

Income Distribution in Jamaica

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1. Introduction

Since independence in 1962, Jamaica has witnessed changes in the physical and human capital stocks, taxation policies, production technology, household structure and even the general economic system. The percentage of illiterate population declined from 16 percent in 1960 to less than 5 percent by the late 70's and per capita disposable income (nominal) has more than doubled (The Statistical Institute, 1982). Bauxite and sugar, both major sources of foreign exchange, are in economic difficulty caused by declining world prices of aluminum and sugar. These and many other factors, including changes in political institutions in Jamaica, may have resulted in a redistribution of income among households since 1960.

The last reported study of household income distribution in Jamaica utilized the 1958 Household Expenditure Survey (Ahiram, 1964). The present study uses the household expenditure surveys of 1975, 1976, and 1977 to estimate the household income distribution in Jamaica. The household is treated as the income recipient unit, as opposed to income per person, in analyzing the distribution of income by size. Households were classified by selected socioeconomic and regional groups using characteristics of the household head. These characteristics are the occupational and age classes of household heads, household size, and region (Kingston Metropolitan Area, other main towns and rural areas). The analysis of the household groups is intended to contribute to the understanding of the income distribution. A multivariate statistical analysis of sources of income variation in Jamaica is reported to provide possible explanations of income distribution changes.

2. Data and Methods

The Statistical Institute of Jamaica (STATIN) conducted household expenditure surveys in 1975, 1976, and 1977 utilizing a self-weighting national sample (Statistical Institute, 1986). The sample sizes were 3,495, 486, and 1,004 households, respectively, for the three years.¹ The tabular analysis of incomes reported utilizes the most recent 1977 data. Results from the 1975 and 1976 surveys were in most cases similar to those for 1977. The 1975 and 1977 data sets were pooled to analyze income variations in the multivariate analysis. The 1976 data were not used except to trace the aggregate income distribution over time, since this survey had a different seasonal design.

The income concept applied is the annual total expenditure of the household adjusted for home food production and food received as gifts or payments. The reported household income data in the surveys proved incomplete or unreliable.² It is not uncommon to use total expenditure developed from consumer surveys to proxy income in national studies on income distribution (Ginneken, 1976; Morrison, 1978). The method of analyzing and characterizing the income distribution is standard, applying tabular analyses, Gini coefficients, and regressions to condition the resulting distributions for socioeconomic characteristics of households (Ginneken, 1976; Hsia and Chau, 1978; Fields and Schultz, 1980).

For the tabular analyses and regressions, the variables used are based on the occupational status of the household head (10 groups), income class (11 groups), location of the household (3 groups), age class of the household head (10 groups), and household size. In the tabular analysis, the shares of

¹The 1976 survey was conducted over the four seasons. Attempts were made to select the same households in all the seasons for interviews which were, however, not entirely successful. Due to the small sample size, the 1976 results must be interpreted with caution. For details see (Statistical Institute, 1986).

²For all results, income is proxied by total expenditure.

income accruing to the five percentage groups were calculated for the sample partitions generated by the other socioeconomic variables. In the regression analysis, the characteristics for partitioning the households were defined as independent dummy variables. Different combinations of these explanatory variables were used in expressions with the dependent variable expressed as the log of household income.

3. Size Distribution and the Gini Ratio

Age of Household Head

Table 1 summarizes results on the distribution of household income by age of head. Several observations are suggested in Table 1. First, the estimated mean incomes indicate a bimodal distribution, with the peaks occurring at age classes 24-29 and 45-49. Mean incomes for these two age classes are about the same. But, the mean income for the 45-49 age class has a larger standard deviation. Earning capabilities, educational attainment, and capital stock are likely to be more varied among the households in the 45-49 age class. Households in the 24-29 age class are more likely newly formed and may include working couples. Beyond this age group, female participation in the labor force declines, causing household incomes to fall.

The distributions of income for each age class by percentile group are also presented in Table 1. Clearly, the distribution of income is rightwardly skewed. The top 20 percent (81-100%) of the households in all the age classes account for over 40 percent of the income for the class. Also, note that the concentration of income at the top 20 percent of the households is greatest among the 45-49 age class. The bottom 20 percent of the households on the other hand account for only about 5 percent of the total income. Similar results were obtained from a comparative analysis of the 1975 and 1976 survey data.

Gini ratios are also reported in Table 1 along with an index of inequality. The index of inequality is simply the Gini coefficient of each class normalized by the lowest Gini coefficient. Income inequality is greatest among the households with heads 65 years of age and above. In a relative sense, the inequality is about 34 percent greater among the households with heads 65 years of age and above than among households with heads 24 years of age and less. These two age groups have the two lowest estimated mean incomes.

Occupational Status of Household Head

The income variation among households is greater by occupation status of the household head than by age class of the household head (Table 2). A majority of the household heads reported agriculture as their occupation.³ These agricultural households had the lowest mean incomes, about one-third the mean income for the professional and administrative class. The size distribution of income by occupation class of the household head was rightward skewed. Among the professional and administrative groups, the lowest twenty percent of the households account for less than 3 percent of the total income that accrued to this class of households. Notice that among agricultural and transport and communication households, the lowest 20 percent accounted for relatively higher shares of income than in the other occupation classes. Aside from the "others group", income inequality was greatest among the manufacturing and related occupation and professional and administrative groups, as indicated by Gini ratio (Table 2). Hsia and Chau (1978) also found

³The occupational classes noted are not truly occupational classes, but industries of employment. However, since no groups overlap each other, for policy purposes the above occupational groups are useful.

that the professionals and managers/administrative classes had a high mean income as well as a greater degree of inequality in their study of Hong Kong.

Household Size

Distributions of household incomes by household size are reported in Table 3. The unimember households, which constitute a sizable percentage of all households, had an estimated mean income which was nearly half that of the five member households. The five member households had the highest estimated mean income. The standard deviations of income are generally larger for larger sized than smaller sized households. Larger sized households with more members may have had different participation rates in labor markets depending on the ages of the members. Specifically, in larger households, the income earning members may not have been very different from the medium sized households, since there may have been more children and elderly members as well. Also, in larger sized households, the investment in human capital per member may have been lower than for smaller households.

The distribution of income by percentiles provides a picture that is again rightward skewed. The top 20 percent of the households account for over 50 percent of the total income as opposed to the less than 6 percent of total income received by the bottom 20 percent of the households. Income inequality was least pronounced among the eight and more member households. Based on the income inequality index, the degree of inequality for the household size and occupation classes appeared similar.

Regions

More than 58 percent of the sampled households were rural. These households had an estimated mean income that are about half that of the

households in Kingston. The variation of the estimated mean income of rural households was also the largest, as reported in Table 4. In rural areas, the majority of the households are agricultural and have incomes governed predominantly by the amount of agricultural resources they own or control. That is, the larger dispersion of the mean incomes of rural households may have been reflecting the dispersion in land ownership (Paukert, Skolka, and Maton, 1981).

The income distribution by region was also skewed to the right. Similar observations were suggested by the analysis of the 1975 and 1976 household expenditure surveys. The top 20 percent of the households received about 50 percent of the income while the bottom 20 percent had less than 5 percent. However, the overall income inequality among the regions was less pronounced than among the other partitions of the sample already examined. In Kingston where inequality is most pronounced relative to the other two regions, the index of inequality was about 12 percent higher than for other main towns.

4. Income Distribution in Jamaica: 1958-1977

The estimates in Table 5 provide a unique opportunity to evaluate the change in the income distribution of Jamaica over a nearly 20 year period. Ahirma (1964) calculated the distribution for Jamaica, making use of the 1958 Household Expenditure Survey. The definition of income Ahiram (1965, p. 335) used was as follows: "annual money income of wage earners, non-wage earners and other income recipients before deductions. It excludes income in kind, gifts, payments to pension funds and similar institutions on behalf of workers, recipients from capital transactions." Thus, differences in the definition of income as used in this and Ahiram's study should be kept in mind in evaluating the temporal relationships.

Based on the results in Table 5, income distribution in Jamaica appears to have changed modestly in favor of the poor during the past 20 years.⁴ The lowest ten percent of the households accounted for only one half of one percent of the total household income in 1958. Nearly 20 years later, the share of this lowest 10 percent had about doubled. The income share of the top 10 percent of the households showed a nearly 31 percent decline in 1975 relative to 1958.

The income definitions used may be partly responsible for the observed changes in income shares of households. But it does not appear plausible to attribute all the observed change to differences in the measurement of income. Ahiram (1964) also noted that his definition of income measured about 80 percent of all household incomes. With this disparity in observed and actual income implicit in the measure utilized by Ahiram and our use of expenditure as proxy for income, the unaccounted income of households requires qualification results. However, it seems safe to conclude that the income distribution in Jamaica during the period 1958-1977 changed with a bias in favor of the poor. But even though the income share of the bottom 10 percent doubled in the nearly 20 year period, the very low level of income in this category indicates an important poverty problem for Jamaica.

5. Multivariate Analysis

The data used for the multivariate analysis reported in this section were from the 1975 and 1977 surveys. In specification 1, the time and regional dummies are regressed on the log of the household income (Table 6). The time dummy coefficient is positive and significant, indicating that household

⁴In Table 5, the income is distributed over decile groups in order that it may be compared with the results reported by Ahiram (1964) who used the 1958 Household Expenditure Survey.

incomes were higher in 1975 than in 1977, by about 6 percent.⁵ It will be shown, however, that as other factors determining household income are introduced, the estimated temporal change is reduced. Household incomes (in logs) were greater by nearly 62 percent and 30 percent, respectively, in Kingston and the other towns than rural areas.

In the second specification, occupational class of the household heads was included. Coefficients estimated are relative to the agricultural occupation class. The regional dummies were excluded from this specification, but the time dummy was retained. The significance of the time dummy coefficient was reduced negligibly in specification 2 compared to 1. Relative to agricultural households, all other types of households had higher incomes, varying from 26 percent ("others") to a high of 173 percent (administrators, executives and managers).

The occupational dummies are omitted and household size dummies added in specification 3. The estimated time dummy coefficient in this specification, adjusting for household size, becomes significant and positive, indicating that household incomes were higher in 1975 than in 1977 by about 8 percent. The household size dummy coefficients show that relative to four member households, small households had incomes that were significantly lower. The larger households, on the other hand had incomes that were not significantly different from the income of the four-member households. It appears that as household size increases above the four member household, incomes remain at about the same level. Larger households may have more younger children and elderly persons who do not contribute to household income.

In specification 4, the occupational and regional dummies were both introduced. With this specification, the estimated coefficient for the time

⁵The time dummy variable is measured relative to 1977.

dummy ceases to be significant at the 5 percent level. The signs of the occupational and regional dummies are all positive and significant at the 5 percent level. Notice, however, that the magnitudes of the regional dummies are reduced by nearly 50 percent relative to specification 1. Magnitudes of the occupational dummies also dropped, and varied across the occupational classes. Thus, the covariation between the occupational class and regions was strong. Stated differently, for a given occupation, household income differed significantly by regions and these differences did not change during the two years considered.

The household size dummies and regional dummies were introduced in specification 5. The time dummy which was also included was insignificant. The regional dummies retained their signs as in specifications 1 and 4 and the household size dummies retained their signs as in specification 3. The estimated coefficients of the regional dummies increased in magnitude relative to specifications 1 and 4. The estimated coefficients of the dummies identifying household with more than four members increased in magnitude and became highly significant (relative to specification 3). The smaller sized household dummies retained the negative signs but were reduced slightly in magnitude. Across regions, household size was an important determinant of income and household incomes were positively associated with larger households. When household size alone was considered, the estimated coefficients for the larger sized households were statistically insignificant (specification 3). This result indicates that household incomes varied significantly by household size and region.

In specification 6, occupational status, household size and time dummies were included. The estimated time dummy coefficient was smaller relative to previous estimates and insignificant. The estimated coefficients of the

occupational and household size dummies are all significant and retained their signs from the previous specifications. The changes in the magnitudes of the occupational and household size dummies were mixed, compared with specifications 2 through 5. Relative to specification 2, all but the administrative and related class coefficients, increased in magnitude. It appears that by occupation status, household income differed significantly by household size and that this difference did not change between 1975. and 1977.

Finally in specification 7, all the dummy variables were included. The estimated time dummy coefficient was insignificant. Thus, during the two years no significant change in household income, not accounted for by the other variables, was observed. The estimated coefficients of the occupational dummies all retained their signs but their values decreased sharply relative to specification 6. The estimated regional dummy coefficients were positive and significant. These values declined relative to the estimates in specifications 1 and 5 but increased relative to specification 4. The estimated coefficients for the household size dummies reflecting more than four members, increased relative to the estimates in all the preceding specifications. The opposite effect was found for the magnitudes of the estimated coefficients for the dummies indicating households of smaller size. In short, occupational class of the household head, household size and regions were all important in explaining the variations in the logarithm of household income in Jamaica.

Values for the explained variation of the log of income reported in Table 6 show that the regressions explained at most about 35 percent. Obviously, income determination is complex and it is not surprising that the coefficients of determination R^2 values were low (Sahota, 1974; Fields and

Schultz, 1980; Ahluwalia, 1976; Papanek, 1978; and Rossi, 1981). The R^2 value for the last regression equation, since it contained more variables was highest. The standard error of estimate (SSE) results indicate predictive power of the explanatory variables, if compared among equations. Occupation class reduced the SSE by 11 percent, relative to regional dummies (see specification 1 and 4). Household size reduced the SSE by about 18 percent (specifications 1 and 5). Region reduced the SSE by only 4 percent (specification 6 and 7). In other results not reported, age of the household head reduced the SSE by 6 and 4 percent relative to specifications 4 and 5. Age of the household was a less important factor in household income determination than household size and occupational class. Similar pattern findings were summarized by Kuznets, 1976.

6. Concluding Comments

This study has updated the information on the income distribution in Jamaica. Utilizing household survey data, the size distribution of income was investigated and related to selected conditioning variables. Annual household expenditure (adjusted for home production and gifts) was used to proxy household incomes. The pattern of the size distribution of incomes in Jamaica remained biased toward the top 10 percent. For sample partitions studied, the top 20 percent of the households accounted for over 40 percent of total income in most cases. Gini ratios calculated by household type indicated that inequality was more evident among households with different socioeconomic features than among households in different regions.

The income distributions from 1975, 1976, and 1977 in Jamaica were compared to the income distribution for 1958. The Gini coefficients in the more recent years were lower than in 1958, suggesting income inequality had

reduced during the intervening 20 years. The income share of the lowest 10 percent of the households (albeit small) had doubled whereas the share of the highest 10 percent of the households had dropped about 30 percent. This comparison over time is only approximate, since the definitions of incomes used by Ahiram (1964) and in this analysis were different.

A multivariate regression analysis applying several related specifications was utilized to estimate impacts of selected classification variables on household incomes. Household income varied considerably by occupation, household size and region. The results suggest that incomes of agricultural households were much less than for the other types of households. Also, rural household incomes were much lower than household incomes in Kingston or the other main towns. These results imply the continuing presence of dualism in Jamaica.

For specific occupational classes, household incomes were different by region and household size. Variations in household incomes observed by household size weaken considerably in more complex or conditioned regression model specifications. However, based on the regression results, the regional variables were the least important of those studied. Regional income inequality at the household level may be confounded with agriculture as an occupation in less structured analyses. For Colombia, Fields and Schultz (1980) also found that regional inequalities, though pronounced, were small. It appears that policies to alleviate income inequality in Jamaica should concentrate on occupational class and industrial development. This will require programs to increase incomes of agricultural households or altered occupational opportunities for rural households.

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Table 1. Income distribution by age of household head age group: Jamaica, 1977

| Age Group | Size | Percent | Mean Income (\$J) | Standard Deviation | 0 - 20 Percent | 20 - 40 Percent | 40 - 60 Percent | 60 - 80 Percent | 80 - 90 Percent | 90 - 100 Percent | Gini Ratio | Index of Inequality |
|-----------|------|---------|-------------------|--------------------|----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------|---------------------|
| - 24 | 74 | 7.39 | 2,596 | 1,954 | 6.40 | 10.81 | 16.63 | 24.92 | 14.81 | 26.44 | 0.36 | 100 |
| 24-29 | 84 | 8.38 | 4,791 | 4,589 | 4.27 | 8.41 | 14.40 | 23.86 | 18.56 | 30.49 | 0.44 | 123 |
| 30-34 | 106 | 10.58 | 3,713 | 3,089 | 5.97 | 10.35 | 15.45 | 22.54 | 16.38 | 29.32 | 0.38 | 107 |
| 35-39 | 93 | 9.28 | 4,111 | 4,074 | 4.65 | 8.90 | 12.91 | 21.39 | 17.53 | 34.63 | 0.45 | 126 |
| 40-44 | 98 | 9.78 | 4,225 | 4,053 | 4.70 | 10.21 | 14.68 | 21.61 | 17.58 | 31.20 | 0.42 | 116 |
| 45-49 | 108 | 10.78 | 4,757 | 5,540 | 4.65 | 9.39 | 12.97 | 18.97 | 16.68 | 37.34 | 0.46 | 128 |
| 50-54 | 92 | 9.18 | 4,446 | 3,988 | 4.59 | 7.98 | 13.42 | 25.06 | 18.56 | 30.38 | 0.44 | 122 |
| 55-59 | 85 | 8.48 | 2,738 | 2,505 | 4.87 | 10.54 | 15.83 | 20.47 | 16.03 | 32.26 | 0.41 | 113 |
| 60-64 | 73 | 7.29 | 2,297 | 1,775 | 4.76 | 10.72 | 15.60 | 24.36 | 17.76 | 26.80 | 0.39 | 108 |
| 65 + | 189 | 18.86 | 2,316 | 2,476 | 3.55 | 7.75 | 12.75 | 21.80 | 19.66 | 34.50 | 0.48 | 134 |

Source: Household Expenditure Survey, STATIN, 1977.

Table 2. Income distribution by occupation class of household head: Jamaica, 1977^a

| Occupation/ Status | Size | Percent | Mean Income (\$J) | Standard Deviation | 0 - 20 Percent | 20 - 40 Percent | 40 - 60 Percent | 60 - 80 Percent | 80 - 90 Percent | 90 - 100 Percent | Gini Ratio | Index of Inequality |
|-----------------------------------|------|---------|-------------------------|-----------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------|------------------------|
| Professional/Administrative | 84 | 8.38 | 7,000 | 6,435 | 2.72 | 9.54 | 14.99 | 25.51 | 16.79 | 30.44 | 0.44 | 128 |
| Clerical/Sales | 62 | 6.19 | 6,022 | 4,591 | 3.71 | 10.19 | 14.89 | 27.51 | 17.94 | 25.75 | 0.40 | 115 |
| Self-Employed/Agriculture | 358 | 35.73 | 2,139 | 1,508 | 5.56 | 11.73 | 16.85 | 23.90 | 16.54 | 25.41 | 0.35 | 101 |
| Self-Employed/Nonagriculture | 135 | 13.47 | 3,693 | 3,211 | 4.13 | 8.81 | 13.45 | 24.30 | 20.16 | 29.15 | 0.43 | 125 |
| Manufacturing/Related Services | 31 | 3.09 | 3,409 | 3,178 | 3.64 | 8.97 | 15.62 | 21.33 | 18.11 | 32.33 | 0.44 | 128 |
| Transport/Communication | 123 | 12.28 | 2,984 | 2,396 | 5.16 | 11.27 | 16.27 | 24.10 | 15.88 | 27.31 | 0.37 | 107 |
| Construction/Installation/Repair | 25 | 2.50 | 5,765 | 4,106 | 6.37 | 11.94 | 16.19 | 22.81 | 19.41 | 23.29 | 0.35 | 100 |
| Others | 90 | 8.98 | 4,152 | 4,210 | 5.13 | 10.56 | 14.72 | 20.98 | 13.90 | 34.71 | 0.41 | 118 |
| | 73 | 7.29 | 3,158 | 4,015 | 4.55 | 8.47 | 13.23 | 20.73 | 14.84 | 38.18 | 0.46 | 134 |

^a21 households not reporting their occupation are missing from this table.

Source: Household Expenditure Survey, STATIN, 1977.

Table 3. Income distribution by household size: Jamaica, 1977

| Family Size | Size | Percent | Mean Income (\$J) | Standard Deviation | 0 - 20 Percent | 20 - 40 Percent | 40 - 60 Percent | 60 - 80 Percent | 80 - 90 Percent | 90 - 100 Percent | Gini Ratio | Index of Inequality |
|-----------------|------|---------|-------------------|--------------------|----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------|---------------------|
| One member | 173 | 17.27 | 2,114 | 2,387 | 3.25 | 8.35 | 13.42 | 20.52 | 16.97 | 37.49 | 0.48 | 133 |
| Two members | 139 | 13.87 | 2,366 | 2,300 | 3.57 | 8.48 | 14.39 | 24.00 | 18.16 | 31.40 | 0.45 | 124 |
| Three members | 136 | 13.57 | 3,673 | 4,255 | 4.21 | 7.62 | 13.15 | 20.94 | 16.65 | 37.43 | 0.48 | 131 |
| Four members | 139 | 13.87 | 4,124 | 3,825 | 5.52 | 9.68 | 13.91 | 22.61 | 18.20 | 30.08 | 0.41 | 114 |
| Five members | 123 | 12.28 | 4,771 | 5,356 | 5.00 | 8.33 | 11.22 | 20.52 | 17.65 | 37.28 | 0.47 | 130 |
| Six members | 90 | 8.98 | 3,949 | 3,279 | 5.91 | 9.95 | 14.41 | 23.04 | 16.23 | 30.45 | 0.39 | 108 |
| Seven members | 63 | 6.29 | 3,896 | 3,274 | 5.82 | 11.07 | 15.25 | 21.38 | 17.29 | 29.20 | 0.38 | 106 |
| Eight/+ members | 139 | 13.87 | 4,248 | 3,386 | 6.66 | 11.28 | 15.36 | 22.84 | 16.39 | 27.46 | 0.36 | 100 |

Source: Household Expenditure Survey, STATIN, 1977.

Table 4. Income distribution by location of household: Jamaica, 1977

| Location | Size | Percent | Mean Income (\$J) | Standard Deviation | 0 - 20 Percent | 20 - 40 Percent | 40 - 60 Percent | 60 - 80 Percent | 80 - 90 Percent | 90 - 100 Percent | Gini Ratio | Index of Inequality |
|-------------|------|---------|-------------------------|-----------------------|-------------------|--------------------|--------------------|--------------------|--------------------|---------------------|---------------|------------------------|
| Kingston | 277 | 27.64 | 5,133 | 4,966 | 3.90 | 8.63 | 13.98 | 23.02 | 18.28 | 32.19 | 0.45 | 112 |
| Other towns | 147 | 14.67 | 3,872 | 3,240 | 4.92 | 10.30 | 15.46 | 23.07 | 16.81 | 29.44 | 0.40 | 100 |
| Rural | 578 | 57.68 | 2,690 | 2,722 | 4.45 | 9.98 | 14.54 | 21.48 | 16.40 | 33.13 | 0.42 | 107 |

Source: Household Expenditure Survey, STATIN, 1977.

Table 5. Income distribution in Jamaica, 1958, 1975-77

| Survey Year | Decile Group of Households | | | | | | | | | | Gini |
|-------------------|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|
| | 0-10% | 10-20% | 20-30% | 30-40% | 40-50% | 50-60% | 60-70% | 70-80% | 80-90% | 90-100% | |
| 1958 ^a | 0.6 | 1.6 | 2.5 | 3.5 | 4.6 | 6.2 | 8.3 | 11.5 | 17.4 | 43.8 | 0.58 |
| 1975 | 1.3 | 2.8 | 3.9 | 5.1 | 6.3 | 7.9 | 9.9 | 12.5 | 16.9 | 33.3 | 0.45 |
| 1976 | 1.4 | 2.9 | 4.1 | 5.2 | 6.3 | 7.4 | 9.2 | 12.3 | 16.7 | 34.5 | 0.45 |
| 1977 | 1.3 | 2.8 | 3.9 | 4.9 | 6.1 | 7.4 | 9.4 | 12.2 | 17.7 | 35.0 | 0.46 |

^aThe 1958 results are from Ahiran (1964), also found in Jain (1975), Table 41.

Source: Household Expenditure Survey, STATIN, 1977

Table 6

Linear Regression Results Relating the Log of Household Income to
Occupation, Area, Household Size and Year

| Independent Variables | Alternative Model Specifications | | | | | | |
|--|----------------------------------|-------------|------------|-------------|------------|-------------|-------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <u>Year</u> (deviations around 1977) | 0.06(2.01)* | 0.06(1.97) | 0.08(2.70) | 0.05(1.69) | 0.05(1.64) | 0.04(1.57) | 0.03(1.20) |
| <u>Occupation</u> (deviations around agricultural) | | | | | | | |
| Professionals and related | -- | 0.84(17.15) | -- | 0.68(13.25) | -- | 0.91(20.51) | 0.72(15.73) |
| Administrators, executives and managers | -- | 1.73(14.56) | -- | 1.52(12.75) | -- | 1.68(15.61) | 1.44(13.42) |
| Clerical and sales | -- | 1.10(20.93) | -- | 0.88(15.51) | -- | 1.19(24.87) | 0.93(18.23) |
| Self-employed in non-agriculture | -- | 0.47(11.13) | -- | 0.34(7.75) | -- | 0.49(12.98) | 0.34(8.69) |
| Manufacturing and processing | -- | 0.57(7.67) | -- | 0.34(4.38) | -- | 0.61(9.24) | 0.35(5.13) |
| Mining, refining and quarrying | -- | 0.97(6.32) | -- | 0.85(5.59) | -- | 1.02(7.38) | 0.87(6.41) |
| Services | -- | 0.32(7.90) | -- | 0.17(3.89) | -- | 0.38(10.36) | 0.20(5.07) |
| Transport and communications | -- | 0.77(9.34) | -- | 0.61(7.41) | -- | 0.78(10.62) | 0.60(8.17) |
| Construction, installation and repairs | -- | 0.67(14.72) | -- | 0.52(10.99) | -- | 0.67(16.41) | 0.50(11.67) |
| Others | -- | 0.26(5.02) | -- | 0.12(2.27) | -- | 0.29(6.18) | 0.12(2.54) |

Table 6--Continued

| Independent Variables | Alternative Model Specifications | | | | | | |
|--|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| <u>Area (deviations around rural areas)</u> | | | | | | | |
| Kingston | 0.62(20.78) | -- | -- | 0.33(9.91) | 0.67(24.65) | -- | 0.38(12.70) |
| Other Towns | 0.30(7.60) | -- | -- | 0.11(2.71) | 0.38(10.54) | -- | 0.18(5.07) |
| <u>Household Size (deviations around household size = 4 members)</u> | | | | | | | |
| 1 member household | -- | -- | -0.83(17.46) | -- | -0.80(17.83) | -0.75(17.62) | -0.74(17.66) |
| 2 member household | -- | -- | -0.46(9.21) | -- | -0.43(9.29) | -0.43(9.68) | -0.42(9.59) |
| 3 member household | -- | -- | -0.23(4.54) | -- | -0.23(4.81) | -0.22(4.81) | -0.21(4.91) |
| 5 member household | -- | -- | 0.10(1.88) | -- | 0.14(2.95) | 0.12(2.72) | 0.14(3.17) |
| 6 member household | -- | -- | 0.09(1.54) | -- | 0.11(2.14) | 0.15(2.92) | 0.15(3.15) |
| 7 member household | -- | -- | 0.06(0.97) | -- | 0.14(2.51) | 0.16(3.13) | 0.19(3.67) |
| 8 or more member household | -- | -- | 0.19(3.86) | -- | 0.32(6.92) | 0.35(8.12) | 0.39(9.17) |
| Intercept | 7.55(249.91) | 7.39(231.74) | 7.95(184.67) | 7.38(233.37) | 7.67(182.95) | 7.49(178.87) | 7.46(181.03) |
| R ² | 0.09 | 0.18 | 0.15 | 0.19 | 0.26 | 0.33 | 0.35 |
| SSE | 0.77 | 0.71 | 0.72 | 0.70 | 0.63 | 0.57 | 0.55 |

*t-values are presented in parentheses.