October than in May and the unpaid family workers a lower percentage, reflecting the school vacation period and the seasonal character of rural work by many unpaid family workers.

In the urban areas there is a lower percentage of both men and women employed as a percentage of those 10 and over than in rural areas. Although in both areas the percentage of males exceeds the females, the ratio of males to females employed is higher in the rural areas. As would be expected, the ratio of self-employed and unpaid family workers is very much higher in rural areas than in urban while with wage and salary workers, although the members are about the same, 2,232,000 in the rural to 2,176,000 in urban areas, the reverse is true of the ratio.

One of the problems facing a country with a rapidly growing population is the high dependency ratio. In the Philippines in the 1960 census each person in the working years 15-59 had to support one person under 15 or 60 or over. In the 1948 census this ratio was only 96 dependents to 100 in the working ages, but by May 1967, the dependency ratio had risen to 104 to 100. If 15-65 is used for the

working ages the dependency ratio is much lower: 89-100. In developed countries it is even lower; 52 in Japan and only 35 in England and Wales according to Dr. Concepcion.[8/]

But perhaps a fairer test is to say that the employed labor force in May 1957, was only 12.2 million, while those under 10, those not in the labor force over 10, and those not employed amounted to 22.4 million. This means that each 100 in the employed labor force had to support themselves plus 183 others. If unpaid family workers are taken out of the labor force and added to these three groups mentioned above, the ratio is about 100 self-employed and wage and salary workers supporting themselves and 284 others. This means that in May 1967 only about 26 per cent of the total population, the self-employed, and wage and salary workers had to support 74 per cent of the population. If the part-timers who want more employment were converted to full-time unemployed and those with jobs but not working were shifted from employed to not employed, less than one fourth of the population supports itself as well as over three fourths of the total.

[8/] The Manila Times, July 18, 1969.

3. Industrial Classification

Although the industrial classification and the occupational classification are logically separate, there are some distinct cases of overlap. Most farmers (occupational classification) are engaged in agriculture, (industrial classification), but a clerical worker (occupational classification) might be employed in any of the major industrial classifications in the country. This section will concentrate on the industrial classification, and the next on the occupational, but references will be given in the second to some of the main areas of overlap.

Agriculture, including forestry, hunting and fishing, formed the largest fraction, 57.4 per cent of the total employed in May 1967. (Table 5). Of the four million increase in employment from 1957 to 1967 two million were added in agriculture, but the remaining industries, with only 42.6 per cent of the total, also increased by two million, so that their share of the total rose while agriculture declined slowly percentagewise from 60.6 per cent in May 1957, to 57.4 in May 1967. As would be expected, most of the 7 million in agriculture are self-employed, 3.1 million; and unpaid family workers,

2.8 million, leaving only 1.1. million wage and salary workers in agriculture.

The combined service categories, 7, 8, 9 are the second largest group. If government, community, business and recreational services which includes 0.8 million workers or 6.6 per cent of the total, is combined with those in domestic services and other personal services, the total is 1.6 million or 13.2 per cent of the total or more than in manufacturing or commerce. In the combined service category almost all are wage and salary workers.

Manufacturing is the third largest group, but it has only 1.4 million employees or 11.4 per cent of the total. Well over half in this group are wage and salary workers, but there are substantial numbers of self-employed and unpaid family workers, especially in smaller rural industries such as embroidery.

Commerce is a close fourth with 1.35 million or 11.1 per cent of the total. In this group, unlike manufacturing, self-employed are the largest percentage, wage and salary workers second and unpaid family workers third but more than in manufacturing.

These four -- agriculture, combined services, manufacturing and commerce -- account for over 90 per cent of the total employment. Mining, public utilities, transportation and communication are all small groups accounting for less than a total 0.8 million employees.

There are practically no women employed in mining, construction, public utilities and very few in transport, storage and communications. Women exceed men in manufacturing, commerce, domestic service and other personal services but this is not true in manufacturing and commerce if only wage and salary workers are considered. If only urban manufacturing is considered males exceed females. It follows, therefore, that females substantially exceed males in rural manufacturing (small home industries) and the same is true in commerce.

The key industrial fact to remember is that of the approximately 7 million engaged in farming and related industries, 6.4 million of these are located in rural areas and only 0.6 in urban areas. If these members are subtracted from the rural and urban employed labor force, there are only 2.4 million left in other rural industries, but 2.8 in other urban industries.

4. Occupational Classification

Not only is agriculture still the major industrial source of employment but also, as would be expected, farmers, farm laborers, fishermen, hunters, lumbermen and related workers form by far the largest occupational class with almost 7 million employed persons or 57 per cent of the total in May 1967. (See Table 6). Again as might be expected there are not only more males, 5.3 million in comparison to 1.7 million females, but among all employed males, farmers and related occupations made up 66 per cent of the total and females only 40 per cent of the total employed female. Almost identical figures and percentages apply to agriculture.

The second largest occupational group in May 1967, was craftsmen, factory operatives and workers in related occupations numbering 1.6 million or 12.8 per cent of the total employed. This is larger than the number engaged in manufacturing, of course, since this occupational group could be employed in many other industries.

Service and related workers are third in importance, just under one million or 7.8 per cent, while salesmen and

related workers were a close fourth, 0.9 million or 7.6 per cent. These four occupational groups accounted for about 35 per cent of the employed.

Three categories that need special study are (1) professional, technical and related workers, 435,000 or 3.6 per cent; (2) proprietors, managers, administrators and officials, 439,000 or 3.6 per cent and (3) clerical, office and related workers, 352,000 or 2.9 per cent. These three taken together equal over 10 per cent of the total employed, a high percentage for a developing economy. These groups are most likely to have graduated from high school and gone on for advanced training. This reflects the high percentage of people who go on for advanced training and university education in the Philippines. There were actually more females than males in the first two categories and more males in the third. This may reflect the large number of women teachers, nurses and rural proprietors. Of course, there were fewer high level employees in rural than urban areas.

By occupation, male farmers, mine workers and transport workers greatly exceed females and they also outnumber the females as clerks, craftsmen and factory

operators and manual workers and laborers. Women were more frequently employed as professionals, proprietors, salesmen and service workers. It would seem that women in the Philippines have a wide range of occupations open to them with only some of the heavier jobs the preserve of the males.

V

Comparison of the Labor Forces in the Five ASEAN Countries

The preceeding section has summarized with tables the major labor force variables in the Philippines from the latest available BCS Survey of Households. A time series study of some of those key variables from 1957-67 is made after the cross country comparisons undertaken in this section.

As similar tables as possible were prepared from the other ASEAN countries: Indonesia, Malaysia, Singapore and Thailand for a period as close to May, 1967 as possible. This gave a large body of data for the labor forces in the five ASEAN countries in the second half of the 1960's.[9/]

[9/] For an earlier comparative study covering a wider range of ASEAN countries see: You Poh-Seng, "Growth and Structure of the Labor Force in the Countries of Asia and the Far East", (APC/BP/6), pp. 183-207.

The author wishes to acknowledge his indebtedness to this report and to Professor You for his helpful suggestions.

It would be possible to make some meaningful comparisons between the Philippines and her neighbors by presenting one by one each set of tables, but the reader might become lost in all the details. Instead an effort was made to pick out for intensive study some of the key variables under the four major groupings already studied in the Philippines. These important variables which follow, appear as categories II-V in ASEAN Table 1.

II. Labor Force Participation Rates

2. Percentage in the labor force to total population 10 years of age and over (total male and female)
3. Percentage of males in the labor force to the male population 10 years of age and over
4. Percentage of females in the labor force to the female population 10 years of age and over

III. Status of Employment. Only the three main groups were used so the totals do not equal 100 per cent of the employed labor force.

5. Percentage of wage and salary workers of the total employed labor force

6. Percentage of self-employed workers (also called independent workers) of the same total

7. Percentage of unpaid family workers of the same total

IV. Industrial Classification. Only the four main groups were used so the totals do not equal 100 per cent of the total employed labor.[10]

8. Percentage engaged in agriculture, forestry, fishing and related industry to the total employed labor force

9. Percentage engaged in manufacturing to the total employed labor force

10. Percentage engaged in commerce to the total employed labor force

11. Percentage engaged in services to the total employed labor force

V. Occupational Classification

As already pointed out several occupational and industrial classifications are almost alike; so these were

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[10] P. Barrock and J. M. Limbar in their world study used three combined classifications: agriculture, industry, services. "Changes in the Industrial Distribution of the Labor Force by Region, 1880-1960," International Labor Review, October 1968, (Vol. 98, No. 4), pp. 311-336.

not repeated. Only two were selected; for study where the occupations tended to cover all industries.

12. Percentage in the 3 high level occupations (professional, managerial and clerical classifications combined) to the total employed labor force

13. Percentage of craftsmen and related workers to the total employed labor force

In addition, an attempt was made to get data on per capita income converted to dollars in category I.1. Similarly some figures were collected on educational attainment in category VI: 14 and 15, but they were really not comparable enough to be used so they were dropped from later computations.

From the five ASEAN countries it was possible to compile 14 series of data using these 15 variables: 5 series from Indonesia were used, 3 from the Philippines, 3 from Thailand, 2 from West Malaysia and 1 from Singapore (ASEAN Table 1).

With this matrix (ASEAN Table 1) a number of simple visual comparisons can be made, but it was hoped to combine

a variable from as many of the labor force categories as possible to compare the labor forces of the ASEAN countries.

The major hypotheses to be tested in this section is that the ASEAN countries have similar, or closely related, labor force patterns. If all countries had the same level of economic development and urban-rural life, the labor force patterns would be assumed to be the same except for special country differences. This, of course, is not true so some adjustment has to be made for the state of economic development or the degree of urban-rural life.

Economists frequently use per capita income as a proxy for economic development and so it was decided to try variable (1) National Income per capita as the dependent variable.

The 14 data series were first, therefore, arranged from the low income Indonesian, Java-Madura series to the high income data series of Singapore. It was clear from the data that the rural areas had the lower incomes and the urban the higher incomes. (This order is not shown in Table 1). Using National Income per capita (1) as the

dependent variable, fourteen simple and 13 multiple linear regressions were run as a test with only fair results. Although 5 simple and 5 multiple regressions by applying the F test were significant at the .01 level, 5 simple and 3 multiple regressions were not significant at the .05 level.[11/]

It seemed wise to see whether some other proxy for development might not be found which would also reflect rural and urban life. On inspection the data in the matrix seemed as if the percentage of the labor force engaged in agriculture, forestry, fishing and related industries (8) might serve as a good proxy for the degree of rural-urban development. The order of the 14 data series was, therefore, arranged in ASEAN Table 1 from the low percentage in agriculture in the Bangkok-Thonburi urban region of Thailand to the highest percentage in rural Thailand. This order resulted in the first 6 series being urban, the next four all areas in a country and the last three rural. Fourteen simple and many multiple regressions were run using the percentage engaged in agriculture (8) as the dependent variable with much higher

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11/ The simple regressions also indicated that many of the 14 series had rather high standard errors of estimate, particularly in groups II and VI. Furthermore, no regression had a multiple correlation (R) of over .87 or a $\bar{R}^2$ of over .71.

correlations and levels of significance than using per capita income (1).[12/]

As a first approximation each of the simple correlations was examined to see which one in each group would be the best to use in the multiple regressions. ASEAN Table 2 shows that variables in Groups III, IV and V have the highest levels of significance while in descending order those in Groups I, II and VI are less significant. These latter groups all involved some data estimating or adjustment to make the series more comparable. With more research it may be possible to improve the data so that the significance of these figures in these groups would increase. (See Revisions in tables 5-7).

In each group one variable (1, 3, 5, 11, 12, 15) was selected with the highest correlation coefficient (R). Only the male labor force participation rates (3) is positively correlated with ruralness i.e. the higher the male labor force participation rate the more rural the area.

[12/] Nine out of the fourteen simple regressions were significant by the F test at the .01 level, two at the .05 level and only three above that level. Using the T-test these last three were significant at the .10 level, two at the .05 level, while all the rest were significant at the .01 level (Table 2).

All of the other five variables are negatively correlated with ruralness i.e. lower percentages of the labor force engaged in the service industry (11), in high level occupations (12) or employed as wage and salary workers (5) -- lower per capita income (1) and educational attainment (15). The reverse is, of course, true for the urban regions. Five of the variables, all but the male labor force participation rate, are positively related to urbanization. The higher the rates the greater the degree of urbanization. As a country develops, it can anticipate that each of these five variables will increase, while the male labor force participation rate will decline. Later some variables with slightly lower levels of simple correlation were substituted to try to secure better fits. Of these the total male and female labor force participation rate (2), the percentage of self-employed (6), and the percentage in commerce (10) tended to improve certain regression equations.

The next step was to solve the multiple linear regression equations using the various combinations of the variables selected. The more significant results are reported in Table 4.

The first five equations in Table 4 used combinations of the variables selected with the highest simple correlation coefficient in each group. Equation (3) is the best fit and the highest significance except that the T test for the percentage of high level occupations (12) was not significant at the 10 per cent level and its sign and that for male labor force participation rate 13 were reversed from what would have been expected.[13/]

Other variables were tried to get better fits and greater significance. Equation 7 proved to be the most satisfactory with total labor force participation rates (2) percentage of self-employed (6), percentage in commerce (10) and percentage of high level employment (12) as independent variables against percentage of the employed labor force engaged in agriculture (8) as the dependent variable as a proxy for the degree of rural-urban development. All four variables had the signs expected, three of the four T values

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[13/] Two thirds of the prediction from equation (3) will be within ± 4.8 points, the standard error of estimate, and 95% of the observation will fall within ± 9.6 of the predicted amount. We took two additional sets of data from the Indonesian sample survey of 1964-65 Rural Java and Madura and Urban -- other islands and found the prediction was within twice the standard error of estimate. In the case of rural Java the prediction was low, 64 per cent in comparison with 72.6 per cent observed and in the urban areas of the other islands high: 23.6 per cent calculated in comparison to the actual of 16.8 per cent.

are significant at the .01 level and the fourth at the .10 level. Equation (7) also had the higher R value .997, the highest R^2 .990, the highest F value and the lowest standard error.[14]

In equation (8) a fifth variable, Income per capita (1) was added but it gave less satisfactory results as did equation (9) with one less variable Percentage in Commerce (10). Equations (6) (10) and (11) were not quite as good fits and in each, one of the regression coefficients was not significant at the .10 level.

Revised Data

Subsequently, new data from the West Malaysia Social Survey of 1967-8 was obtained[15] and incorporated in place of the older 1962 data. Furthermore, the level of significance of the regression coefficients for the labor force participation variable (2) and (3) was usually not satisfactory

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[14] For the 14 series of data this seems to be a very close fit. Equation (7) was used to project the percentage engaged in agriculture in Indonesia in the urban population of the islands, other than Java with 12.4 per cent projected and 16.8 actual, well within two standard errors of computation ($\pm$6.3).

[15] Dr. Carroll Shaw and Mr. James Elliot have been most helpful in supplying data from Malaysia.

(See Table 4). It was decided to adjust the Thailand figures from ages 11 to 10 and the Malaysian figures from age 15 to 10 and take account of the cut-off age at 65 of older workers in the new series. A new matrix Table 5 was prepared and new simple regressions run. Table 6 shows that there was a distinct improvement in the labor force participation rates both the totals (2) and the male rates (3) became significant at the one per cent level and the females (4) at the five per cent level. All of the other results were approximately the same as in the original simple regressions in Table 2.

Various multiple regressions using 2, 3, 5, 6, 10, 11 and 12 in various combinations were tried. Table 7 shows that three equations each combining one labor force variable in each of the four major categories as independent variables with the percentage engaged in agriculture as the dependent variable were highly significant, more so than the best equation (7) of the unrevised data. The first of the equations used the same independent variables 2, 6, 10, 12 and the same dependent variable (8) as in equation (7). The second equation substitutes (3) for (2) and the third (5) for (6). A combination which was less satisfactory was 2, 5, 10, 12. All combinations with 11 were also less satisfactory.

We, therefore, conclude that making allowance for the degree of rural-urban development, the labor force patterns of the ASEAN countries show a high level of correlation, a low standard error of estimate, a high level of significance in the correlation coefficients and a high F value significant at the .01 level.

These equations may also have significance outside the ASEAN countries. Tests were run to see how well the unrevised equation (7) would predict the percentage of the employed labor force engaged in agriculture in Taiwan in January 1969 using the labor force data in their 22nd Survey.[16/] The projected percentage was 38.5 and the observed was 38.0 much less than the standard error of the estimate. Similarly using the revised equation number (1), the projected percentage was 37.2 per cent as compared to 38.0 well within the standard error of the estimates 2.79.

Two more involved tests were made a cross-section analysis in Indonesia and a time series in the Philippines.

1. Cross-section in one country, Indonesia Labor Force Sample Survey Round II, 1964-5. Suffice it to say

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16/ The Quarterly Report on the Labor Force Survey in Taiwan, January, 1969, No. 22.

at this point, that simple linear regressions using 15 series of data (Table 1), the percentage of the employed labor force engaged in agriculture and related industries (8) as the dependent variables as done above and all the other variables, except per capita income, as the independent variables, all had very high levels of correlation (Table 2). All t and F tests indicated confidence at the 1 per cent level.

In the multiple regressions using four labor force variables the best fit was found by combining labor force participation rates (2), percentage of self-employed (6), percentage in services (11) and percentage of high level manpower (12) (Table 3). The only difference between this and the ASEAN cross sectional results is the shift between commerce (10) and services (11).

Unfortunately the services correlation coefficient by the T test is not significant at the .10 level. All of the other correlation coefficients for services or commerce in the otherwise good fit equations are even less significant. It was decided to run first three independent variables 2, 6, 12 and 3, 6, 12 and the resulting equations

were both extremely good fits with the former slightly better than the latter. These Indonesian tests tend, therefore, to confirm the regional patterns.[17]

2. Time series in the Philippines May 1957-May 1967

Following the same patterns as for the cross-sectional analyses, a matrix was developed including the usual variables for the eleven year period 1957-67 (See Table 11). Simple regressions were used first with per capita income (1) as the dependent variable and then the percentage of the employed labor force engaged in agriculture and related industries (8). In both sets of data all the variables but four: total labor force participation rates (2) female labor force participation rate (4) percentage in manufacturing (9) and the percentage of craftsmen and other workers (13) were significantly correlated. The simple regressions using income per capita in 1955 peso prices are shown in Table 12.

A number of multiple regressions were tried both with (1) and (8) as dependent variables, with results much less satisfactory than those of the cross-section analysis.

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[17] This Indonesia data will be reported in more detail in a separate paper.

Since there was not a rise in income per capita each year, or a fall each year in the percentage engaged in agriculture and related industries, it was decided to test "time" to see if it would give a better fit. Again 2, 4, 9, 13 were the least significant. The best in all respects was with percentage of wage and salary workers (5) so it was decided to try a series of simple and multiple regressions using (5) as the dependent variable. In the Philippine matrix (Table 11) it is clear that in all but two years the percentage of wage and salary workers had advanced. The simple regressions shown in Table 13 indicate higher correlations with variables 2, 3, 7, 8, 11 and 12 than in Table 12, but slight declines in the other variables. Even using (5) as the dependent variable, the multiple regressions (Table 13) tend to be less significant than many found in the cross-section analyses for the 5 ASEAN countries or regions in Indonesia. If a longer time series was possible the results might be better, but the 1968 data has not been processed and the 1956 figures are not fully comparable to those in the following years. Differences in the sample from year to year may account for some of variations in the data. With changes in all categories quite small from year to year, any data or sampling

problems may be magnified. Also the labor force bulge discussed above may have affected certain variables more than others.

VI

Conclusions

This paper has tried to show how the labor force patterns of the Philippines are similar to those in the other ASEAN countries. In sections II and III the relationship between the rapid overall growth of the population and increasing size of the labor force in the post-war period was stressed. The Philippines had a baby boom starting in about 1948, so did the other ASEAN countries, although in Indonesia it was a bit later. All of these countries had, just prior to the baby boom, a small or "holl w" generation or age group, with the Indonesian the most obvious (absolute hollow group) and the Philippine the least pronounced (relative hollow group). The combination of the baby boom and the hollow group resulted in a sudden jump in demand for primary schools 6 to 7 years later and a labor force bulge 15 to 20 years later in the second half of the sixties (1960's). Unless checked a new baby boom is already starting with a new labor force bulge expected

in the 1980's. These fluctuations make the use of straight line projections in the study of the labor force dangerous for policy purposes in the ASEAN countries.

In section IV the major labor force variables in the Philippines were studied and in section V they were compared with the same types of data from the other ASEAN countries to test the hypothesis that the labor force patterns were similar, or closely related, in all the ASEAN countries if the degree of economic development, or the degree of rural-urban development was considered.

Fifteen key labor force variables were picked for study and from 5 ASEAN countries, 14 series of these variables were used in linear regression analyses. Income per capita as a proxy for economic development was found to be less satisfactory, probably because of the many difficulties in making exact comparisons with national income data, than using the percentage of the employed labor force engaged in agriculture, forestry, fishing and related industries as a proxy for the degree of rural-urban development. By using this proxy as the dependent variable it was possible to include rural, urban and combined rural-urban

labor force data in simple and multiple linear regression equations. Using the revised figures in ASEAN Table 5, of the many equations tested with various combinations of labor force variables, three equations were found with high multiple correlation $\bar{R}^2$ of 0.992, low standard errors of estimate, high F values significant at the .01 level and t values of 3 of the 4 correlations coefficient significant at the .01 level (ASEAN Table 3). The best of these equations

$$Y_8 = a + b_2x_2 + b_6x_6 + b_{10}x_{10} + b_{12}x_{12}$$

$$Y_8 = 50.3 + \underset{(0.167)}{0.411}\, x_2 + \underset{(0.102)}{0.423}\, x_6 - \underset{(0.145)}{1.724}\, x_{10} - \underset{(0.250)}{1.310}\, x_{12}$$

All data in percentages

Y_8 = Employed in agriculture

x_2 = Labor force participation rate

x_6 = Self-employed

x_{10} = Employed in commerce

x_{12} = Employed in high level occupations

These variables are found in all the ASEAN labor force surveys. When used to estimate the percentage engaged in agriculture in Taiwan, they projected 37.2 percentage as compared to 78.0 found in the survey, much less than the

standard error of the estimate.[18]

From all these studies it has been shown that the labor force patterns in the Philippines and the the ASEAN countries are similar enough to count on the following relationships.

The more rural the area or the country, as measured by the percentage of the employed engaged in agriculture and related industries, the higher the labor force participation rates of males and females (2) and of males alone (3), the higher the percentage of the self-employed (6), the lower percentage of wage and salary workers (5), the lower the percentage of employees in commerce (10) in services (11), the lower the percentage of high level occupations (12). This study shows the reverse to be true as the area or the country becomes more urban. Since there is a distinct trend to urban migration, these variables should be helpful in understanding the futur labor force patterns in the ASEAN countries.

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[18] As yet this study has been confined to ASEAN countries, but the ability to project the Taiwan degree of ruralness so closly suggests that a further study should be taken to discover the relevance of this methodology over a wider area.

A cross-sectional analyses of 15 regional data series of the Second Social Survey in Indonesia 1964-65 confirms similar relationships of the significant labor force variables.

A time series analysis of Philippine labor force data from 1957 to 1967 gives somewhat less significant results than the cross-sectional analyses, but again the same group of variables were used but in different combination for meaningful results.

percentage of the self-employed (6), the lower percentage of wage and salary workers (5), the lower the percentage of employees in commerce (10) in services (11), the lower the percentage of high level occupations (12). This study shows the reverse to be true as the area or the country becomes more urban. Since there is a distinct trend to urban migration, these variables should be helpful in understanding the future labor force patterns in the ASEAN countries.

Table 21.-THE BABY BOOM AND THE HOLLOW GENERATION IN ASEAN COUNTRIES

Percentage Distribution of the Total Population

Age Group	Indonesia	Philippines	Thailand	Malaysia	Singapore	
	1961	1960	1960	1957	1957	1966
0 - 4	17.7	16.9	16.1	17.8	18.3	14.0
5 - 9	15.9	16.1	15.2	15.2	15.1	15.4
10 - 14	8.5	12.7	11.8	10.8	9.4	14.1
15 - 19	8.0	10.4	9.5	9.7	9.4	11.3
20 - 24	8.1	9.1	9.2	8.3	8.2	6.7
25 - 30	8.9	7.2	7.9	7.0	7.7	7.0
30 - 34	7.6	5.8	6.1	5.9	6.2	5.9

Sources: Census data except the 1966 Singapore Sample Household Survey.

PHILIPPINES

Table 1. Population as Reported by Sex and Age, 1960 Census; Population by Sex, 1948 Census

(Number in Thousands)

Age Group	1961 Census			
	Both Sexes Number	Percentages		
		Total	Male	Female
Total	27,088	100.0	100.0 (13,663)	100.0 (13,425
0 - 4	4,572	16.9	17.2	16.5
5 - 9	4,369	16.1	16.5	15.8
10 - 14	3,435	12.7	12.9	12.4
15 - 19	2,814	10.4	10.1	10.7
20 - 24	2,459	9.1	8.7	9.4
25 - 29	1,953	7.2	7.0	7.5
30 - 34	1,556	5.8	5.6	5.9
35 - 39	1,428	5.3	5.1	5.4
40 - 44	1,099	4.1	4.0	4.1
45 - 49	1,033	3.8	3.8	3.8
50 - 54	710	2.6	2.7	2.6
55 - 59	488	1.8	1.9	1.8
60 - 64	431	1.6	1.7	1.5
65 - 69	226	0.8	0.8	0.8
70 - 74	209	0.8	0.8	0.8
75 - 79	110	0.4	0.4	0.4
80 - 84	99	0.4	0.4	0.4
85 and over	95	0.4	0.3	0.4

	1948 Census			
	Both Sexes Number	Per cent Increase, 1948-1960		
		Both Sexes	Male	Female
Total	19,234	40.8	41.6	40.1

Sources : 1948 Census
1960 Census

PHILIPPINES

Table 2. Relation Between Total Population and the Labor Force in the Philippines, May Figures for 1957, 1962 and 1967

	Number (in thousands)			Per cent of Total			% of Age 10 and over		
	1957	1962	1967	1957	1962	1967	1957	1962	1967
Total Population	25,030	29,257	34,656	100.0	100.0	100.0			
- Children 0-9 years old	9,703	11,533	12,953	38.8	39.4	37.4			
Population 10 years and over	15,327	17,724	21,703	61.2	60.6	62.6	100.0	100.0	100.0
- Not in the Labor Force	6,390	7,030	8,429	25.5	24.0	24.3	41.7	40.3	38.8
Labor Force age 10 and over	8,922	10,692	13,274	35.6	36.5	38.3	58.2	60.3	61.2
- Unemployed	773	1,012	1,089	3.1	3.5	3.1	5.0	5.7	5.0
Working Labor Force	8,149	9,680	12,185	32.6	33.1	35.2	53.2	54.6	56.1
- Self-employed	3,534	3,900	4,505	14.1	13.3	13.0	23.0	22.0	20.7
- Unpaid family	2,403	2,834	3,256	9.6	9.7	9.4	15.7	16.0	15.0
Wage and Salary Workers	2,149	2,935	4,408	8.6	10.0	12.7	14.0	16.6	20.3

Source : BCS Survey of Households Bulletin

PHILIPPINES

Table 3. Relation Between Population and the Labor Force in the Philippines by Sex, Urban and Rural, May 1967

(Number in thousands)

	Number		% of Total		% of Age & over		Number		% of Age 10 & over	
	Male	Female	Male	Female	Male	Female	Urban	Rural	Urban	Rural
Total population	17,480	17,176	100.0	100.0						
- Children 0-9 yrs. old	6,639	6,314	38.0	36.8						
Population 10 years and over	10,841	10,862	62.0	63.2	100.0	100.0	7,271	14,432	100.0	100.0
- Not in the Labor Force	2,295	6,134	13.1	35.7	21.2	56.5	3,328	5,101	45.8	35.3
Labor Force 10 and over	8,546	4,728	48.9	27.5	78.8	43.5	3,943	9,331	54.2	64.6
- Unemployed	554	535	3.2	3.1	5.1	4.9	517	572	7.1	3.9
Working Labor Force	7,992	4,193	45.7	24.4	73.7	38.6	3,426	8,759	47.1	60.7
- Self-employed	3,419	1,086	19.6	6.3	31.5	10.0	858	3,647	11.8	25.3
- Unpaid family	1,712	1,543	9.8	9.0	15.8	14.2	384	2,872	5.3	19.9
Wage and Salary Workers	2,851	1,557	16.3	9.1	26.3	14.3	2,176	2,232	29.9	15.5

Source : Journal of Philippine Statistics, April to June 1968. Vol. 19, No. 2.

PHILIPPINES

Table 4. Summary Table : Number and Percentage Distribution of Persons by Employment Status in the Philippines
May 1957 and May 1967
(Number in thousands)

	Total	%	Self Employed	%	Wage and Salary	%	Unpaid Family	%
May 1957	8,149		3,534		2,149		2,403	
Per cent		100.0		43.4		26.4		29.5
May 1967	12,185		4,505		4,408		3,256	
Per cent		100.0		37.0		36.2		26.7
Increase	4,036		971		2,259		853	
Per cent of total increase		100.0		24.0		56.0		21.1
Per cent increase by status		49.5		27.5		105.1		35.5
Male								
May 1957 %		100.0		48.2		26.6		25.1
May 1967		100.0		42.8		35.7		21.4
Female								
May 1957		100.0		33.3		26.0		39.9
May 1967		100.0		25.9		37.1		36.8

PHILIPPINES

Table 5. Percentage Distribution of Employed Persons by Industry Group, by Sex, Urban and Rural, May 1967

(Number in thousands)

	Industry Group	Both Sexes Number	Per cent of Total Both Sexes	Male	Female	Urban	Rural
	Total	12,185	100.0	100.0 (7,992)	100.0 (4,193)	100.0 (3,426)	100.0 (8,759)
0	Agriculture, forestry, hunting and fishing	6,993	57.4	66.5	40.0	17.3	73.1
1	Mining and Quarrying	52	0.4	0.6	0.2	0.4	0.4
2	Construction	347	2.8	4.3	0.1	4.5	2.2
3	Manufacturing	1,389	11.4	8.0	17.8	18.2	8.8
4	Electricity, gas, water and sanitary services	33	0.3	0.4	--	0.7	0.1
5	Commerce	1,352	11.1	6.3	20.2	19.6	7.8
6	Transport, Storage and Communication	385	3.2	4.7	0.3	7.1	1.6
7	Government, community business and recreational services	806	6.6	6.4	6.9	15.4	3.2
8	Domestic Services	562	4.6	1.2	11.1	11.6	1.9
9	Personnel services other than domestic	245	2.0	1.4	3.1	4.8	0.9
10	Industry not reported	20	0.2	0.2	0.2	0.3	0.1

Source : Journal of Philippine Statistics, April to June 1968. Vol. 19. No. 2.

PHILIPPINES

Table 6. Percentage Distribution of Employed Persons by Occupation, by Sex, Urban and Rural, May 1967

(Number in thousands)

	Both Sexes Number	Per cent of Total Both Sexes	Male	Female	Urban	Rural
Total	12,185	100.0	100.0 (7,992)	100.0 (4,193)	100.0 (3,426)	100.0 (8,759)
0 Professional, technical, and related workers	435	3.6	2.6	5.4	8.3	1.7
1 Proprietors, managers, administrators and officials	439	3.6	2.2	6.3	6.9	2.3
2 Clerical, office and related workers	352	2.9	3.1	2.4	7.7	1.0
3 Salesmen and related workers	923	7.6	4.3	13.9	12.7	5.6
4 Farmers, farm laborers, fishermen, hunters, etc.	6,951	57.0	66.0	40.0	17.0	72.7
5 Workers, in mine, quarry and related occupations	40	0.3	0.4	0.2	0.2	0.4
6 Workers in operating transport occupations	309	2.5	3.3	0.1	5.5	1.4
7 Craftsmen, factory operatives and workers in related occupations	1,562	12.8	10.6	17.1	19.5	10.2
8 Manual workers and laborers, n.e.c.	202	1.7	2.4	0.3	3.1	1.1
9 Service and related worker	953	7.8	4.5	14.2	18.9	3.5

Source : Journal of Philippine Statistics, April to June 1968. Vol. 19, No. 2.

PHILIPPINES

'TICIPATION RATE BY AGE GROUP IN THE PHILIPPINES: MAY AND OCTOBER 1966
(Number in thousands)

		% Female		% Urban		% Rural	
	tober 1966	May 1966	October 1966	May 1966	October 1966	May 1966	October 1966
I	100.0 10,666)	100.0 (10,068)	100.0 (10,670)	100.0 (6,393)	100.0 (7,084)	100.0 (13,607)	100.0 (14,252)
II	71.3	38.7	38.9	53.3	50.5	59.4	57.4
III	48.0	35.0	32.3	39.8	34.1	49.1	43.3
IV	97.6	43.5	47.4	70.6	7.11	71.4	72.1
V	94.9	41.7	45.7	65.8	67.4	70.1	72.7
VI	57.3	17.3	22.6	29.6	27.9	40.4	46.6

1966 and October 1966.

ASEAN COUNTRIES

Table 1.-COUNTRY DATA SERIES

	Variables	Thailand: Bangkok-Thonburi (Urban) 1967	West Malaysia (Urban) 1965	Singapore (Urban) 1966	Indonesia (Urban) 1964 - 65	Thailand: All Other Urban 1967	Philippines (Urban) May 1967	West Malaysia All 1962
I	National Income							
	1 National Income per Capita ($)	273.34	487.15	535.70	112.07	200.36	273.51	228.19
II	Labor Force Participation Rates							
	2 Total Male and Female	53.0	56.8	42.3	42.7	57.4	54.2	50.0
	3 Male	65.2	82.2	64.4	63.5	69.8	69.7	65.1
	4 Female	41.5	30.2	19.8	23.5	46.1	40.3	33.0
III	Status of Employment							
	5 Wage and Salary Workers	66.9	77.5	75.7	51.4	41.3	63.5	53.5
	6 Self-employed Workers	18.0	14.0	16.0	35.6	30.4	25.0	29.7
	7 Unpaid Family Workers	11.8	4.4	4.5	9.4	23.9	11.2	14.4
IV	Industrial Classification							
	8 Agriculture	2.1	3.1	3.5	11.2	12.1	17.3	54.7
	9 Manufacturing	29.3	16.1	19.2	11.7	13.9	18.2	6.8
	10 Commerce	29.3	26.7	23.7	25.7	33.0	19.6	13.5
	11 Services	35.6	29.1	35.8	40.0	30.0	31.8	17.1
V	Occupation Classification							
	12 3 High Level Occupations	16.6	23.9	21.1	22.1	14.1	22.9	9.6
	13 Craftsmen and Others	34.6	22.2	28.5	24.2	14.2	19.5	15.5
VI	Educational Attainment							
	14 Primary School Graduates	16.1	27.4	20.1	28.6	17.2	18.8	30.3
	15 High School Graduates & Up	5.3	13.0	8.8	7.1	3.6	26.8	5.5

ASEAN COUNTRIES

Table 1.-COUNTRY DATA SERIES (Continued)

	Variables	Philippines All May 1967	Indonesia: Java and Madura 1964-65	Indonesia Almost All 1964-65	Indonesia Other Islands 1964-65	Philippines (Rural) May 1967	Indonesia (Rural) 1964-65	Thailand (Rural) 1967
I	National Income							
1	National Income per Capita	158.10	80.56	91.33	111.52	109.09	88.68	110.13
II	Labor Force Participation Rates							
2	Total Male and Female	61.2	57.0	55.8	53.6	64.7	57.6	76.9
3	Male	78.8	77.4	76.0	73.5	83.1	77.7	82.5
4	Female	43.5	37.5	36.4	34.3	45.3	38.2	71.6
III	Status of Employment							
5	Wage and Salary Workers	36.2	34.1	27.7	14.7	25.5	25.4	10.7
6	Self-employed Workers	37.0	44.9	47.7	53.4	41.6	48.9	29.7
7	Unpaid Family Workers	26.7	19.0	22.5	29.5	32.8	23.8	57.3
IV	Industrial Classification							
8	Agriculture	57.4	66.9	68.8	72.7	73.1	74.5	82.6
9	Manufacturing	11.4	6.5	5.8	4.2	8.8	5.2	3.3
10	Commerce	11.1	11.7	10.4	7.8	7.8	8.9	5.8
11	Services	13.2	11.3	11.2	10.9	6.0	8.3	4.9
V	Occupational Classification							
12	3 High Level Occupations	10.1	5.2	5.4	5.9	5.0	3.8	11.5
13	Craftsmen and Others	12.8	11.3	10.5	8.9	10.2	9.2	6.0
VI	Educational Attainment							
14	Primary School Graduates	18.5	15.5	16.4	8.4	18.4	15.2	4.3
15	High School Graduates & Up	12.7	1.0	1.1	1.4	6.0	0.4	0.5

Table 2.-SIMPLE REGRESSION OF LABOR FORCE DATA USING PERCENTAGE ENGAGED IN AGRICULTURE AS THE DEPENDENT VARIABLE

Eq.: $y = a + bx$

y_8 = % of Employed Labor Force in Agriculture

VARIABLES	Intercept	Regression Coefficient	Computed T-value	R	R^2	Standard Error of Estimate	F-
. National Income							
x_1 National Income per Capita	75.752	-0.161 (0.043)	-3.770***	0.736	0.504	22.550	14.2
. Labor Force Participation Rate							
x_2 Total Labor Force Participation Rate	-116.382	2.894 (0.738)	3.923***	0.750	0.525	22.060	15.3
x_3 Male LF Participation Rate	-280.385	4.456 (0.582)	7.652***	0.911	0.816	13.744	58.5
x_4 Female LF Participation Rate	-13.922	1.489 (0.655)	2.271**	0.548	0.242	27.870	5.1
. Status of Employment							
x_5 Wage and Salary Workers	98.857	-1.297 (0.190)	-6.841***	0.892	0.779	15.055	46.8
x_6 Self-employed Workers	-21.983	1.936 (0.456)	4.248***	0.775	0.567	21.062	18.04
x_7 Unpaid Family Workers	5.172	1.785 (0.431)	4.144***	0.767	0.554	21.375	17.17
Industrial Classification							
x_9 Manufacturing	86.620	-3.793 (0.657)	-5.774***	0.858	0.713	17.145	33.34
x_{10} Commerce	96.540	-3.249 (0.316)	-10.283***	0.948	0.890	10.640	105.74
x_{11} Services	93.012	-2.466 (0.178)	-13.838***	0.970	0.936	8.093	191.47
Occupation Classification							
x_{12} 3 High Level Occupations	88.038	-3.769 (0.395)	-9.544***	0.940	0.874	11.370	91.08
x_{13} Craftsmen and Others	97.765	-3.360 (0.521)	-6.450***	0.881	0.758	15.767	41.608

(R) Revised and new data.

*** Significant at 1 per cent.
** Significant at 5 per cent.
* Significant at 10 per cent.

No asterisk: Not signif

Table 4.-SOME MULTIPLE REGRESSIONS OF LABOR FORCE DATA...(Continued)

Equation: $a + b_1x_1 + b_2x_2 + \ldots b_nx_n$ y_8 = % of Employed Labor Force in Agriculture	(8) $x_1, x_2, x_6, x_{10}, x_{12}$	(9) x_2, x_6, x_{12}	(10) x_3, x_6, x_{10}, x_{12}	(11) x_3, x_5, x_{10}, x_{12}
Intercept: a	66.390	17.129	64.396	92.235
Regression coefficient: b				
b_1 National income per capita	-0.007 (0.014)			
b_2 Total Male and Female Labor Force Participation Rate	0.257 (0.177)	0.551 (0.513)		
b_3 Male Labor Force Participation Rate			0.236 (0.165)	0.110 (0.180)
b_5 Wage and Salary Workers				-0.217* (0.109)
b_6 Self-employed Workers	0.321 (0.198)	0.745* (0.404)	0.301** (0.115)	
b_{10} Commerce	-1.797*** (0.191)		-1.728*** (0.192)	-1.826*** (0.205)
b_{11} Services	-		-	-
b_{12} 3 High Level Occupations	-1.434*** (0.273)	-2.530*** (0.803)	-1.677*** (0.229)	-1.462*** (0.330)
R_2	0.997	0.956	0.996	0.995
R	0.989	0.889	0.989	0.986
Standard Error of Estimate	3.298	10.684	3.379	3.735
F-value	244.386***	35.743***	290.696***	237.602***

See footnotes in Table 2.

Table 1.-COUNTRY DATA SERIES

Variables	Thailand: Bangkok-Thonburi (Urban) 1967	West Malaysia (Urban) 1965	Singapore (Urban) 1966	Indonesia (Urban) 1964-65	Thailand: All Other Urban 1967	Philippines (Urban) May 1967	West Malaysia All 1967
I National Income							
1 National Income per Capita	273.34	487.15	535.70	112.07	200.36	273.51	252.36
II Labor Force Participation Rates							
2 Total Male and Female	51.0	47.5	42.3	42.7	55.2	54.2	52.7
3 Male	62.7	68.7	64.4	63.5	67.1	69.7	73.0
4 Female	39.9	25.3	19.8	23.5	44.3	40.3	35.2
III Status of Employment							
5 Wage and Salary Workers	66.9	77.5	75.7	51.4	41.3	63.5	55.6
6 Self-employed Workers	18.0	14.0	16.0	35.6	30.4	25.0	25.4
7 Unpaid Family Workers	11.8	4.4	4.5	9.4	23.9	11.2	17.3
IV Industrial Classification							
8 Agriculture	2.1	3.1	3.5	11.2	12.1	17.3	52.2
9 Manufacturing	29.3	16.1	19.2	11.7	13.9	18.2	8.6
10 Commerce	29.3	26.7	23.7	25.7	33.0	19.6	10.6
11 Services	35.6	29.1	35.8	40.0	30.0	31.8	17.6
V Occupational Classification							
12 3 High Level Occupations	16.6	23.9	21.1	22.1	14.1	22.9	10.9
13 Craftsmen and Others	34.6	22.2	28.5	24.2	14.2	19.5	17.4
VI Educational Attainment							
14 Primary School Graduates	16.1	27.4	20.1	28.6	17.2	18.8	-
15 High School Graduates & Up	5.3	13.0	8.8	7.1	3.6	26.8	-

(R) Revised and new data.

Table 1.-COUNTRY DATA SERIES (Continued)

	Variables	Philippines All May 1967	Indonesia: Java and Madura 1964-65	Indonesia Almost All 1964-65	Indonesia Other Islands 1964-65	Philippines (Rural) May 1967	Indonesia (Rural) 1964-65	Thailand (Rural) 1967
I	National Income							
	1 National Income per Capita	158.10	80.56	91.33	111.52	109.09	88.68	110.13
II	Labor Force Participation Rates							
	2 Total Male and Female	61.2	57.0	55.8	53.6	64.7	57.6	73.9
	3 Male	78.8	77.4	76.0	73.5	83.1	77.7	79.3
	4 Female	43.5	37.5	36.4	34.3	45.3	38.2	68.8
III	Status of Employment							
	5 Wage and Salary Workers	36.2	34.1	27.7	14.7	25.5	25.4	10.7
	6 Self-employed Workers	37.0	44.9	47.7	53.4	41.6	48.9	29.7
	7 Unpaid Family Workers	26.7	19.0	22.5	29.5	32.8	23.8	57.3
IV	Industrial Classification							
	8 Agriculture	57.4	66.9	68.8	72.7	73.1	74.5	82.6
	9 Manufacturing	11.4	6.5	5.8	4.2	8.8	5.2	3.3
	10 Commerce	11.1	11.7	10.4	7.8	7.8	8.9	5.8
	11 Services	13.2	11.3	11.2	10.9	6.0	8.3	4.9
V	Occupational Classification							
	12 3 High Level Occupations	10.1	5.2	5.4	5.9	5.0	3.8	11.5
	13 Craftsmen and Others	12.8	11.3	10.5	8.9	10.2	9.2	6.0
VI	Educational Attainment							
	14 Primary School Graduates	18.5	15.5	16.4	8.4	18.4	15.2	4.3
	15 High School Graduates & Up	12.7	1.0	1.1	1.4	6.0	0.4	0.5

(R) Revised and new data.

INDONESIA: REGIONAL SERIES

Table 2.-SIMPLE REGRESSION OF LABOR FORCE DATA USING PERCENTAGE ENGAGED IN AGRICULTURE AS THE DEPENDENT VARIABLE

: $y = a + bx$ y_8 = % of Employed Labor Force in Agriculture ABLES	Intercept	Regression Coefficient	Computed T-value	R	$\bar{R}^2$	Standard Error of Estimate	F-val
ational Income							
x_1 National Income per Capita	118.662	-60.679 (33.732)	-1.800	0.446	0.138	28.006	3.236
Labor Force Participation Rate							
x_2 Labor Force Participation Rate: Both Sexes	-165.976	4.181 (0.391)	10.700***	0.948	0.890	9.995	114.484
x_3 Labor Force Participation Rate: Male	-237.453	4.016 (0.571)	7.028***	0.890	0.776	14.287	49.391
x_4 Labor Force Participation Rate: Female	- 78.671	3.958 (0.401)	9.881***	0.939	0.873	10.729	97.631
Status of Employment							
x_5 Wage and Salary Workers	117.571	-1.928 (0.257)	-7.513***	0.902	0.798	13.542	56.438
x_6 Self-employed Workers	-107.975	3.589 (0.451)	7.951***	0.911	0.816	12.926	63.216
x_7 Unpaid Family Workers	- 17.535	3.697 (0.486)	7.609***	0.904	0.803	13.402	57.904
Industrial Classification							
x_9 Manufacturing	109.113	-8.239 (0.774)	-10.648***	0.947	0.889	10.038	113.388
x_{10} Commerce	104.954	-3.605 (0.125)	-28.953***	0.992	0.984	3.868	838.279
x_{11} Services	93.999	-2.111 (0.062)	-33.801***	0.994	0.988	3.320	1,142.486
ccupation Classification							
x_{12} 3 High Level Occupations	89.556	-3.540 (0.119)	-29.831***	0.993	0.984	3.756	889.913
.. Craftsmen and							

ASEAN COUNTRIES (R)

Table 4.-SOME MULTIPLE REGRESSION OF LABOR FORCE DATA USING PERCENTAGE ENGAGED IN AGRICULTURE AS THE DEPENDENT VARIABLE

Equation: $y = a + b_1x_1 \dots b_nx_n$ y_8 = % of Employed Labor Force in Agriculture	x_2, x_6, x_{10}, x_{12}	x_3, x_6, x_{10}, x_{12}	x_3, x_5, x_{10}, x_{12}
Intercept: a	50.307	29.432	56.584
Regression Coefficient: b			
b_1 National Income per Capita			
b_2 Total Male and Female Labor Force Participation Rate	0.411** (0.167)		
b_3 Male Labor Force Participation Rate		0.636** (0.279)	0.542* (0.269)
b_5 Wage and Salary Workers			-0.297*** (0.081)
b_6 Self-employed Workers	0.423*** (0.102)	0.319*** (0.093)	
b_{10} Commerce	-1.724*** (0.145)	-1.509*** (0.191)	-1.602*** (0.182)
b_{11} Services			
b_{12} 3 High Level Occupations	-1.310*** (0.250)	-1.535*** (0.208)	-1.147*** (0.265)
$\underline{R}^2$	0.997	0.997	0.997
R	0.992	0.992	0.992
Standard Error of Estimate	2.790	2.875	2.780
F-value	425.847***	400.871***	428.804***

(R) Revised and new data.

*** Significant at 1 per cent.
** Significant at 5 per cent.
* Significant at 10 per cent.
No asterisk: Not significant at 10 per cent for the T-test and at 5 per cent for the F-test.

Table 1.-INDONESIA: REGIONAL SERIES

	Variables	Java and Madura (Urban)	East Java (Urban)	North Sumatra and Atjeh (Urban)	Indonesia (Urban)	Outside Java (Urban)	Java and Madura (Total)	Indonesia (Total)	North Sumatr and Atjeh (Total)
I	National Income								
1	National Income per Capita	1.1	1.1	1.4	1.2	1.4	0.9	1.0	1.3
II	Labor Force Participation Rates								
2	Total Male and Female	43.8	45.8	43.3	42.6	40.9	56.9	55.8	54.1
3	Male	63.7	65.8	63.8	63.5	63.1	77.3	76.0	70.6
4	Female	25.8	27.8	22.2	23.5	19.6	37.5	36.4	37.3
III	Status of Employment								
5	Wage and Salary Workers	56.7	53.9	49.7	51.4	41.5	34.1	27.7	23.3
6	Self-employed Workers	32.0	33.9	33.5	35.6	42.3	44.9	47.7	51.7
7	Unpaid Family Workers	8.0	8.3	12.6	9.4	11.9	19.0	22.5	22.9
IV	Industrial Classification								
8	Agriculture	8.2	9.7	11.0	11.2	16.8	66.9	68.8	70.6
9	Manufacturing	13.2	12.7	9.9	11.7	8.8	6.5	5.8	3.6
10	Commerce	26.0	26.3	25.7	25.7	25.1	11.7	10.4	8.3
11	Services	42.0	40.1	36.6	40.0	36.1	11.3	11.2	13.4
V	Occupational Classification								
12	3 High Level Occupations	21.9	22.0	21.4	22.1	22.7	5.2	5.4	6.3
13	Craftsmen and Others	25.9	24.0	20.4	24.2	21.0	11.3	10.5	9.2
VI	Educational Attainment								
14	Primary School Graduates	28.8	27.8	37.7	28.6	28.1	15.5	16.4	24.2
15	High School Graduates & Up	6.6	6.3	9.4	7.1	8.2	1.0	1.1	2.0

Table 1.-INDONESIA: REGIONAL SERIES (Continued)

	Variables	East Java (Total)	Java and Madura (Rural)	Outside Java (Total)	Indonesia (Rural)	North Sumatra and Atjeh (Rural)	East Java (Total)	Outside Java (Rural)
I	National Income							
1	National Income per Capita	0.7	0.8	1.2	1.0	1.3	0.8	1.2
II	Labor Force Participation Rates							
2	Total Male and Female	58.6	58.7	53.6	57.6	55.6	60.5	55.4
3	Male	79.9	79.1	73.5	77.7	71.5	81.8	75.1
4	Female	38.6	39.1	34.3	38.2	39.3	40.2	36.6
III	Status of Employment							
5	Wage and Salary Workers	33.2	32.0	14.7	25.4	21.1	31.1	11.9
6	Self-employed Workers	45.5	46.1	53.4	48.9	53.2	46.7	54.6
7	Unpaid Family Workers	19.5	20.1	29.5	23.8	23.8	20.7	31.4
IV	Industrial Classification							
8	Agriculture	70.7	72.6	72.7	74.5	75.5	77.0	78.6
9	Manufacturing	4.9	5.9	4.2	5.2	3.1	4.1	3.8
10	Commerce	10.8	10.3	7.8	8.9	6.8	9.2	6.0
11	Services	10.6	8.3	10.9	8.3	11.5	7.6	8.3
V	Occupational Classification							
12	3 High Level Occupations	5.0	3.6	5.9	3.8	5.0	3.3	4.2
13	Craftsmen and Others	9.3	9.9	8.9	9.2	8.3	7.8	7.6
VI	Educational Attainment							
14	Primary School Graduates	14.6	14.2	18.4	15.2	23.1	13.2	17.4
15	High School Graduates & Up	0.9	0.4	1.4	0.4	1.3	0.4	0.6

Source: Indonesia National Socio-Economic Survey, 1965.

Table 3.-SOME MULTIPLE REGRESSION OF LABOR FORCE DATA USING PERCENTAGE ENGAGED IN AGRICULTURE AS THE DEPENDENT VARIABLE

Equation: $y = a + b_1x_1 \ldots + b_nx_n$ y_8 = % of Employed Labor Force in Agriculture	(1) x_2, x_6, x_{12}	(2) x_3, x_6, x_{12}	(3) x_2, x_6, x_{10}, x_{12}	(4) x_3, x_6, x_{10}, x_{12}	(5) $x_1, x_2, x_6, x_{10}, x_{12}$	(6) $x_1, x_2, x_6, x_{10}, x_{12}$
Intercept: a	-10.232	7.383	-13.140	6.874	-4.486	6.811
Regression coefficient: b						
b_1 National Income per Capita					-1.683 (3.286)	0.013 (3.742)
b_2 Total Male and Female Labor Force Participation Rate	0.684** (0.260)		0.661*** (0.279)		0.561 (0.349)	
b_3 Male Labor Force Participation Rate		0.340** (0.132)		0.464*** (0.186)		0.465 (0.262)
b_5 Wage and Salary Workers						
b_6 Self-employed Workers	1.105*** (0.103)	1.042*** (0.086)	1.171*** (0.170)	0.905*** (0.164)	1.161*** (0.177)	0.905*** (0.181)
b_{10} Commerce			0.182 (0.360)	-0.484 (0.483)	0.074 (0.430)	-0.484 (0.487)
b_{11} Services						
b_{12} 3 High Level Occupations	- 2.143*** (0.276)	-2.483*** (0.154)	-2.285*** (0.285)	-2.035*** (0.477)	-2.245*** (0.427)	-2.034*** (0.482)
R	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997
R^2	0.9992	0.9991	0.9991	0.9990	0.9990	0.9990
Standard Error of Estimate	0.882	0.896	0.931	0.942	0.967	0.946
F-value	5,454.594***	5,285.531***	3,673.719***	3,583.148***	2,723.759***	2,842.665***

Table 3.-SOME MULTIPLE REGRESSION OF LABOR FORCE DATA ... (Continued)

Equation: $y = a + b_1x_1 \ldots + b_nx_n$ y_8 = % of Employed Labor Force in Agriculture	(7) x_2, x_5, x_{12}	(8) x_3, x_5, x_{12}	(9) x_2, x_5, x_{10}, x_{12}	(10) x_3, x_5, x_{10}, x_{12}	(11) $x_1, x_2, x_5, x_{10}, x_{12}$
Intercept: a	64.572	88.842	64.256	55.549	79.687
Regression coefficient: b					
b_1 National Income per Capita					-3.249 (6.656)
b_2 Total Male and Female Labor Force Participation Rate	0.581 (0.627)		0.592 (0.632)		(0.400) (0.761)
b_3 Male Labor Force Participation Rate		0.124 (0.279)		0.597 (0.368)	
b_5 Wage and Salary Workers	-0.536*** (0.133)	-0.461*** (0.098)	-0.392* (0.201)	-0.199 (0.169)	-0.386* (0.208)
b_6 Self-employed Workers					
b_{10} Commerce			-0.687 (0.712)	-1.761 (0.956)	-0.882 (0.835)
b_{11} Services					
b_{12} 3 High Level Occupations	-2.320*** (0.665)	-2.793*** (0.322)	-1.858** (0.824)	-1.130 (0.953)	-1.786* (0.862)
$\frac{R}{R^2}$	0.998 0.996	0.998 0.996	0.999 0.996	0.999 0.996	0.999 0.996
Standard Error of Estimate	1.891	1.943	1.906	1.831	1.966
F-value	1,183.383***	1,120.742***	874.146***	947.404***	657.318***

S OF THE PHILIPPINE LABOR F CE 1957-196
(May figures)

1960a/	1961	1962	1963	1964	1965	1966	1967
360.0	368.0	376.0	391.0	384.0	391.0	399.0	406.0
57.5	59.6	60.3	60.9	59.9	57.4	56.7	61.2
78.1	78.8	78.6	78.7	78.2	76.4	75.9	78.8
37.2	40.3	42.5	43.6	42.0	38.7	37.7	43.5
28.1	29.4	30.3	30.8	31.7	34.8	34.5	36.2
41.0	40.9	40.3	40.4	39.7	41.0	37.8	37.0
30.1	29.6	29.3	28.6	28.5	24.0	27.5	26.7
60.7	59.8	61.6	59.4	58.5	57.4	56.9	57.4
12.4	11.9	11.2	12.2	11.8	11.6	12.1	11.4
9.1	9.5	9.7	10.4	11.3	10.6	10.9	11.1
10.5	11.1	11.2	10.5	11.4	13.5	12.8	13.2
8.2	9.1	9.2	8.6	9.8	10.5	10.6	10.1
13.7	12.9	12.4	13.3	13.1	13.2	13.6	12.8

October 1959 and 1961 was added to October 1960.

Table 12.-SIMPLE REGRESSION OF LABOR FORCE DATA IN THE PHILIPPINES 1957-67 WITH NATIONAL INCOME PER CAPITA (AT 1955 PRICES) AS THE DEPENDENT VARIABLE

$y = a + bx$ y = Per Capita Income RIABLES		Intercept	Regression Coefficient	Computed T-value	R	$\bar{R}$	Standard Error of Estimate	F-
bor Force Participation te								
x_2	Total Labor Force Participation Rate	343.184	0.568	0.146	0.049	-0.108	19.836	0.
x_3	Male LF Participation Rate	1,091.936	-9.125**	-2.386	0.623	0.319	15.542	5.
x_4	Female LF Participation Rate	281.254	2.359	0.989	0.313	-0.002	18.860	0.
tatus of Employment								
x_5	Wage and Salary Workers	216.989	5.226***	8.400	0.942	0.874	6.679	70
x_6	Self-employed Workers	710.927	-8.218***	-5.518	0.879	0.747	9.485	30
x_7	Unpaid Family Workers	587.349	-7.373***	-3.237	0.733	0.487	13.499	10
ndustrial Classification								
x_8	Agriculture	894.580	-8.701***	-3.959	0.797	0.595	11.994	15
x_9	Manufacturing	640.135	-22.144	-1.630	0.477	0.142	17.451	2
x_{10}	Commerce	161.985	21.100***	4.127	0.809	0.616	11.678	17
x_{11}	Services	230.388	12.780***	3.874	0.791	0.583	12.159	15
ccupation Classification								
x_{12}	3 High Level Occupation	236.604	15.439***	5.023	0.859	0.708	10.183	25
x_{13}	Craftsmen and Others	587.789	-15.939	-1.327	0.404	0.071	18.163	1

*** Significant at 1 per cent.

** Significant at 5 per cent

* Significant at 10 per cent.

No asterisk: Not significant at 10 per cent for the T-test and at 5 per cent for the F-test.

PHILIPPINES

Table 13.-SIMPLE REGRESSION OF LABOR FORCE DATA IN THE PHILIPPINES 1957-67 WITH PERCENTAGE OF EMPLOYED WAGE AND SALARY WORKERS AS THE DEPENDENT VARIABLE

: $y = a + bx$ y_8 = % of Employed Wage and Salary Workers	Intercept	Regression Coefficient	Computed T-value	R	$\bar{R}^2$	Standard Error of Estimate	F-val
National Income(at 1955 prices)							
x_1 National Income per Capita	-33.363	-0.170 (0.020)	8.400***	0.942	0.874	1.203	70.568
Labor Force Participation Rate							
x_2 Total Labor Force Participation Rate	39.037	-0.143 (0.699)	-0.204	0.068	-0.106	3.570	0.042
x_3 Male LF Participation Rate	166.037	-1.728 (0.666)	-2.596**	0.654	0.365	2.706	6.740
x_4 Female LF Participation Rate	20.902	0.239 (0.445)	0.537	0.176	-0.077	3.523	0.288
Status of Employment							
x_6 Self-employed Workers	90.028	-1.462 (0.279)	-5.232***	0.868	0.725	1.780	27.374
x_7 Unpaid Family Workers	74.745	-1.547 (0.314)	-4.921***	0.854	0.699	1.863	24.216
Industrial Classification							
x_8 Agriculture	134.677	-1.749 (0.308)	-5.833***	0.889	0.768	1.637	34.030
x_9 Manufacturing	76.671	-3.876 (2.469)	-1.570	0.464	0.128	3.171	2.464
x_{10} Commerce	-6.302	3.623 (0.998)	3.628***	0.771	0.549	2.280	13.163
x_{11} Services	0.438	2.629 (0.418)	6.296***	0.903	0.794	1.539	39.645
Occupation Classification							
x_{12} 3 High Level Occupations	3.049	3.032 (0.381)	7.948***	0.936	0.861	1.264	63.163
x_{13} Craftsmen and Others	60.598	-2.268 (2.243)	-1.010	0.319	0.002	3.391	1.022

*** Significant at 1 per cent.
** Significant at 5 per cent.
* Significant at 10 per cent.

No asterisk: Not significant at 10 per cent for the T-test and at 5 per cent for the F-test.

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Institute of Economic Development and Research
SCHOOL OF ECONOMICS
University of the Philippines

Discussion Paper No. 69-22 December 17, 1969

SIGNIFICANT CHARACTERISTICS OF THE PHILIPPINE LABOR FORCE: A COMPARISON WITH OTHER ASEAN COUNTRIES

by

Everett D. Hawkins

Significant Characteristics of the Philippine Labor Force: A Comparison with other ASEAN Countries[1]

Everett D. Hawkins

I

Although the labor forces of no two countries have identical characteristics, it is the thesis of this paper that in many respects the Philippine labor force closely resembles those of her neighbors, the ASEAN countries: Indonesia, Singapore, Malaysia and Thailand. Of course, each has its peculiarities. The Philippines exports doctors and nurses; Indonesia has the densest population in the central island of Java; Singapore is primarily an urban area; Malaysia shows wide differences in ethnic groups; Thailand claims a higher percentage of women workers than other countries. It is the contention of this paper, however, that the similarities are more significant than these particular differences.

Let us start by making some tentative hypotheses. These are primarily developed from an intensive study of the population and labor force in Indonesia[2] with some reference to other ASEAN countries.

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[1] Miss Rachel Cabato has rendered valuable assistance in the preparation of this paper. The author wishes to thank her and all his colleagues at the School of Economics, University of the Philippines, for their help and encouragement.

[2] "Indonesia's Population Problem" Chapter 6 in Asia's Population Problem, S. Chandrasekhar, ed., London: George Allen and Unwin, Ltd., 1967, pp. 119-145.

1. The Philippines and other Southeast Asian countries are experiencing a rapid increase in population, a veritable population explosion because birth rates are remaining high while death rates have fallen rapidly.

2. Each country has has a post-World War II baby boom coming after a "hollow" war generation. Although we are assuming similarities, we must recognize exogenous differences; for example, certain important events, like the revolutionary struggles against the Dutch, which caused the baby boom to start later in Indonesia than in the Philippines.

3. Each country, with the exception of the special case of Singapore, still has most of its population living and working in rural areas, but with bulging urban areas with different labor force characteristics than the rural areas.

4. From the above we would expect: a) agriculture, forestry and fishing to be the leading industries, b) farming and related work to be the leading occupations, c) self-employed and unpaid family workers to exceed wage and salary workers. But as economic development and urbanization take place increasing numbers and percentages would enter secondary and tertiary industries, manufacturing, commerce

and services. For example, we can assume that the Philippines is more economically developed than Indonesia, as measured, for example, by a higher per capita income, and so we would expect in the Philippines a higher percentage of urban workers, of non-farm occupations, of wage and salary workers and high level employment than in Indonesia.

In general the data used in this paper come from labor force sample surveys rather than the Census of each country, since usually the former is more precise in its measurement of labor force characteristics. For the Philippines this has meant using the surveys from 1957-67 with comparisons made with other countries using data from the second half of the 1960's which are also considerably more recent than the census figures of 1957, 1960 and 1961. Originally it was planned to link educational attainment with labor force characteristics, but the data from the labor force surveys made meaningful comparisons most difficult. An attempt to find comparable data from other sources will be made later.

For many reasons it was decided not to include in this paper any special analysis of unemployment because

the definitions of unemployment often vary from study to study and country to country. Furthermore, unemployment is not a very meaningful concept in rural areas with large percentages of the labor force self-employed or unpaid family workers.[3] Of course, there are problems with other labor force concepts, but an effort has been made to make the necessary adjustments. The use of ILO single digit classifications for industry and occupations has assisted in the standardization both in the censuses and labor force sample surveys.

The Philippines faces a major population explosion that has already caused major labor force problems and will continue to do so for some years to come. So do the other ASEAN countries. Let us start by analyzing the general population and labor force problems in the Philippines in Section II. A comparison of the Philippine picture with that in other ASEAN countries follows in Section III. A more detailed analysis of the particular salient features of the Philippine labor force is presented in Section IV and a comparison with other ASEAN countries in Section V. A final section will attempt to highlight the major common elements with some reference to important differences.

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[3] Professor You Poh-Seng of the University of Singapore is active in the drive to get labor force definition more meaningful in the ASEAN setting.

II

General Population and Labor Force Problems in the Philippines

From the end of the 18th century, Thomas Robert Malthus has made economists concerned about the relation between a higher rate of population increase and a lower rate of increase in food supply with a resulting low subsistence level of wages. Certainly the rate of population increase in the Philippines has since World War II been among the highest in the World, over 3 per cent, possibly 3.5 per cent a year. The population according to the census in 1948 was 19 million; 12 years later in the 1960 census, it was almost 27 million, and by the census of 1970 it will probably have doubled the 1948 figure and be 38 million people. If the current rate of population growth continues, the population will double in less than 22 years and be over 75 million in 1990 and over a 100 million in the year 2000.

In recent years, although money wages have risen slowly, real wages of unskilled workers have fallen and those of skilled workers have declined even faster. It was not until 1968, with relatively stable prices due to the large rice crop, helped by IR-8 and other "miracle" seeds and the

spread of modern agricultural technology, that real wages rose for the first time since 1959.

The malthusian race in the Philippines between man and land, between mouths and food, has seriously risen in tempo in the post-war period. The Philippines has its crowded slums and overcrowded rural areas, but fortunately it has its frontier areas where land settlement is still taking place. In fact, for some years the increase in food supply to meet the mouths of new Philippine babies came from the addition of new lands rather than increases in the productivity per hectare. New marginal lands, however, usually have lower yields and higher costs. The new rice technology may give the Philippines only a few years of peace until the population again catches up to food supply, unless in the meantime a major campaign is launched to lower birth rates and a further drive is made to extend modern technology in both agriculture and industry.

Since foreign migration during the 20th century has been relatively minor, except in a few specific instances, the growth of population is almost entirely accounted for by natural increases: births minus deaths. Registration

of death and birth is still incomplete in the Philippines, but fortunately the Bureau of Census and Statistics has been conducting sample surveys usually twice a year since 1956.

The birthrate has remained fairly regularly at the high level of between 45 and 50 per thousand population with the possible exception of the disrupted war and reconstruction years, so that the increase in population is due mainly to the really significant decrease in the death rate which has dropped from 30 to 50 or even more per thousand in the 1960's.

The Philippine population boom since World War II, especially since the 1948 census, has been primarily a baby boom; not only have more babies been born, but they have tended to survive much better than in the troubled war and immediate post-war years. The percentage of children under 15 rose from 44.2 per cent in 1948 to 45.7 per cent in the 1960 census. And this trend of an increasing younger population is expected to continue to the census of 1970 when Dr. Concepcion expects the median age of population to be only 16.3 years as compared to 20.3 years in 1903.[4/]

[4/] The Manila Chronicle, July 13, 1969, p. 3.

In the 1960 census each of the age groups 12 years of age and under was considerably larger than each of those from 13 to 19; each of the 20 to 24 year groups was not much smaller than the 13 to 19 year olds. Because of war and post-war conditions, the 13 to 19 year olds are a relatively small group, a relatively hollow generation in relation to those age groups just above and below them.

A baby boom following a relatively hollow generation means a primary school boom starting 7 years later and a labor force bulge 15 to 20 years later. About that same time a new marriage boom starts, the demand for housing rises and a new baby boom is on its way. Since the middle 50's the Department of Education has had a difficult time trying to supply enough schools, first for primary school children and later, intermediate and secondary school students.

In 1955-56 registrations in the first year of primary school rose over 50,000 from 803,161 in 1954-55 to 854,357. The first year enrolments went up by over 500,000 from 1954-55 to 1,304,381 in 1965-66. All primary school enrolments also increased from just under 3 million in 1954-55 to about 4.2 million in 1964-65.

Starting about 1963, as expected, about fifteen years after the baby boom began in 1948, the labor force has been expanding yearly at a much more rapid rate than in the 1950's. In the period 1957-62, the population ten years of age and over was increasing at an average of only 480,000 a year, but rose to an average of 800,000 in the period 1962-67. The labor force also rose from 350,000 per year to 535,000 per year in the same period; the increases in 1967 and 1968 being above that average. Undoubtedly, the average yearly increase of those ten years of age and over at the end of the 1960's is over one million and the additional people in the labor force will average yearly over 650,000, unless a much larger number stay longer in high schools and universities and fewer women enter or stay in the labor force. The former is possible, the latter is most unlikely and early retirements are not numerically important.[5/]

The Philippines has already begun to reap the inevitable results of the baby boom which began about 1948: increased demand for education and more people entering the

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[5/] During the 1969 political campaign, the Nationalista Party reported in big advertisements that according to the labor force sample surveys, the annual increase in employment in 1962-65 (Macapagal regime) was only 288,000, while it was 647,000 in 1966-68 (Marcos regime). The Nationalista took credit for this increase in employment with no reference, of course, to the baby boom starting in 1948 or the previous hollow generation.

labor force. There is no reason to expect that there will be any decrease in the labor force in the next fifteen years since almost all of those who will enter the labor force in this period have already been born. In fact, in the 1970's the labor force will continue to grow, although it will not increase as spectacularly as it did in the middle and final years of the 1960's. The Philippines is also experiencing a new marriage boom which will result in a new baby boom and the demand for more housing. A new cycle of births is already starting which will mean more primary education needs in the 70's and more entrance into the labor force, more marriages, more babies and more housing demands in the 1980's.

III

Comparison with ASEAN Countries

Each of the five ASEAN countries had a baby boom after World War II which would be enough to create a labor force bulge some time in the 1960's. What is less widely discussed is that this baby boom was preceded by an absolutely or a relatively small or "hollow" generation. This small generation was undoubtedly the result of high death rates and lower birth rates caused by the disruption of the war, the occupation and in Indonesia the post-war revolution.

How does the record in the Philippines compare with the other countries? In comparison with other ASEAN countries Philippines has experienced her labor force bulge more from a baby boom than a hollow generation, while the reverse is true in Indonesia.

A quick glance at table 21 shows the baby boom clearly in the five ASEAN census reports. The 0-4 and the 5-9 year groups greatly exceeded the 10-14 and the 15-18 year olds; over 31 per cent of the population in each country was from 0-9 year of age, but only ± 20 per cent from 10-19. Nine years later in Singapore in 1966 the baby boom covers the 5-19 year olds. The 0-4 year group is smaller than both the 5-9 and the 10-14 year groups showing that Singapore has perhaps reached the third stage of the demographic transition where birth rates are falling off faster than death rates, thus resulting in a decline in the rate of growth. Japan in the 1950's had such a rapid decline in birth rates that population is rising only about one per cent a year. The reverse of a baby boom -- a dip was resulting in a labor force decline sufficient to cause (by the end of the 1960's) a shortage of junior high school graduates relative to their demand.

ASEAN countries, the censuses of 1970 may not show any major reversals but there may be some slowing down in the expected births because of the hollow generation reaching the child bearing age and as birth control begins to be more important. It is well to remember, however, that the big post-war generation because of the baby boom began to reach the child bearing age at the middle to the end of the sixties.

A look at the 10-14 and the 15-19 year olds in the 5 ASEAN censuses also shows that this group was relatively small in comparison with the older generations.

In a normal population distribution each older 5 year group should be smaller than the preceding 5 year group. Obviously in Indonesia this was not true in 1961. The 20-24 year olds exceeded the 15-19 year olds and the 25-30 year group exceeded the 20-24, the 15-19 and the 10-14 year olds. The 10-24 year olds are an "absolute" hollow generation. In Singapore the 10-14 year olds were about 500 less than the 15-19 year olds and in the Singapore Sample Household Survey of 1966 the 20-24 year olds was also an absolute "hollow" generation, smaller than the 25-30 year

the census and the survey were taken 9 years apart most of the 10-14 year olds in 1957 were the 20-24 year olds of 1966.

In the other three countries there is a relatively small or hollow group. In Malaysia we would have expected the 10-14 years to be a larger group. In Thailand the 15-19 are a relatively small group, only a bit larger than the 20-24 year olds. The Philippines had the least hollow profile, but the 15-19 years might well have been a larger group. The 10-14 year olds were 2.3 points higher than the 15-19, indicating the baby boom had started in this group about 1948 according to single year data. Had it started in 1945, this group would have been even larger.

The labor force bulge that appeared in the 60's is a function both of the height of the baby boom and the depth of the hollow generation.

The baby boom in the Philippines as well as in the three other Southeast Asian countries started sooner than in revolution-torn Indonesia. The hollow generation is most severe in Indonesia so it is not surprising that more has been written about it in Indonesia. For example,

G. W. Jones (1964) has made several projections pointing out that the growth of the labor force will be most rapid in the 1966-71 period, 14.7 per cent, almost 3 per cent a year as compared to only 8.8 per cent in 1956-61 or less than 2 per cent a year. The per cents of increase will decrease somewhat in the 70's as shown in Table 22 which assumes declining mortality after 1966. The same general picture would follow assuming constant mortality, but of course, the numbers would not rise quite so rapidly.

Table 22

ESTIMATED GROWTH OF THE INDONESIAN LABOR FORCE, 1956-61 AND PROJECTED GROWTH, 1961-81

Size of Labor Force (in thousands)

Year	Java & Madura	Outer Islands	Total	Increase	Per cent Increase
1956	21,018	10,844	31,862	-	
1961	22,727	11,852	34,579	2,717	8.5
1966	25,111	13,272	38,383	3,804	11.0
1971	28,658	15,384	44,042	5,659	14.7
1976	32,514	17,678	50,192	6,150	14.0
1981	36,552	19,985	56,537	6,345	12.6

Source: G. W. Jones. "The Growth and Changing Structure of the Indonesian Labor Force, 1930-81." Bulletin of Indonesian Economic Studies, Canberra. No. 4, June 1964. p. 64. He did not show totals.

He has also pointed out (see Table 23) how this lumpiness will affect the age composition of the labor force. The per cent of Indonesian workers 45 and over will increase because of declining mortality. The percentage of younger worker 10-24 will also rise because of the labor force boom until about 1976 and then it will decline, while the middle age group 25-44 will decline in percentage as the hollow generation passes through these ages until in 1976-81 when the baby boom exceeds the hollow generation in the 25-44 year group.

Table 23

PERCENTAGE COMPOSITION OF THE PROJECTED INDONESIAN LABOR FORCE, BY AGE GROUP

(assuming declining mortality)

Age Group	1961	1966	1971	1976	1981
Java and Madura	%	%	%	%	%
10-24	25.9	26.8	30.8	34.1	30.9
25-44	49.0	45.6	40.3	35.3	37.8
45+	25.2	27.6	28.9	30.6	31.3
Outer Islands					
10-24	30.9	31.8	35.2	37.9	33.6
25-44	46.2	43.9	39.9	36.5	40.3
45+	22.9	24.3	24.9	25.6	26.1

Source: G. W. Jones, op. cit., p. 66.

This kind of projection, taking into account these irregularities in the birth and survival patterns gives a much more realistic picture than simple linear trends and averages which tend to gloss over crucial differences. For certain purposes even five year groupings conceal by averaging out differences. Single age cohorts are better for more precise estimates, but it seems as if some random differences are not real but due to the reporting of people that their age, for example, is more often 25 than 24 or 26 years of age. Demographers have developed ways to make adjustments for this factor, but possibly in the post-war period there were sharp breaks which must be perceived not statistically smoothed out in making labor force projections.

IV

An Analysis of the Labor Force in the Philippines

We have already moved a considerable distance from the simple Malthusian population ideas, but we need to go further in breaking down total population into those not in the labor force and those in it. In turn we must analyze each of the major components of these two categories. In the Philippines, the dividing point used is 10 years of age.

Those under 10 years are considered too young to be in the labor force. They constituted about a third of the population -- over 8.9 out of 27.1 million -- in the 1960 census. (Table 1) Because of the baby boom those under 10 had risen to 13 million in 1967, or about 37 per cent of the total population. (Table 2)

Since those 10 and over might or might not be in the labor force this group is singled out for special attention. Those not in the labor force aged 10 or over were estimated by the census of 1960 to be 9.1 out of 27.1 million, or another third of the total population. That meant that less than a third of the total population of the Philippines was in the labor force according to the 1960 census. The major classes of people not in the labor force but aged 10 or over are: students, housewives and those who are too old, sick or who choose not to work. Here the question of definitions is important. Because the Labor Force Sample Surveys use a more refined technique to distinguish these groups, the totals in these categories, depending on the season of the year, are generally a lower percentage than found in the 1960 census. Some students and housewives enter the labor force only in certain seasons:

planting, harvesting and vacation periods.

With the subtraction from the total population those too young to work and those not in the labor force 10 and over, the remainder is the labor force which in turn is divided into the employed and the unemployed. The labor force grew from 8.9 million in May 1957, to 13.3 million in May 1967, with unemployment reported as 773,000 and 1,089,000 respectively, leaving the employed labor force as 8.1 million in 1957 and 12.2 million in 1967.[6/] The October 1967 figures show a smaller labor force, fewer unemployed and fewer employed than in May 1967, for seasonal reasons mentioned above.

Labor Force Participation Rates

The basic variable, Labor Force Participation Rate, is usually related to the population of working age rather

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6/ Ruprecht has recomputed the absolute figures of the population 10 years of age and over, based on the 1960 census, which he calculates, were 7.1 per cent higher than those used in the sample surveys. He then goes on to use the sample survey percentages to calculate revised numbers for the labor force and some of its key variables. The absolute numbers used in this paper may be underestimated. Emphasis will, therefore, be put on percentages. Theodore R. Ruprecht, "Philippine Labor Statistics a Critique and Recomputation of PSSH Data," The Philippine Statistician, March-June, 1966 (Vol. XV, Nos. 1 & 2, pp. 73-88).

than total population. Philippines, Indonesia and Singapore use 10 years of age and over even if there is a decreasing percentage of younger teenagers 10-14 in the labor force in these countries. For this study the labor force participation rate is found by dividing those in the labor force 10 and over by the total population 10 and over, with adjustments where necessary for countries like Thailand which uses 11 and Malaysia which has adopted ages 15-65.

Table 2 shows that in May 1967, the Philippine labor force participation rate was 61.2 per cent, the October rate was lower. If the unemployed are subtracted, the employed labor force rate is 56.1

It is well known, however, that these labor force participation rates vary greatly between males and females, between rural and urban areas and among age groups. The first three variables to study, therefore are:

a) Sex

b) Rural/Urban

c) Age

These variables also are important in studying the employed, the unemployed, those not in the labor force, those 10 and

over, and the total population as well as the next three classifications of the employed labor force.

2. Status of Employment

3. Industrial Classification

4. Occupation Classification

a) Sex

Because of the different roles in Philippine society of men and women, their labor force participation rates differ markedly as do the other labor force rates discussed in the following sections. In most cases, therefore, totals for men and women will be followed by separate rates for men, and for women.

Although more boy than girl babies are born, and in the 1960 census males exceeded females in the total population, in the population 10 years of age and over in May 1967, the males did not exceed the females, the numbers were almost equal.

Housewives make up a large fraction, almost 40 per cent, of those 10 years of age and over not in the labor force. As a result the percentage of males 10 and over in the labor force is much higher than females, 78.8 per cent

as compared to 43.5 per cent (see Table 3) for a combined total of 61.2 per cent in May 1967. Women because of their role as mothers are not as permanently in the labor market as men, but there is some indication that a higher percentage of Filipino women are entering the labor force.

The number of unemployed were about equal, 554,000 males and 535,000 females, but calculated as a percentage of the labor force participants, females on the average had a much higher percentage of unemployment in May 1967, 11.3 per cent as compared with 6.5 per cent for males, for a total of 8.2 per cent. Of these unemployed there were just over 350,000 males and about the same number of females who had never been employed before.

b. Urban-Rural

Just about two thirds of the Philippine population 10 years of age and over are located in rural areas and only one third are in urban areas, but more than two thirds of the labor force and those employed are in the rural areas because of the higher participation rates in rural areas for both males and females.

In rural areas 83.1 per cent of the males 10 and over and 45.3 per cent of the females for a total of 64.6 per cent were in May 1967 in the labor force compared with only 69.7, 40.3 and 54.2 respectively in the urban areas. (Table 3). That means that of the total labor force of 13.3 million, 9.3 were in the rural areas and 3.9 in the urban areas in May 1967. Although there were slightly more reported unemployed in the rural areas than the urban, the percentage was considerably lower in the rural areas.

For careful study of the labor force in the Philippines as in other countries it is important to note the rural-urban differences in the other labor force variables.

c. Age

Age is a third important variable, especially in the younger and older age brackets from 10-24 and from 65 and over, in determining the labor force participation rates of the population 10 years of age and over. (Table 7). Although there is only a slight decline in the labor force participation rates between the 25-44 year olds (71.2 per cent) and the 45-64 group (68.8 per cent) in May 1966, the decline is even less in October of the same year. The sub-

stantial decline in the rate shows up in the 65 and over group -- only 36.9 per cent of those 65 and over were in the labor force in May 1966 and 40 per cent in October 1966. Of perhaps greater significance are the low labor rates for the younger group 10-24 years of age where the rate in May 1966 was 46.1 per cent as compared to 40.2 in October 1966. The seasonal pattern is clear with more young people in the labor force in May -- a school holiday period than in October, while the reverse holds for those 65 and over.

There is some decline in the labor force participation rates starting at age 60 or even earlier, while the participation rate under 25 drops off fairly rapidly. I made an estimate by five year groups showing participation rates of 49 per cent in the 20-24 group, 42 per cent in the 15-19 group and only 12 per cent in the 10-14 group in October 1965. In summary, starting at age 15 there may be a substantial increase in the percentage of young men and women entering the labor force with relatively constant percentages participating in the labor force from 25 to 60 or 65 and then a gradual decline.

It must be remembered that, although the total population in the younger age brackets 10-24 is proportionally

larger than in the older brackets, nevertheless the young form only about a third of the total employed population.

Table 8

Percentage of Labor Force by Age May 1966 and October 1966

Age	May	October
10--14	8.2	5.8
15-19	16.1	14.7
20-24	12.6	12.9
25-4·	40.2	42.8
45-›4	20.5	21.0
6' and over	2.3	2.7

The younger and older workers tend to have more than their roportion of workers with less than 40 hours a week. Unemp oyment is concentrated in the younger workers espe-cial.y among those looking for their first job.

Age is also important in those not in the labor force. 54.5 per cent of those not in the labor force were goinc to school or too young to work and 4.9 per cent were retired or too old in October 1966. Among males not in the labor force those in school or too young were 85 per cent

and those too old 6 per cent, leaving only 9 per cent in the other categories. Among females the key factor was housekeeping with 55 per cent; those in school and too young amounting to only 40 per cent; too old, 4 per cent; and other reasons, 1 per cent.

2. Status of Employment

The employed labor force is generally broken down into three or four main categories: the self-employed, (independent workers) the unpaid family workers and wage and salary employees. Sometimes a fourth group, employers, is added, but in the Philippines they are included with the self-employed.[7/]

In the early stages of development, but beyond the period of slavery and serfdom, the self-employed, composed of farm owners and renters, small sellers and merchants, shopkeepers, many craftsmen, most drivers of wagons, trishaws, taxis and other vehicles, boot blacks and many others, form the largest group. They are often assisted by their families and relatives as unpaid family workers. Only gradually does

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7/ In May 1966 the employers amount to only about 100,000.

the relationship of employer and employee develop until wage and salary workers become the predominant group in the labor force.

In the Philippines (see Table 4) self-employed workers, including employers, were still the largest group among the 12.2 million employed workers in May 1967. About 4.5 million or 37 per cent of the total were self-employed. The next largest group were wage and salary workers -- almost as large, with 4.4 million workers or over 36 per cent of the total. Unpaid family workers still numbered more than 3.2 million, but accounted for less than 27 per cent of the total.

Ten years earlier, in May 1957, wage and salary workers were in third place just below unpaid family workers. In the ten years, wage and salary workers increased the most rapidly, by 105 per cent, unpaid family workers by 35.5 per cent, and self-employed by only 27.5 per cent in comparison with the total increase of the employed labor force of almost 50 per cent. If this trend continues wage and salary workers should rise perhaps before 1970 to first place indicating the Philippines has reached that

stage of development attained some time ago by most developed countries of having the employee-employer relationship the most important form of employment. This does not mean that there is an over-all decrease in self-employment or unpaid family workers, but that their relative importance is declining as wage and salary workers increase several times faster than they do.

These total figures conceal a major difference in the two sexes. Among female workers unpaid family workers were still, in May 1966, the largest group; wage and salary workers, second; and self-employed, third; but in May 1967, female wage and salary workers went to the first place. Even in May 1957, male wage and salary workers slightly exceeded unpaid family workers and the spread between these groups has enlarged since then. The male self-employed still remain first, while amongst females it has sunk to third place.

Seasonally there are usually fewer employed in October than in May. Percentagewise, there is very little difference in the self-employed, but the wage and salary workers form a larger percentage of the total employed in