NOTES ON THE RELATIVE DISTRIBUTION OF INCOME IN DEVELOPING COUNTRIES

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In his 1960 article, Professor Irving Kravis examined the patterns of personal income distribution in ten countries and came out with the conclusion that there is greater equality of income distribution in more advanced countries and that economic development generates "forces that operate to make income distribution more equal".[1] But the results of our recent research on relative distribution of wages and salaries in Ghana tend to indicate that increases in per capita income in African countries do not necessarily lead to a more equal income distribution.[2] It appears from our results that the forces that might have helped to reduce income inequality in the advanced countries may not be operative in present day Africa and that the attempt to maintain the *status quo* leads to a more unequal income distribution.

Our work was a historical comparison of the available evidence for Ghana in the period 1956–68. It was based primarily on data from the *Labour Statistics* published by the Central Bureau of Statistics, which provides frequency distribution of the labour force in the "modern" sector.[3]

To arrive at estimates of incomes earned, first we had to compute the number of income units within the various wage and salary groups. The *Labour Statistics* breaks down wage and salary earners into two groups: (1) daily rated and (2) monthly rated. We have combined the two groups by converting the daily rated to monthly rated. Finally to arrive at incomes earned by the various wage and salary groups we assumed that the mathematical expected income of any unit within a class will be the midpoint value of the class.

Our sources of data impose some limitations on our analysis. The coverage does not include all persons in wage and salary employment. The *Labour Statistics* covers cash payments only of paid employees in civilian employment. Even within civilian employment, persons working on cocoa farms and domestic servants are excluded. The extent of under-reporting in the *Labour Statistics* may be gauged by a comparison with the 1960 Population Census figures. According to the Census figures in March 1960, there were 542,000 persons in wage employment. The *Labour Statistics* reports that wage employment was 319,477 in December 1959 and 332,898 in December 1960. Linear interpolation of these figures yields an estimate of 323,250 for March 1960. Thus, the *Labour Statistics* accounted for only 59.6% of the actual wage employment.

The coverage for the public sector is complete since copies of all payment vouchers for the Civil Service, Local Authorities, and Public Corporations are available. But the coverage of small establishments, i.e., those employing less than ten persons in the private sector, is especially poor. It is worth noting that the coverage of the private sector has improved over time. For instance after the Industrial Census of September 1962 the number of establishments covered in the *Labour Statistics* was increased by 114. Notes the *Labour Statistics* for 1963: "In the ensuing years a further endeavour will be made to extend the coverage of establishments and others in the Directory of

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[1]Irving Kravis, "International Differences in the Distribution of Income," *Review of Economics and Statistics*, (November 1960) Vol. XLII, No. 4.

[2]Kodwo Ewusi, *Distribution of Monetary Incomes in Ghana*, 1956–1968, I.S.S.E.R. Technical Publication No. 14 (Accra, 1971).

[3]Central Bureau of Statistics, *Labour Statistics*, several issues.

Industrial Establishments which were omitted during the 1963 Employment Report."[4] It is apparent from the above that the increase in our income units over time especially of the private sector is partly due to better statistical coverage.

These qualifications notwithstanding our results clearly indicate that over the period of our analysis the relative distribution of income has worsened. The Lorenz curve is the technique most commonly used to indicate differences in the degree of inequality of different income distributions. The convexity of the curve indicates the degree of inequality. The greater the convexity of the curve, the greater the inequality of income distribution. The Lorenz curves in Figure I compare the distribution of income derived from our data for 1956, 1962 and 1968.

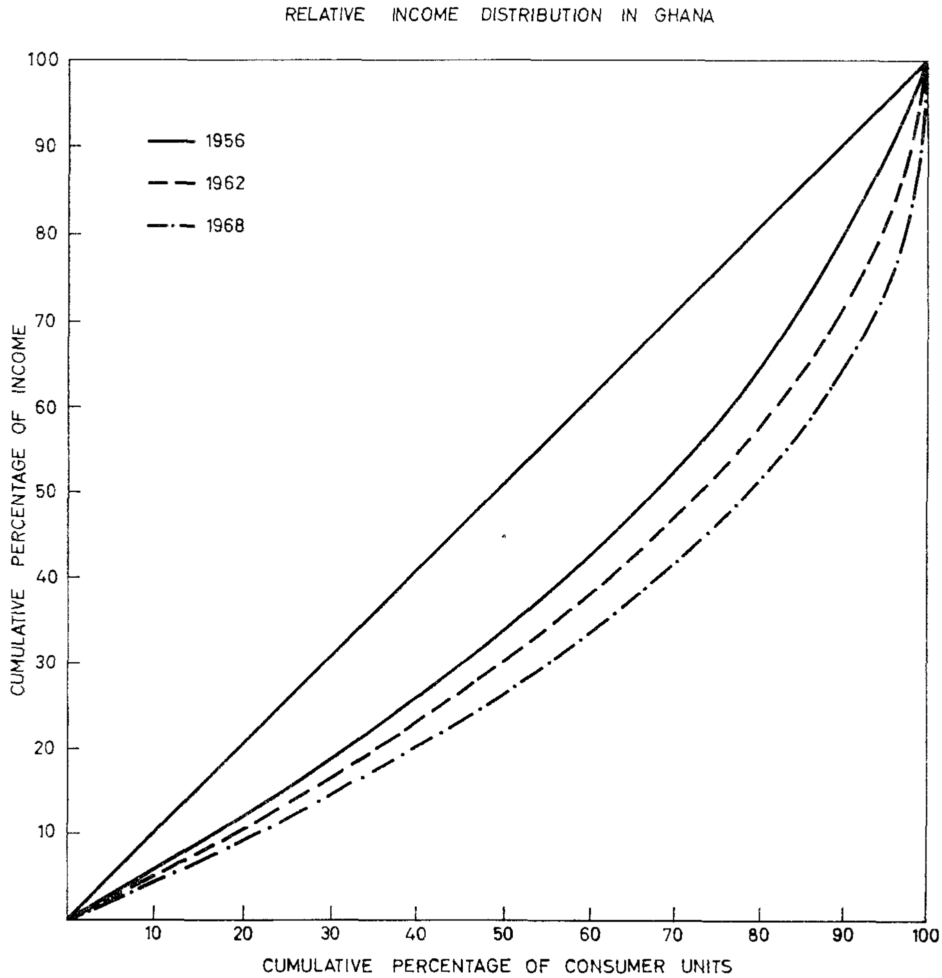

FIG. 1.

The inescapable conclusion from our graphs is that the relative distribution of income has deteriorated. This is shown by the curves for 1962 and 1968 moving farther away from the egalitarian line. The use of the Lorenz curve for comparison may be limited. Lorenz himself recognised the possible ambiguity in comparison when the

[4]Central Bureau of Statistics, *Labour Statistics*, 1963 (Accra) p. 2.

curves intersect.[5] Such an ambiguity does not arise in our present analysis; and our conclusion is therefore decisive.

In his "Reflections on the Approaches to the Problems of Distribution in Underdeveloped Countries," R. Gendarme notes that there are quantitative indicators of inequality in income distribution which can be used with the Lorenz curve.[6] Even though each of these measures places emphasis on different aspects of the distribution of income, their combined utilization may give a fair approximation of the degree of inequality of income distribution, especially if all the indices show the same direction of change. And indeed in the table below, all the indicators show the same direction of change.

MEASURE OF CHANGES IN INEQUALITY IN INCOME DISTRIBUTION 1956–1968

Measure	1956	1968
Coefficient of Variation	193.750	207.993
Standard Deviation of Log of Income	0.034	0.042
The Pareto Coefficient	1.7821	1.805
The Gini Concentration Ratio	0.621	0.666
The Gini Coefficient	14.585	17.664

An increase in any of the measures implies a greater inequality in the distribution. In our case the coefficient of variation rose from 193.8 in 1956 to 208.0 in 1968, and the standard deviation of the logarithms of income from 0.034 to 0.042 in the same period.

To conclude we may cite the most telling piece of evidence in support of our finding. The share of the uppermost income units in total income can be used as an index of changes in relative distribution. If the upper income units increase their share of income, this will only be at the expense of the lower income groups. And over time the upper income units have been increasing their share in total income. In 1956 the upper 6.1% of wage and salary earners earned 12.9% of total income. In 1962 the uppermost 5.1% accounted for 20.3% of income and finally in 1968 the upper 4.6% of income units accounted for 24.7% of total income.

[5] M. C. Lorenz, "Methods of Measuring the Concentration of Wealth," Publications of the American Statistical Association, Vol. 9 (1905), pp. 209–19.

[6] R. Gendarme, "Reflections on the Approaches to the Problems of Distribution in Underdeveloped Countries", in *The Distribution of National Income* (Edinburgh, 1968), p. 373.