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TRENDS IN THE RELATIVE HOUSEHOLD INCOME OF WORKING-AGE MEN WITH WORK LIMITATIONS:

CORRECTING THE RECORD USING INTERNAL CURRENT POPULATION SURVEY DATA

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CES 08-05 March, 2008

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Abstract

Previous research measuring the economic well-being of working-age men with work limitations relative to such men without work limitations in the public use March Current Population Survey (CPS) systematically understates the mean household income of both groups; overstates the relative household income of those with work limitations; and understates the decline in their relative household income over time. Using the internal March CPS, we demonstrate this by creating a cell mean series beginning in 1975 that provides the mean reported income of all topcoded persons for each source of income in the public use March CPS data. Using our cell mean series with the public use March CPS, we closely match the yearly mean income of working-age men with and without work limitations over the period 1987-2004 in the internal data and show that this match is superior to ones using alternative methods of correcting for topcoding currently used in the disability literature. We then provide levels and trends in the relative income of working-age men with work limitations from 1980-2006, the earliest year in the March CPS that such comparisons can be made.

* The research in this paper was conducted while the authors were Special Sworn Status researchers of the U.S. Census Bureau at the New York Census Research Data Center at Cornell University. The paper was completed while Burkhauser was a Visiting Scholar at the American Enterprise Institute. Research results and conclusions expressed are those of the authors and do not necessarily reflect the views of the U. S. Census Bureau. This paper has been screened to ensure that no confidential data are disclosed. Support for this research came from the National Science Foundation (award nos. SES-0427889 SES-0322902, and SES-0339191) and the National Institute for Disability and Rehabilitation Research (H133B040013 and H133B031111). We thank Lisa Marie Dragoset, Arnie Reznek, Laura Zayatz, the Cornell Census RDC Administrators, and all their U.S. Census Bureau colleagues who have helped with this project.

Introduction

The public use version of the March Current Population Survey (CPS) is the primary data source used by public policy researchers and administrators to investigate yearly trends in United States average household income and its distribution. The public use March CPS is a large nationally representative sample of households collected each March, since 1942, by the U.S. Census Bureau.[1] The detailed questions on the employment and sources of income of household members make it an extremely valuable resource for tracking long term trends in the economic well-being of Americans. However, to protect the confidentiality of its respondents, the U.S. Census Bureau censors the reported income values for each source of income that it collects (see Appendix Table 1 for a list of these sources of income) when it reports them in the public use version of the March CPS data it makes available to the outside research community. The impact of U.S. Census Bureau topcoding procedures on measured wage earnings and income inequality for the population as a whole have recently been explored by Feng, Burkhauser, and Butler (2006) and Burkhauser, Feng, and Jenkins (2007). Less is known about how this topcoding impacts measured economic well-being across groups within the United States population including working-age people with and without work limitations.

Since the passage of the Americans with Disabilities Act of 1990 policy researchers have increasingly tracked the economic well-being of working-age people with disabilities relative to their peers without disabilities.[2] However, all previous work on long-term trends in the relative economic well-being of working-age people with disabilities has been based on the public use March CPS data. We will show this past work misses the top part of the household income distribution of both those with and without work limitations. And more importantly for this

paper because those with work limitations are less likely to be in the top part of the distribution of household income, previous estimates of their relative household income: overstate their mean household income relative to the household income of working-age people without work limitations and understate the drop in their household income relative to those without work limitations over the last two decades.

In 2006 we were granted permission by the U.S. Census Bureau to use the internal March CPS to test the sensitivity of measured income inequality to alternative methods of providing additional information on topcoded persons in the public use March CPS. Furthermore, we were allowed to provide researchers without access to the internal March CPS data with this information as long as in doing so we did not unduly risk the confidentially of CPS respondents. Using the internal March CPS data, we are able to observe income trends above the public use topcode levels for 1975-2004.[3]

The U.S. Census Bureau internal March CPS data we were given access to is superior to the public use March CPS data since it contains all of the income variables found in the public use March CPS but without topcodes. See Appendix Table 1 for a description of the income variables used in this paper. However, it is more limited than the public use March CPS data in some ways. For instance, it does not include all of the non-income variables found in the public use CPS. As a result, while we have internal March CPS income data for 1975 to 2004, we are only able to determine the work limitation status of individuals in the internal March CPS sample for the period 1987-2004 even though the public use CPS data includes a work limitation status variable beginning in 1980 Additionally, we are unable to generate matched-pairs of responses across years to create the two-period work limitation measure used by Burkhauser, Houtenville, and Rovba (2007).

Access to the internal March CPS allows us to use the income information above the topcoded values in the public use March CPS to explore how the economic well-being of working-age people with work limitations has varied over time relative to their peers without work limitations. Additionally, using the internal March CPS data we have created, and are now able to distribute to the larger research community, a cell mean series for each source of income extending back to 1975 that provides the mean income of individuals whose income is above the topcode values for that source of income in the public use March CPS.

To create this extended cell mean series, we used procedures similar to those used by the U.S. Census Bureau since 1995 to create their official cell means. For each non-labor income source, we replaced the topcoded income value with the weighted mean-income of all individuals who are topcoded in the public use March CPS from that source. For labor income sources, we used demographic characteristics to generate finer cell mean categories and replaced the topcoded income value with the weighted mean income of individuals with the same set of demographic characteristics who are topcoded in the public use March CPS from that source. The demographic characteristics considered in creating these cell means include race, gender, and employment status, which are the same categories that the U.S. Census Bureau currently uses to produce their cell means. Like the U.S. Census Bureau, to protect the confidentiality of respondents, when less than five individuals are topcoded from an income source; we combine those individuals with individuals from a similar source to obtain a cell-size of five or more to generate a cell mean. See Larrimore, Burkhauser, Feng, and Zayatz (2008) for a more detailed discussion of our extended cell mean series and the procedures we followed to protect the confidentiality of respondents.

When we use our extended cell mean series with the public use March CPS, we closely match the yearly mean household size-adjusted income of working-age (aged 21-58) men with and without work limitations found using the internal March CPS data for 1987-2004. We then show this corrected public use March CPS data better matches the internal March CPS data than previous data used in the disability literature. Finally we use our cell mean series together with all years of the public use March CPS data that contain information on work limitation status to show how levels and trends in the relative household size-adjusted income of working-age men with work limitations have changed over the period 1980-2006 as well as how the sources of their income have changed over the period 1987-2006.

Defining Income

We follow standard procedures for measuring the economic well-being of working-age men (aged 21-58) in the literature by examining their size-adjusted household income.[4] See Gottschalk and Smeeding (1997) for a review of the general income distribution literature and Gottschalk and Danziger (2005) for a more detailed discussion of the usual assumptions made in this literature that we discuss below. Income in the March CPS survey is reported for each individual in the household separately and is divided into a range of labor and non-labor income sources—e.g. interest, dividends, public transfers—as well as income from other members of the household. In examining income at the household level, we assume that income within the household is shared equally among the household members and income is treated equally in the household regardless of its source. To adjust for household size, accounting for economies of scale within households, we divide total household income by the square root of the number of individuals living in the household. Given our assumptions that income is shared equally within the household, we also restrict our sample to individuals who are living in households that are

not classified as group quarters and that do not contain members of the military. To report income consistently over time, all income has been adjusted to 2004 dollars using the CPI-U-RS reported by the Bureau of Labor Statistics. This series makes adjustments for changes in methods used to calculate the Consumer Price Index and thus provides a more accurate representation of inflation trends then the standard CPI-U series (Stewart and Reed, 1999).

Identifying work limitations in the March CPS

In addition to collecting detailed information on the income of individuals in the sample, since 1981 the March CPS has included a question "Does anyone in this household have a health problem or disability which prevents them from working or which limits the kind or amount of work they can do?" If any household member has a work limitation, there is a follow-up question to determine which member of the household has the limitation.

This variable has been widely used in the economics literature to capture the working-age population with disabilities both using the public use CPS and the Survey of Income and Program Participation. See: Acemoglu and Angrist (2001); Autor and Duggan (2003); Bound and Waidmann (1992); Bound and Waidmann (2002); Burkhauser, Daly, and Houtenville (2001); Burkhauser, Daly, Houtenville and Nargis (2002); Burkhauser Houtenville, and Rovba (2005); Daly and Burkhauser (2003); Houtenville and Burkhauser (2005); Hotchkiss (2003); Hotchkiss (2004); Jolls and Prescott (2005). However, the use of self-reported health measures, especially ones based on work limitations, can be affected by employment status. See: Currie and Madrian (1999) and Baker, Stabile, and Deri (2004). For this reason and others, some have

argued that this variable should not be used to capture the working-age population with disabilities. See: Hale (2001) and Kirchner (1996).

However, Burkhauser et al. (2002) show that while a work limitation-based measure of the working-age population with disabilities understates the size of the working-age population with disabilities relative to an impairment-based measure in the National Health Interview Survey (NHIS) and understates the employment rate of this more nuanced impairment-based disability population, the trends in employment in the two working-age populations with disabilities measured over the period 1983-1996 were the same.

The NHIS dramatically changed its survey design in 1997 and dropped its detailed impairment questions. Hence researchers using the NHIS are no longer able to consistently capture long term trends in employment for the total population with impairments. Furthermore, the quality of the NHIS income data was and remains so far below that of the public use March CPS that it has never been an ideal data set for capturing trends in income. Hence the public use March CPS remains the only available data set that contains both a consistently measured working-age population with disabilities and excellent information on their employment and economic well-being. Nonetheless the public use March CPS is far from a perfect data set for measuring the socio-economic outcome of those with and without disabilities.[5]

A continuing criticism of using the work limitation question in the March CPS to assign disability status is that the time period over which the question refers is ambiguous. The question is asked in the March CPS survey, but in the section of the survey that asks about income during the previous calendar year. Given its placement, it could be assumed that respondents answer retrospectively about their disability status during the previous income year **(**Acemoglu and Angrist 2001**).** However, since a subset of March CPS respondents are

surveyed in the previous year, an alternative way of capturing longer term disability status is to define individuals as having a long term disability only if they report a work limitation both in the March following the income year and in the March of the income year, a period that more closely matches the income year and can be assumed to more appropriately differentiate those with longer term disabilities from those who first report them in the March following the income year(Burkhauser, Houtenville, Rovba 2007**)**. While it would be useful to test the robustness of our results using this second approach, for confidentiality reasons, the U.S. Census Bureau does not provide researchers with the matching information necessary to create this variable using the internal March CPS data. Thus we are only able to use the more common one-period work limitation-based disability definition here.

A second limitation of the public use March CPS data for measuring the economic well-being of working-age people with disabilities is that for confidentially reasons each source of income in the public use March CPS is topcoded. Because each source of income has topcodes, this not only affects those with very high total income but can and does impact those with relative modest total income but whose income from one or more sources exceeds the topcoded value. As we will show this includes working-age men with work limitations whose income from Social Security, Supplemental Security Income, Workers Compensation or other disability related transfers exceed topcode values. This paper provides a method of correcting this problem.

Topcoding in the March CPS

To protect the confidentiality of respondents, the U.S. Census Bureau topcodes each source of income of respondents in the public use March CPS survey. One of the challenges this presents to researchers is that topcode levels are time-inconsistent, leading to artificial increases or decreases in mean incomes as different fractions of the population are subject to topcoding

each year. See Levy and Murnane, 1992 for an early review of the income distribution literature and a more formal statement of this problem. The public topcode levels for each CPS year are presented in Appendix Tables 2 and 3.

Additionally, in income year 1995 the U.S. Census Bureau began providing cell means for topcoded individuals – the mean income of all individuals who are topcoded from the topcoded source of income. Prior to 1995, the U.S. Census Bureau simply replaced the incomes of topcoded individuals with the topcode value. Since cell means were not provided retroactively in years prior to 1995, using the public use March CPS data without taking this major change in the reported income values among the highest income individuals in the data into account results in a significant artificial increase in 1996 and beyond in their measured income due to more accurate reporting of their incomes since then. Hence while the use of cell means after 1995 causes the public use March CPS to conform better to the internal March CPS, not taking this improvement in measurement into account will grossly overestimate how much actual income increased after 1995 among those at the highest income levels (See Feng, Burkhauser, and Jenkins, 2007).

Topcoding also has implication for measuring the relative income of different subsamples of the population. If the income distribution for the working-age population with work limitations is identical to that of the working-age population without work limitations, then individuals in both groups will be topcoded at the same rate. As a result, while the mean incomes of both groups will be lower, these means would be reduced by the same percent from the topcodes and their comparative mean incomes will be unchanged. However, if individuals in the two groups have different probabilities of being topcoded or if the mean suppressed income of those who are topcoded differs between the two groups, topcoding will influence our measure

of their relative well-being. If working-age people with work limitations are concentrated at lower income levels where they are less likely to be topcoded, we would expect topcoding to artificially raise the ratio of their mean income relative to those without work limitations, because their observed mean income will be less artificially depressed from the topcodes than that of working-age people without work limitations and hence will be closer to their true mean. Similar results will occur even if the probability of topcoding is the same across both groups when the amount of suppressed income is higher for individuals without work limitations. It is to these questions that we now turn.

Prevalence of Topcoding among Individuals with Work Limitations

Figure 1 illustrates the percentage of working-age men (aged 21-58) topcoded each year in the public use March CPS since income year 1980, the first year containing a work limitation status value in the March CPS data. Even though the incomes of working-age men with work limitations are generally lower than the incomes of working-age men without work limitations, topcoding is clearly a problem that impacts both populations. In every year since 1993, at least 1% of those with work limitations have been topcoded in the public use data—and this proportion grew to over 3% by 2006,. While topcoding is prevalent among those with work limitations, it is significantly more so among working-age men without work limitations. Thus, while income is suppressed in both groups, we expect that the difference between the observed and true mean income is greater for those without work limitations. As a result, correcting for topcoding will show that individuals with work limitations are relatively worse off than previous research has shown.

To further explore the impact of changing the topcodes on the observed mean incomes of working-age men with and without work limitations, we examined where they fall in the overall

income distribution. Figure 2 reports the percent of working-age men in each percentile of the size-adjusted household income distribution with work limitations—aggregated over the entire period of our data, 1980-2006. In our aggregate sample, 6% of working-age men report a work limitation. If they were equally distributed across the income distribution, all three lines in Figure 2—the mean percentage of working-age men with work limitations in our aggregated years in each percentile as well as the minimum and maximum percentage of such men in any one of our aggregated years (1980-2006)—would be horizontal at the 6% value. But as Figure 2 shows, this is not the case. Since those with work limitations are disproportionately at the lower end of the income distribution, each line slopes downward. Thus, given the distribution of working-age men across the income distribution pictured in Figure 2, topcodes will disproportionately lower the reported income of working-age men without work limitations and, other things equal; will overstate the income of the entire distribution of working-age men with work limitations relative to the entire distribution of working-age men without work limitations.

Sources of Topcoding among Individuals with Work Limitations

While the difference in overall topcoding rates alone is enough to change the well-being of working-age men with work limitations relative to their counterparts without work limitations, the problem from topcoding extends beyond different rates of topcoding. Since public use March CPS topcodes are placed on each source of income rather than on total individual or total household income, these topcodes suppress different amounts of income. Topcodes on wage and salary income often suppress tens of thousands of dollars of income since the tail of the distribution on this source of income is quite long. In contrast, topcodes on some non-labor income sources like Social Security or Supplemental Security Income payments have, because of program benefit limits, much shorter tails. Thus their suppressed income is more in the range of a

few hundred dollars. To understand how topcodes impact individuals with and without work limitations, it is useful to compare the sources of their income more likely to be topcoded.

Table 1 shows the percentage of men with and without work limitations who are topcoded overall and on various sources of their household's income—their own labor earnings, their own non-labor earnings, or from income sources of another household member.
As can be seen in columns 1 and 2, in every year, the household income of a smaller percentage of men with work limitations is topcoded than the household income of men without work limitations. But that percentage has grown substantially for both groups between 1980 and 2006. And as column 3 somewhat surprisingly shows, since the U.S. Census Bureau reclassified the income sources in 1987, the growth has been greater for men with work limitations, hence increasing the ratio of column 1 and column 2 values from 0.29 in 1987 to 0.62 in 2006.

However, the relative importance of topcoding within sources is markedly different between the two groups. As columns 4 and 5 show, working-age men with work limitations are much less likely to be topcoded on their own labor earnings than are their counterparts without work limitations in every year. The prevalence of topcoding is closely related to the increase in topcoded values reported in Appendix Table 3, for the most part rising from 1980 to 2006 for both groups in years when the topcodes were left unchanged by the U.S. Census Bureau. The four largest year to year declines in the prevalence of topcoding on labor earnings coincide with the four years in which the U.S. Census Bureau significantly increased its labor earnings topcode thresholds—1981, 1984, 1995, and 2002. But in all years the ratio (column 6) of these two values was quite low—between 0.05 and 0.32.

While men with work limitations are much less likely to be topcoded on their own labor earnings than are those without work limitations, the opposite is the case for their own non-labor

income sources. In almost all years, working-age men with work limitations are more likely to be topcoded on a non-labor income source (column 7) than are working-age men without work limitations (column 8). This was especially the case prior to 1987 when the U.S. Census Bureau redefined and expanded its income source categories. Non-labor income however contains a very heterogeneous group of income sources (Appendix Table 1) that includes government transfers such as Social Security income and veteran's benefits as well as private non-labor earnings such as dividends and interest income. The driving factor causing working-age men to be topcoded more frequently for non-labor income is that a relatively large percentage of these men are topcoded for Social Security, Supplemental Security Income, Workers Compensation, or disability transfers. In contrast, topcoding for men without work limitations in the non-labor earnings category is primarily from rent, interest and dividends.

The topcode rates for non-labor income further disaggregated into these categories is presented in Table 2 for years since 1987 after the U.S. Census Bureau redefined its income source categories. Topcoding in non-labor income has increased substantially for both working-age men with and without work limitations over time but the sources of these topcodes have not dramatically changed. Most of the growth for those with work limitations has been in Social Security, Supplemental Security Income, Workers Compensation, and disability transfers while increased topcoding in rents, interest, and dividends are behind the growth in this category for those without work limitations. Because growth has been at different rates, the ratio (Table 1, column 9) has fluctuated over time.

While not shown in Table 2, the vast majority of topcoding on non-labor income sources for individuals with work limitations prior to 1987 were from workers compensation and veterans' income. Thus, the major decline in topcoding on non-labor income for individuals

with work limitations in 1987 can largely be attributed to separating workers compensation and veterans' income into two separate income categories and increasing the topcode for workers compensation income from $29,999 to $99,999. This is consistent with our findings provided in Table 2 for years after 1987 that the higher prevalence of topcoding for individuals with work limitations results from their relatively high probability of being topcoded from Social Security, Supplemental Security Income, Workers Compensation, or disability transfers.

A comparison of columns 4 and 7 of Table 1 shows that working-age men with work limitations are also much more likely to be topcoded on non-labor income sources than on their own labor earnings while the opposite is the case for those without work limitations (column 5 and 8).

As can be seen in columns 10 and 11, the household income of working-age men with work limitations has, for the most part, been somewhat less likely to contain a topcode because of the income of another household member than has the household income of working-age men without a work limitation. While the share of topcoded income from this source has been growing for both since 1987, as column 12 shows the growth patterns have varied.

Tables 1 and 2 confirm that working-age men with work limitations are less likely to live in a household whose income has been topcoded than are working-age men without work limitations. Additionally, when working-age men with work limitations are topcoded it is more likely to be in an income category like government transfers, in which the difference between the topcoded value and their actual value is small rather than in income categories like rents, interest, dividends, and own labor earnings where the difference is larger and in which working-age men without work limitations are most likely topcoded. Hence the impact of topcoding on comparisons of the relative economic well-being of working-age men with and without work

limitations is likely to be even larger than would have been expected simply by comparing the total percentage of individuals' topcoded in Figure 1.

Methods to Correct for Topcoding Problems

Various methods are available to control for topcoding in the public use March CPS data. One method is to do nothing and hope for the best. However, as discussed above, this will confuse real changes in mean income with changes in reported income due to topcoding. As can be seen in Appendix Table 3, the changes in topcoding in 1995 when the U.S. Census Bureau not only increased the topcode but began to provide cell means for topcoded values dramatically increased reported income from all sources. For instance, the topcode for primary earnings income rose from $99,999 to $150,000 thus reducing the share of men without work limitations who were topcoded on their own income from 3.080% to 1.862%, but the use of cell means increased the average reported primary labor earnings of those men who were still topcoded to $308,691.

A second approach is to simply ignore the introduction of cell means, and use a series where all individuals who are topcoded are assigned income at the topcode level even after the introduction of cell means in 1995. For instance, this no cell mean series would correct for the jump in income among the 1.862% of men without disabilities discussed above who were assigned a cell mean value of $308,691 by giving them a cell mean value of $150,000. But this does not remedy the problem of inconsistent topcode level changes over time (such as the change in labor earnings topcoding from $99,999 to $150,000 between 1994 and 1995) and will therefore still provide an inaccurate picture of income trends.

A more sophisticated approach discussed for labor earning by Burkhauser, Butler, Feng, and Houtenville (2004) and for income by Burkhauser, Couch, Houtenville and Rovba (2005) is

to create a consistent topcode series. For each income source, this series takes the topcode that cuts most deeply into that source's income distribution in a given year and then chooses a topcode value that cuts that deeply into that source's income distribution in all other years. The advantage of this approach is that it consistently measures a given percentage of the income distribution of that income source in all years of the study but at the cost of losing information by topcoding a larger fraction of the population in all other years.

In our case where we are looking at the household size-adjusted income of working-age men who are topcoded at a higher rate than the general population, the cut into the data using consistent topcoding is around 7 to 7.5%. This is about twice the cut in the data for the general population reported by Burkhauser et al. (2004, 2005). If the share of income not captured does not change, trends in a consistently topcoded series will closely match the inequality trends for the entire distribution.

But this is not the case when comparing how the relative income of subsets of the population is changing over time. Because more individuals are topcoded with this approach than in the public data, the observed mean incomes of individuals with and without work limitations will be lower. But, because most of the people who are captured by our reduction in the topcodes are individuals without work limitations, using this approach will reduce their mean income more than that of those with work limitations. Hence we will consistently overestimate the mean income of working-age men with work limitations relative to working-age men without work limitations by disproportionately excluding the top part of the income distribution.

Given this limitation of consistent top-coding in providing a consistent comparison of the economic well-being of subpopulations, we provide a new method for controlling for top-coding in the public use March CPS data. Using the internal March CPS data, we use approximately the

same methodology the U.S. Census Bureau used to create its cell means after 1995 and extend the series back to 1975. With our cell means, which are now publicly available in Larrimore, Burkhauser, Feng, and Zayatz (2008), it is possible to create a consistent cell mean series that can be used with the public use March CPS, which better matches the income distributions found in the internal March CPS data for working-age men with and without work limitations, as we will demonstrate below.

While our cell mean approach has significant advantages over consistent topcoding because it allows us to better understand changes at the top of the income distribution, it does not capture the full distribution. It is well known that the U.S. Census Bureau topcodes the public use March CPS data. It is less well known that the U.S. Census Bureau also censors high incomes in the internal March CPS data (See Welniak, 2003, Feng et al. 2006, and Burkhauser et al. 2007 for a fuller discussion). Since the internal March CPS data is censored, income at the very top of the income distribution will not be observed in these data. This poses a potential problem in creating a cell mean series for the public use March CPS from the internal March CPS data since at best it will match the trends found in the internal data from which the cell means are created. If changes in the censoring points in the internal March CPS data result in inconsistencies, our cell mean series used with the public use March CPS data will retain those inconsistencies.

While this is a limitation of our cell mean series in measuring the "true" trends in income, the problem is mitigated because censor points in the internal March CPS data are significantly more stable than their public use March CPS counterparts. Since the U.S. Census Bureau began reporting 24 income sources in income year 1987, the only changes in the internal March CPS censor levels occurred in 1993 and 1994. As a result, while there is a disconnect in the internal

March CPS between these years, using our cell means with the public use March CPS allows for consistent trends before and after these years that closely match the internal March CPS data.

Additionally, since the censoring points in the internal March CPS data are significantly higher than the topcodes in the public use March CPS data the fraction of individuals who are impacted by them is significantly lower than the fraction impacted by the public use March CPS topcodes. Thus, while some censoring does occur in the internal March CPS data, the results provided using the extended cell mean series with the public use March CPS data will be significantly closer to results that would be obtained using data that consistently captured the full income distribution. The additional information gained by using our cell means series with the public use March CPS justifies using the extended cell mean series despite the cost of accepting a trend-break in 1993 in our analysis.

Comparison of Mean-income by Work Limitation Status

In Table 3 we first compare the mean income of working-age men with and without work limitations from 1987-2004 using our extended cell mean series together with the public use March CPS data (Cell Mean) to those using the unadjusted public use March CPS data (Unadjusted), the public use March CPS data without cell means (No Cell Means), the consistently topcoded public use March CPS data (Consistent Topcode), and the internal March CPS data used by the U.S. Census Bureau (Internal). For each series, the first column presents the mean household sized-adjusted income of working-age men with work limitations and the second column is the mean household size-adjusted income of working-age men without a work limitation. The third column is the ratio of these two values. It measures the average economic well-being of working-age men with work limitations relative to such men without work limitations.

Thanks to cell means, the mean income of working-age men with and without work limitations in 2004 captured in the Unadjusted data is very close to our Cell Mean data and both are very close to the values in the 2004 Internal data. So for those simply interested in comparing the relative income of those with and without work limitations in 2004, the current Unadjusted data or our Cell Mean data nicely capture the means in the Internal data. And this is true for all years since 1995 when cell means were first provided by the U.S. Census Bureau.

But for those interested in the trends in these series prior to 1995 the Unadjusted data is flawed because it does not provide cell means for persons above the topcoded values. Hence its mean values are smaller for both those with and without work limitations than those produced using the Internal data. In contrast, our Cell Mean data provide yearly means very close to those from the Internal data both for those with and without work limitations in all years.

Because the Unadjusted series consistently understates the income of both those with and without work limitations, the ratio of these two values could in principal be greater or less than the ratio in the Cell Mean and Internal series. But as we have shown in Table 3 those without work limitations are more likely to be topcoded and their actual income is likely to be greater when topcoded. So we expect the ratio to be higher in the Unadjusted data series than in the Cell Mean and Internal series in the years where cell means were not calculated. And this is the case, as can be seen by comparing the ratios for 1987-1994 in the three series. In 1987 the Unadjusted series ratio is 0.632 but only 0.626 and 0.627 in the other two series. Thus in most yearly comparisons before 1995 and after 1995 the Unadjusted series will provide a slightly greater decline in the relative income of those with work limitations than found using the more accurate Cell Means series.

In contrast to these three series, both the No Cell Mean series and the Consistent Topcode series understate the mean income of both those with and without a work limitation in 2004 since the former doesn't use cell means to adjust for top coding and the latter focuses only on the bottom 93 percent of the income distribution. As predicted both series miss less of the income of working-age men with work limitations than they do of working-age men without work limitations, so their ratios are always above those of our Cell Mean series and the Internal series. And because the amount of income being missed has been growing more rapidly for working-age men without work limitations, those researchers who use either series will understate the decline in the relative income of working-age men with work limitations over the period. For instance, the relative income of those with work limitations in the Consistent Topcoding series in 1987 was 0.634 compared to 0.626 in the Cell Mean series. By 2004 the values were 0.587, or a decline of 7.41 percent in the Consistent Topcode series but 0.572 or a decline of 8.62 percent in the Cell Mean series.

Using Cell Means to Evaluate Economic Well-being

Because we were only provided with the internal CPS data by the U.S. Census Bureau through 2004 and this does not contain information on work limitation prior to 1987, we are not able to compare our Cell Means series with the internal CPS data outside of the period 1987-2004. But, the public use March CPS data do include self-reported work limitation information beginning in the 1981 survey for income year 1980 so we are able to use the cell means we created with the internal data (independent of work limitation status) and assign cell mean values to those with and without work limitations who have sources of income that were topcoded between 1980 and 1986 in the public use March CPS data. We can also use the cell means

provided by the U.S. Census bureau for years after 2004 to extend our cell mean series to 2006 allowing us to observe more recent trends.

Hence the Cell Mean series we provide in Table 3 for the first time provides cell mean adjusted mean income values constructed from the public use March CPS for working-age men with and without work limitations from 1980 to 2006. As can be seen, the mean household size-adjusted income of working-age men with and without work limitations has increased over this period but the gains have been far less for those with work limitations.

Over the business cycle of the 1980s measured from trough year to trough year (1982-1992) the mean income of working-age men with work limitations slightly increased from $22,215 to $23,959 or by 7.85%, while the mean income of working-age men without work limitations rose by more than twice that percentage from $34,334 to $40,017 or by 16.55%. Thus the relative income of working-age men with work limitations fell from 0.647 to 0.599. While the real income of working-age men with work limitations increased more rapidly over the 1990s business cycle (1992-2004), it did not keep pace with the income gains of working-age men without work limitations. As a result their relative income fell from 0.599 to 0.572. This is the most accurate estimate of the change in the mean income of the entire distribution of working-age men with and without work limitations ever produced with the public use March CPS data. It shows that the economic well-being of working-age men with work limitations relative to such men without disabilities has been falling since 1980, the first year we have been able to record it in the March CPS data.

Table 4 which we limit to 1987-2006 in order to capture the more detailed sources of income information only contained in the March CPS since 1987 (see Appendix Table 1) shows how the share of household income (unadjusted for household size to allow the shares to sum to

1) coming from various sources of income has been changing over this period for working-age men with work limitations. While we are unable to observe the full business cycle of the 1980s, we see that from 1987 through 1992 the share of their household income coming from their own labor earnings (column 1) fell from 27.57% to 23.71%, while for working-age men without work limitations (column 2) the decline was from 58.21% to 56.23%. Hence the ratio of the share of their household income coming from their labor earning relative to their counterparts without work limitations (column 3) fell from 0.47 to 0.42 over this brief period.

Looking at the full business cycle of the 1990s, the differences in income shares between individuals with and without work limitations are more pronounced. From 1992-2004, the share of household income of working-age men with work limitations coming from their own labor earnings continued to decline, falling from 23.71% to 17.87% while the share of household income coming from their own labor earnings rose for working-age men without work limitations over this period from 56.23% to 57.16 %. So, by 2004 the ratio of these two shares was 0.31, its lowest value up to that time. This ratio hit an all time low of 0.29 the next year.

The fastest growing source of income for working-age men with work limitations over the entire period 1987-2006 was own Social Security, SSI, Workers Compensation and other disability transfers. In 1987 funds from these sources accounted for 13.84% of their household income. By 2006, these disability related government transfers made up 17.07% of their household income. Such transfers made up a trivial amount of the household income of working-age men without work limitations over the entire period. The other source of increased share of household income for working-age men with work limitations was the income of other household members, increasing from 51.50% in 1987 to 59.77 % in 2006. Hence a major reason why the real income of working-age men with work limitations did not fall in absolute terms

over this time (Table 3, column 1) was that government transfers and the work of other household members more than made up for the decline in their own labor earnings.

Conclusion

Since individuals with disabilities generally have relatively low incomes, a common misperception is that topcoding is irrelevant when exploring their economic well-being. Because the U.S. Census Bureau assigns topcodes to each source of income and not to total household income, individuals in the public use March CPS with work limitations are topcoded at significant rates which have been growing in recent years. This is because individuals with work limitations tend to have higher levels of public transfers and other non-labor income which are assigned lower topcode levels than labor income sources.

While topcoding suppresses the income of those with work limitations, the suppressed income from the topcodes tends to be lower for them than for individuals without work limitations who are more likely to have suppressed labor income. This is the reason why we find that working-age men with work limitations are comparatively worse-off than previously thought based on previous research using the public use March CPS.

We were able to partially lift the constraints of topcoding by obtaining access to the U.S. Census Bureau's internal March CPS data files. While this internal data is also topcoded, the topcodes are much higher than in the public data and thus provides us with a more complete picture of the entire income distribution. Using the internal March CPS data, we found that the ratio of incomes between working-age men with and without work limitations is up to 2 to 3 percentage points lower than the ratio found using previously available public use March CPS data.

We also have extended the cell mean series provided by the U.S. Census Bureau to allow future researchers using the public use March CPS data to estimate the incomes of individuals above the topcode threshold. Using this cell mean series with the public use March CPS data, we are able to much more closely match the internal March CPS values from 1987-2004.

Finally, we use our cell mean series with public use March CPS data to look at the relative economic well-being of working-age men with work limitations over the period 1980-2006 which captures the last two major United States business cycles. Using this improved data we are able to confirm and more precisely measure the very long term decline in the relative economic well-being of working-age men with work limitations. And, since 1987, we are able to capture in detail the dramatic decline in the share of their household income coming from their own work and the equally dramatic rise in the share of their household income coming from government transfers and the income raised by other household members.

ENDNOTES

[1] Each year the U.S. Census Bureau releases its yearly average income and poverty rates from the March CPS using these data (U.S. Census Bureau, 2007). As we will discuss in some detail below these official values are based on the internal March CPS data that is not available, except under certain conditions, to researchers outside of the U.S. Census Bureau.

[2] See Stapleton and Burkhauser (2003) for a review of the literature on the quality of the data available to track the employment and economic well-being of working-age people with disability as well as trends in these social success indicators and Houtenville, Stapleton, Weathers and Burkhauser (2008) for an update and extension of this work.

[3] Each March CPS survey captures household income from the previous year. In this paper, we are always referring to the income year when we mention a year. So, when we discuss the year 1975, this refers to the income received in 1975 as reported on the March CPS survey in 1976.

[4] A similar analysis for working-age women is available on request from the authors. Because men continue to be the primary labor earners in United States households, the differences in household size-adjusted income we find between working-age women with and without work limitations are somewhat smaller than the ones reported here for men but the patterns are the same.

[5] For a detailed discussion of the quality of nationally representative data sets, including the NHIS, SIPP, and CPS for measuring the employment and economic well-being of working-age people with disabilities see: Houtenville et al. (2008).

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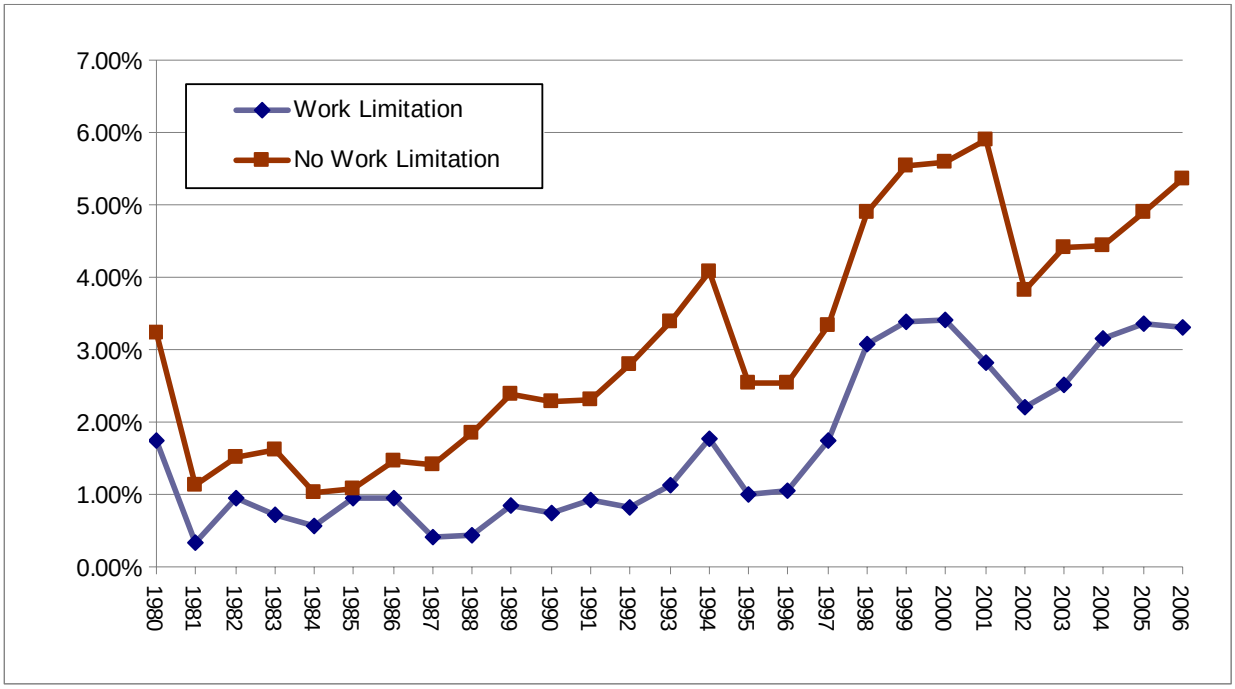
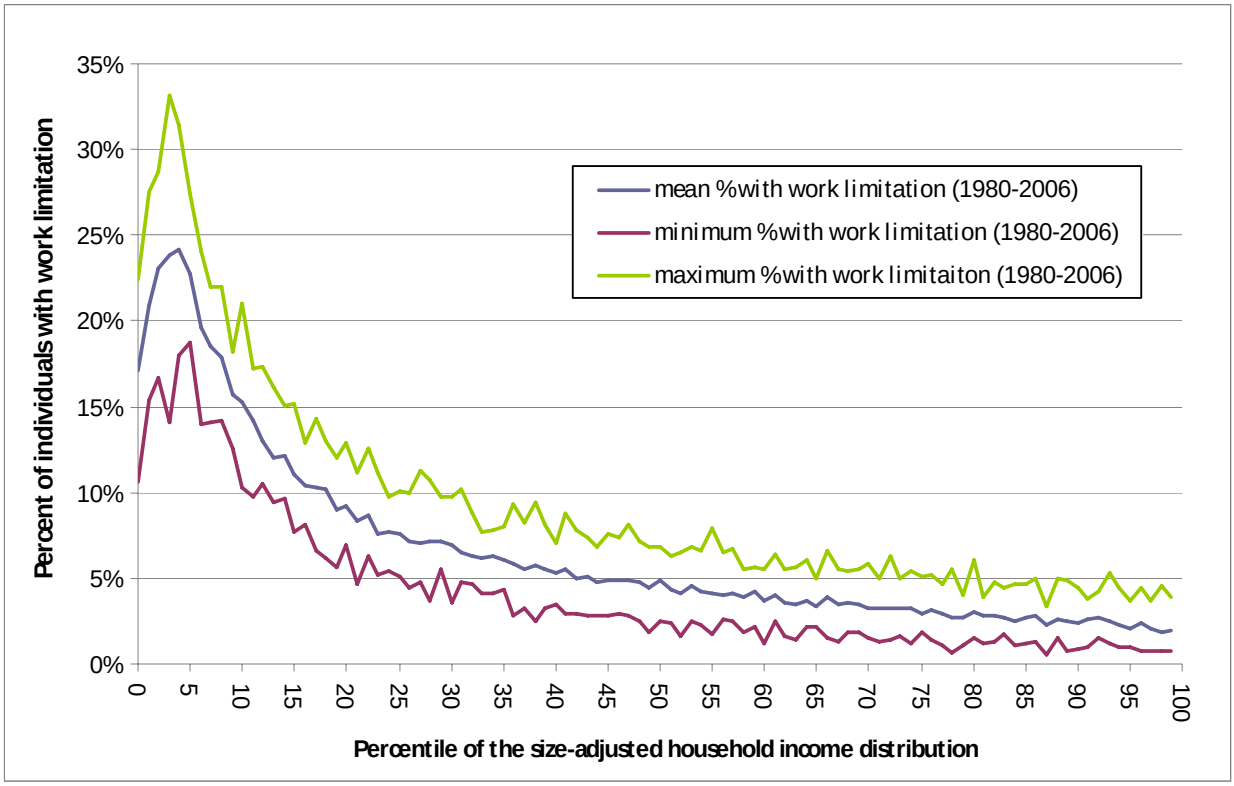
Figure 1. Yearly Percentage of Working-age Men by Work Limitation Status whose Household Income is Topcoded in the Public Use March CPS (1980-2006).



Source: Author's calculation using internal March CPS data.

Figure 2. Mean, Minimum, and Maximum Percentage of Working-age Men with a Work Limitation across the Size-adjusted Household Income Distribution of Working-age Men (1980-2006).



Source: Author's calculation using internal March CPS data.

Table 1. Percentage of Working-age Men with and without a Work Limitation Topcoded on any Source of their Household's Income and by Source (1987-2006).

	Household Income			Own Labor Earnings			Own Non-Labor Earnings			Topcode o other HH	
Income Year	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Wi W Lim
	(1)	(2)	(1)/(2)	(4)	(5)	(4)/(5)	(7)	(8)	(7)/(8)	(10)	(
1980	1.731%	3.224%	0.54	0.459%	2.646%	0.17	0.813%	0.053%	15.24	0.459%	0.5
1981	0.322%	1.137%	0.28	0.121%	0.954%	0.13	0.121%	0.028%	4.28	0.081%	0.1
1982	0.944%	1.522%	0.62	0.411%	1.219%	0.34	0.369%	0.047%	7.81	0.164%	0.2
1983	0.724%	1.625%	0.45	0.121%	1.377%	0.09	0.402%	0.022%	18.00	0.201%	0.2
1984	0.552%	1.026%	0.54	0.039%	0.769%	0.05	0.434%	0.078%	5.56	0.079%	0.1
1985	0.954%	1.078%	0.89	0.278%	0.857%	0.32	0.437%	0.031%	14.06	0.239%	0.1
1986	0.954%	1.468%	0.65	0.318%	1.201%	0.26	0.477%	0.029%	16.60	0.159%	0.2
1987	0.411%	1.408%	0.29	0.123%	1.149%	0.11	0.082%	0.028%	2.89	0.206%	0.2
1988	0.444%	1.842%	0.24	0.266%	1.520%	0.18	0.089%	0.052%	1.71	0.089%	0.2
1989	0.845%	2.382%	0.35	0.362%	1.969%	0.18	0.242%	0.064%	3.76	0.242%	0.3
1990	0.754%	2.287%	0.33	0.317%	1.909%	0.17	0.119%	0.053%	2.25	0.317%	0.3
1991	0.932%	2.303%	0.40	0.233%	1.889%	0.12	0.311%	0.062%	5.04	0.389%	0.3
1992	0.809%	2.793%	0.29	0.258%	2.218%	0.12	0.110%	0.088%	1.26	0.442%	0.4
1993	1.139%	3.390%	0.34	0.228%	2.745%	0.08	0.569%	0.103%	5.52	0.342%	0.5
1994	1.779%	4.081%	0.44	0.155%	3.080%	0.05	0.967%	0.124%	7.82	0.658%	0.9
1995	1.005%	2.536%	0.40	0.274%	1.862%	0.15	0.091%	0.108%	0.84	0.639%	0.5
1996	1.048%	2.526%	0.42	0.262%	1.869%	0.14	0.481%	0.140%	3.43	0.306%	0.5
1997	1.742%	3.335%	0.52	0.377%	2.415%	0.16	0.612%	0.208%	2.94	0.753%	0.7
1998	3.090%	4.901%	0.63	0.273%	2.429%	0.11	1.454%	1.341%	1.08	1.408%	1.2
1999	3.372%	5.542%	0.61	0.519%	2.939%	0.18	1.427%	1.484%	0.96	1.427%	1.3
2000	3.410%	5.598%	0.61	0.415%	3.134%	0.13	2.028%	1.201%	1.69	1.014%	1.4
2001	2.830%	5.893%	0.48	0.354%	3.501%	0.10	1.445%	1.143%	1.26	1.032%	1.4
2002	2.217%	3.829%	0.58	0.148%	1.952%	0.08	1.271%	0.874%	1.45	0.798%	1.0
2003	2.522%	4.400%	0.57	0.224%	1.987%	0.11	1.373%	1.143%	1.20	0.925%	1.3
2004	3.157%	4.435%	0.71	0.341%	1.949%	0.18	1.593%	1.207%	1.32	1.251%	1.3
2005	3.364%	4.894%	0.69	0.180%	2.097%	0.09	1.562%	1.403%	1.11	1.622%	1.5
2006	3.305%	5.366%	0.62	0.164%	2.297%	0.07	1.800%	1.515%	1.19	1.374%	1.7

Source: Author's calculations using internal March CPS data.

Table 2. Percentage of Working-age Men with and without a Work Limitation Topcoded by Sub-categories of their Non-labor Household Income (1987-2006).

	Social Security, SSI, Workers Compensation, and Disability Transfers			Interest, Dividends, and Rental Income			All Other Non-Labor Income		
Income Year	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio
	(1)	(2)	(1)/(2)	(4)	(5)	(4)/(5)	(7)	(8)	(7)/(8)
1987	0.041%	0.003%	-	0.000%	0.011%	0.00	0.041%	0.014%	2.89
1988	0.000%	0.000%	-	0.000%	0.024%	0.00	0.089%	0.031%	2.90
1989	0.242%	0.000%	-	0.000%	0.042%	0.00	0.000%	0.022%	0.00
1990	0.000%	0.000%	-	0.000%	0.036%	0.00	0.119%	0.017%	7.14
1991	0.117%	0.000%	-	0.039%	0.039%	0.99	0.155%	0.022%	6.93
1992	0.074%	0.000%	-	0.000%	0.042%	0.00	0.037%	0.045%	0.81
1993	0.494%	0.012%	-	0.076%	0.059%	1.29	0.000%	0.032%	0.00
1994	0.890%	0.003%	-	0.077%	0.065%	1.19	0.000%	0.056%	0.00
1995	0.046%	0.007%	-	0.000%	0.064%	0.00	0.046%	0.037%	1.23
1996	0.393%	0.003%	-	0.087%	0.080%	1.09	0.000%	0.057%	0.00
1997	0.377%	0.007%	-	0.141%	0.179%	0.79	0.094%	0.023%	4.06
1998	0.591%	0.003%	-	0.863%	1.065%	0.81	0.091%	0.285%	0.32
1999	0.649%	0.003%	-	0.476%	1.249%	0.38	0.303%	0.238%	1.27
2000	0.737%	0.010%	-	0.691%	0.886%	0.78	0.599%	0.322%	1.86
2001	0.649%	0.006%	-	0.531%	0.879%	0.60	0.354%	0.272%	1.30
2002	0.532%	0.004%	-	0.414%	0.578%	0.72	0.355%	0.312%	1.14
2003	0.644%	0.002%	-	0.504%	0.757%	0.67	0.336%	0.392%	0.86
2004	0.853%	0.011%	-	0.597%	0.868%	0.69	0.313%	0.343%	0.91
2005	0.901%	0.015%	-	0.421%	1.039%	0.40	0.240%	0.358%	0.67
2006	0.884%	0.015%	-	0.622%	1.175%	0.53	0.295%	0.344%	0.86

Source: Author's calculations using internal March CPS data.

Table 3. Comparisons of Mean Household Size-adjusted Income of Working-age Men with and without Work Limitations using Alternative Topcode-methods (1980-2006).

	Public Unadjusted			Public - No Cell Means			Public - Consistent Topcode			Public - Cell Means			Intern	
Income Year	With Work Limitation (dollars)	Without Work Limitation (dollars)	Ratio	With Work Limitation (dollars)	Without Work Limitation (dollars)	Ratio	With Work Limitation (dollars)	Without Work Limitation (dollars)	Ratio	With Work Limitation (dollars)	Without Work Limitation (dollars)	Ratio	With Work Limitation	Withou Work Limitati
	(1)	(2)	(1)/(2)	(4)	(5)	(4)/(5)	(7)	(8)	(7)/(8)	(10)	(11)	(10)/(11)	(13)	(14)
1980	22,307	34,418	0.618							22,571	35,186	0.618		
1981	22,808	34,423	0.663							22,898	34,694	0.660		
1982	22,108	34,101	0.648							22,215	34,334	0.647		
1983	22,159	34,488	0.643							22,251	34,834	0.639		
1984	23,133	35,950	0.643							23,135	35,950	0.644		
1985	23,240	36,823	0.631							23,777	37,181	0.640		
1986	23,553	38,328	0.615							23,744	38,867	0.611		
1987	24,774	39,207	0.632	24,774	39,207	0.632	24,109	38,029	0.634	24,943	39,815	0.626	24,963	39,79
1988	23,963	39,773	0.602	23,963	39,773	0.602	23,610	38,774	0.609	24,185	40,560	0.596	24,163	40,58
1989	24,818	40,595	0.611	24,818	40,595	0.611	24,409	39,495	0.618	25,148	41,717	0.603	25,153	41,74
1990	23,201	39,388	0.589	23,201	39,388	0.589	22,858	38,399	0.595	23,456	40,349	0.581	23,459	40,36
1991	24,175	38,758	0.624	24,175	38,758	0.624	23,517	37,825	0.622	24,337	39,548	0.615	24,392	39,49
1992	23,786	38,952	0.611	23,786	38,952	0.611	23,435	38,089	0.615	23,959	40,017	0.599	23,843	39,73
1993	22,836	39,065	0.585	22,836	39,065	0.585	22,411	38,285	0.585	23,143	41,473	0.558	23,141	41,39
1994	23,612	39,710	0.595	23,612	39,710	0.595	22,793	39,006	0.584	24,020	42,283	0.568	23,946	42,19
1995	24,437	42,313	0.578	24,093	40,425	0.596	23,580	39,178	0.602	24,445	42,302	0.578	24,840	42,28
1996	24,800	43,606	0.569	24,376	41,394	0.589	23,795	40,083	0.594	24,800	43,609	0.569	24,970	43,61
1997	25,328	45,014	0.563	24,730	42,465	0.582	23,872	41,229	0.579	25,328	45,013	0.563	25,039	44,96
1998	26,207	46,654	0.562	25,376	43,708	0.581	25,193	42,953	0.587	26,254	46,652	0.563	25,987	46,72
1999	26,852	46,946	0.572	25,970	44,869	0.579	25,790	44,325	0.582	27,005	47,959	0.563	27,437	47,82
2000	25,853	48,523	0.533	24,871	44,915	0.554	24,653	44,433	0.555	25,857	48,528	0.533	25,663	48,45
2001	25,501	48,251	0.529	24,458	44,321	0.552	24,396	44,112	0.553	25,388	48,276	0.526	25,625	48,37
2002	24,560	47,041	0.522	24,051	44,375	0.542	23,837	43,410	0.549	24,560	47,041	0.522	24,594	47,05
2003	24,646	46,832	0.526	24,056	44,380	0.542	23,970	43,721	0.548	24,646	46,832	0.526	24,640	46,73
2004	26,455	46,228	0.572	25,328	43,549	0.582	25,174	42,915	0.587	26,455	46,228	0.572	26,444	46,13
2005	24,587	46,784	0.526							24,587	46,784	0.526		
2006	25,381	47,223	0.537							25,381	47,223	0.537		

Source: Author's calculations using public-use (1980-1986) and internal (1987-2004) March CPS data

.**Table 4. Comparisons of the Share of Household Income by Income Source of Working-age Men with and without Work Limitations (1987-2006).**

	Own Labor Earnings			Own Social Security, SSI, Workers Compensation, and Disability Transfers			Own Interest, Dividends, and Rental Earnings			All other own non-labor income			Income of all me	
Income Year	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Without Work Limitation	Ratio	With Work Limitation	Wi W Lim
	(1)	(2)	(1)/(2)	(4)	(5)	(4)/(5)	(7)	(8)	(7)/(8)	(10)	(11)	(10)/(11)	(13)	(
1987	27.57%	58.21%	0.47	13.84%	0.16%	-	1.38%	1.73%	0.80	5.71%	1.51%	3.77	51.50%	38.
1988	27.72%	58.98%	0.47	15.04%	0.18%	-	1.72%	1.65%	1.04	5.10%	1.43%	3.57	50.42%	37.
1989	27.49%	58.06%	0.47	14.75%	0.16%	-	1.87%	1.77%	1.05	4.62%	1.36%	3.41	51.27%	38.
1990	25.47%	57.33%	0.44	15.13%	0.18%	-	1.72%	1.75%	0.99	4.49%	1.44%	3.12	53.19%	39.
1991	24.57%	56.71%	0.43	15.39%	0.19%	-	1.96%	1.63%	1.20	4.79%	1.63%	2.93	53.29%	39.
1992	23.71%	56.23%	0.42	15.59%	0.18%	-	1.23%	1.51%	0.81	4.44%	1.86%	2.39	55.03%	40.
1993	21.80%	56.68%	0.38	16.20%	0.18%	-	1.19%	1.61%	0.74	4.98%	1.64%	3.04	55.83%	39.
1994	22.75%	57.18%	0.40	16.63%	0.16%	-	1.96%	1.54%	1.27	4.50%	1.53%	2.94	54.17%	39.
1995	22.90%	57.40%	0.40	15.40%	0.19%	-	1.61%	1.72%	0.94	5.82%	1.50%	3.89	54.28%	39.
1996	23.75%	57.28%	0.41	14.74%	0.16%	-	1.88%	1.82%	1.03	4.84%	1.35%	3.60	54.79%	39.
1997	21.21%	57.15%	0.37	17.65%	0.16%	-	1.83%	2.08%	0.88	4.75%	1.21%	3.94	54.57%	39.
1998	21.34%	56.96%	0.37	14.98%	0.14%	-	2.33%	2.15%	1.08	4.71%	1.28%	3.67	56.64%	39.
1999	20.88%	57.22%	0.36	16.09%	0.15%	-	1.97%	2.38%	0.83	5.12%	1.19%	4.30	55.94%	39.
2000	20.33%	58.36%	0.35	17.10%	0.14%	-	2.28%	1.85%	1.23	4.97%	1.17%	4.24	55.32%	38.
2001	20.21%	57.79%	0.35	15.77%	0.15%	-	1.74%	1.69%	1.03	6.07%	1.25%	4.85	56.22%	39.
2002	18.74%	58.04%	0.32	16.66%	0.19%	-	1.59%	1.25%	1.28	6.37%	1.48%	4.32	56.64%	39.
2003	17.72%	56.81%	0.31	16.90%	0.16%	-	1.61%	1.41%	1.14	5.00%	1.41%	3.53	58.78%	40.
2004	17.87%	57.16%	0.31	17.11%	0.17%	-	2.00%	1.54%	1.30	5.64%	1.25%	4.52	57.38%	39.
2005	16.31%	56.62%	0.29	17.57%	0.18%	-	1.24%	1.61%	0.77	4.87%	1.23%	3.94	60.01%	40.
2006	17.15%	56.20%	0.31	17.07%	0.19%	-	1.69%	1.78%	0.95	4.32%	1.03%	4.19	59.77%	40.

Source: Author's calculations using internal March CPS data.

Appendix Table 1. Income Items Reported in the Current Population Survey

Name	Name in Public Files	Name in Internal Files	Definition
		Income Years 1975–1986	
Labor Earnings			
Wages	I51A	WSAL_VAL	Wages and Salaries
Self Employment	I51B	SEMP_VAL	Self employment income
Farm	I51C	FRSE_VAL	Farm income
Other Sources			
Social Security	I52A	I52A_VAL	Income from Social Security and/or Railroad Retirement
Supplemental Security	I52B	SSI_VAL	Supplemental Security Income
Public Assistance	I53A	PAW_VAL	Public Assistance
Interest	I53B	INT_VAL	Interest
Dividends Rentals	I53C	I53C_VAL	Dividends, Rentals, Trust Income
Veterans	I53D	I53D_VAL	Veteran's, unemployment, worker's compensation
Retirement	I53E	I53E_VAL	Pension Income
Other	I53F	I53F_VAL	Alimony, Child Support, Other income
		Income Years 1987–2004	
Labor Earnings			
Primary earnings	ERN_VAL	ERN_VAL	Primary Earnings
Wages	WS_VAL	WS_VAL	Wages and Salaries-Second Source
Self Employment	SE_VAL	SE_VAL	Self employment income -Second Source
Farm	FRM_VAL	FRM_VAL	Farm income -Second Source
Other Sources			
Social Security	SS_VAL	SS_VAL	Social Security Income
Supplemental Security	SSI_VAL	SSI_VAL	Supplemental Security Income
Public Assistance	PAW_VAL	PAW_VAL	Public Assistance & Welfare Income
Interest	INT_VAL	INT_VAL	Interest
Dividends	DIV_VAL	DIV_VAL	Dividends
Rental	RNT_VAL	RNT_VAL	Rental income
Alimony	ALM_VAL	ALM_VAL	Alimony income
Child Support	CSP_VAL	CSP_VAL	Child Support Income
Unemployment	UC_VAL	UC_VAL	Unemployment income
Workers Comp	WC_VAL	WC_VAL	Worker's compensation income
Veterans	VET_VAL	VET_VAL	Veteran's Benefits
Retirement - Source 1	RET_VAL1	RET_VAL1	Retirement income - source 1
Retirement - Source 2	RET_VAL2	RET_VAL2	Retirement income - source 2
Survivors - Source 1	SUR_VAL1	SUR_VAL1	Survivor's income - source 1
Survivors - Source 2	SUR_VAL2	SUR_VAL2	Survivor's income - source 2
Disability - Source 1	DIS_VAL1	DIS_VAL1	Disability income - source 1
Disability - Source 2	DIS_VAL2	DIS_VAL2	Disability income - source 2
Education assistance	ED_VAL	ED_VAL	Education assistance
Financial assistance	FIN_VAL	FIN_VAL	Financial Assistance
Other	OI_VAL	OI_VAL	Other income

Sources: Current Population Survey Annual Demographic File Technical Documentation, 1976-2002, Current Population Survey Annual Social and Economic Supplement Technical Documentation, 2003-2005.

Appendix Table 2. Public Use CPS Censoring Points for each Income Source in Dollars (1975–1986)

Income Year	Wages (I51A)	Self Employment (I51B)	Farm (I51C)	Social Security (I52A)	Supplemental Security (I52B)	Public Assistance (I53A)	Interest (I53B)	Dividends Rentals (I53C)	Veterans and Workers Comp (I53D)	Retirement (I53E)	Other (I53F)
1975	50,000	50,000	50,000	9,999	5,999	19,999	50,000	50,000	29,999	50,000	50,000
1976	50,000	50,000	50,000	9,999	5,999	19,999	50,000	50,000	29,999	50,000	50,000
1977	50,000	50,000	50,000	9,999	5,999	19,999	50,000	50,000	29,999	50,000	50,000
1978	50,000	50,000	50,000	9,999	5,999	19,999	50,000	50,000	29,999	50,000	50,000
1979	50,000	50,000	50,000	9,999	5,999	19,999	50,000	50,000	29,999	50,000	50,000
1980	50,000	50,000	50,000	9,999	5,999	19,999	50,000	50,000	29,999	50,000	50,000
1981	75,000	75,000	75,000	19,999	5,999	19,999	75,000	75,000	29,999	75,000	75,000
1982	75,000	75,000	75,000	19,999	5,999	19,999	75,000	75,000	29,999	75,000	75,000
1983	75,000	75,000	75,000	19,999	5,999	19,999	75,000	75,000	29,999	75,000	75,000
1984	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	29,999	99,999	99,999
1985	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	29,999	99,999	99,999
1986	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	29,999	99,999	99,999

Source: Current Population Survey Annual Demographic File Technical Documentation

Note: In the 1985 March CPS (income year 1984), six values for INCOMP exceeded $29,999 but were not top coded. In the calculations we did for this paper we corrected this error and top coded these values at $29,999.

Appendix Table 3. Public Use CPS Censoring Points for each Income Source in Dollars (1987–2006)

Income Year	Primary Earnings (ERN_VAL)	Wages (WS_VAL)	Self Employment (SE_VAL)	Farm (FRM_VAL)	Social Security (SS_VAL)	Supplemental Security (SSI_VAL)	Public Assistance (PAW_VAL)	Interest (INT_VAL)	Dividends (DIV_VAL)	Rental (RNT_VAL)	Alimony (ALM_VAL)	Child Support (CSP_VAL)
1987	99,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1988	99,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1989	99,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1990	99,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1991	99,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1992	99,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1993	99,999	99,999	99,999	99,999	49,999	9,999	24,999	99,999	99,999	99,999	99,999	99,999
1994	99,999	99,999	99,999	99,999	49,999	9,999	24,999	99,999	99,999	99,999	99,999	99,999
1995	150,000	25,000	40,000	25,000	49,999	25,000	24,999	99,999	99,999	99,999	99,999	99,999
1996	150,000	25,000	40,000	25,000	49,999	25,000	24,999	99,999	99,999	99,999	99,999	99,999
1997	150,000	25,000	40,000	25,000	49,999	25,000	24,999	99,999	99,999	99,999	99,999	99,999
1998	150,000	25,000	40,000	25,000	49,999	25,000	24,999	35,000	15,000	25,000	50,000	15,000
1999	150,000	25,000	40,000	25,000	49,999	25,000	24,999	35,000	15,000	25,000	40,000	15,000
2000	150,000	25,000	40,000	25,000	49,999	25,000	24,999	35,000	15,000	25,000	40,000	15,000
2001	150,000	25,000	40,000	25,000	49,999	25,000	24,999	35,000	15,000	25,000	40,000	15,000
2002	200,000	35,000	50,000	25,000	49,999	25,000	24,999	25,000	15,000	40,000	45,000	15,000
2003	200,000	35,000	50,000	25,000	49,999	25,000	24,999	25,000	15,000	40,000	45,000	15,000
2004	200,000	35,000	50,000	25,000	49,999	25,000	24,999	25,000	15,000	40,000	45,000	15,000
2005	200,000	35,000	50,000	25,000	49,999	25,000	24,999	25,000	15,000	40,000	45,000	15,000
2006	200,000	35,000	50,000	25,000	49,999	25,000	24,999	25,000	15,000	40,000	45,000	15,000

Source: Current Population Survey Annual Demographic File Technical Documentation (1988-2002), Current Population Survey Annual Social and Economic Supplement Technical Documentation (2003-2007)

Appendix Table 3. (Continued)

Income Year	Unemployment (UC_VAL)	Workers Comp (WC_VAL)	Veterans (VET_VAL)	Retirement 1st source (RET_VAL1)	Retirement 2nd Source (RET_VAL2)	Survivors 1st Source (SUR_VAL1)	Survivors 2nd Source (SUR_VAL2)	Disability 1st Source (DIS_VAL1)	Disability 2nd Source (DIS_VAL2)	Education Assistance (ED_VAL)	Financial Assistance (FIN_VAL)	Other (OI_VAL)
1987	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1988	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1989	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1990	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1991	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1992	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1993	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1994	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1995	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1996	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1997	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1998	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
1999	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2000	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2001	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2002	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2003	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2004	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2005	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000
2006	99,999	99,999	99,999	45,000	45,000	50,000	50,000	35,000	35,000	20,000	30,000	25,000

Source: Current Population Survey Annual Demographic File Technical Documentation (1988-2002), Current Population Survey Annual Social and Economic Supplement Technical Documentation (2003-2007).

Appendix Table 4. Internal CPS Censoring Points for each Income Source in Dollars (1975–1986)

Income Year	Wages (I51A)	Self Employment (I51B)	Farm (I51C)	Social Security (I52A)	Supplemental Security (I52B)	Public Assistance (I53A)	Interest (I53B)	Dividends Rentals (I53C)	Veterans and Workers Comp (I53D)	Retirement (I53E)	Other (I53F)
1975	99,999	99,999	99,999	9,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1976	99,999	99,999	99,999	9,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1977	99,999	99,999	99,999	9,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1978	99,999	99,999	99,999	9,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1979	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1980	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1981	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1982	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1983	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1984	99,999	99,999	99,999	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1985	250,000	250,000	250,000	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1986	250,000	250,000	250,000	19,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999

Source: Author's calculations using internal March CPS data.

Appendix Table 5. Internal CPS Censoring Points for each Income Source in Dollars (1987–2004)

Income Year	Primary Earnings (ERN_VAL)	Wages (WS_VAL)	Self Employment (SE_VAL)	Farm (FRM_VAL)	Social Security (SS_VAL)	Supplemental Security (SSI_VAL)	Public Assistance (PAW_VAL)	Interest (INT_VAL)	Dividends (DIV_VAL)	Rental (RNT_VAL)	Alimony (ALM_VAL)	Child Support (CSP_VAL)
1987	299,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1988	299,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1989	299,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1990	299,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1991	299,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1992	299,999	99,999	99,999	99,999	29,999	9,999	19,999	99,999	99,999	99,999	99,999	99,999
1993	999,999	999,999	999,999	999,999	49,999	25,000	24,999	99,999	99,999	99,999	99,999	99,999
1994	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
1995	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
1996	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
1997	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
1998	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
1999	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
2000	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
2001	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
2002	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
2003	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999
2004	1,099,999	1,099,999	999,999	999,999	50,000	25,000	25,000	99,999	99,999	99,999	99,999	99,999

Source: Author's calculations using internal March CPS data.

Appendix Table 5. (Continued)

Income Year	Unemployment (UC_VAL)	Workers Comp (WC_VAL)	Veterans (VET_VAL)	Retirement 1st source (RET_VAL1)	Retirement 2nd Source (RET_VAL2)	Survivors 1st Source (SUR_VAL1)	Survivors 2nd Source (SUR_VAL2)	Disability 1st Source (DIS_VAL1)	Disability 2nd Source (DIS_VAL2)	Education Assistance (ED_VAL)	Financial Assistance (FIN_VAL)	Other (OI_VAL)
1987	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1988	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1989	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1990	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1991	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1992	99,999	99,999	29,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1993	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1994	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1995	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1996	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1997	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1998	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
1999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
2000	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
2001	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
2002	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
2003	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999
2004	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999	99,999

Source: Author's calculations using internal March CPS data.