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The Real Distribution of Current Goods and Services

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1. Measures of Income Distribution

Empirical studies of income distribution are generally undertaken as a proxy for the distribution of utility or welfare of a population. Criticisms have been levied against using data on household income to measure the distribution of welfare, and in the light of these, new empirical concepts of distribution have been proposed in recent years. Reynolds and Smolensky [1977] study the effect of government by computing the post-fisc income distribution, in which households (by income class) are credited with government goods and services and transfers they receive and debited with taxes they pay. A variety of investigators have claimed that current income is not the best proxy for utility or welfare: rather, some concept of permanent income would be more appropriate. Along these lines, Weisbrod and Hansen [1968] calculate a measure of economic welfare in which they adjust a household's income by its annuitized net worth; Garfinkel and Haveman [1977] compute the distribution of "earnings capacity" of households, rather than current income; Moon [1976] uses a net worth concept to calculate a distribution of economic welfare for the aged. In addition to these studies which expand the relevant time horizon over which income accrues to the household, from the present to the lifetime, there are studies (see Morgan, et. al. [1962]) which attempt to modify income distribution by including non-market consumption (from home production, etc.).

The approach taken here is opposite to the direction in which these studies have gone. Rather than examine a longer time horizon than current income gives us, we ask for an even more immediate measure of command over goods and services than current income: namely, what

is the actual distribution by income class of the economy's current goods and services produced? Who gets the net product?

There are two reasons for asking this question -- one, the conventional distribution of welfare reason, and a second macroeconomic reason. Two important mechanisms have evolved in modern American capitalism to redistribute real goods and services in a way which differs from the distribution of money or factor income. The first is government, of which account has been taken by Reynolds and Smolensky; the second is installment and mortgage debt. Poor and middle income people now have substantially more command over the economy's goods and services because of the ease of attaining credit -- or so it would appear. It therefore becomes of interest to ask how the net national product is actually distributed, as a measure of economic welfare.

A neoclassical utilitarian can, of course, argue that the real distribution of goods and services is a worse proxy for economic welfare than is the distribution of income which, in turn, is not so good a proxy as the distribution of net worth or lifetime earnings capacity. This follows, since those with a high net worth or earnings capacity could clearly choose to consume more if they wished: that they do not reveals their preference for saving over current consumption, a saving which may very well finance the increased command over goods (through borrowing) of a poorer household. To put the matter slightly differently: a household with a higher net worth can choose to consume more goods and services today than a lower net worth household. It should not, therefore, lose points in the distribution of utility if it does not so choose. From another vantage point, it can be pointed out that there is a disutility from borrowing.

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Nonetheless, it can be argued the real distribution of current
goods and services is an interesting measure of economic welfare, be-
cause it gives the most immediate measure of who gets what part of the
economic pie. Let us imagine a sequence of economies over which the
cost for the household of incurring debt decreases. Certainly in those
economies where debt is almost costless to incur, the distribution of
goods is much more interesting as an indicator of welfare than the
distribution of income. In the limiting case, suppose income is just
scrip, and goods are allocated on some other basis: it is clearly the
distribution of goods which would inform us about the distribution of
economic welfare. Now it can be argued that debt is becoming less
costly for American consumers to incur: first, the proliferation of
credit cards has made the access to debt painless and almost universal;
second, time payments and mortgage payments are extended over increas-
ingly long horizons; third, among the lower and middle income groups,
debt is almost ubiquitous, and hence the "psychological" (as opposed to
monetary) disutility from incurring it is probably quite small. (That
is, the Puritan ethic no longer holds sway.) The American economy has
become such a consumption economy that command over current goods has
become most important.

Hence even from a utilitarian point of view, a case can be made
for the relevance of examining the distribution of current goods and
services. The household's subjective rate of time preference is so-
cially determined; and contemporary American practices have determined
this parameter to be sufficiently high (it is conjectured) to make this
distribution interesting.

From a non-utilitarian viewpoint, the argument is even stronger. Classically, income distribution was the examination of who got what part of the pie -- not who could get what part of the pie if he wanted it. And even from a modern policy point of view, should one ask do people feel poor, or are they poor in an immediate sense?

The discussion above concerns the validity of the distribution of current goods and services as a proxy for economic welfare. Such a distribution is also interesting from a macroeconomic point of view. A classical position of Keynesians, underconsumptionists, stagnationists, and Marxists has been that the advanced capitalist economy does not generate sufficient consumption and investment to maintain full employment. The model is this: investment in new capital goods is proportional to some function of the demand for final product (consumption). If wages are too low, then consumption is low and insufficient investment will be forthcoming to produce full employment. (However, if wages are too high, the profit rate will be so low as to dampen the animal spirits of capitalists, and so again insufficient investment will be forthcoming.) If one takes a telelogical position that modern capitalism has evolved methods of stimulating consumption so as to coax out private investment of sufficient magnitude, then the examination of the distribution of goods and services becomes interesting. In particular, if there is substantial redistribution by government and the debt mechanism, then one might infer those mechanisms are important anti-stagnation tools for the economy. How much investment and consumption would be forthcoming if income stayed with its earners, and was not redistributed through borrowing and government to households with higher marginal propensities to consume?

2. Measuring the Distribution of Current Goods and Services

Our approach has been to examine how the total pie of goods and services available to the U.S. economy is distributed to households by income class. This total pie is not quite net national product (NNP), for exports are not available to domestic households and imports are. Hence total goods and services absorbed, P, is simply

$$P = NNP + M - X = C + I_{net} + G.$$

For the U.S. economy, P does not differ substantially from NNP; for a small economy it would.

We have chosen to examine data from the expenditure side of the accounts, rather than the income side, as for our purposes this is more direct. We examine 1972 and 1961, as two years for which comparison can be made with the results of Reynolds and Smolensky. The procedure was to calculate the distribution of the three components of P -- C, I_{net}, and G -- and add them together. We did not pay attention to the problem of goods in kind. Notice that from the point of view of the macroeconomic question posed above, one does not want to account for goods in kind, as only goods whose exchange is mediated by a market are relevant for concerns of investment stimulus and employment. (From a welfare point of view, one would, however, wish to adjust for non-market phenomena.)

Following is a brief account of statistical procedures.

1. Consumption. Distribution of consumption goods by income class was taken from the Survey of Consumer Expenditures [1966; 1977]. If one aggregates consumption expenditures from the survey data, the total consumption is substantially less than consumption as reported in the

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national accounts. Inquiries with the BLS indicated that some categories were left out of the survey data, and in addition there are some imputed consumption categories included in the national accounts data. These, however, did not account for much of the statistical discrepancy. Our method, nevertheless, was to distribute total consumption as reported in GNP accounts (Survey of Current Business) by the distribution calculated from the Survey data.

2. Net Investment.

investment

Net investment was calculated as gross private domestic minus capital consumption allowances as reported in the Survey of Current Business. This was broken down into net residential investment and net business investment (which includes all non-residential net investment). Net residential investment was distributed to households by using a distributor calculated from the distribution of value of new home purchases by income class. Data for calculating this distribution were taken from the Survey of Consumer Finances [1961; 1963] for 1961, and the H.U.D. Statistical Yearbook [1973] for the later year.

The procedure for distributing net business investment is somewhat ad hoc: however, it can be defended on the grounds that net business investment is a small fraction of total P: for 1961, the fraction was 1.9% and for 1972, 4.0%. Net non-residential investment was distributed according to the distribution of stock ownership by income class, reported by Blume, et al. [1974] for both years. That is, the assumptions were made that for practical purposes most investment is made by corporations, and that the investments should be credited to the owners of corporations.

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Net investment is so low in the U.S. economy because of the large fraction of gross investments which are capital consumption allowances. Since the most inequitably distributed component of P is business investment, we tried to get an alternative calculation which ignored depreciation charges. We distributed, therefore,

$$P' = C + I_{gross} + G$$

in which the rich receive a greater fraction of the pie than in the distribution of P. If one believes capital consumption allowances in the national accounts overestimate true depreciation, then the correct distribution to take would be some average of the distributions of P and P'. The reader may form his own average with the results provided.

3. Government. We wish to distribute government expenditures of goods and services by income class. We do not wish to distribute government transfer payments, as these have already shown up in consumption. To distribute G, we simply adjusted the distribution of government expenditures reported by Reynolds and Smolensky for government transfers, by reference to the SCB breakdown of government expenditures into goods plus services plus transfers. In addition, we calculated the distribution of G for 1972, instead of 1970, while using still the distributors provided by Reynolds and Smolensky for 1970.

It should be pointed out there are important philosophical issues in deciding how to distribute public goods expenditures which we avoid. For example, Reynolds and Smolensky distribute general government expenditures in several ways: their retrogressive distribution is to households on a per household basis, their progressive distribution is to households according to income. From our point of view, neither of

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these is correct. National defense, for example, should be distributed according to net worth or property ownership, as we believe national defense is used primarily to defend extant property relations. An argument can also be made that education expenditures are not entirely for the benefit of the direct recipients, but are to socialize the work force, for their future docile participation in the work place. As such, education expenditures accrue at least in part to the owners of property, or large employers. An example of empirical work on income distribution which endeavors to take these considerations into account is Peppard [1976]. In order, however, to keep our results comparable to Reynolds and Smolensky, we have used their methods for distributing G.

3. Results

For each of the years 1961 and 1972, the distribution of current goods and services was estimated at ten points along the Lorenz curve. Lorenz curves were then interpolated by estimating the function:

$$\eta = \pi e^{-\beta(1-\pi)}$$

(where π is the cumulative fraction of households to whom fraction η of current goods and services accrues), by OLS applied to the log form of the function. (This method for interpolating a Lorenz curve is used by Kakwani and Podder [1973] and Reynolds and Smolensky.) Since the Gini coefficient for this function is:

$$G = 1 - \frac{2(\beta-1)}{\beta^2} - \frac{2e^{-\beta}}{\beta^2},$$

$\hat{G}$ can be calculated directly from the estimated parameter $\hat{\beta}$. Lorenz curves are presented in Charts 1 and 2.

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Tables 1 and 2 report the distributions for: (a) Reynolds's and Smolensky's initial factor income; (b) Reynolds's and Smolensky's standard post-fisc calculation; (c) our current goods and services $P = C + I_{net} + G$; (d) $P' = C + I_{gross} + G$; (e) consumption alone (reported, since C dominates the other components of P). We see the functional form provides a good fit through the available points. In 1972, the distribution of P is considerably more equitable than the post-fisc distribution. A rough measure is this: if we look at the change in Gini coefficient in passing from the initial distribution of factor income (.484) to the distribution of current goods and services (.248), then government redistribution appears to account for 63% of the move towards equity and debt redistribution for the remaining 37%. (We take the difference between the post-fisc distribution and the distribution of P as done here as due mainly to redistribution through borrowing.) In 1962, the story is similar in direction, but less dramatic in magnitude. Of the change in G from .465 to .303, 74% appears accounted for by government redistribution, and 26% by the debt mechanism. Thus, the debt mechanism has grown in importance over the decade, an obvious fact.

Examination of quintiles is interesting. The fraction of factor income, or post-fisc income, or of current goods and services, accruing to each quintile was calculated using the estimated parameter $\hat{\beta}$. (As such, the accuracy of the figures reported for the top 5% depends on the estimated Lorenz curve being a good estimate for the tail of the distribution, which may not be the case.) According to the Reynolds/Smolensky Smolensky estimated distribution, the bottom quintile received 2.9% of initial factor income and 6.7% of standard post-fisc income; they

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received, however, 9.6% of current goods and services. The share of the bottom 60% of households goes from 23% to 42% in passing from the initial factor income to current goods and services distribution in 1970/72, a most substantial increment. (In 1961, the comparable change is from 24% to 37%.) Virtually all the redistribution of factor income which occurs in arriving at the distribution of current goods and services goes from the highest quintile to the lowest three quintiles. The share of the fourth quintile changes relatively little. This is true for both 1961 and 1972. The upper middle class and rich lend substantially to the lower middle class and poor, with some net lending by the middle class.

An anomaly of the distributions should be pointed out: in both the 1961 and 1972 data, the Lorenz curves for the post-fisc and current goods and services distributions cross near the top tail of the distribution. For the top 16% of households in 1961, and the top 10% in 1972, post-fisc income seems to be more equitably distributed than current goods and services. An obvious explanation for this would be due to net investment: in the current goods and services distribution, we distributed net investment according to stock ownership, and stock ownership is extremely inequitably distributed, even at the top of the income scale. (For instance, the top 6% of households owned about 74% of the stock; the top 1.5% owned 56% of the stock!) We would expect that for high income households, consumer debt is unimportant -- that is, income is no constraint to consumption. Hence, all households of sufficiently high income will consume about the same amount, and so the highly inequitable distribution of net investment among them will tip the balance and cause current goods and services to be less equitably

distributed than post-fisc income. Hence, we recomputed the
distribution of current goods and services, dropping out net non-
residential investment. Still the Lorenz curve crosses the post-
fisc Lorenz curve, but now at a much higher point -- at about the
94% cumulative income level, for both years. Since, however, we
have only one observed point in our distributions that far out in
the income distribution, such a result could easily be accounted
for by inconsistencies in the consumer survey data and the national
accounts data.

Reynolds and Smolensky show that the standard post-fisc
distribution did not change significantly between 1961 and 1970.
This, however, is not the case as concerns the distribution of
current goods and services. We performed an F test to examine
whether the β coefficients for the two years differed significantly,
and they do at the 5% significance level. Thus, while the degree
of redistribution resulting from government has not changed over
the decade, the redistribution effected by the debt mechansim has
increased. It may be precisely because the debt mechanism has
been increasingly effective as a redistributor that government
did not have to advance as an equalizer over the decade. In
fact, the power of the Reynolds-and-Smolensky conclusion -- that
post-fisc equity did not increase over the decade -- seems signifi-
cantly mollified by the fact that the distribution of current
goods and services did become more equitable.

Finally, it should be pointed out there is an additional
methodological problem with the post-fisc concept. There is a
sense in which the post-fisc income distribution is a hybrid
concept which adds apples and oranges in an unsatisfactory way.

In the post-fisc measure of income, goods and services received by households (from the government) are added to net income. In the current-goods-and services approach, goods and services (received from the government) are added to goods and services (received through the market). We have the following hierarchy: a pure income approach gives a measure (albeit imperfect) of potential command over goods; the current-goods-and-services approach gives a measure of actual command over goods; the post-fisc approach, in this light, seems to be a somewhat arbitrary average of these two polar measures. That is: what is the precise meaning of an income number which gives partly a measure of potential command and partly a measure of actual command, without specifying how much of each type of command over goods and services is embedded in the statistic? For this reason, it appears that the current-goods-and-services approach is the appropriate extrapolation from the pure income approach, if one wishes to measure actual command over goods and services.

4. Conclusion.

Two types of conclusion emerge, corresponding to the two questions raised initially to motivate the study of this distribution concept. Concerning welfare: although the property relations and differential earnings capacity among households are such as to determine a highly skewed juridical distribution of potential claims on the economy's net product, the de facto distribution of that product, as modified by government and the debt mechanism is substantially more equitable. There is, of course, the chance

that this observation can be used as ammunition against further redistribution -- a policy conclusion which this author does not endorse. Rather, it is conjectured that without the redistribution which has been effected, capitalism would have been far less stable in the United States than it is. The reform of distribution is far less radical than direct tampering with property relations by the state.

Secondly, concerning macroeconomic stability: it is conjectured that without the substantial redistribution of spending power through government transfers and borrowing, not to speak of the direct stimulus from government spending on goods and services, aggregate demand would be substantially less than it is. The redistribution discussed here may be necessary not only to satisfy the material needs of the bottom 60% of the population, but to maintain employment as high as it is.

With respect to these two conclusions, which are phrased in terms of problems of advanced capitalist economics, it would clearly be worthwhile to investigate to what extent these redistributive mechanisms operate in the Western European and Japanese economies. Casually, it would appear that in Japan, for example, the redistribution may even go in the opposite direction: workers may subsidize capitalists' investments, as is evidenced by the large savings of the former and the large debt-equity ratios of firms. In countries with trade union movements stronger than in the United States (Italy, France), what does the distribution of current goods and services look like? Does the debt mechanism in the United States "win" for the workers what they have not been able to extract at

the bargaining table? Does the debt mechanism in the United States take the place of more government redistribution in other countries? An international comparison of the distributions of current goods and services and of income would provide interesting data for a discussion of these questions.

Table 1

Quintile Comparisons - 1961

	(a) Initial Factor Distribution		(b) Standard Post Fisc		(c) $P=C+I_{net}+G$		(d) $P'=C+I_{gross}+G$		(e) C	
	Cumulative %	Δ	Cumulative %	Δ	Cumulative %	Δ	Cumulative %	Δ	Cumulative %	Δ
Bottom 20%	3.3	3.3	6.42	6.42	7.67	7.67	7.40	7.40	6.87	6.87
40%	10.4	10.1	17.06	10.64	19.52	11.85	18.99	11.59	17.94	11.07
60%	24.4	14.0	34.0	16.94	37.19	17.67	36.51	17.52	35.16	17.22
80%	51.0	26.6	60.22	26.22	62.99	25.80	62.40	25.89	61.24	26.08
100%	100.0	49.0	100.0	39.78	100.0	37.01	100.0	37.60	100.0	38.76
Top 5%	84.9	15.1	88.49	11.51	89.49	10.51	87.28	10.72	88.86	11.14
$\hat{\beta}$	2.25		1.42		1.20		1.24		1.34	
$\hat{G}$	.465		.344		.303		.312		.329	
r^2	.99		.99		.99		.99		.98	

Table 2

Quintile Comparisons 1972

		(a) Initial Factor Distribution		(b)* Standard Post Fisc		(c) $P=C+I_{net}+G$		(d) $P'=C+I_{gross}+G$		(e) C	
		Cumulative %	Δ	Cumulative %	Δ	Cumulative %	Δ	Cumulative %	Δ	Cumulative %	Δ
Bottom	20%	2.9	2.9	6.7	6.7	9.6	9.6	9.1	9.1	9.2	9.2
	40%	9.4	6.5	17.7	11.0	23.0	13.4	22.1	13.0	22.4	13.2
	60%	22.9	13.5	34.8	17.1	41.5	18.5	40.4	18.3	40.8	18.4
	80%	49.4	26.5	60.9	26.1	66.5	25.0	65.6	25.2	65.9	25.1
	100%	100.0	50.6	100.0	39.1	100.0	33.5	100.0	34.4	100.0	34.1
Top	5%	84.2	15.8	88.8	11.2	90.7	9.3	90.4	9.6	90.5	9.5
$\hat{\beta}$		2.41		1.36		.923		.989		.966	
$\hat{G}$		.484		.333		.248		.262		.257	
r^2		.98		.99		.99		.99		.99	

*Columns 1 and 2 are 1970 data.

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