 to 1918 — 34 per thousand

1918 to 1938 — 27 per thousand

1938 to 1948 — 29 per thousand

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Combining these results with those of the rate of growth of the population for the corresponding period, we get the following:

	1903 to 1918	1918 to 1938	1938 to 1948
Rate of decrease	34	27	29
Rate of growth	19	22	19
Rate of increase	53	49	48

Limits of Errors to the Rate of Decrease

For the purpose of this discussion, I take as example the case of the rate of decrease of 29 per thousand for the period 1938 to 1948. This rate is the weighted average of two components:

1. Decrease of census population of 1938... 18 per thousand. With a weight of 13,392,634 or 134 for short.

2. Decrease of population added to the census population from 1938 to 1948. . . 53 per thousand. With a weight of 5,979,784 or 598 for short.

Census figures are subject to these sources of errors: under-enumeration, over-enumeration and errors arising from classification of people according to their ages. In this particular case, since the period is ten years, the classification error will arise if persons below ten years are classified as above ten years and those who are ten years or over are classified as below ten years. On the assumption that the maximum error from each of these sources is 5%, the contribution of each of these factors to the magnitude of deviations from 29 were computed for these different sources of error.

a. **Classification Error**

By the 1948 census, there were approximately 2,941,000 persons in the age group 5 to 9 and approximately 2,560,000 in the age group 10 to 14. Assuming that classification errors would involve the persons having the ages 7, 8, 9, 10, 11, and 12, about 60% of each group would be involved. Assuming further that 5% of the group were not correctly classified, we get about 90,000 from the age group 5 to 9, and about 80,000 from the age group 10 to 14 who were improperly classified. The combined total is 170,000 and would represent about 10% from each group instead of 5%. I took the sum rather than the difference although erors are compensating if they should occur simultaneously.

The 170,000 figure used did not produce any significant deviation from the rate of decrease of 18 per thousand of the 1938 population.

b. **Over-enumeration and Under-enumeration**

Over-enumeration and under-enumeration have significant effects on the rate of decrease. The computation made disclosed that for every 1% allowed for this kind of error, the change in 18 is one unit either upward or downward. So that an under-enumeration of 5% in 1938 and an over-enume-

ration of 5% in 1948 will increase the rate of decrease by 10 units. Hence it will be about 28. On the other hand, an over-enumeration of 5% in 1938 and an under-enumeration of 5% in 1948 will reduce it only to about 8. The final effect on the death rate which is 29 is about 3 points for every 5 points of change in 18, which represents the rate of decrease of the census population.

DISCUSSION OF THE RESULTS

There are two factors that cause the decrease of a population. They are death and emigration. There are likewise two factors that contribute to the increase of a population—birth and immigration. The difference between the two represents the growth of the population. In the case of our population, since rate of increase is greater than the rate of decrease, we have an increasing population.

The total number of aliens in the Philippines during the census years are as follows:

1903 — 56,148
1918 — 64,037
1939 — 166,654
1948 — 133,562

It seems evident that immigration does not have a significant effect on the increase or population even if there is an apparent under-enumeration of these foreign population in our censuses.

During the period 1903 to 1948 a big number of Filipinos had emigrated to Hawaii, Continental United States, especially California, Guam and Okinawa, but my impression is that their number is not significant compared to the number we have used in obtaining the rate of decrease although no accurate figure on these Filipino emigrants are available.

In view of these considerations, it seems that the birth rates in the Philippines from 1903 to 1949 would be identical with the rate of increase in the population and the death rates the same as the rate of decrease. Consequently, the Philippine birth rates and the death rates are the following:

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PHILIPPINE DEATH RATE FROM CENSUS DATA

	1903 to 1918	1918 to 1938	1938 to 1948
Birth rate	53	49	˒48
Death rate	32	27	29

CONCLUSION

The birth rate has steadily decreased and unless the trend had been reversed recently it could not be as high as 49 per thousand in 1959 unless we allow for a total of about 3% over-enumeration and /or under-enumeration in 1938 and 1948. It may even be lower than 47.

The death rate is decreasing and although it is higher in 1948 than in 1938 the increase was perhaps due to the effects of the war. If the decrease in the death rate should follow a straight line trend, it should be about 22 per thousand in 1958.

The results of this study seem to show that the increase of our population should not be higher than 25 per thousand per year.

Actual numbers alone mean little; the rate of population growth must also be considered, for trends are more important than population status. "Growth as contrasted with stagnation or decline counts rather than density, for growth affects the nature, arts and institutions in quite a different way than stagnation does, and rapid growth differently than slow growth."

It should be pointed out that many students of population no longer consider crude rates of birth, death or natural increase sufficiently accurate. They use fertility rates and net reproduction rates in their studies of trends in population movements. These rates, however, can be obtained only for countries with adequate statistics.

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THE SURVEY OF MANUFACTURES AS AN AID TO ECONOMIC PLANNING

By Clarence L. Barber *

In recent years economic planners have made extensive use of the capital-output ratio, the capital-employment ratio and related totals in planning economic development programs. Ideally, the incremental capital-output ratio (ICOR) and the incremental capital-employment ratio are the ratios the planner would like to have available but in their absence a measure of the average ratios may provide a good first approximation to the incremental ratios. Data published in the 1956 Annual Survey of Manufactures afford a basis for calculating a number of ratios useful to the economic planner. These ratios are presented in Table 1.

In manufacturing, the capital-output ratio may be usefully defined as the ratio between total capital investment in a particular industry and the net value added by that industry. This ratio measures the number of pesos of investment required to produce (with a normal complement of labor) a peso's worth of net annual output. Thus, for all manufacturing the data show that 1.27 peso's worth of investment will produce one peso's worth of annual net output (Column 1, Table 1). The ship-building and repair industry with a ratio of 7.04, basic industrial chemicals with a ratio of 5.07, and stamped, coated and engraved metals with a ratio of 3.16 are all examples of industries with a comparatively high capital-output ratio indicating that a fairly large investment is required to obtain a given increase in net output. The grain mill products industry also shows a suprisingly high ratio, 3.38, but this undoubtedly reflects the fact that the industry performs an important storage function. More than sixty percent of the total investment in this industry consists of the value of inventory . In contrast, the embroideries industry with a ratio of .57, the cordage rope and twine industry with a ratio of .58 and the beverages industry with a ratio of .59 are all examples of industries with a comparatively low capital-output ratio.

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Net value added by manufacture is not as precise a measure of net output as one might wish for, since it includes depreciation, repairs and maintenance and other minor expenses, as well as the net income produced by the industry. However, it is probably accurate enough for comparative purposes. Another statistical limitation of the above ratios arises out of the fact that the value of fixed investment will not usually be measured in current prices. In industries where the bulk of fixed capital investment has been made fairly recently, these ratios will again be accurate enough for making general comparisons. But if it is known that in particular industries much of the fixed investment was made many years ago when price levels were much lower some allowance should be made for this fact in interpreting the data.

In less developed countries like the Philippines where capital is scarce and the supply of labor is, potentially at least, comparatively plentiful there is a good deal of interest in the amount of employment that will be provided by an investment project as well as in the increase in output that will occur. Some light on this relationship is given by the data appearing in Columns 2, 3 and 4. These three columns give the value of fixed assets per employee, the value of total inventory per employee and the value of total capital investment per employee (fixed assets plus inventory). Thus, on the average, all manufacturing firms (with more than twenty employees) had in 1956 an investment per employee of 4,900 pesos in fixed assets, 2,500 pesos in inventory and 7,400 pesos in both fixed assets and inventory.

In making comparisons between different industries it is clear that in industries where the capital requirement per employee is high, a given investment may give rise to only a very modest amount of employment whereas in industries where the capital required per employee is low it may give rise to a good deal of additional employment. The data in table 1, column 4, indicate that the total capital investment per employee is fairly high for basic industrial chemicals, 30,700 pesos; for miscellaneous primary metal products, 27,200 pesos; and for the vegetable, lard and margarine industry, 20,600 pesos. On the other hand, total investment per employee is quite low for the cocoa, chocolate and sugar confectionery industry, 1,800 pesos; for ba-

kery products, 2,200 pesos; and for the footwear industry, 2,300 pesos.

In interpreting both the above sets of data some allowance needs to be made for the extent to which an industry was able to utilize its total capacity in the year for which the data are calculated. When an industry is only able to operate at about one-half its normal capacity it will show a capital-output ratio and a capital requirement per employee that may be about twice as large as their normal capacity operation level. The concept of capacity operation, of course, needs to be interpreted with some care. For the capacity of an industry varies with the number of shifts it operates and the length of its working day. In theory, it can be argued that underdeveloped countries could compensate for their shortage of capital by running all their industries on a 24-hour a day, 7-day a week basis with three or four shifts of workers. In practice this does not seem to occur although the extent to which multiple shift operation is practicable and might offer a partial solution to the problem of capital shortage in underdeveloped countries undoubtedly merits a good deal of further exploration. The failure of businessmen themselves to introduce multiple shifts more extensively may reflect the considerable investment that is required in training a new set of workers, restrictions in the labor laws on hours of work and social attitudes which are inimical to work at unusual hours.

Another factor that needs to be considered in interpreting data on the capital-output ratio is the profit ratio that exists in the industry. Where a new industry enjoys a considerable measure of monopoly and is able to obtain a very high rate of profit the ratio of capital investment to the net value of output may be significantly lower than it would become if more competition were introduced into the industry and profit rates declined. While no published data are available to indicate the profitability of different industries the data in column 5, Table 1, provide a crude measure of comparative profit rates in different manufacturing industries. This column shows net value added minus total payrolls as a percent of total invested capital. The former total is approximately equal to total profits plus depreciation and a variety of miscellaneous expenses including the proprietor's own labor in unincorporated firms. Thus the data in column 5 are a sort of crude gross profit rate.

For all manufacturing the crude gross profit rate was 53.8 percent for 1956. However, this overall average conceals marked variation in the rates for individual industries. For example, the alcoholic beverages industry showed a crude gross profit rate of 155.3 percent, the cigars and cigarette industry a rate of 110.7 percent and the cordage, rope and the twine industry a rate of 102.5 percent. In contrast, for the motor vehicles industry the crude gross profit ratio was only 20.1 percent, for grain mill products it was only 12.3 and for ship-building and repair it was only 2.4 percent.

These brief comments hardly do justice to all the available data but details are presented in Table 1 for further study, analysis and interpretation.

Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956ᵃ—continued

Industry and industry group	Capital-output ratioᵇ	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate ᶜ (Percent)
		(000 pesos)			
Total manufacturing	1.27	4.9	2.5	7.4	53.8
Food, manufactured	1.36	6.0	2.3	8.3	53.7
Slaughtered, prepared and preserved meat ..	1.27	5.6	2.5	8.1	54.0
Dairy products	0.82	4.7	1.6	6.3	84.0
Ice cream, sherbet, ice drop and popsicle ..	0.62	4.0	2.1	6.0	114.5
Milk processing plant products	2.47	6.3	0.5	6.8	20.0
Canned and preserved fruits and vegetables .	1.44	1.3	2.2	3.5	26.3
Preserved fish	0.74	2.4	1.0	3.4	104.4
Grain mill products	3.38	3.9	3.9	7.8	12.3
Rice mill products	2.71	4.1	1.9	6.0	15.0
Corn mill products	4.94	4.1	6.5	10.6	7.0
Bakery products	0.79	1.4	0.9	2.2	58.7
Bakery products (dry and perishable) ..	0.78	1.4	0.9	2.2	60.6
Ice cream cones and wafers (apa)	1.37	2.6	0.6	3.2	39.6
Sugar mills and sugar refinery plant products ..	1.37	10.1	2.8	12.9	58.0
Cocoa, chocolate and sugar confectionery ..	0.93	1.0	0.8	1.8	58.2
Candy factory products	0.95	0.7	0.7	1.4	49.5
Cocoa and chocolate products	1.01	2.3	1.4	3.7	68.3

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Industry and industry group	Capital-output ratio[b]	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate[c]
		(000 pesos)			(Percent)
Food, manufactured—continued					
Miscellaneous food preparations	1.33	3.3	1.8	5.1	47.0
Vermicelli and noodles	1.35	0.5	1.0	1.5	30.5
Desiccated coconut	1.14	2.2	0.6	2.8	42.2
Vegetable lard and margarine	1.97	6.6	14.0	20.6	36.3
Coffee, roasted and ground	1.23	9.3	7.2	16.5	64.6
Prepared feeds for animals and fowls	1.17	8.4	5.6	13.9	68.3
Starch and its by-products	1.55	4.2	0.9	5.1	42.6
Other food products, n.e.c.	1.56	9.4	2.8	12.2	47.7
Beverages	0.59	6.1	1.4	7.5	135.5
Distilled, rectified and blended liquors including malt products	0.53	6.4	1.9	8.3	155.3
Soft drinks and carbonated water	0.65	5.8	1.0	6.9	117.6
Tobacco products	0.78	1.6	3.3	5.0	98.2
Cigars and cigarettes	0.70	1.5	3.5	5.0	110.7

Table 1.—Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956a—continued

Industry and industry group	Capital-output ratiob	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit ratec (Percent)
		(000 pesos)			
Textiles	1.75	3.7	4.5	8.1	34.0
Textile mill products	2.09	3.7	5.1	8.9	26.1
Hemp mill products	1.34	2.5	1.6	4.1	31.7
Cotton textile mill products	2.09	3.8	7.0	10.8	27.5
Ramie processing mill products	3.01	3.3	0.1	3.4	8.8
Knitting mill products	1.77	4.5	4.2	8.7	38.2
Hosiery knitting mill products	1.17	3.0	1.8	4.8	53.9
Underwear knitting mill products ..	2.06	0.7	2.6	3.4	16.2
Outwear knitting mill products	0.90	0.6	1.5	2.1	46.1
Other knitting mill products	1.87	8.2	6.5	14.7	39.7
Cordage, rope, twine and net	0.58	1.6	1.8	3.4	102.5
Footwear, other wearing apparel and made-up textile goods	1.27	1.5	1.4	2.8	41.2
Footwear	1.40	1.0	1.4	2.3	27.3
Shoes, except rubber	1.40	1.0	1.4	2.3	27.5
Slippers	0.99	0.6	1.0	1.6	48.4
Other footwear, except rubber	1.43	0.9	1.0	1.9	15.6

Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956[a]—continued

Industry and industry group	Capital-output ratio[b]	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate[c]
		(000 pesos)			(Percent)
Wearing apparel, except footwear	1.21	1.0	1.4	2.4	39.9
Men's and boy's ready-made wear	1.14	1.1	1.5	2.6	44.4
Tailor shop manufacturers	0.24	0.1	0.4	0.5	178.3
Modistes' and dress shop products including ready-made women's and children's dresses	1.47	0.8	1.2	2.0	27.5
Umbrellas, parasols, canes and walking sticks	1.30	1.3	2.5	3.8	46.3
Made-up textile goods, except wearing apparel .	2.17	7.2	1.2	8.4	27.8
Embroideries, hand or machine-made	0.57	0.6	1.7	2.3	124.4
Fabrics, ornamented with embroidery, applique, drawn work or other forms of ornamental stitching	0.22	0.1	0.0	0.2	425.0
Wearing apparel	0.58	0.6	1.8	2.4	124.1
Wood and cork products, except furniture	1.34	2.7	1.0	3.8	27.6
Sawmill and planing mill products	1.44	2.7	1.0	3.6	20.2
Lumber, rough or surfaced, not worked ...	1.12	2.5	0.9	3.4	45.3
Worked lumber (matched, shiplapped or patterned)	1.59	2.1	1.7	3.8	25.5

Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956a—continued

Industry and industry group	Capital-output ratio[b]	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate[c]
		(000 pesos)			(Percent)
Wood and cork products, except furniture—continued					
Plywood and veneered panels	0.90	3.2	1.4	4.6	75.5
Windows and doors and other woodwork	2.08	1.9	1.4	3.3	3.9
Doors	0.98	1.4	0.1	1.5	28.8
Wooden boxes (except cigar boxes)	2.45	5.5	4.2	9.8	21.7
Other wood products, n.e.c.	0.59	0.8	0.6	1.4	75.9
Furniture and fixtures	0.95	1.4	1.2	2.6	42.9
Rattan furniture, including reed, wicker or cane furniture, except upholstered	0.64	0.7	0.5	1.2	27.6
Wood furniture, except upholstered	1.35	1.1	1.3	2.4	6.7
Venetian blinds and other window screens & shades	1.67	1.8	2.5	4.3	24.5
Metal furniture, except upholstered	1.09	2.6	1.6	4.2	49.4
Mattresses, renovated, manufactured & repaired	0.53	0.9	1.0	1.9	86.8
Upholstered furniture, all materials, and furniture and fixtures, n.e.c.	0.35	2.6	1.1	3.7	283.4

Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956a—continued

Industry and industry group	Capital-output ratiob	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate c
		(000 pesos)			(Percent)
Paper and paper products	1.42	6.1	3.0	9.0	51.0
Paper mill products	2.01	8.8	4.2	13.0	34.1
Paper board	2.12	9.6	3.0	12.6	32.8
Articles of pulp, paper and paper board	1.24	5.2	2.6	7.8	59.8
Paper stationery	1.62	10.3	2.3	12.5	40.9
Paper boxes and other containers	0.95	2.6	2.6	5.3	85.6
Printed and published materials and allied products	1.39	3.5	1.6	5.1	22.3
Newspapers, magazines and periodicals	1.41	3.1	1.2	4.3	9.5
Books and pamphlets	1.30	5.1	3.9	9.0	52.5
Commercial printing products	1.40	3.6	2.1	5.7	30.9
Offset, rotogravure and photogravure products	0.24	1.1	0.2	1.3	219.2
Leather products, except footwear and other wearing apparel	1.01	2.7	1.9	4.6	69.4
Leather	1.04	3.1	1.7	4.8	68.3
Leather and leather substitute products	0.91	1.5	2.3	3.8	74.2
Rubber products	1.46	2.9	1.8	4.8	37.0
Shoes, rubber	1.20	1.8	1.7	3.5	41.3

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Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956ᵃ—continued

Industry and industry group	Capital-output ratioᵇ	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate ᶜ
		(000 pesos)			(Percent)
Chemicals and chemical products	1.40	8.9	6.4	15.4	52.3
Basic industrial chemicals	5.07	25.5	5.2	30.7	12.8
Basic chemicals	3.16	14.6	1.9	16.5	18.0
Alcohol	1.60	10.0	3.8	13.8	47.0
Vegetable oils	1.02	4.6	6.3	11.0	74.8
Miscellaneous chemical products	1.13	6.9	6.7	13.5	64.8
Medical and pharmaceutical preparations ...	1.32	7.1	7.1	14.2	55.9
Toilet preparations	1.19	5.9	8.7	14.6	61.9
Soap and other washing and cleaning compounds	1.14	9.3	7.5	16.4	60.8
Paints, varnishes and lacquers	0.63	4.4	6.5	10.8	144.0
Miscellaneous chemical products, n.e.c.	1.26	4.9	3.6	8.5	52.9
Products of petroleum and coalᵈ					
Non-metallic mineral products, except products of petroleum and coal	1.58	10.0	2.8	12.8	46.5
Structural clay products	1.23	3.6	1.0	4.6	41.1
Brick and hollow tiles	1.16	4.1	1.0	5.1	45.3
Tiles, except hollow	1.42	2.8	1.0	3.8	32.5

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Industry and industry group	Capital-output ratioᵇ	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate ᶜ
		(000 pesos)			(Percent)
Glass and glass products	1.33	8.5	1.9	10.4	51.7
Glass containers	1.30	9.8	2.1	11.9	56.0
Glass mirrors	1.98	4.5	1.0	5.5	10.7
Structural glass products	1.84	2.6	1.3	3.9	5.4
Non-metallic mineral products, n.e.c.	1.23	4.3	2.7	7.0	53.3
Concrete products (structural)	0.58	1.5	0.9	2.3	92.1
Lime	1.12	3.4	0.5	3.9	53.5
Basic metal products	2.30	14.6	2.0	16.7	30.4
Iron and steel foundry products	0.43	0.9	0.7	1.6	101.8
Miscellaneous primary metal industry products	2.81	24.3	3.0	27.2	27.5
Metal products, except machinery and transportation eiquipment	1.55	4.5	3.6	8.1	36.6
Tin cans, other tinware and aluminum ware (except household and hospital utensils)	0.60	1.2	1.3	2.5	86.1
Packers' cans, tin or aluminum	0.62	1.2	1.3	2.6	80.7

Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956[a]—continued

Industry and industry group	Capital-output ratio[b]	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate[c]
		(000 pesos)			(Percent)
Fabricated structural metal products	1.43	3.0	3.6	6.5	27.0
Fabricated structural iron and steel	1.49	3.2	4.0	7.2	26.2
Architectural metal work	1.17	2.2	2.1	4.3	31.2
Stamped, coated and engraved metals	3.16	6.6	4.8	11.5	15.3
Enamelled, japanned and lacquered metal products	2.71	4.4	4.9	9.3	18.2
Galvanized and other hot-dip coated iron and steel sheets	4.16	12.0	4.6	16.6	11.4
Fabricated wire products	1.65	7.7	4.9	12.7	43.9
Metal shipping barrels, drums, kegs and pails .	1.27	11.1	5.8	16.8	63.6
Other secondary metal products, n.e.c.	1.12	3.1	2.8	5.9	58.8
Heating and cooking apparatus (except electrical)	1.22	0.2	2.4	2.6	15.3
Miscellaneous fabricated metal products, n.e.c.	1.12	3.5	2.8	6.3	61.3
Machinery, except electrical machinery	2.17	4.9	2.2	7.1	19.3
Tractors and farm machinery	2.15	6.3	1.4	7.8	15.1
Special industry machinery	1.57	4.5	2.2	6.7	32.5

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Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines : 1956a—continued

Industry and industry group	Capital-output ratio[b]	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit rate[c]
		(000 pesos)			(Per cent)
Machinery, except electrical, n.e.c.	2.70	3.5	3.1	6.6	13.0
Service, industry and household machines ..	2.74	3.4	3.5	7.0	13.7
Miscellaneous machinery parts	2.48	3.9	1.4	5.2	9.1
Electrical machinery, apparatus, appliances and supplies	1.45	4.8	4.7	9.5	47.0
Electrical machinery and apparatus	3.65	12.0	2.9	14.9	16.3
Storage batteries and incandescent lamps	1.71	4.6	8.0	12.6	41.4
Transportation equipment	2.72	6.8	4.0	10.8	12.5
Shipbuilding and repairing	7.04	12.0	2.1	14.1	2.4
Motor vehicles	1.89	4.5	6.1	10.6	20.1
Motor vehicles, except combat vehicles and motorcycles	1.87	4.7	6.5	11.1	20.5
Motor vehicle parts and assemblies, except engines and motorcycle parts	2.39	3.7	1.5	5.2	17.8
Motor vehicles and cycles, repaired	1.68	2.0	2.8	4.8	18.1

Table 1. — Capital-Output and Employment Ratios, and Crude Gross Profit Rates for Manufacturing Establishments, by Industry, for the Philippines: 1956a—continued

Industry and industry group	Capital-output ratiob	Value of fixed assets per employee	Value of inventory per employee	Total capital per employee	Crude gross profit ratec
		(000 pesos)			(Percent)
Miscellaneous manufactures	0.96	17.5	4.7	22.2	92.2
Photographic, optical and ophthalmic goods	0.89	4.6	1.9	6.6	48.0
Sensitized unexposed photographic film	0.92	5.1	1.8	6.9	40.8
Eyeglasses, spectacles and parts	0.80	3.1	2.4	5.6	77.2
String instruments	1.09	4.6	2.5	7.1	61.5
Pearl buttons	1.52	1.4	1.1	2.5	10.3
Ice	2.69	14.0	0.3	14.2	19.3
Miscellaneous manufactures, n.e.c.	0.90	29.6	8.2	37.9	104.8
Signs and advertising displays, except printed	1.19	5.2	1.4	6.6	40.5d
Miscellaneous manufactured products	2.39	9.3	2.5	11.8	27.9

_a Data cover manufacturing establishments with 20 or more employees.

a Data cover manufacturing establishments with 20 or more employees.
b Value of total investment (fixed assets plus inventory) divided by value added by manufacture.
c Value added by manufacture less total payrolls as a per cent of total capital invested (fixed assets plus inventory).
d Included under miscellaneous manufactures.

Source: 1956 Annual Survey of Manufactures, Vol. 1, Series 2, National Economic Council and the Bureau of the Census and Statistics.

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Recording Year of Admission

December 31, 1959

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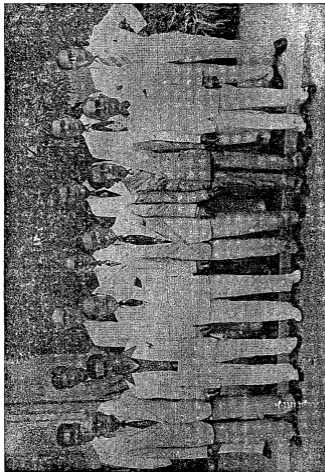
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