Comments on Papers by Welniak; Strudler, Petska, and Petska; and Williams [1]

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These three papers by analysts at the U.S. Bureau of the Census, the Statistics of Income (SOI) Division of the Internal Revenue Service, and the Congressional Budget Office (CBO) estimate changes in the distribution of income over the past two decades. In my remarks, I first address what the three papers have in common. Then, I discuss some of the main issues in measuring the distribution of income and compare how these three papers addressed these issues. I comment on the strengths and weaknesses of alternative approaches. Finally, I briefly discuss some implications of the authors' findings. For brevity, I reference the papers in the discussion by the institutional affiliations of the authors (Census, SOI, and CBO).

▶ Common Features of the Three Papers

All the papers measure changes in the distribution of income over the past two decades. Census estimates changes in the distribution of pretax income between 1979 and 2000 and also extends its analysis back to 1967. SOI estimates changes in the distribution of pretax and post-tax income between 1979 and 2001. CBO looks at the changes in a broader measure of pretax income that includes taxes paid by businesses between 1979 and 2000.

All the papers show that inequality has increased over the past two decades. Census shows that Gini coefficients and other commonly used inequality measures have increased. SOI shows that pretax and post-tax Gini coefficients have increased, that income cutoffs at the top percentiles of the income distribution have increased faster than income cutoffs for lower percentile groupings, and that the share of income going to the highest percentiles of the population has also increased. CBO shows that average pretax income has grown faster for the higher percentile groupings than for other population groups.

All three papers compare "snapshots" of the income distribution in different years. That is, they compare dispersions of income among samples of the population,

but the individuals in the sample change over time. Thus, none of the studies is examining changes over time in the incomes of a fixed group of individuals, as would be done by a panel study. An alternative and more conceptually appealing way to look at income distribution is to measure the dispersion of lifetime incomes across a fixed population, but available data do not facilitate comparing how the dispersion of lifetime incomes changes over time. Compared with a distribution of lifetime incomes, the "snapshot" distributions in these papers overstate inequality for two reasons. First, they include some individuals whose incomes are temporarily high or low in a given year because of, for example, windfall gains or a spell of unemployment. Second, they include individuals at different ages; so, a portion of the inequality reflects the variation in incomes over a person's lifecycle and not lifetime difference in incomes among people. While the papers overstate the level of inequality, however, it does not follow that they overstate the increase in inequality.

▶ Methodological Issues in Measuring Income Distribution and How Papers Address Them

While the papers reach similar conclusions, they differ significantly in their approaches. This reflects the numerous methodological issues that researchers confront in measuring income distribution. The differences in part also reflect differences in the types of data produced by the agencies where the researchers work. In this section, I discuss the strengths and weaknesses of different approaches and compare the choices made in the three papers.

Choice of an Income Concept. The first question is what income concept to use, given the existence of taxes and Government transfer programs. The two conceptually pure alternatives are to look at income that people receive from market transactions—that is, income in the absence of Government taxes and transfers—or to look at income net of all Government taxes and transfers. The latter is the best measure of the well-being of

individuals, while the distribution of market income indicates how the income distribution might have changed, absent changes in the tax law.

None of the authors estimates the distribution of market income, while only CBO displays changes net of Federal Government taxes and transfers.[2] Instead, CBO measures income before taxes but including transfers, while Census and SOI measure income before individual income taxes but net of business taxes. SOI also measures income net of taxes, while CBO measures income net of both taxes and transfers.

Measuring pretax income is not straightforward. We observe reported income of individuals before taxes, but we do not really know whose incomes are reduced how much by taxes. In the case of the individual income tax, it is typical, though not strictly correct, for researchers to assume that the tax reduces the after-tax incomes of those who pay it, but does not affect anyone's observed pretax income.[3] But there are differing views on which individuals experience lower after-tax incomes as a result of taxes remitted by businesses. CBO allocates the employer portion of payroll taxes in proportion to wages received, and the corporate income tax in proportion to investment income (interest, dividends, capital gains) of individuals, and adds these taxes back to observed income to derive its measure of pretax income. These are reasonable assumptions, but not the only possible ones.

Inclusiveness of Income Measure. Economic income is defined as the sum of consumption plus changes in net worth. By this broad measure, income includes all sources of cash receipts, net of costs of earning income—wages, interest, dividends, rents, and business profits—plus changes in the value of assets (adjusted for inflation), income from noncash fringe benefits, and the net imputed value of consumption services from durable goods (principally houses). None of the authors uses this broad a measure of income, although the U.S. Treasury Department has used such a measure (called "family economic income") in analyses of the distributional effect of Federal taxes. See Cronin (1999).

All the authors include cash flow income (wages, interest, dividends, rent, profits) in their income measures.

CBO, as noted above, also adds back business taxes to arrive at a broader measure of pretax income. No one counts accrued capital gains or other forms of accrued income (such as the inside buildup on pensions and life insurance reserves), but CBO and SOI include realized gains reported on tax returns. CBO and Census include cash transfer payments in their measures, but SOI does not. CBO also imputes some in-kind benefits received, such as the value of employer-provided health insurance.

Making the income measure broader improves it as a measure of economic well-being, but can come at a cost for items not reported in the primary data source (see below), but imputed from other data sets. Researchers confront a tradeoff between the quality of the income concept and the precision of the data.

Unit of Measurement. Another issue is how to define the unit of comparison. Because people who are related or live together typically pool their incomes, most researchers do not examine the distribution of income across individuals. Census and CBO use the household as their unit of analysis, while SOI uses tax filing units. In general, comparing incomes across households is preferable to comparison across tax units for two reasons. First, tax units exclude nonfilers, and therefore miss many households at the low end of the income distribution (although they do include low-income people without a filing requirement who file a return to get refunds of withheld taxes or to claim refundable credits.) Second, tax units include some individuals, such as many students, whose economic well-being is represented better by the incomes of their families than by their individual incomes.

A related issue, if the household or family is the unit of measure, is if and how to adjust for differences in family size. The same income supports differing standards of living for households of different compositions, and changes in the composition of households (by marital status and household size) over time can affect trends in measures of income distribution. Among the authors, only CBO includes an explicit adjustment for family size in the analysis. CBO also reports trends in income distribution within more homogenous subgroups—elderly childless households, nonelderly childless households, and households with children. In particular, they find that

incomes of elderly childless households have increased more over the past two decades than incomes of other household types.

Sources of Data. Not surprisingly, the authors use the sources of data their agencies produce—Census uses data from their Current Population Survey (CPS), while SOI uses administrative tax data from a sample of individual tax returns. CBO performs a statistical match between CPS and SOI data; the CPS sample is used as the basis for the CBO households, while SOI data are the basis for estimated incomes.

Each approach has strengths and weaknesses. Typically, administrative data are more accurate and complete than survey data; in particular, income from capital reported on tax returns is much larger than income from capital reported to CPS and much closer to totals in the National Income and Product Accounts. But SOI data are limited to what people are required to report on their tax returns, while the CPS collects a broader range of data and includes a representative national sample of households, not just tax filers. (SOI does include data on realized capital gains, which are not collected by Census.) CBO attempts to get the best of both worlds by merging tax return and CPS data, but the use of statistical matching procedures means that incomes are in part estimated rather than observed.

Measures of Inequality. Finally, the researchers use different indices to measure inequality. SOI and CBO (but not Census) examine changes in income shares among percentile groups. SOI also measures changes in the income levels at which percentile breaks begin. Both Census and SOI, but not CBO, estimate changes in the "Gini" coefficient, a commonly used overall index of inequality. Census also reports alternative summary measures that apply different weights to different parts of the income distribution. SOI and CBO, but not Census, compare changes in pre- and post-tax measures of inequality. In spite of this diversity, all the measures used show rising inequality over the past two decades.

▶ Concluding Comments

These are excellent papers and good examples of the careful and high-quality research performed within

U.S. Government agencies. While the authors address difficult methodological issues in diverse ways, they reach broadly similar conclusions about trends in income distribution. Using measures of annual income, the dispersion of income has clearly increased. While this does not definitively establish that the distribution of lifetime income has become less equal, it certainly provides cause for concern about widening inequality in the United States.

How much this all has to do with Government fiscal policies, however, is not clear. Inequality widened in the 1980's, as tax rates, especially on high-income individuals, were falling. Inequality also widened in the 1990's, when tax rates on high-income individuals were increased. Since 2001, in the face of new tax cuts, measures of inequality may be narrowing as a result of the recent decline in stock prices, which disproportionately affects reported incomes (especially from capital gains) of high-income individuals. This suggests that tax policies, while modifying market outcomes, are probably not the major driver of the changes in income distribution.

▶ Notes and References

[1] See Welniak (2003); Strudler, Petska, and Petska (2003); and Williams (2003), this volume.

[2] The CBO measure does not include the effects of State and local taxes and transfers.

[3] This assumption is a good approximation, but does not hold in all cases. For example, tax-exempt municipal bonds pay lower interest rates than taxable securities of comparable risk. Recipients of income from tax-exempt bonds do not pay taxes to the Federal Government, but do receive lower incomes from those securities than they would have, absent a Federal income tax.

Cronin, Julie-Anne (1999), "U.S. Treasury Distributional Analysis Methodology," OTA Paper 85 (September).

Strudler, Michael; Petska, Tom; and Petska, Ryan (2003), "An Analysis of the Distribution of Individual Income and Taxes, 1979-2001, presented at the Joint Statistical Meetings, San Francisco, California (August).

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