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THE TREND TOWARD EQUALITY
IN THE DISTRIBUTION OF NET INCOME:
A REEXAMINATION OF DATA AND METHODOLOGY

Timothy M. Smeeding

UNIVERSITY OF WISCONSIN - MADISON

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Timothy M. Smeeding
University of Utah, Department of Economics

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ABSTRACT

Edgar Browning has argued recently that the size distribution of family income in the U.S. is substantially more equal than is popularly believed. For example, he estimates that the 1972 "net income" share of the bottom quintile of families is 12.5 percent, in comparison to the Census bureau estimate of 5.4 percent of money income. Adopting Browning's technique, a more careful analysis of available data indicates that the income share of the bottom quintile was no more than 7.4 percent of net income in 1972.

Further adjusting the data to take account of Browning's over-valuation of in-kind transfers and the fact that in his calculations families are not reranked as income components are added on to (or subtracted from) Census money income, the income share of the lowest quintile is finally estimated to be 6.5 percent of net income in this same year.

These alterations also substantially affect the trend toward equality in the distribution of net income. Whereas Browning finds that the income share of the lowest quintile of families increased by 61.5 percent from 1952 to 1972, the final adjusted figures presented here indicate an increase of only 18.1 percent over this same period.

The Trend toward Equality in the Distribution of Net Income:
A Reexamination of Data and Methodology

In two recent papers, Edgar Browning (3 and 4)[1] has argued that

the size distribution of family income is substantially more equal than

is popularly believed. Whereas the U.S. Bureau of the Census (35) re-

ports that the share of the lowest quintile in 1972 was 5.4 percent of

money income, after several statistical operations which will be challenged

here, Browning estimates their share at 12.5 percent of "net income."

Moreover, he estimates a strong and substantial trend toward greater

equality in the distribution of net income over the past 30 years: He

states that the share of the lowest quintile increased 61.5 percent from

1952 to 1972. If Browning is correct, his results are indeed important.[2]

While several studies[3] have concluded that inequality has either remained

constant or increased over the past 30-35 years, few[4] have indicated a

decrease in inequality, and certainly none have suggested the massive

decline in the extent of inequality which Browning has documented. In

this paper, it will be shown that his results must be either treated with

a great deal of skepticism or rejected.

This paper takes issue with Browning in two different ways. First,

sections I through IV accept (for the most part) Browning's basic methodology

(i.e., aggregating published data from several sources into one size dis-

tribution of income), but they employ a more detailed analysis of avail-

able data, alter Browning's basic income concept, and reject his attempts

to adjust the data for differences in family size. An alternative

estimate of the size distribution of "revised" net income is thus obtained.

Second, section V directly criticizes Browning's methodology, while section VI reviews the counterevidence, adjusts for methodological defects, and makes an assessment of the level and trend in income inequality over the last 35 years.

1. RECALCULATING THE LEVEL OF NET INCOME

Panel A of Table 1 replicates Browning's derivation of net income by quintile for 1972. The bottom, panel B, presents an alternative set of income figures. In row 1 of each panel are the Census Bureau estimates of the distribution of money income in 1972. This is the only line for which the two sets of data are in agreement.

In row 2, Browning adjusts the Census figures for income under-reporting according to published reports on both the extent of under-reporting by broad income category and the distribution of each category of income by family income class.[5] The use of published figures imposes these limitations on him. A more favorable technique involves the use of the original Census' Current Population Survey (CPS) microdata and the division of broad income categories into separate income components. This technique was employed in generating the underreporting figures in row 2, at the bottom half of Table 1. By and large, the two sets of estimates are similar.[6]

Row 3 in both panels deals with a critical and generally nonmeasured source of income, namely, in-kind transfers. Browning's procedure "does not purport to measure the dollar value to the recipients of these government subsidies. Instead they represent the market value of the resources

Table 1

The Distribution of Net Income in 1972
(billions of dollars)

A. Browning's Estimates[1]

Row	Income Component	Lowest	2nd	3rd	4th	Highest	Total[3]
1	Money Income[4]	$37.1	81.7	120.1	164.1	284.2	687.2
	Plus						
2	Adjustment for Underreporting	$ 6.1	8.0	8.7	11.2	26.8	60.7
3	In-Kind Transfers	$22.0	7.0	4.0	3.0	2.0	38.0
4	Education Transfers	$ 8.7	10.4	12.3	13.7	17.5	62.7
5	Capital Gains	$ 3.3	4.1	4.9	5.5	20.3	38.0
6	Potential Additional Earnings	$18.5	25.3	24.2	17.1	36.3	121.4
	Minus						
7	Income and Payroll Taxes	$ 1.3	5.8	15.5	26.6	67.5	116.6
	Equals:						
8	Net Income	$94.4	130.7	158.7	188.0	319.6	891.4
9	Percentage Distribution of Row 8	10.6%	14.7	17.8	21.1	35.9	100.0

B. Revised Estimates[2]

Row	Income Component	Lowest	2nd	3rd	4th	Highest	Total
1	Money Income[4]	$37.1	81.7	120.1	164.1	284.2	687.2
	Plus						
2	Adjustment for Underreporting	$ 5.5	7.4	9.7	12.6	26.8	62.0
3	In-Kind Transfers	$10.8	4.4	2.7	2.1	2.2	22.2
4	Education Transfers	$ 7.4	9.3	11.9	13.8	15.5	57.9
5	Capital Gains	$ 1.3	2.9	3.2	4.6	25.5	37.5
6	Fringe Benefits	$ 2.3	9.9	15.8	21.3	29.6	79.0
	Minus						
7	All Taxes	$10.8	24.2	35.6	48.8	102.0	221.5
	Equals:						
8	Net Income	$53.6	91.4	127.8	169.7	281.8	724.3
9	Percentage Distribution of Row 8	7.4%	12.6	17.6	23.4	38.9	100.0
10	Percentage Distribution of Row 1	5.4%	11.9	17.5	23.9	41.4	100.0

Notes:
1. From Browning (3), Table II, p. 914.
2. See text for source and derivation of author's estimates.
3. Detail may not add to total due to rounding.
4. Source: U.S. Bureau of the Census (35), Table 4.

available to the various quintiles" (3, p. 915). Let us accept (for now) this definition of "income." Browning distributes $38.0 billion of in-kind transfers to all CPS families in 1972, while row 3 in panel B distributes only $22.2 billion of in-kind transfers. Further, the distributors differ significantly. Browning allocates 57.9 percent of in-kind benefits to the lowest quintile, while panel B indicates that only 48.6 percent of in-kind benefits accrue to these units. There are three major sources of this discrepancy. First of all, although total program expenditures need to be adjusted to match the CPS population, Browning makes no such adjustment. Many in-kind benefits (particularly medical care) accrue to people living in institutions, a group not counted in the CPS income distribution figures. Similarly, in-kind benefits accruing to military living on base, foster children, and others living in "group quarters" units (e.g., boarding houses, state foster homes, college dormitories), as well as in-kind transfer payments going to families outside the fifty states (e.g., Food Stamps to persons living in Puerto Rico and Guam) must be subtracted before in-kind benefits can be attributed to the CPS population.

Secondly, Browning does not attempt to allocate general government expenditures to individuals. Therefore, in-kind payments classified as "social welfare expenditures," which are primarily of a public goods nature, should be eliminated. We have thus pared medical research expenditures, public health expenditures (e.g., the Food and Drug Administration budget, venereal disease control), and other anomalous items from reported figures. Finally, capital expenditures such as medical facilities construction and library contruction were also eliminated on the grounds that the benefits

from these programs could not be accurately allocated to families on the basis of annual income.

Another problem is the separation of those in-kind transfers which accrue to unrelated individuals, a group excluded from the figures reported here. These single-person units represent only 8.7 percent of the total CPS population, but 24.6 percent of all households. Browning "guesstimates" that $5.8 billion (13.2 percent) of in-kind transfers accrue to this group, while the revised estimates allocate $8.4 billion (27.5 percent) to this group. Microdata estimates of the distribution of Medicare, Medicaid, Food Stamps, and Public Housing benefits between families and unrelated individuals in the CPS population in 1972 provide the basis for these panel B estimates.[7]

Table A-1 in the Appendix breaks down in-kind transfers by detailed group, explaining these adjustments and the data sources used to make them. In total, the $43.8 billion of aggregate in-kind benefits reported by Browning (footnote 3 of his Table II) is reduced to $35.7 billion by the procedures mentioned above. A further $5.1 billion of in-kind expenditures were reclassified as in-kind education transfers[8] which are reported in the next row, leaving a total figure of $30.6 billion of in-kind transfers accruing to the CPS population. Adjusting for the benefits accruing to unrelated individuals leaves $22.2 billion in row 3 of panel B.

Finally, the in-kind benefit distributors differ in each panel as well. The differences are due to the author's use of more accurate CPS microdata to allocate each in-kind transfer by its relevant distributor (be it veteran's payments, worker's compensation, or public assistance).[9] Browning employs an awkward and inexact procedure which assumes that all of the poor are

in the lowest quintile (only about 91 percent are in that quintile) and
that all families in the lowest quintile received the same in-kind
transfers per capita as poor families (of the 10.875 million families
in the lowest quintile, only 4.618 million—or about 42.5 percent—were
poor). The distributor by which Browning allocates the remaining $16.0
billion of in-kind transfers among the top four quintiles was not specified.

In row 4 of panel A $62.7 billion of educational expenditures are
distributed according to the following formula: 60 percent in proportion
to the number of children under 18 years of age in each quintile, and the
remaining 40 percent in proportion to total money plus in-kind income
(the sum of rows 1 thru 3). No educational benefits were assumed to
accrue to unrelated individuals.

A different approach is used in panel B. Exclusions for educational
construction and other minor items (e.g., education funds for correctional
institutions) reduce the total from $62.7 to $57.9 billion,[10] and the
addition of Child Nutrition and School Health expenditures raises the
total to $59.8 billion. From Census Bureau (35; 36) figures, it is
estimated that at least 1.007 million (12.1 percent) of the total 1972
college enrollment of 8.313 million students were classified as unrelated
individuals (including veterans under the GI bill). This reduces ex-
penditures for college and higher education and leaves a net total of
$57.9 billion in education transfers for families.

Elementary education expenditures (75.6 percent of the total in
panel B) were allocated on the basis of the number of children ages 6
to 17 in each quintile, not the number of children under 18 in each
quintile (Browning's distributor). Eliminating non-school age children

(i.e., children under 6) is important because while 81.4 percent of the children under 18 were of school age in the highest quintile, 59.6 percent were in this category in the lowest quintile. Despite the evidence[11] that higher educational expenditures are distributed more _unequally_ than income, Browning's proportional distributor for higher educational benefits seems acceptable.

In row 5, Browning estimates that of a total of $42.2 billion of capital gains, $38.0 billion (or 90 percent) accrued to families. These estimates were derived from De Wulf (10). While De Wulf distributes $27.4 billion of capital gains for 1966 by taxpayer's adjusted gross income (AGI) class (and not by Census family money income class),[12] Browning applied the AGI distribution to the CPS distribution in some unspecified fashion, such that 8.7 percent of capital gains accrued to the lowest quintile.

The figures in the bottom panel are based on the CPS distribution of dividend income (for capital gains on stocks and bonds) and general property income (for capital gains on homes). It was estimated that 11.1 percent of capital gains accrued to unrelated individuals while only 3.5 percent of total capital gains accrued to families in the bottom quintile.

In row 6, Browning estimates the values of leisure ("potential additional earnings") by multiplying the number of adults in each quintile who are not earners by the average earnings per earner for that quintile. Of course, this estimate does not distinguish between voluntary and involuntary leisure, in spite of Browning's own comment that "involuntary leisure" should be valued below the market wage rate. Further, Browning admits a possible understatement of the value of leisure for those under 24 and over 65[13] in the lowest quintile who would place a _higher_ value

on leisure than the average annual wage for the lowest quintile.[14]

Implicitly then, Browning counts all of the aged as "voluntarily un-
employed," despite employers' mandatory retirement policies and despite
widespread illness, disability, and the declining value of their human
capital. Also, single parents with young children and all high school
and college students who do not work should be so classified. I doubt
whether many economists would accept these criteria for defining the
"voluntarily unemployed."[15] Moreover, the leisure time of the employed,
including paid vacations and paid holidays, is not valued, nor is the
value of non-market work in the home or voluntary services to charitable
organizations included. Finally, all adults in any one quintile are
assumed to have the same value for leisure as the average working person
in that quintile, i.e., average quintile earnings, regardless of their
individual earnings capacity. Browning comments that "some readers may
wish to exclude this adjustment altogether," (3, pp. 916-917) as they
are in panel B.

Instead of potential additional earnings, row 6 in the bottom panel
contains an estimate of employer-subsidized fringe benefits,[16] which like
other income increases economic welfare. These include employer contributions
for Social Security, profit sharing and vested private pensions; federal,
state and local government retirement funds; health and life insurance;
and other minor categories. Fringe benefits, and in-kind and other
"expense account" items such as free personal use of automobiles, travel,
and free food, were not counted because no data were available. After
subtracting the share of unrelated individuals (according to their share
of wage and salary income), a total of $79.0 billion in fringe benefits

was distributed. Of this total, $46.7 billion was distributed in pro-
portion to wage and salary income, despite the fact that the value of
these benefits is probably more unequally distributed than wage and salary
income. The remaining $32.3 billion, representing employer contributions
for social insurance, were allocated according to the quintile distribution
of employee payroll taxes paid by wage and salary workers.

Row 7 contains estimates of the tax burden by family income quintile.
The top panel includes only federal payroll and income taxes, on the
assumption that indirect business taxes (employer payroll taxes, sales
and excise taxes, property taxes on businesses, and the corporate income
tax) are already reflected in the distribution of money income. Thus
only direct personal taxes paid by families after the receipt of money
income are subtracted. Browning mentions that property taxes and state
and local individual income taxes should also be subtracted, but he
claims to know of no estimates of their distribution by income class.
His distributor for tax burdens was derived from the Brookings MERGE
file of family units ranked by MERGE adjusted income quintiles.[17]

The figures in the bottom panel include all taxes (including federal,
state and local income taxes, employee and employer payroll taxes, sales
and excise taxes, the corporate income tax, property taxes and motor
vehicle taxes). Their distribution was determined by applying the over-
all effective tax rates estimated by Joseph Pechman and Benjamin Okner[18]
to an expanded tax base which included the income components in rows 1,
2, 5, and 6.

Browning's argument that "the distributional effects of these taxes
are already reflected in the distribution of money income" (3, p. 917)

implicitly assumes that such taxes as employer payroll taxes, sales taxes,
corporate income taxes, and business property taxes either fall on the
owners of capital (or employers) or are back-shifted onto wages. If
some amount of these taxes are forward-shifted to consumers--and some
large part must certainly be so shifted--his rationale for excluding
these taxes is unfounded. Pechman and Okner, on the other hand, employ
eight different sets of incidence assumptions in deriving their tax rates.

Despite the fact that Browning knows "of no estimates of these (i.e.,
property and state and local income) taxes by quintiles" (3, p. 917), there
are several estimates of the distribution of these taxes by income class.[19]
It follows that a reasonable distributor can be constructed. These taxes
are particularly important in that many of the benefits of these taxes--
that is, education benefits--have already been distributed in both panels
without ever having accounted for the distributional effects of taxes used
to finance these expenditures.

Summing rows 1-6 and subtracting row 7, row 8 presents an estimate
of net income by quintile, and row 9 the percentage distribution of this
income. Finally, for purposes of comparison row 10 in the bottom panel
presents the percentage distribution of Census money income (row 1 in
both panels). The differences in these figures are substantial. Browning's
estimate of the income share of the bottom quintile (10.6 percent) is
nearly twice as large as the 5.4 percent of Census money income which they
receive. In contrast, the revised estimate of 7.4 percent is 37.0 percent
larger than the Census figure. It appears that while Browning may be
correct in terms of the direction of bias in the Census Bureau estimates,

he substantially overstates the percentage share of the bottom quintile
as compared to the figures at the bottom of Table 1.

Before leaving these net income estimates, one final income component
need be mentioned. Neither Browning nor the author have included income
in the form of non-money wages, farm in-kind income, rent on owner-
occupied dwellings, and imputed interest on long-term bank deposits.
Estimates of the size distribution of these income components were first
made by Budd and Radner (6), and later by Radner and Hinrichs (27), using
the Bureau of Economic Analysis (BEA) income data. However, this data is
not comparable with the data utilized here.[20] In any case, of these
imputed income items valued at $38.8 billion in 1971, about 8.0 percent
accrues to the bottom quintile of BEA consumer units. If 8.0 percent of
these benefits had accrued to our bottom quintile of families in 1972,
there would be no change in their net income share as calculated by the
revised figures, and a .1 percentage point decrease in Browning's
estimated share. Hence, omitted income items should have little effect
on the results presented in Table 1.[21]

2. RECALCULATING THE TREND IN NET INCOME

Browning creates similar estimates of net income for 1952 and 1962
in order to examine the trend in inequality. These estimates employ
generally the same distributors in 1952 and 1962 as those used in 1972.
However, they exclude the adjustments for underreporting and capital
gains. It seems somewhat strange that Browning excludes these items.
First of all, while no income underreporting estimates are available
for 1952 or 1962, there is evidence for 1964 and 1970 thru 1975 which

indicates that Current Population Survey income has never been less than
89.9 percent nor more than 91.6 percent of the independently estimated
benchmark total.[22]   Hence underreporting estimates for 1952 and 1962 have
been included in the revised estimates and allocated by quintile according
to the same distributor in all three years.

It is even more inappropriate that Browning should ignore capital
gains. Both of our 1972 estimates were derived by extrapolating a 1966
point estimate to 1972 at the rate of growth of GNP. Why not deflate by
the same measure to 1962 and 1952? Again, such a figure has been included
in the revised estimates and allocated according to my 1972 distributor
for capital gains.

Having included capital gains, income underreporting, and fringe
benefits, and omitted potential additional earnings, net income totals
for 1952 and 1962 which are identical to those constructed in Table 1
are obtained. These tables are included in the Appendix (Tables A-3
and A-4).

Table 2 presents an overview of the trend in income inequality for
three income measures: Census money income (row 10, Tables 1, A-3, and
A-4), Browning's estimated net income (from row 8, Table II; and row 6,
Tables A-I and A-II in (3)), and the net income estimates developed in
this study (row 9, bottom of Table 1; and row 9 of Tables A-3 and A-4).
Panel A of Table 2 contains estimates of the income share of the bottom
quintile for all three years and the percentage increase in income shares
between 1972 and 1952. Browning's original estimate of the trend toward
equality, measured by the increase in the share of the bottom quintile
(55.1 percent), is twice as large as the increase estimated in this study

Table 2
Trends In Income Inequality, 1952-1972

	Measure	Year	Census Money Income	(Percentage change from 1952)	Browning's Net Income	(Percentage change from 1952)	Revised Net Income	(Percentage change from 1952)
A.	Percentage Income Share of Lowest Quintile	1952	4.9%		6.9%		5.9%	
		1962	5.0	(2.0)	7.7	(11.5)	6.2	(5.1)
		1972	5.4	(10.2)	10.7	(55.1)	7.4	(25.4)
B.	Percentage Income Share of Highest Quintile	1952	42.2%		36.4%		41.6%	
		1962	41.3	(-2.1)	35.0	(-3.8)	39.9	(-4.1)
		1972	41.4	(-1.9)	34.4	(-5.5)	38.9	(-6.5)

Sources: Tables 1, A-3, and A-4; Browning (3) Tables II, A-I, and A-II.

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(25.4 percent). Census money income indicates a more modest trend (10.2 percent) toward greater equality.

Viewing the trend toward equality from a different perspective, panel B of the table presents estimates of the income share of the highest quintile for all three years and the percentage decrease in those shares between 1972 and 1952. The estimates of this study show decreases in the share of the top fifth which are slightly larger than the decreases indicated by Browning's original figures. In sum, it seems that Browning substantially overstates the gain in the share of the lowest quintile, but understates the losses of the highest quintile by a smaller amount.

3. SOURCES OF DIFFERENCE BETWEEN THE ESTIMATES

This section examines the relative importance of the various income components in explaining changes in the level of income inequality both for Browning's estimates and for the "revised" estimates developed in this paper. Table 3 presents the income share of the lowest quintile in 1972 and for each additional income component taken separately, the income share of the lowest quintile after that adjustment. Further, the percentage increase (or decrease) in income share after each adjustment has been computed. By comparing these figures one can obtain some idea of the relative importance of each income adjustment in adding to or subtracting from equality.

In-kind transfers have increased the income share of the lowest quintile by 25 percent via the author's imputations and 50.9 percent— or more than twice as much—for Browning. The increased equality in the distribution of net income is also explained somewhat by the addition

Table 3

The Impact of Adjustments on the Income
Share of the Lowest Quintile

Row	Income Component	Revised Estimate of the Percentage Share of Lowest Quintile	Percent Change from Row 1	Browning's Percentage Share of Lowest Quintile	Percent change from Row 1
1	Money Income	5.40%		5.40%	
	Money Income plus:				
2	Adjustment for Underreporting	5.69	5.4%	5.78	7.0%
3	In-Kind Transfers	6.75	25.0	8.15	50.9
4	Education Transfers	5.97	10.6	6.11	13.1
5	Capital Gains	5.30	-9.1	5.57	3.1
6a[1]	Fringe Benefits	5.14	-4.8	NA	NA
6b[2]	Potential Additional Earnings	NA	NA	6.88	27.4
	Money Income Minus:				
7[3]	Taxes	5.65	4.6	6.27	16.1
8	Net Income	7.40	37.0	10.59	96.1

Notes: 1. These figures include **fringe benefits but exclude potential additional earnings.**

2. Browning includes potential additional earnings but excludes fringe benefits.

3. These figures include all taxes while Browning includes only federal personal income taxes and employee payroll taxes.

of education transfers for both Browning's estimates and the author's estimates. The imputation of potential additional earnings are also important in explaining Browning's results.

Each of Browning's income adjustments not only increases the income share of the bottom quintile by more than the revised estimates but, further, every one of his adjustments has an equalizing effect in terms of increasing the income share of the bottom quintile. According to the revised estimates, capital gains and fringe benefits increase income inequality by lowering the share of this quintile. What Browning is saying, then, is that each of the additional income components--even capital gains income--is more equally distributed than Census money income!

4. ADJUSTMENTS FOR DIFFERENCES IN FAMILY SIZE

So far, our discussion has been couched in terms of income shares, unadjusted for family size or family needs. The estimates in Browning's paper, from which he draws his conclusions regarding the level and trend in inequality, are based on shares adjusted for differences in average family size between quintiles by per capitization of family income figures. Some would argue for such an adjustment on the grounds that 1) there are differences in the number of individuals within the same number of families in each quintile, and further that 2) there are economies of size in providing the same level of well-being among different size units, and finally that 3) these differences should be accounted for by adjusting income figures to some common denominator. Yet Browning's per capita adjustment[23] not only overadjusts for this

bias by ignoring economies of size, but it also severely misrepresents the distribution of income per capita as well.

On the overadjustment issue, any per capita transformation argues that a two-person family needs only 50 percent as much income as a four person family to be as well off. Similarly, a six-person family needs half again as much income to be as well off. On the other hand, the family equivalence scales which divide the Census poverty thresholds by family size (and age, location, and sex as well) indicate that the average two-person unit needs 67 percent of the income of a four-person unit, while an average six-person family needs only a third more income than a four-person unit to be equally as well off. The per capita trans- formation fails to take account of these economies and diseconomies of family size, and hence overadjusts income figures for family size dif- ferences. Thus, if any family size adjustment is to be made[24] it should be made on an equivalence scale basis.

Most importantly, however, the size distribution which Browning hopes to obtain is the distribution of _individuals_ ranked by family income per family member, and separated into quintiles on this basis. Unfortunately it is impossible to obtain such a distribution from his data sources.[25] In other words, Browning's quintile distribution of per capita income purports to represent the distribution of income (i) per family member (n), or i/n, where each family member is ranked on the basis of own per capita income and counted only once. In actuality, however, Browning's estimates are based on each quintile's _total_ income (I) divided by the _total_ number of persons in that quintile (N), or I/N, counted N times each. This latter distribution of family per capita

income is most certainly very different from the former distribution.[26]

In sum, because the derivation of the true distribution of individual

family income per capita is precluded by the use of aggregate data,

and because a family equivalence scale adjustment would be preferred

to a per capita adjustment in any case, we do not adjust any of the

income measures presented here for family size differences.

5. VALIDITY OF METHODOLOGY

There are at least three major stumbling blocks in the Browning

methodology which call into question the validity of the estimates of

income inequality presented above. The first relates to the omission

of unrelated individuals, the second to the recipient value of in-kind

transfers, and the third to the reranking of families as adjustments to

income are performed.

Omission of Unrelated Individuals

Why does Browning exclude unrelated individuals? The answer cannot

be simply attributed to the paucity of distributional information regard-

ing the sources of income for these individuals. Since the Census Bureau

publishes estimates of the distribution of income by detailed income class

for both unrelated individuals and families in all three years, it is

possible to combine these units into a distribution for all households.

In addition, the underreporting, education, and capital gains imputations

could more easily be calculated for the entire group of households. In

fact, Browning would not have to arbitrarily adjust these income com-

ponents to remove the share of unrelated individuals.

The importance of this omission is documented in Table 4. Unrelated individuals made up 23.6 percent of all income receiving units (families plus unrelated individuals) in the U.S. in 1972. In that same year they received 12.3 percent of total gross money income.[27] Hence by excluding unrelated individuals Browning has omitted almost one-quarter of all income-receiving units and almost one-eighth of total income. Further, the importance of this bias increases over time. In 1952 and 1962 about 19.0 percent of all units were unrelated individuals; in 1972, 23.6 percent of all units were single persons; and by 1975, almost 27 percent were so classified. Finally, the bottom of Table 4 presents several estimates of income inequality among unrelated individuals and among all income-receiving units. From 1952 to 1972 the income share of both the bottom and top quintiles of unrelated individuals increased. Hence the trend in inequality among unrelated individuals is unclear.

The available evidence on inequality of income among families, unrelated individuals, and both together may be summarized by considering their Gini coefficients. These Ginis indicate that the level of income inequality among unrelated individuals is substantially larger than among families. Further, while family inequality has decreased from 1952 to 1972 as measured by the Gini coefficient of Census money income, inequality among unrelated individuals has changed little. The combined effect is to leave income inequality among families and unrelated individuals virtually constant over this period.

In summary, the failure to include unrelated individuals is difficult to justify. At the very least, this omission leaves many unanswered questions regarding the level and trend in inequality from 1952 to 1972.[28]

Table 4

Unrelated Individuals: Trends in
Population and Income

	Row	Item	1952	Year 1962	1972
A. Population:	1	Number of Families (millions)	41.0	47.0	54.4
	2	Number of Unrelated Individuals (millions)	9.7	11.6	16.8
	3	Families plus Unrelated Individuals (millions)	50.7	58.0	71.2
	4	(2)/(3) • 100	19.1%	19.0	23.6
	5	Total Resident Population (millions)	145.5	173.0	191.8
	6	(3)/(5) • 100	6.7%	6.4	8.7
B. Census Money Income:	7	Share of Lowest Quintile of Unrelated Individuals	2.5%	2.6	3.3
	8	Share of Highest Quintile of Unrelated Individuals	50.0%	52.7	50.9
	9	Share of Lowest Quintile of Families and Unrelated Individuals	NA	3.4	3.7
	10	Share of Highest Quintile of Families and Unrelated Individuals	NA	43.9	44.8
	11	Gini Coefficient for Unrelated Individuals	.497	.496	.498
	12	Gini Coefficient for Families	.368	.362	.357
	13	Gini Coefficient for Families plus Unrelated Individuals	.408	.407	.411

Sources by Row:
1. and 2. Miller (22) Table 1, pp. 45-50, 1952, 1962; Table A, p. 1, 1972.
        5. Statistical Abstract of the U.S. (32), Table 2, 1952, 1962; U.S.
            Bureau of the Census (35) 1972.
7. and 8. U.S. Bureau of the Census (35) Table 16, p. 46, 1972; Miller (22)
            Table 23, pp. 170-174, 1952, 1962.
9. and 10. Michael Taussig (34) Table 2, p. 6.
       11. Estimated directly from CPS data tapes 1972; Miller (22) Table 23,
            pp. 170-174, 1952, 1962.
12. and 13. Michael Taussig (34) Table 3, p. 7.

Recipient Valuation of In-kind Transfers

The second problem with Browning's methodology is the recipient valuation of in-kind transfers. Browning argues that neither in-kind benefits nor money income transfers measure the "true benefit" to recipients, because no transfers are lump sum transfers, and hence all transfers are worth less to their recipients than their cost to the taxpayers. This statement may well be true. But however large the difference between the true benefit value of transfers and their nominal value (i.e., the taxpayer cost), the cash value of money transfers to recipients is accurately measured by Browning while the cash value of in-kind transfers is not. In other words, there is some additional difference between the cash value of in-kind transfers to recipients and the cash value of money transfers to recipients, over and above the difference between the nominal value of all types of transfers and their true benefit value (whatever that may be). This additional difference can be measured by estimating the difference between the nominal value of an in-kind transfer and the amount of cash transfer a family would be willing to accept instead. This cash equivalent value of in-kind transfers in the form of food, housing, and medical care has been estimated to average about 70 percent of market value.[29] There are no estimates of recipient value available for education or other in-kind transfers.[30] However, if we assume that the cash value of all education and in-kind transfers is equal to 70 percent of market value, and adjust rows 3 and 4 in Table 1 such that all figures are in terms of cash value,[31] the author's revised estimate of the net income share of the bottom quintile in 1972 would fall from 7.4 to 6.9 percent of net income, while

Browning's would be reduced from 10.6 to 9.9 percent. Both the level

of income inequality and the trend towards greater equality are over-

stated by failing to adjust in-kind benefits for their recipient value.[32]

Reranking of Families

The final (and probably most serious) problem is one to which

Browning hesitantly admits,[33] namely the reranking problem. Actually

there are two reranking problems. The first--conversion to per capita

income distributions from published data--has already been discussed.

This problem can be avoided simply by relying on the unadjusted quintile

distributions. The second reranking problem--families changing quintiles

as income components are added or subtracted--can only be avoided by

relying on microdata analyses which allow units to be reranked.[34]

The 1972 CPS data tapes have been employed to estimate first the

size distribution of reported Census family income, and then the size

distribution of family income after adjusting for income underreporting,

federal payroll and income taxes, and in-kind transfers in the form of

Food Stamps, Medicare, Medicaid, and public housing. The total absolute

value of these adjustments in 1972 was $190.0 billion, compared to $687.2

billion of reported Census income. The percentage share in family income

for the lowest quintile changed from 5.4 to 7.0 percent when families

were reranked after these adjustments. However, if the original ranking

of families (by reported Census income) is maintained, and shares of

adjusted income are assigned as in Table I (i.e., the families are not

reranked as their income changes), the share for the lowest quintile

becomes 7.4 percent. In other words, maintaining the original money

income ranking increases the income share of the bottom quintile by 2.0

percentage points (5.4 percent to 7.4 percent), while correctly rerank-

ing families by net income increases this share by only 1.6 percentage

points (5.4 percent to 7.0 percent). A full 20 percent of the change

in the income share of the bottom quintile is due to failure to rerank

families. It follows that the "one ranking" methodology employed in

section I overestimates the change in the income share of the bottom

quintile by at least one-fifth. If families could be reranked, Browning's

estimate of the income share of the bottom quintile would be less than

9.5 percent of net income, rather than 10.7 percent of net income.[35]

Browning's reranked estimate would be less than 9.5 percent for the

following reason. Intuitively, the amount of quintile-switching varies

positively with the value of "gross redistribution"[36] undertaken, relative

to the original value of the base income total accruing to a given quintile.

Table 5 illustrates the magnitude of these adjustments. In the first row,

we find the value of the Census money income share of the bottom quintile

of families, while the second row indicates the value of gross redistribution

or total adjustments to this income share. The final row presents the

ratio of income adjustments to the Census income share. In the first

column, we find that the author's microdata imputations incurred a gross

redistribution of $17.6 billion to the lowest quintile. This $17.6 billion

of redistribution caused the 20.0 percent overestimate of the change in

the income share of the bottom quintile mentioned above. Browning's

total adjustments (row 2, column 2) equal $50.5 billion--almost three

times larger than the value of redistribution we have used in our micro-

simulations. Hence Browning's estimate of the change in the income share

Table 5

The Quantitative Importance of Gross
Redistribution to the Lowest Quintile of Families
(billions of dollars)

Gross Income of Lowest Quintile of Families	Smeeding[2] 1972	Browning[3] 1972	1962	1952
Census Money Income	$37.1	$37.1	15.8	8.8
Gross Redistribution[1]	$17.6	$50.5	15.0	7.7
Gross Redistribution as a Percentage of Census Money Income	47.4%	136.1%	94.9	87.5

Notes: 1. Gross redistribution is the sum of all adjustments to income,
           i.e., all additional income components plus taxes.

        2. Smeeding (30) Chapter 9. Gross redistribution includes
            underreporting adjustments, some in-kind transfers, federal
            personal income taxes, and employed payroll taxes.

        3. Browning (3) Tables II, A-I, and A-II. Gross redistribution
            includes in-kind transfers, education transfers, potential
            additional earnings, federal personal income taxes and
            employee payroll taxes.

sources on which he had to rely" (p. 48). However, with the help of some microdata distributors, and adopting a methodology similar to Browning's in section I, the level of income inequality in 1972--as measured by the net income share of the bottom quintile--was estimated to be no more than 7.4 percent[39] of net income, rather than the 10.7 percent which Browning obtains. Moreover, the author's figures in section II show that the trend toward income equality, from 1952 to 1972, as measured by the percentage increase in the income share of the lowest quintile, was 25.4 percent rather than Browning's 55.1 percent increase.[40]

In section V, it was argued that the basic methodology employed by Browning was faulty for three reasons: unrelated individuals were ex-cluded, in-kind transfers and education transfers were not adjusted to the recipient's cash income value of these transfers, and families were not reranked on the basis of net income after alterations in money income. It was concluded that the omission of unrelated individuals may have overstated the trend toward equality since inequality increased when these unrelated individuals were included as units of analysis. It was also suggested that the overvaluing of in-kind transfers and the failure to rerank biased the results in section I toward a greater degree of equality than actually exists.

Table 6 roughly adjusts for the effect of these biases on our net income calculation from sections I and II. Adjusting for recipient's valuation of in-kind transfers, and the reranking bias, the revised estimate of the income share of the lowest quintile in 1972 is 6.5 percent of adjusted net income while the Census estimate is 5.4 percent of money

of the bottom quintile is probably more than 20 percent—possibly as much as 40-50 percent—too large!

Browning argues that any deficiencies in his estimated adjustments for any one year are less important when the same methodology is used consistently in all three years. In other words, the level of income inequality in any one year may be amiss, but the time trend in inequality should be fairly accurate. This is false for at least two reasons. First of all, as Michael Taussig (34) has pointed out, the use of the same distributors for in-kind transfers, taxes, and potential additional earnings in all three years is inaccurate.[37] Second, and more important in my view, is the extent to which the reranking bias increases over time, as documented in Table 5. In 1952, Browning's gross redistribution was equal to 87.5 percent of the original income share of the bottom quintile while by 1972, the amount of gross redistribution had increased to 136.1 percent of their original income share. It seems clear that the extent of the reranking bias increased markedly from 1952 to 1972, thus causing Browning to overestimate the trend towards equalization by increasing the share of the lowest quintile by larger amounts in each year.[38]

6. SUMMARY AND CONCLUSION

We have shown that the size distribution of income is sensitive to the income measure, the demographic unit of analysis, the imputation procedures, and the per capita standardization procedure that Browning employs. Michael Taussig (34) has written, "Yet it is hard to suggest any improvements on Browning's arbitrary adjustments, given the data

Table 6

An Estimate of the Net Income
Share of the Lowest Quintile of
Families, 1952-1972

Row	Basis of Estimate	Year			Percentage Change 1952 to 1972
		1952	1962	1972	
1	Revised Net Income	5.9%	6.2%	7.4%	25.4%
	Adjusted for:				
2	Recipient Value of In-Kind Transfers	5.7	5.9	6.9	21.1
	and for:				
3	Reranking Bias, yields Adjusted Net Income	5.5	5.7	6.5	18.1
4	Census Money Income	4.9	5.0	5.4	10.2

Sources and Methods by Row:

1. Table 1, Row 9, bottom panel; Tables A-3, A-4, Row 9.

2. Net Income as in Tables 1, A-3, and A-4, but counting in-kind transfers and education transfers at 70 percent of their market value.

3. Income share in row 2 adjusted for the amount of gross redistribution as follows: In 1952 the author's gross redistribution (counting in-kind transfers and education at recipient value) was $6.1 billion, or 69.3 percent of the money income share of the lowest quintile. It was assumed that this figure created a 20.0 percent overestimate of the net income share of the lowest quintile in that year. In 1962, on this same basis, gross redistribution was 74.1 percent of money income, a 6.9 percent increase over the 1952 figure. The adjustment factor was therefore increased to 20.0 x 1.069 or 21.4 percent. Similarly in 1972, gross redistribution as a percentage of money income was 87.8 percent, an increase of 29.9 percent over 1952. The 1972 adjustment factor was then estimated to be 20.0 x 1.299, or 26.0 percent. These adjustment factors are used to reduce the difference between the Census money income shares in row 4 and the estimates in row 2 by their respective amounts.

4. Row 10, Tables 1, A-3, and A-4.

income. On this basis, official Census figures underestimated the level of income inequality by only about 20 percent in 1972. While the Census figures indicate that by 1972 the lowest quintile of income recipients had increased their share of income by 10.2 percent, the author's figures indicate an increase of 18.1 percent. These figures suggest that a slightly more equal income distribution (as well as a more comprehensive assessment of income) is achieved by including the omitted income components. More importantly, these estimates indicate that we have not made a great deal of progress towards income equalization over the past two decades. While these "conclusions" are certainly more accurate than Browning's, they must be interpreted in light of the rough adjustments undertaken to satisfy the methodological criticisms mentioned above. While Browning has introduced a potentially useful method of arriving at a more comprehensive estimate of income inequality when accurately applied, the issue of the level and trend in income inequality is far from closed. Only when sufficiently comprehensive and accurate sources of income microdata are developed, and only when we have included all income-receiving units in compiling our distribution estimates, will we be able to estimate accurately the level of income inequality and its historical trend.

APPENDIX

There are four tables in the Appendix. Tables A-1 and A-2 break
down in-kind transfers and education transfers into program-specific
categories. The footnotes to each category indicate the adjustments
undertaken to reconcile "social welfare expenditures" with in-kind and
educational transfers accruing to the CPS population. The final column
indicates the quintile distributor by which each subcategory of benefits
was proportionately allocated in each of these Tables. Tables A-3 and
A-4 show the derivation of net income in 1952 and 1962. Sources and
derivation of figures are documented in section I of the text.

Table A-1

Social Welfare Expenditures:[1] Noneducational, In-Kind
(millions of dollars)

Category	Program	1952[2]	1962[2]	1972[2]	Distributor[4]
Social Insurance	Health Insurance for the Aged[3]	$ NA	$ NA	$8019.1	MED
	State Temporary Disability Expenditures: Hospital and Medical	13.6	47.0	68.3	WC
	Worker's Compensation	257.5	492.5	1293.0	WC
Public Assistance	Vendor Medical Payments[4]	89.7	331.1	6078.0	MED
	Other Public Assistance[5]	.5	240.2	3446.0	FS
Health and Medical Care[6]	Civilian Hospital and Medical Care[6]	1136.7	2203.7	4701.0	MED
	Maternal and Child Care Health Programs[7]	38.1	181.3	464.2	MED
Veterans	Veteran's Health and Medical Care[8]	554.1	853.2	2128.2	VET
	Welfare and Other[9]	153.0	59.3	195.4	VET
Housing	Public Housing and other	43.9	232.4	2128.1	PH
Other Social Welfare	Vocational Rehabilitation[10]	22.7	126.6	687.6	PA
	Child Welfare Services[11]	5.6	193.3	397.1	PA
	Special OEO Programs[12]			720.9	PA
	Social Welfare not elsewhere Classified[13]	3.2	19.1	290.3	PA
	TOTAL	$2318.6	$4979.7	$30617.2	

30

Table A-1--Continued.

Sources: Dales and Skolnick (7), Merriam and Skolnick (21), unpublished
          worksheets of the Social Security Administration, courtesy of
          Sophie Dales.

Notes:

   1. Figures include only in-kind Social Welfare Expenditures which
accrue to the Current Population Survey (CPS) civilian, noninstitutional
population, excluding those living in group quarters facilities such as
nursing homes and orphanages, excluding education and education-related
expenditures.

   2. Calendar year figures derived by taking the average of fiscal year
figures.

   3. Net of research and demonstration funds and net of the 7.5 percent
of Medicare funds received by persons in group quarters according to U.S.
Department of Health, Education, and Welfare, Social Security Administration (39).

   4. Includes social service expenditures. Net of the 17.1 percent of
medical assistance accruing to persons in group quarters facilities, according
to U.S. Department of Health, Education, and Welfare, National Center for
Social Statistics (37).

   5. "Other Public Assistance" includes both cash transfers and in-kind
benefits. Presumably the cash assistance portion of these payments has
already been reported as such on the CPS and is hence subtracted out. See
Merriam and Skolnick (21), Chapter 2 for details.

   6. Listed under Civilian Hospital and Medical Care is a category
entitled "Other Public Health." These expenditures include the activities
of, and funding for, such agencies as the Food and Drug Administration, venereal
disease control, the Center for National Health Statistics, etc. Due to the
"public goods" nature of such expenditures, this category was omitted.

   7. Net of medical construction and medical research expenditures.

   8. Excluding hospital construction and medical research. In 1970,
12.1 percent of Veteran's cash payments were made to veterans who were
institutionalized. It was thus assumed that 12.1 percent of veteran's
hospital and medical care expenditures accrued to institutionalized
veterans as well. These adjustments are over and above direct institutional
expenditures made for the U.S. Soldiers' Home and Naval Home, which
are reported elsewhere.

Table A-1—Continued.

9. Welfare and other veteran's programs include both cash and in-kind payments in nine categories. Included are such items as adjusted service certificates (cash), domiciliary care (institutionalization), beneficiaries' travel (in-kind), vocational rehabilitation (cash and in-kind), etc. Unfortunately, none of these programs are broken down by amount. Consequently, 50 percent of these payments were included as in-kind benefits above.

10. "Vocational rehabilitation" includes some indeterminable amount of medical research expenditures and cash workshop training grants. The gross reported amount was reduced by 20 percent to take account of these factors.

11. Included are funds for domiciliary care of homeless orphans, delinquents, etc. These constitute 25 percent of total expenditure and were subtracted from the gross amount. See Merriam and A. Skolnick (20), p. 182.

12. Included are such services as legal aid, Community Action Program, VISTA, etc. Research and evaluation expenditures were subtracted from the gross amount.

13. The reported amount is net of salaries and expenses of research personnel in the Office of the Secretary of Health, Education, and Welfare, in the Office of the Commissioner of Welfare, and in the Social and Rehabilitation Service.

14. The distributors listed below were used to allocate in-kind transfers to families ranked by money income quintile. They are coded as follows:
MED = Medicare and Medicaid
WC = Worker's Compensation
FS = Food Stamps
VET = Veteran's Pensions and Veteran's Disability
PH = Public Housing
PA = Cash Public Assistance

Education Transfers and Related Education Programs[1]
(millions of dollars)

Category	Program	1952[2]	1962[2]	1972[2]	Distributor[6]
Elementary and Secondary Education	Elementary and Secondary Schools[3]	$5810.6	$15438.3	$41904.9	CHILD
	Child Nutrition[4]	173.1	471.8	1582.5	CHILD
	School Health	38.5	128.7	307.5	CHILD
Higher Education	Colleges and Higher Education[3]	922.0	2484.4	10555.5	MI plus IK
	Veteran's Education	896.6	115.4	2287.1	VET Y
	Vocational and Other Education[5]	178.3	385.3	3159.0	MI plus IK
	Total Education Expenditures	$8019.1	$19023.9	$59796.5	

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Table A-2—Continued.

Sources: Merriam and **Skolnick (21), Dales and Skolnick (7)**, and un-
published figures, courtesy of Social Security Administration.

Notes:
1. Includes child nutrition programs, school health programs, and
Veteran's education benefits paid under the G.I. Bill, net of construction
expenditures.

2. Calender year figures derived by averaging fiscal year figures.

3. Net of school construction expenditures and net of federal expenditures
for dependent schools abroad and territorial schools.

4. "Child nutrition" includes the National School Lunch Act and the
Child Nutrition Act.

5. Includes education funds for federal correctional institutions, adult
basic education, agricultural extension services, and university community
service programs. Construction and federal correctional institution funds were
excluded.

6. The distributors listed below were used to proportionately allocate
educational transfers by money income quintile. They are coded as follows:
    MI plus IK = money income plus in-kind transfers
    CHILD   = number of children 6 or older and 17 or younger
    VETY   = veteran's payments accruing to veterans under 35 years of
                 age and in school.

Table A-3

The Distribution of Revised Net Income in 1962[1]
(billions of dollars)

Row	Income Component	Quintile					
		Lowest	2nd	3rd	4th	Highest	Total
1	Money Income	$ 15.8	38.3	55.7	75.9	130.6	316.3
2	Plus Adjustment for Underreporting	$ 2.4	3.4	4.5	5.7	11.7	27.8
3	In-Kind Transfers	$ 1.6	.7	.5	.4	.4	3.6
4	Education Transfers	$ 2.8	3.3	3.9	4.1	4.6	18.8
5	Capital Gains	$ .7	1.6	1.9	2.6	14.4	21.2
6	Fringe Benefits	$ .7	3.1	5.0	6.7	9.3	24.8
7	Minus All Taxes	$ 4.6	11.0	16.1	21.9	46.5	100.1
8	Equals Net Income	$ 19.4	39.4	55.4	73.5	124.5	312.4
9	Percentage Distribution of Row 8	6.2 %	12.6	17.7	23.5	39.9	100.0
10	Percentage Distribution of Row 1	5.0 %	12.1	17.6	24.0	41.3	100.0

Notes: 1. See text for source and derivation of amounts.

Table A-4

The Distribution of Revised Net Income in 1952[1]
(billions of dollars)

Row	Income Component	Quintile					
		Lowest	2nd	3rd	4th	Highest	Total
1	Money Income	$ 8.8	21.9	30.7	42.2	75.7	179.5
	Plus						
2	Adjustment for Underreporting	$ 1.4	2.0	2.5	3.2	6.8	15.9
3	In-Kind Transfers	$ .5	.3	.3	.3	.3	1.7
4	Education Transfers	$ 1.3	1.4	1.7	1.4	2.1	7.8
5	Capital Gains	$ .5	1.2	1.4	2.0	10.7	15.8
6	Fringe Benefits	$ .3	1.1	1.8	2.4	3.4	9.0
	Minus						
7	All Taxes	$ 2.6	6.2	8.8	12.0	27.0	56.6
	Equals						
8	Net Income	$ 10.12	21.7	29.6	39.4	72.0	173.1
9	Percentage Distribution of Row 8		5.9 %	12.5	17.1	22.8	41.6	100.0
10	Percentage Distribution of Row 1		4.9 %	12.2	17.1	23.5	42.2	100.0

Notes: 1. See text for source and derivation of amounts.

NOTES

[1] This paper concentrates on the income distribution estimates and methodology in Browning (3), the results of which provide the basis for Browning (4).

[2] In fact, the popular press (e.g., Irving Kristol in the Wall Street Journal, July 12, 1976) and the Chamber of Commerce of the United States (19) have seen fit virtually to declare an end to poverty and inequality, based on Browning's research. Further, it seems that these results will soon be incorporated in a best selling introductory economics textbook by C.R. McConnell (20).

[3] See S. Danziger and E. Smolensky (9) for a brief summary of part of this research. Also see Reynolds and Smolensky (28), Gastwirth (13), Henle (16), Schultz (29), Budd (5), and Radner and Hinrichs (27).

[4] Danziger (8), Kuznets (17), Smeeding (31), and Paglin (25) have so argued.

[5] The quintile distribution is interpolated from these figures. For instance, U.S. Bureau of the Census (35), Table K, p. 25, presents under-reporting estimates for property income (interest, rent, dividends, etc.) in one lump sum.

[6] See Smeeding (30), Appendix 2, for details. While Browning's figures in row 2 are not much different from the author's estimates, this need not have been the case. For instance, reported CPS property income is only 45 percent of the aggregate benchmark. Assuming proportional under-reporting, Browning inflates each family's reported property income by a

factor of 2.22. On the other hand disaggregation of property income and benchmark aggregate totals into their component parts indicates that rental income is accurately reported, dividend income is less than 40 percent reported, and interest income is both underreported (those reporting interest have understated the amount received) and nonreported (some 20 percent of families receiving interest income failed to report the receipt of interest income). When each of these factors is separately adjusted for on a micro-data basis, the results would agree with Browning's only by coincidence.

[7]See Smeeding (30) Appendix VI for details.

[8]It was assumed that such programs as the School Health Program and Child Nutrition were better distributed as educational expenditures than as general in-kind transfers.

[9]See Table A-1 for details.

[10]See Table A-2 for details. Further, it appears that rather than taking fiscal year 1972 plus fiscal year 1973 and averaging to estimate calendar year 1972 in-kind and education expenditures, Browning seems to have employed the fiscal 1972 figures alone. If so, he underestimates total in-kind and educational expenditures by about 5.7 percent.

[11]See Hansen and Weisbrod (15).

[12]The difference between Census money income and adjusted gross income (pretransfer income) is cash transfer payments. This difference is, however, substantial. In 1972, the lowest quintile of families had 5.4 percent of Census money income, but only 1.3 percent of adjusted gross income.

[13]Forty-six percent of the **families in the lowest quintile** are headed by an individual over 65 or under 24.

[14]Browning argues that most unemployed adults were voluntarily unemployed. He claims that there were 27 million adults in families who did not work in 1972 while there were only about 5 million unemployed during that same year. Of course, 13 million of these adults were 65 or over, while another 6 million were in college or high school and not working. If all aged and all school attenders are voluntarily unemployed, i.e., do not register as unemployed, 19 of the 27 million who did not work would be accounted for. This leaves only 3 to 4 million nonaged, not in school, and not registered as unemployed. If one does not believe that the aged and students should be counted as voluntarily unemployed, of course, this comparison has little meaning in the first place.

[15]Irwin Garfinkel and Robert Haveman (12) have recently developed the concept of "earnings capacity," which measures the ability of an individual (or family) to generate a net income flow by fully utilizing its endowments of human and physical capital. This measure is appealing in that it abstracts from a unit's tastes for earned versus unearned income (roughly "leisure"). The authors impute annual earnings capacity to individuals based on their human capital (age, years of schooling) and demographic characteristics (race, marital status, location). The aged are not included in their calculations. Arranging families in order of their earnings capacity, Garfinkel and Haveman find that nonearners are typically endowed with a lower earnings capacity than earners, and that the bottom 20 percent of families have only 2.2 percent of total net

earnings capacity. This can be compared to the 3.0 percent of actual earnings which they receive plus the 8.6 percent of total "potential earnings" (or leisure) which Browning imputes to this group.

[16]The market value of these benefits were derived from the U.S. Department of Labor (40), a recent paper by Emil Sunley (33), and the U.S. Department of Health, Education and Welfare, Social Security Administration (38).

[17]Fried et al. (11) Table 3-5, page 50. Note that the "income" concept which underlies this ranking is not specified by Fried et al., but is probably the MERGE file distribution of adjusted family income which includes fringe benefits, accrued capital gains, and imputed rent and hence is very different from the ranking of families in the CPS money income distribution.

[18]Pechman and Okner (26), Table 4-8, p. 59, lists total effective tax rates by MERGE "adjusted family income class" (see footnote 17) in 1966. These income class-specific tax rates were interpolated to arrive at an average rate for each quintile of families. The tax rates employed here are a simple average of the effective quintile specific tax rates which Pechman and Okner find under their most progressive variant and least progressive variant. These variations are due to different assumptions regarding the incidence of the corporate income tax, property taxes, and employer payroll taxes. It was assumed that the tax rates applicable to the MERGE family units when arranged by quintiles of adjusted family income were the tax rates which would be applicable to families arranged by Census income quintiles. This assumption is, of course, tenuous but

equivalent to Browning's distributor for personal tax rates estimated from the same source. In any event, these effective tax rates vary only from 23.5 percent in the lowest quintile to 27.9 percent in the highest. Hence this assumption is probably more acceptable than if tax rates varied widely by MERGE family quintiles.

[19]For instance, on the property tax, see Aaron (1), p. 27; Netzer (24), p. 45; Musgrave and Musgrave (23), p. 368; Pechman and Okner (26), p. 52; and the Advisory Commission on Intergovernmental Relations (2), p. 36.

[20]For instance, the BEA series is based on microdata, includes all consumer units, but excludes employer subsidized fringe benefits, education benefits, and most in-kind transfers.

[21]However, it should be noted that neither Browning nor the author allocate the benefits of general government expenditures to individual families as do Reynolds and Smolensky (28). Further, even if we had included imputed income along with capital gains, our estimate of the annuitized value of wealth would probably be incomplete. For an estimate of income, including net worth, see Hansen and Weisbrod (14).

[22]While the percentages are roughly the same, even by category of income during these years, the mix of the types of income (earnings, transfers, etc.) has probably changed substantially over this period.

[23]This adjustment will be explained shortly. It should also be mentioned that in Browning's paper, he compares his per capita adjusted distribution to the Census distribution, which he did not adjust to a per capita basis. Such an "apples to oranges" comparison is patently unfair. If the Census figures are similarly adjusted to a per capita

basis, the difference between Browning's estimates of the income share

of the bottom quintile and the Census estimate is reduced by a fifth.

[24]On the other hand, it has been argued by Lebergott (18), p. 43;

that per capita adjustments (and equivalence scale adjustments) imply

that, holding income constant while varying family size, the birth of

children reduces economic welfare while death increases it. Another

point, mentioned by Danziger (8, p. 97), is that use of equivalence

scales (or per capita adjustments) is designed to improve comparability

between income units by taking account of those who share in a unit's

income. Yet if interhousehold transfers are common, neither of these

adjustments takes account of these transfers. In sum, then, some would

argue against any standardization procedure, preferring to concentrate

on the actual unadjusted income shares.

[25]This point has been made by Taussig (34) in his brief review of

Browning's paper.

[26]For instance, families in the bottom quintile had money incomes

less than $5612 in 1972, while families in the top quintile had incomes

exceeding $17,760 in this same year. If we have a two-person family with

an income of $5600 and a seven-person family with an income of $19,600,

by family income ranking the former is in the poorest quintile while the

latter is in the richest quintile. In terms of income per capita, however,

their rankings are identical. Each has an income per capita of $2800.

Of course, any sort of equivalence scale adjustment should be carried out

on this same basis, i.e., based on a reranking of individual family incomes

which have been adjusted for family size, age, sex, etc.

[27]These estimates are derived by adding the total incomes of unrelated individuals to the total family incomes in the last total column of Table 1, rows 1 through 6.

[28]Reynolds and Smolensky (28) have used several published data sources to chart the level of inequality and the trend in inequality from 1950 to 1970. Their work differs from Browning's in the following respects: unrelated individuals are included, leisure is excluded, all taxes are included, and distributors for additional income components change yearly. On this basis, Reynolds and Smolensky find that the income share of the lowest quintile of families and unrelated individuals was 5.6 percent in 1950 and 5.4 percent in 1970. By these figures inequality has remained nearly constant, possibly showing some increase over a similar period. However, because this study uses aggregate data, it suffers from the ranking problems (which will be discussed shortly) which also apply to Table 1 above.

[29]See Smeeding (30) Chapter 4 and Appendix 6.

[30]There may also be some difference between the recipient value of fringe benefits and their market value. However, because fringe benefits are not taxed as personal income (at least not at the time they are paid), their value to recipients may be _more than_ their market value. If this is the case, because fringe benefits are more unequally distributed than money income, income inequality would be further exacerbated by including an estimate of the recipient value of fringe benefits.

[31]Because cash equivalents tend to rise with income, the use of an average cash equivalent for all quintiles probably overstates the cash value of in-kind income to the lowest quintile while understating the

value to the highest quintile. It follows that the averaging technique employed here overstates the equalizing effect of in-kind transfers on the size distribution of income.

[32]The author's 1962 net income shares of the bottom quintile would fall to 5.9 percent, and for 1952 to 5.7 percent, while Browning's are 7.5 percent and 6.6 percent respectively. By these figures my estimate of the gain in the income share of the lowest quintile falls from 25.4 to 21.0 percent, and Browning's from 55.1 to 50.0 percent. The reason for the declining trend toward equality is, of course, the increasing importance of these overvalued in-kind transfers and education transfers between 1952 and 1972.

[33]Browning states (3, p. 922), "If all the adjustments could be made on the basis of individual families, and then families were reclassed on the basis of their adjusted incomes, some families might end up in different quintiles" [emphasis added].

[34]Actually there is another ranking problem as well. Both Browning and the author have employed quintile tax distributors based on families which are ranked by an income measure other than Census money income. To the extent that these rankings differ from the original Census ranking, we may misestimate the quintile distribution of taxes. Browning's capital gains distributor (based on adjusted gross income) suffers from this same defect.

[35]Similarly, the 7.4 percent of income which the author attributes to the bottom quintile is probably closer to 7.0 percent.

[36]"Gross redistribution" is defined as the sum of all income adjust-
ments, i.e., additional income components plus the absolute value of taxes.

[37]Taussig mentions, for instance, that Browning assumes the ratio
of earnings to total money income for each quintile was the same in 1952
and 1962 as in 1972--an obviously incorrect assumption. For instance, the
U.S. Bureau of the Census (35, Table 13) indicates that the percentage
of family heads in the lowest quintile who were employed drops from 58.5
percent in 1952 to 43.4 percent in 1972. Similarly, families in the low-
est quintile reporting no earnings increased from 20.9 percent to 36.4
percent while those reporting income from earnings only decreased from
56.7 percent to 25.3 percent over this same 20-year period.

[38]A rough example will illustrate this point. Assume that in 1952,
Browning's estimate of the change in the income share of the lowest
quintile is overestimated by 20.0 percent. Hence his estimate of the
income share of this quintile falls from 6.9 to 6.5 percent of net income.
In 1962, gross redistribution (as a percentage of original money income)
was 8.5 percent larger than in 1952. Hence we assume that the income
share of the lowest fifth of families is underestimated by 20.0 x 1.085,
or 21.7 percent. Similarly, in 1972, percentage gross redistribution is
55.5 percent greater than in 1952. Hence the overestimation factor in-
creases to 20.0 x 1.555 or 31.1 percent. Adjusting Browning's yearly
estimates of the income share of the lowest quintile in this fashion,
we find that his 1952-1962-1972 trend in the income share of the lowest
quintile becomes 6.5-7.1-9.0 percent rather than 6.9-7.7-10.7 percent.
The income share of the bottom quintile thus increased by about 38.5
percent rather than 55.1 percent over this period.

[39]The phrase "no more than" seems appropriate in that both higher education benefits and fringe benefits were distributed in proportion to income, while they are probably much more regressively distributed. Further fringe benefits in-kind were not counted at all. More appropriate distributors for these income components would almost surely increase income inequality.

[40]It should be remembered that after adjusting for family size, Browning estimated the income share of the bottom quintile to be 12.5 percent of net per capita income in 1972, while the trend toward equality from 1952 to 1972 revealed a 61.5 percent increase in the income share of the lowest quintile on this basis.

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