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ABSTRACT

In this paper we examine two of the primary causes of inequality--variation among economic units in both the capacity to generate income and the utilization of that capacity--and attempt to discern the contribution of each cause to measured income inequality. We develop estimates of the earnings capacity of each individual and family in the population, examine patterns of capacity utilization among groups in the population, and, finally, compare the inequality in earnings with the inequality in earnings capacity in order to discern the relative contributions to observed earnings inequality of both earnings capacity and its utilization. Our results indicate that (1) racial differences in income cannot be attributed to racial differences in capacity utilization, (2) low capacity utilization plays a relatively minor role in accounting for the low incomes of poor people, and (3) the contribution of differences in capacity utilization to income inequality is small.

ECONOMIC INEQUALITY AND THE UTILIZATION OF EARNINGS CAPACITY

The measurement of economic inequality is conventionally based upon statistical indicators of the variation in annual family money income. While such indicators and temporal changes in them are of interest, they mask the contribution of the various determinants of economic inequality. In this study we focus on two of the primary causes of inequality--variation among economic units in both the capacity to generate income and the utilization of that capacity--and attempt to discern the contribution of each cause to measured income inequality.

Central to this discussion is the concept of the "earnings capacity" of individuals and family units. In the first section of the paper we will define this concept and describe the procedures employed in estimating the earnings capacity of each individual and family in the population. In the second section, the patterns of capacity utilization among groups in the population will be examined. In the third section we will compare the inequality in earnings with the inequality in earnings capacity in an effort to discern the relative contributions to observed earnings inequality of both earnings capacity and its utilization.

While comparison of capacity utilization patterns among various population groups is of intrinsic interest, additional considerations motivate this study. First, pervading the national debate on social policy has been the issue of the "worthiness" of the beneficiaries of public programs. Thus, extension of assistance to poor families has been opposed by some on grounds that (at least) some poor persons are in that state because they are lazy--that they do not use their capacities as effectively as the nonpoor. Similarly, the high incidence

of poverty among blacks has been regarded by some as evidence of a lack of motivation or a failure to take advantage of earnings opportunities. With a measure of earnings capacity, the basis for these assertions can be examined.

A second purpose in analyzing patterns of capacity utilization concerns the relationship between differential utilization rates and observed income inequality. While the substantial and persistent observed income inequality in the U.S.[1] stems from numerous interdependent factors, these factors can be partitioned into two categories--inequality of earnings capacity and variation in the utilization of earnings capacity. Through analysis of both factors, the relative contribution of each to observed inequality can be determined.[2]

A final purpose of this study stems from the widely recognized weaknesses in both the concepts and the data that underlie standard income distribution analyses.[3] Although the real economic welfare of a family is determined by its potential real consumption over some period, the conventional income definition includes only a fraction of the flows that compose this value. All nonmoney income receipts are excluded from the definition, as are the consumption values of leisure, net worth, and capital gains. As a result, studies of inequality based on current family income are subject to significant biases; in particular, biases due to the transitory forces that the current income concept reflects. In analyzing patterns of capacity utilization, the concept of net earnings capacity will be derived. This indicator of economic status is designed to capture the economic capacity of a family rather than the extent to which its economic potential is realized. Because this concept approximates that of

"full income,"[4] it will be argued that it is superior to current income as an indicator of economic status. Comparison of the inequality in net earnings capacity with that in current income will suggest the extent to which analyses based on the latter variable provide biased estimates of the inequality in true economic welfare.

I.

The earnings capacity of an individual or a family unit measures the ability of the unit to generate a net income flow if the unit's physical and human capital endowment is used at capacity. By focusing on the economic capability of a unit, this indicator of economic status reflects neither the unit's tastes for income nor transitory fluctuations in income. In this study, earnings capacity is estimated for each of 50,000 families in a weighted national sample of families.[5]

To derive this measure, we first estimate the annual earnings capacity of each family head (EC_H) and spouse (EC_S). These estimates are imputations based on regression equations in which annual earned income is the dependent variable and the individual's human capital and demographic characteristics serve as independent variables. The latter include age, years of schooling, race, marital status, and location. In addition, dummy variables for weeks worked and part- or full-time work during the employed weeks are included. Separate equations are estimated for white and black men and white and black women. Only those individuals with positive earnings are included in the sample used for the regressions.

Although experimentation was undertaken with both linear and log-linear models, only estimates from the log-linear model are

reported, for several reasons. First, comparisons between current income and earnings capacity measures of economic status were quite insensitive to the functional form used in estimating earnings capacity. Second, a number of a priori reasons suggest the superiority of the log-linear model. The most important consideration is the required nonnegativity of predicted earnings from this model. In addition, only the log-linear model reflects the likely positive relationship between the variance of earnings and the level of human capital. Finally, the log-linear model yields a somewhat better fit.

The estimated earnings functions are presented in the Appendix. The R^2's for the regressions range from .52 for white males to .63 for black females. The estimated coefficients are as expected. From these coefficients and an individual's human capital and demographic characteristics, every family head and spouse in the sample is assigned an earnings capacity, EC_H or EC_S. These estimates are based on the assumption that capacity work effort entails full-time employment for 50-52 weeks per year.

These estimates are then aggregated into an estimate of family earnings capacity by summing the earnings capacity of the head (EC_H) with that of the spouse (EC_S), if a spouse is present. However, prior to aggregation, one adjustment is made. In order to account for exogenous limitations on economic capacity due to either health disabilities or insufficient aggregate demand, EC_H and EC_S are multiplied by the fraction $\frac{50-W_{su}}{50}$, where W_{su} = weeks sick or unemployed. The aggregation of these adjusted estimates yields gross earnings capacity (GEC):

$$GEC = EC_H\left(\frac{50-W_{su}}{50}\right) + EC_S\left(\frac{50-W_{su}}{50}\right) . \qquad (1)$$

Although the illness and unemployment adjustment builds some temporary income fluctuations into the earnings capacity measure for an individual or a family, there is a strong argument for such an adjustment.[6] To the extent that the magnitude of involuntary loss of work due to illness and unemployment is related to earnings capacity, failure to adjust for these limitations on capacity would lead to biased estimates of the relationship of capacity utilization to earnings capacity.[7]

II.

From the GEC estimate for every sample family (appropriately weighted), aggregate gross earnings capacity of the nation (AGEC) is derived. By comparing aggregate total earnings with AGEC, an estimate of the national rate of capacity utilization is obtained. For 1973, AGEC is estimated to be $1132 billion. Because aggregate 1973 earnings were $670 billion, the national rate of capacity utilization is about 59 percent. The gap between actual and capacity earnings is $462 billion. Of this total gap, about 20 percent is accounted for by the aged population, which has a measured rate of capacity utilization of about 30 percent. Of the remaining gap of about $370 billion accounted for by the non-aged population, spouses (with a very low capacity utilization rate of 27 percent) contribute about two-thirds, males contribute about one-fifth, and female family heads contribute about 10 percent.

As these aggregate results indicate, substantial variation in capacity utilization exists among subgroups of the population. Because an individual's rate of capacity utilization (CUR) is positively related to his or her work effort,[8] factors that account for variation in individual work effort will also explain the variation in individual capacity utilization rates. These factors include (1) income, (2) the rewards for and costs of working, (3) tastes for income vis-a-vis leisure, and (4) the availability of work. For example, because of child care costs, women with children will tend to have lower CUR than women without children. Similarly, men will tend to have higher CUR than women because of differences in tastes for market vis-a-vis nonmarket work resulting from current and previous differences in social expectations for men and women. In addition, because income transfer programs simultaneously increase the incomes of beneficiaries and reduce the rewards to them from working, individuals eligible for such programs--for example, female heads of households--will tend to work less, ceteris paribus, than ineligible individuals. In contrast to these predictions, expectations regarding the relationship of CUR to the level of earnings capacity are not so clear cut. On the one hand, those with high capacity will tend to work less because they have more income; on the other hand, they will tend to work more because the reward for working is higher.

Table 1 presents two sets of CUR estimates for several subgroups of the non-aged population. In the top part of the table, the observed mean CUR is shown for groups distinguished by race, sex, and marital status. Several interesting patterns should be noted. For example, a comparison of whites with blacks indicates that the average white unit

TABLE 1

Observed and Adjusted Capacity Utilization Rates for the Non-Aged Population, by Sex, Marital Status, and Race

	All	White	Black
Observed Capacity Utilization Rates (CUR)			
All families and individuals	.61	.61	.58
All males	.85	.86	.80
Married males	.88	.89	.84
Single males	.66	.66	.65
All females	.32	.31	.43
Married females	.28	.27	.42
Female heads	.42	.42	.41
Single females	.55	.55	.52
Adjusted Capacity Utilization Rates (ACUR)[a]			
All families and individuals	.65	.64	.70
All males	.84	.84	.84
Married males	.87	.88	.86
Single males	.68	.68	.74
All females	.33	.33	.42
Married females	.33	.33	.39
Female heads	.46	.45	.52
Single females	.64	.64	.70

[a]See text and note 9.

has a slightly higher CUR than the average black unit--.61 compared to .58. While this pattern holds for all males, whether married or single, the average black female tends to have a substantially higher CUR than the average white female--.43 compared to .31. This result is caused by the higher labor force participation rates of black wives relative to white wives. For this group, the black CUR is .42 while the white is .27.

Also, single males have a much lower observed CUR than married males for both racial groups. While some or perhaps even all of this difference can be attributed to differences between these two groups in tastes and in social and financial pressures to work, a portion of the difference may be due to an overestimation of the earnings capacity of single males relative to married males. Physical and mental disabilities not captured by our data may simultaneously reduce both true earnings capacity and the probability of getting married. Finally, it should be noted that single females utilize less of their capacity than do single males, but more than do married females and female heads of households.

These observed CUR estimates, however, may be misleading as indicators of the relationship of race, sex, or marital status to the utilization of earnings capacity. For example, if married males, on average, have higher earnings capacity than single males, and if CUR is positively associated with earnings capacity, a part of the observed married-single male CUR differential will be due to the difference in earnings capacity rather than to marital status. This problem is particularly serious in comparing the rate of capacity

utilization among racial groups. Because of fewer years of schooling, among other things, the mean earnings capacity of blacks is substantially lower than that of whites.

This problem can be avoided by comparing the CUR of various population groups that have the same level of earnings capacity. For example, rather than comparing the CUR of the average black male with that of the average white male (as in the top part of Table 1), we can compare the CUR of the average black male having an earnings capacity of $X with that of the average white male <u>having the same earnings capacity</u>. These "earnings capacity constant" CUR estimates are the second set shown in Table 1, and are referred to as <u>adjusted</u> CUR (ACUR) estimates. They are obtained by statistically holding earnings capacity constant when comparing utilization among groups.[9]

The utilization patterns suggested by ACUR differ from the observed ratios in the top part of the table. In particular, the racial comparison is reversed; ACUR of non-aged black units (.70) exceeds that of non-aged white units (.64) when both are evaluated at the mean earnings capacity for the total non-aged population. Similarly, while black males have a lower CUR than white males, ACUR is equal for the two groups. Indeed, ACUR is higher for single black males than for single white males--.74 compared to .68. The comparisons among married and single males and females presented earlier are not significantly altered by moving from CUR to ACUR.[10] Similarly, the comparison between all black and white females is not altered by moving from CUR to ACUR. But the difference between ACUR for black and white married females is smaller than the comparable differences in CUR while on the other hand ACUR is actually higher for black

female heads and single females than for white female heads and single females.

The comparison of CUR and ACUR in Table 1 indicates a positive relationship between earnings capacity and rates of capacity utilization. In Table 2, this relationship is explored for the non-aged population stratified by marital status, sex, and race. The table presents estimates of capacity utilization rates for each population group at each decile of the group's distribution of earnings capacity.[11]

As column 1 indicates, within the total non-aged population capacity utilization increases steadily with earnings capacity from .56 at the first decile to .66 at the ninth. This pattern holds for whites and blacks considered separately, although the relationship is stronger for blacks than for whites. But this relationship is much less pronounced for the married population than it is for the total population. Although capacity utilization among all husband-wife units does increase with earnings capacity, the increase is very small--from .64 at the first decile to .67 at the ninth. Moreover, within the black married population, the relationship is not monotonic; rather it is like an inverted U.

The overall patterns of family capacity utilization mask some interesting differences between male and female spouses. While capacity utilization is positively related to earnings capacity for married males--from .84 at the first decile to .94 at the ninth--the pattern for married women is reversed. The utilization rate of non-aged wives <u>decreases</u> uniformly as capacity increases from .35 at the first decile to .24 at the ninth. These patterns exist for both blacks and whites. Assuming that the capacities of husbands and wives are positively related, the division

TABLE 2

Capacity Utilization Rates of the Non-Aged Population
by Marital Status, Sex, Race, and Earnings Capacity

Percent	Families & Individuals			Married Population			Men			Women		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
10	.56	.56	.44	.64	.63	.66	.80	.80	.76	.35	.33	.43
20	.60	.61	.53	.64	.63	.68	.81	.81	.78	.34	.33	.43
30	.63	.63	.59	.64	.63	.70	.82	.82	.80	.33	.32	.43
40	.64	.64	.61	.64	.64	.70	.83	.83	.81	.33	.31	.44
50	.64	.65	.64	.65	.64	.71	.84	.85	.82	.32	.31	.45
60	.65	.65	.66	.65	.65	.70	.86	.86	.83	.32	.31	.45
70	.65	.65	.68	.65	.65	.70	.87	.87	.83	.32	.31	.46
80	.66	.66	.69	.66	.66	.69	.89	.89	.83	.32	.31	.47
90	.66	.66	.70	.67	.67	.68	.92	.93	.84	.31	.31	.48

Percent	Married Men			Single Men			Married Women			Single Women		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
10	.84	.84	.82	.57	.57	.63	.35	.32	.46	.37	.37	.38
20	.84	.84	.84	.60	.59	.64	.32	.30	.46	.40	.41	.37
30	.85	.85	.85	.62	.62	.65	.31	.29	.46	.43	.46	.38
40	.85	.86	.85	.64	.64	.66	.29	.28	.46	.46	.47	.40
50	.86	.87	.86	.66	.66	.67	.29	.27	.46	.48	.50	.41
60	.88	.88	.86	.68	.68	.68	.28	.26	.46	.51	.52	.43
70	.89	.89	.87	.70	.70	.69	.27	.25	.46	.55	.55	.46
80	.90	.91	.87	.72	.73	.70	.26	.25	.45	.58	.58	.49
90	.94	.95	.87	.75	.76	.71	.24	.24	.44	.62	.63	.54

of market work effort between husbands and wives appears to depend upon family earnings capacity. As one moves up the distribution of family earnings capacity, the differences in utilization by husbands and wives offset one another, yielding the virtually flat relationship between capacity utilization and earnings capacity for non-aged families.

In contrast to this virtually flat relationship within the married population, the relationship of utilization to capacity is positive and steep within both the male and the female nonmarried populations. This pattern also exists within both the white and the black nonmarried male and female populations, though the relationship is somewhat weaker for black than for white nonmarried males. Again, this relationship may be somewhat exaggerated for the nonmarried population. As suggested previously, physical and mental disabilities not captured by our data may cause our estimates of the earnings capacity of nonmarried men and women to be biased upward. This bias is also likely to be more severe for lower-capacity as compared to higher-capacity single individuals. A mentally retarded individual, for example, is more likely to be nonmarried. Moreover, because of low education he will have a low estimated earnings capacity. To be sure, most people with little or no education are not mentally retarded, and many have substantial earnings. But because our data do not distinguish among mental abilities within the group of those with low estimated earnings capacity, true earnings capacity will be below estimated earnings capacity. Finally, this strong relationship may, in part, be due to differences in demand for high- and low-skilled workers. While our estimates of capacity are adjusted for reported weeks of unemployment, they are not adjusted either for the part-time work that results from this differential in demand or

for the labor force withdrawals prompted by the unavailability of work.

Even if these possible biases were eliminated, however, this relationship between capacity and its utilization would, in all likelihood, remain. Among female heads of households, for example, welfare programs will tend to be more attractive to those with low earnings capacity than to those with high earnings capacity. Hence, female heads with low earnings capacity will be expected to substitute program income for earnings, implying a lower rate of capacity utilization. In general, the lower a person's earnings capacity, the less attractive from both monetary and nonmonetary standpoints are the available jobs.

To summarize, among the non-aged population as a whole capacity utilization increases steadily with earnings capacity. However, most of this increase is attributable to the relatively steep relationship between utilization and earnings capacity within the nonmarried population. For married units, the relationship of utilization to capacity is virtually flat. The positive relationship between capacity and its utilization for married males tends to be offset by a negative relationship for married females.

Given these results, what can be concluded regarding the relationship between low income and capacity utilization for blacks and other groups with a high incidence of income poverty? First, as indicated in Table 1, the differences between the CUR of blacks and whites are very small. Moreover, holding earnings capacity constant, black families have a somewhat higher rate of utilization than white families. Hence, racial differences in earnings cannot be attributed to racial differences in capacity utilization.

The results also indicate that low capacity utilization plays a relatively minor role in explaining the poverty problem generally. The differences in capacity utilization between families of low and high economic status are swamped by differences in earnings capacity between these types of families. The ratio of the utilization rates of those at the first decile of all non-aged units to the utilization rates of those at the ninth decile is .87; the comparable ratio of earnings capacities is .27. This contrast is even more clear among the non-aged married population: While those at the lowest decile have virtually the same utilization rates as those at the top decile, those at the lowest decile have less than one-half the earnings capacity of those at the top decile. This evidence provides no support for the hypothesis that the high poverty incidence among blacks and other population subgroups is primarily attributable to their failure to exploit economic potential.

III.

The observed variation in the utilization of earnings capacity contributes to the inequality in the distribution of pretransfer income (PTY). Indeed, if the rate of capacity utilization were the same for all units, the distributions of PTY and earnings capacity would display the same degree of inequality. Having ascertained that capacity utilization is positively related to earnings capacity, it is clear that the distribution of PTY will be more unequal than the distribution of earnings capacity. In this section, the differences in inequality among various income and earnings capacity measures are assessed and the relative contributions to observed income inequality

of variations among families in earnings capacity and in the utilization of earnings capacity are estimated.

For this analysis, a modification of the gross earnings capacity (GEC) measure used previously is required. First, the procedure used to estimate EC_H and EC_S is modified. The procedure employed to obtain estimates of EC_H and EC_S assigns all individuals of the same age, sex, race, years of schooling, location, and work status an earnings capacity equal to the mean of the cell within which they are included. All within-cell variance is artificially eliminated by this technique. To the extent that such within-cell variance is attributable to unobserved human capital differences or to chance, its suppression tends to exaggerate the effect on earnings of the independent variables included in the regressions and to understate the inequality in the distribution of earnings capacity.

To avoid this artificial compression of the earnings capacity distribution, individual observations within a cell were distributed randomly about the cell mean. This distribution was accomplished through a random number generator technique that incorporated the assumption that the distribution of observations within cells was normal, with a standard deviation equal to the standard deviation of the regression equation.[12] From this procedure, the mean value of earnings capacity for each cell was retained, but a normal distribution of observations within cells was achieved.

Summing the randomized estimates of the earnings capacity of the head and spouse (EC_H^R and EC_S^R) within a household yields a new measure of family gross earnings capacity. This measure, however, does not fully reflect a family's economic position; it neither includes a measure

of capacity returns to assets nor takes account of the costs of market work. To account for capacity returns to assets, income from interest, dividends, rents, alimony, and miscellaneous sources other than government transfers (Y_A) are added to EC_H^R and EC_S^R to obtain a revised measure of family gross earnings capacity (GEC_R).[13]

$$GEC_R = EC_H^R\left(\frac{50-W_{su}}{50}\right) + EC_S^R\left(\frac{50-W_{su}}{50}\right) + Y_A \qquad (2)$$

While the full cost of working has many components, the largest source of variance in such costs among families arises from differences in the costs of child care. Consequently, the GEC_R is adjusted by subtracting an upper-bound estimate of the costs of an acceptable level of child care in order to obtain a measure of net earnings capacity (NEC).[14]

$$NEC = GEC_R - (\$1510 \text{ per child aged 5 years or younger} + \$376 \text{ per child aged 6-14 years}) . \qquad (3)$$

The inequality in economic status as represented by GEC_R and NEC is shown in Table 3 and Figure 1, along with estimates of inequality in the distribution of PTY and total family income (TFY). The estimates presented are for the non-aged population. While numerous measures of inequality could be developed, our focus is on the shares of income (earnings capacity) going to each income (earnings capacity) class, the standard Lorenz curve, and the Gini coefficient.[15] In Table 3, estimates are presented of the shares of pretransfer income, total family income, GEC_R, and NEC accruing to the lowest through the highest families in the distributions of income or earnings capacity. The last row presents

TABLE 3

Distributions of Income and Earnings Capacity
by Quintile, Non-Aged Population
(in percent)

Quintile of Distribution	Economic Status Indicator			
	PTY	TFY	GEC_R	NEC
0-10 percent	.7	1.19	1.48	.84
0-20 percent	1.89	3.01	3.67	2.21
20-40 percent	4.92	6.65	7.53	5.46
40-60 percent	11.63	13.61	14.48	12.29
60-80 percent	25.9	26.55	26.66	26.18
80-100 percent	55.66	50.18	47.66	53.86
Gini coefficient	.540	.479	.448	.521

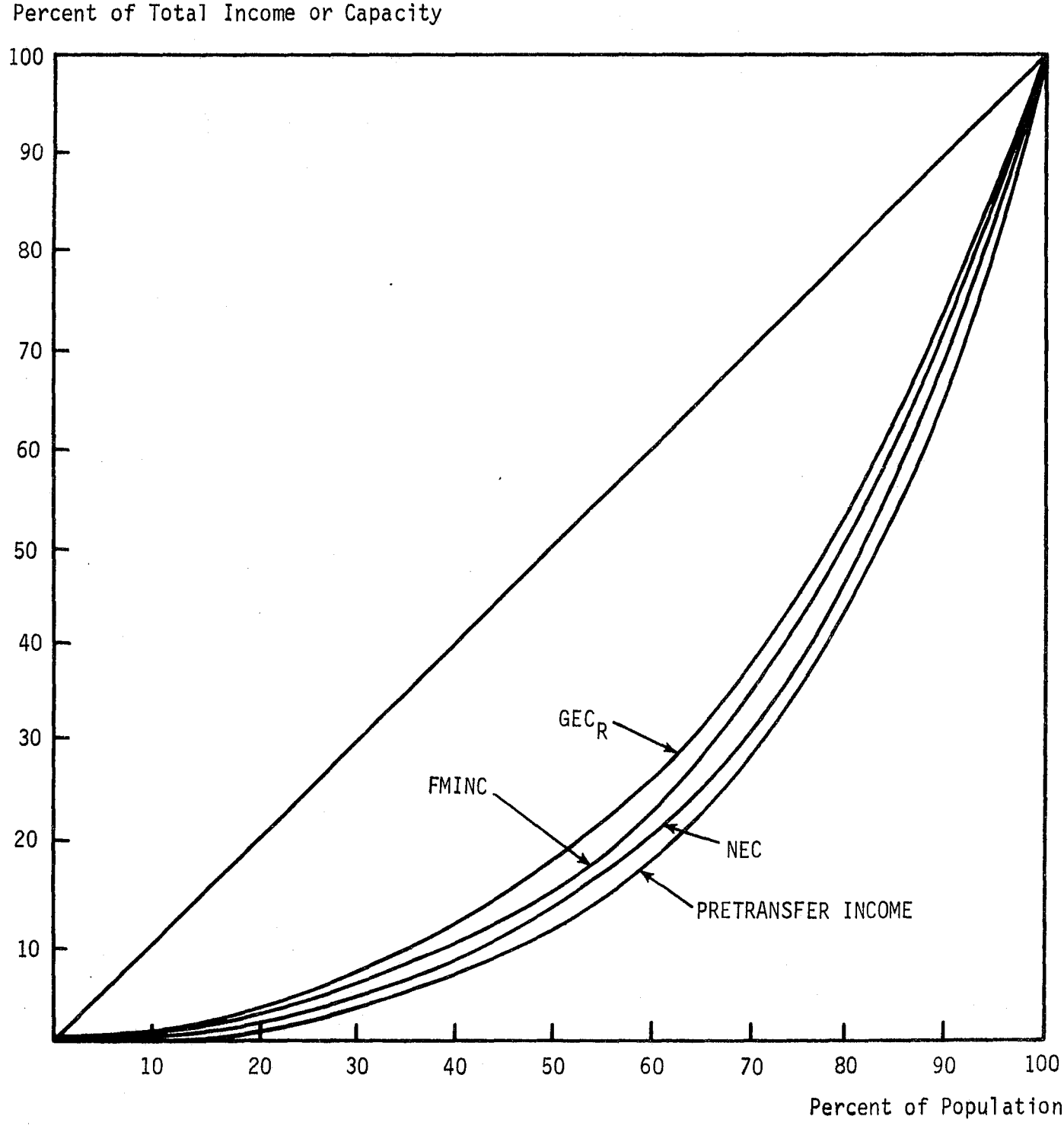

Figure 1: Lorenz Curves of Income and Earnings Capacity, Non-Aged Population

the Gini coefficients for each measure of economic status. Figure 1 presents the Lorenz curves for the four distributions.[16]

The degree of inequality implicit in all of the indicators of economic status is substantial. In each case, the lowest 20 percent of the units account for less than 4 percent of aggregate income or earnings capacity, while the top 20 percent of the units account for at least 48 percent. As expected, the distribution of PTY income is substantially more unequal than the distribution of TFY income. While the Gini coefficient is .540 for PTY, it is .479 for TFY.[17]

Comparing these Gini coefficients yields estimates of the contribution of several factors to inequality in both total income and earnings. First, by comparing the Gini coefficient for PTY with that for TFY, it is possible to estimate the effect of the transfer system in reducing the inequality stemming from market rewards. Because the latter coefficient is 88 percent of the former, the transfer system is estimated to reduce inequality by a maximum of 12 percent.[18]

Second, consider the question of the extent to which inequality in PTY for the non-aged population is attributable to variation among units in the patterns of capacity utilization; that is, to differences in work-leisure tastes, labor supply reductions induced by tax-transfer programs, or the real costs associated with labor market activity. Comparing the Gini coefficient for PTY to that for GEC_R suggests that the variation in earnings capacity accounts for the bulk of the inequality in market-related income. Since the Gini coefficient for GEC_R is 82 percent as great as that for PTY, about one-fifth of the inequality in pretransfer income can be attributed to the variation in capacity utilization.

A final comparison of Gini coefficients allows those factors that account for the variation in capacity utilization--and, hence, for the disparity in inequality between GEC_R and PTY--to be crudely decomposed. Because the distributions of both NEC and PTY reflect the primary component of the real costs of labor market activity (namely, child care responsibilities), a comparison of these two measures tends to capture the effect on the inequality of PTY of remaining sources of variation in capacity utilization--that is, work-leisure preferences and labor supply reductions induced by tax-transfer programs. The ratio of the Gini coefficients for NEC (.521) and PTY (.540) is .96, which suggests that a small portion of the inequality in PTY--about 4 percent--is attributable to the effect on capacity utilization of both work-leisure preferences and labor supply responses to tax-transfer programs. Conversely, about 14 percent of the observed inequality in PTY (the difference between 82 percent and 96 percent) appears to be due to the real costs of labor market activity.[19] However, because the child care adjustment in NEC is an upper-bound estimate and because the real costs of labor market activity are rather differently reflected in actual earnings, this last partitioning of the determinants of inequality in PTY must be interpreted with caution.

IV.

The results presented in this paper shed light on a number of important issues regarding the causes of poverty and the determinants of income inequality. While some confirm ex ante expectations, others fail to verify propositions that appear to be widely believed. Some of the primary conclusions are summarized as follows:

- Although the observed capacity utilization rate is slightly lower for black families than for white families, this differential is accounted for by the high earnings capacity of whites relative to blacks. When black and white families of the same earnings capacity are compared, black families have higher rates of capacity utilization than do white families for most earnings capacity levels.

- While the capacity utilization rates of poor households are somewhat lower than those of high-economic-status households, this difference is primarily attributable to the capacity utilization patterns of unmarried persons. For families, the rates of capacity utilization are nearly constant over the distribution of economic status.

- The contribution of differences in capacity utilization to income inequality is small. The distribution of earnings capacity is about 80 percent as unequal as the distribution of pretransfer income--indicating that at most one-fifth of observed income inequality is attributable to differences in capacity utilization. In turn, child care expense (the primary real cost of labor market activity) appears to account for about two-thirds of the variation in capacity utilization.

NOTES

[1]Studies of the U.S. income distribution have relied primarily on annually released statistics prepared by the U.S. Bureau of the Census and based on the annual March Current Population Survey (CPS). See, for example, U.S. Bureau of the Census [15]. See also J. N. Morgan et al. [11]; M. K. Taussig [13]; and H. Miller [10].

[2]Other attempts to partition the sources of income inequality include C. Jencks et al. [6] and L. C. Thurow and R. E. B. Lucas [14].

[3]These shortfalls in the income concept have been discussed by T. P. Schultz [12] and M. K. Taussig [13].

[4]The concept of "full income" was introduced and most completely analyzed in G. Becker [2].

[5]The sample is that of the 1971 Current Population Survey, "aged" to allow for demographic changes, economic growth, and inflation through 1973. In addition, the 6 percent unemployment rate of 1970 was adjusted to 4.9 percent by randomly assigning unemployment and duration of unemployment experiences to groups identified by age, sex, occupation, and unemployment experience, using the RIM model developed by the Urban Institute. See N. McClung, J. Moeller, and E. Siguel [9].

[6]Data limitations preclude the distinguishing of permanent disabilities from temporary illnesses.

[7]Part of the differences in weeks worked of unemployed or unhealthy individuals vis-a-vis those not affected by unemployment or ill health may be due to differences in tastes for work. This is likely to be minor, however. In any case, our adjustment tends to understate differences between the earnings capacity and current income measures that are taste dependent.

Three additional problems with the adjustment should be noted. First, some of the time that an individual is unemployed is attributable to the absence of a job that the individual deems suitable. Hence, GEC will underestimate some individuals' earnings capacity. Conversely, some individuals who cannot find jobs become discouraged and drop out of the labor force. GEC will overestimate these individuals' earnings capacity. Finally, because the adjustment is made only for labor force participants, earnings capacity imputations for those not in the labor force will be somewhat overestimated.

[8]Throughout this section, the capacity utilization rate (CUR) is defined as the ratio of actual earnings to gross earnings capacity (GEC).

[9]The ACUR estimates are obtained by fitting regression equations that explain earnings as a function of GEC and a dummy variable for the within-group comparison desired to the observations of various population groups. The coefficient on the dummy variable indicates the effect of that variable on earnings, holding GEC constant.

The specific estimates are obtained from the following regression:

$$E = a_0 + a_1 GEC + a_2 GEC^2 + a_3 GEC^3 + a_4 St + a_5 X$$

where E is earnings, St is a 0-1 variable indicating student status, and X is a dummy variable indicating the within-group comparison desired. Separate regressions were run for all subgroups indicated in the stub of Table 1. In addition, separate regressions by race were run. Each regression was evaluated at the mean GEC of the larger group to which its observations belonged (all families and individuals, all males, or all females). The resulting estimate of E was placed over the corresponding value of GEC to obtain the ACUR for the desired subgroups, holding earnings capacity constant.

[10]The ACUR estimates in Table 1 are adjusted only for differences in marital status and race within sex groups. They are not adjusted for differences in earnings capacity between sex groups. The relationship between males and females observed in Table 1 is not altered when such adjustments are made.

[11]These estimates are obtained from the regressions of earnings on earnings capacity described in note 9. As indicated there, separate regressions were run on each subgroup. Each regression was evaluated at the deciles of the GEC distribution for the major population groups and the resulting estimate of earnings at each decile was placed over the corresponding value of GEC to obtain the capacity utilization rate at that decile.

[12]The random number generator routine RANNB generates a sequence of pseudo-random numbers with a normal (Gaussian) distribution with mean 0 and variance 1 by the method of Box and Muller [4]. For a description of computation procedures, see Random Number Routines Reference Manual 1110, Academic Computing Centers, University of Wisconsin, Madison.

[13]Because income from interest, dividends, and rents is a measure (albeit a crude one) of a household's ability to generate income from asset holdings, such income should be counted in ascertaining the family's economic status. By adding actual income flows to human capital earnings capacity, it is implicitly assumed that nonhuman capital assets are being used at capacity. Some assets, such as home equity, have no reported monetary return. Hence, the revised measure underestimates the earnings capacity of families receiving services from owner-occupied housing.

[14]These data are 1968 estimates adjusted for inflation. The 1968 estimates are from B. Bernstein and P. Giacchino [3]. These data are taken from M. Krashinsky [8].

[15]The weaknesses of these and other descriptive statistics that describe entire distributions are discussed in M. Bronfenbrenner [5]. See also A. Atkinson [1].

[16]The technique employed in estimating the Lorenz curve and the Gini coefficient for each of the distributions of economic status is based on that developed in N. C. Kakwani and N. Podder [7].

[17]For purposes of comparison, inequality in the distribution of welfare ratios for the four measures of economic status was also estimated. Through this procedure, the degree of inequality of status relative to needs can be appraised. In general, the welfare ratio Gini coefficients were similar to the Gini coefficients shown in Table 3. Two differences, however, were notable. First, GEC welfare ratios were much less unequally distributed than GEC, while this was not the case for NEC. Second, the Gini coefficients for welfare ratios are uniformly smaller than those for the comparable nondeflated measures; the distribution of economic resources in relation to needs among the non-aged population is less unequal than the distribution of actual income or earnings capacity.

[18]To the extent that the availability of income transfers leads to reductions in the labor supply and, hence, in the PTY of those with low earnings capacity, a comparison of pretransfer and posttransfer Gini coefficients will overestimate the reduction in inequality brought about by income transfers.

[19]Note, however, that these results suggest that part of the inequality in PTY may be due to differences in tastes for children, which contribute to differences in the utilization of gross earnings capacity.

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APPENDIX

Table A-1 presents the estimated earnings functions upon which the estimation of head, spouse, and family earnings capacity is based. The dependent variable is the log of annual earnings.

TABLE A-1

Earnings Functions for Black and White Males and Females

Independent Variables	Males		Females	
	White Coefficient (t-value)	Black Coefficient (t-value)	White Coefficient (t-value)	Black Coefficient (t-value)
Years of schooling	.0212 (3.0)	-.0088 (-.4)	-.0106 (-.7)	-.0229 (-.7)
Years of schooling^2	.0007 (3.2)	.0017 (2.8)	.0033 (6.5)	.0047 (4.3)
Age	.0711 (33.3)	.0525 (7.1)	.0479 (13.3)	.0234 (2.2)
Age^2	-.0008 (-42.6)	-.0007 (-10.0)	-.0006 (-18.1)	-.0004 (-4.0)
Age - years of schooling	.0005 (5.6)	.0004 (1.5)	.0001 (.5)	.0004 (.8)
Weeks worked 1-13	-1.9636 (-85.8)	-2.0173 (-31.1)	-2.2937 (-111.8)	-2.0924 (-39.4)
14-26	-.8201 (-44.2)	-.8324 (-17.1)	-.9790 (-48.0)	-.8835 (-16.4)
27-39	-.4103 (-27.2)	-.3742 (-8.5)	-.4851 (-22.6)	-.4215 (-7.8)
40-47	-.2067 (-13.9)	-.2563 (-5.9)	-.2395 (-9.8)	-.2097 (-3.4)
48-49	-.1434 (-7.1)	-.0970 (-1.6)	-.1446 (-4.0)	-.0124 (-.1)
50-52	---	---	---	---
Full- or part-time work during week				
Full-time	---	---	---	---
Part-time	-.9105 (-51.0)	-.9827 (-21.2)	-.9162 (-61.3)	-.8767 (-22.4)
Location				
Northeast	-.0149 (-1.6)	-.0197 (-.5)	.1292 (7.5)	.1154 (2.2)
North Central	---	---	---	---
South	-.1120 (-12.2)	-.2362 (-7.5)	-.0416 (-2.5)	-.2017 (-4.4)
West	-.0541 (-5.3)	.0132 (.3)	-.0299 (1.6)	-.0316 (-.5)
SMSA suburb	.1542 (18.7)	.2664 (7.1)	.1790 (11.7)	.2647 (4.9)
SMSA central city	.0685 (8.0)	.1609 (5.7)	.1883 (12.2)	.2133 (5.2)
Nonurban	---	---	---	---
Marital status				
Not married - no children			.1243 (6.1)	-.0113 (-.2)
Not married - with children			.0524 (2.1)	-.0378 (-.9)
Married - no children			.1261 (7.8)	-.0030 (-.1)
Constant	7.2901 (96.8)	7.6699 (32.5)	7.1515 (49.0)	7.5754 (20.3)
R^2	.5252	.6068	.6026	.6337
F	1813.7819	266.8581	1498.4130	247.2347