

**PARTICIPATION IN PUBLIC ASSISTANCE PROGRAMS, 1993-1997:  
A FIRST LOOK AT THE SURVEY OF PROGRAM DYNAMICS (SPD)**

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**Introduction**

The Survey of Program Dynamics (SPD) will provide policy makers with information on the effectiveness of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. The first public use file, the *SPD: 1<sup>st</sup> longitudinal file*, contains fully edited, consistently formatted and longitudinally processed core variables for calendar years 1992, 1993, 1994, 1996 and 1997. All persons interviewed in the first wave of the 1992 and 1993 panels of the Survey of Income and Program Participation (SIPP), and still being interviewed at the end of their panel, were eligible for the SPD sample. It is worth noting here that in phase three of SPD, SIPP non-respondents from the 1992 and 1993 panels were brought back into sample to increase the sample size and minimize the impact of sample attrition in the survey. The SPD was first conducted in the spring of 1997 by personal interview and was conducted each spring through 2002. The SPD sample consists of households from combining the 1992 and 1993 SIPP panels and only those people from the 1993 panel will have information for 1995. Thus, the SPD sample does not have reported data for 1995.

This limitation of missing data for 1995 can be overcome, but not without a cost. Linking the SPD file with the 1993 SIPP longitudinal file provides 1995 information on participation in public assistance programs, however, the sample size of the SPD longitudinal cohort is cut by more than a half – reducing the efficiency of any estimates because of the increase in the sample variance. Several alternatives are available to supplement missing data in the SPD: 1<sup>st</sup> longitudinal file. These include nearest neighbor imputation and forward/backward imputation. For this paper, however, using information available from the 1993 SIPP longitudinal file was the method chosen to supplement the 1995 missing data.

This paper discusses techniques and methods used to merge public use files to supplement missing data from the *SPD: 1<sup>st</sup> longitudinal file*. In addition, discussions are presented comparing and contrasting the two approaches when looking at participation in public assistance programs using the SPD data. First, an analysis

of public assistance program participation at two different points in time, 1993 and 1997, using the *SPD: 1<sup>st</sup> longitudinal file* sample is provided.<sup>1</sup> The findings are then presented from the SPD subsample that results from merging the *1993 SIPP longitudinal* and the *SPD: 1<sup>st</sup> longitudinal files* and assessing yearly transitions in the participation of public assistance programs, from 1993-1997.

In the following sections, a brief description of the data sources are provided followed by an overview of the methodology employed in constructing the subsample that resulted from linking the SPD and 1993 SIPP longitudinal files. In the concluding section a summary of the paper's findings and its implications for data users are discussed with respect to the two approaches.

**Data**

SPD: PRWORA not only ushered in major reforms in the welfare program, but also required the U.S. Census Bureau collect data to evaluate the effectiveness of the legislation: SPD. Seven years of data has been collected on the social, demographic, and economic characteristics of a national representative sample of the U.S. population to supplement the three years of data

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\* This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a Census Bureau review more limited in scope than that given to official Census Bureau publications. This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress.

<sup>1</sup> Participation in public assistance or welfare was determined by how the individual responded to the following question: "During 1993 (1997) did (you/Name) receive any Public Assistance?" – Yes/No. The unedited question attempts to get at identifying those individuals in receipt of cash assistance only, rather than the more inclusive definition focusing on participation in other social welfare programs such as Medicaid, Food Stamps, Supplemental Security Income and Energy Assistance.

available from the 1992 and 1993 panels of SIPP. The SPD will provide 10 years of data on program eligibility, access and participation, transfer income and in-kind benefits, detailed economic and demographic data on employment and transitions, income and family composition. For this analysis only individuals with a positive longitudinal weight were included.

1993 SIPP Longitudinal File: SIPP was designed to improve information on the income distribution and economic well-being of the population and on participation and eligibility for a wide range of government social welfare programs, such as Aid to Families of Dependent Children (AFDC), food stamps, social security, unemployment compensation, Medicare and Medicaid. The SIPP questionnaire contains two sections. The core section includes questions about income sources and amounts, program participation and labor force activity, which are asked on a four-month interview cycle, known as a wave. The topical module section, also asked in every wave, includes one or more modules on selected topics and for certain fixed topics, such as child care expenses, health and disability status, housing costs and financing, and child support.

The 1993 SIPP longitudinal file is composed of nine waves resulting in 36 months of data. The longitudinal file structure differs from that of the core wave files in that it contains just one record per person, while the core wave files contain one record per person per month. Because some attributes do not change over the course of a panel, such as race and gender, they appear once for each record. Within each record, the variables correspond to the information that was collected in the core interviews. While most of the core items are included in the longitudinal file, not all constructed variables in the core wave files are included and no items from any of the topical modules are included. For this analysis only individuals with a positive longitudinal weight were included.

## Methods

In order to account for missing data in the SPD: 1<sup>st</sup> longitudinal file, information regarding public assistance program participation for 1995 was extracted from the 1993 SIPP longitudinal file. The matching process across these two data sources can be briefly summarized as follows.<sup>2</sup>

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<sup>2</sup> The SAS code that was used in matching individuals across both data files is available

For both files only people with a positive longitudinal weight are included: for the 1993 SIPP longitudinal file, if  $pnlwgt > 0$ ; for the SPD 1<sup>st</sup> longitudinal file,  $spdlngwt > 0$ . From both longitudinal files, a linking variable must be created that uniquely identifies individuals so that their reported information from both files can be merged. For the 1993 SIPP panel, creating such a variable involves concatenating the panel year (1993), the household identification number (pp\_id) and the person-level identification number (pp\_pnum). Similarly, for the SPD longitudinal panel this variable can be created from concatenating the household identification number (pp\_id), the person-level identification number (pp\_pnum) and the entry address identification number (pp\_entry). The linking variable created in both files maintains respondent confidentiality, while allowing for creating a unique data file for analytical purposes.

Once the two files have been successfully merged and a subsample of people across the panels have been identified, the task then becomes one of manipulating the SIPP person-month data into a format comparable to the annual, retrospective information collected in SPD. Only those variables that correspond with person-months 24 through 35 were evaluated for this paper, focusing on participation in public assistance program for 1995. If an individual received any public assistance over these months the variable *pawyne5* was set to one (or yes), otherwise the variable was set to no (2) or not in universe (0) depending upon the conditions that resulted in negation or exclusion for the corresponding edited variable in SPD. Once the value for the 1995 variable was set it was possible to investigate transitions on-and-off the public assistance rolls from 1993-1997, as well as compare and contrast these findings to a point-in-time analysis looking at 1993 and 1997.

## Findings

### Two Points in Time: 1993 and 1997

Looking at individuals in 1993 and 1997 provides a cross-sectional view of those participating and leaving the public assistance rolls. Such an analysis provides a sufficient number of observations to formulate hypotheses regarding the effectiveness of welfare reform,

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upon request from the author and will be provided as an example in the forthcoming revision to the SPD Users Guide.

but does not allow a longitudinal look at transitions in public assistance program participation.

Approximately 5.8 million individuals aged 15 and over received public assistance in 1993. From this group an estimated 2.0 million reported receiving public assistance in 1997 and approximately 3.8 million reported not receiving public assistance in 1997. Similarly, between 1993 and 1997, approximately 2.1 million individuals who reported either not receiving public assistance or were not in universe for the question in 1993 reported receiving public assistance in 1997.

In regard to selected characteristics those who received public assistance in 1993 and 1997 were more likely to be female and a minority. Their age distribution is similar to the age distribution of those who reported receiving public assistance in 1993 but not receiving it in 1997. However, those who reported not receiving public assistance in 1993 but receiving it in 1997 were disproportionately much younger than those who reported receiving public assistance in 1993 and 1997 or those who reported receiving public assistance in 1993 but not receiving it in 1997.

The income of those who reported receiving public assistance in 1993 but not in 1997 was about one-third higher (in real terms) in 1997 (\$19,186) than in 1993 (\$13,923). In contrast, those who reported not receiving public assistance in 1993 but reported receiving it in 1997 experienced a 10.9 percent decline in their real median annual household income. Individuals who reported receiving public assistance both in 1993 and 1997 experienced an 8.8 percent drop in their real annual household median income (see Figure 1).

Factors that could explain changes in median income between 1993 and 1997 were also evaluated. These included such things as changes in an individual's employment or work status and their marital status. Changes were observed in the employment/working status for all groups, with the most notable changes occurring for those individuals who reported receiving public assistance in 1993 but not receiving it in 1997. These individuals experienced a statistically significant increase in full-time employment while seeing a decline in all the other categories of employment/work status (see Figure 2). Similarly, those who reported receiving public assistance in 1993 and in 1997 also experienced a statistically significant increase in all employment/work status categories and a subsequent decline in

those reported as being non-workers. It is not surprising, however, that individuals who reported not receiving public assistance in 1993 but reported receiving it in 1997 experienced their largest increase in the category of non-worker -- from 43.3 percent in 1993 to 57.2 percent in 1997.<sup>3</sup>

All groups experienced changes in reported marital status. The most notable change was for individuals who reported receiving public assistance in 1993 but not in 1997 with the share of this group who were married, spouse present increasing 13 percentage points between 1993 and 1997.

For people who reported receiving public assistance in 1993 and 1997, and for people who reported receiving welfare in 1997 but not in 1993, the proportion who were married, spouse present declined and the proportion who were divorced, separated, or married but spouse not present increased, respectively.

About three-fourths of those on public assistance in 1993 and 1997 reported receiving payments for twelve months in each of those years. Under one-half of those who received public assistance in 1993 but not receiving it in 1997 reported receiving payments for twelve months in 1993. More than just over half of those who did not receive public assistance in 1993 but reported receiving it in 1997 reported payments of twelve months in 1997.

#### **Those Who Left the Rolls**

Approximately 1.1 million individuals indicated that they received public assistance in 1993 and had never worked but no longer received public assistance in 1997 and were working. For this group, In 1993 over seventy-percent of these individuals were at or below established family-level poverty thresholds. For these same individuals in 1997, only slightly more than one-third is below established family poverty thresholds. About 1 in 5 of these individuals were in families whose income in 1997 was at least two and a half times the poverty level.

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<sup>3</sup> Throughout the following discussion, any reference to the difference in proportions and medians was tested according to established standards and practices of the U.S. Census Bureau. Testing for statistical significant assumes a 90 percent confidence-level and a correlation of 0.35 over time, unless otherwise noted.

### Participation in Social Welfare Programs

Examining whether moving off the public assistance rolls in 1997 affected participation in other social welfare programs, such as Medicaid, Supplemental Security Income (SSI), food stamps, and Energy Assistance, in 1993 nearly 99 percent of those who reported received public assistance also reported being covered by the Medicaid program, but by 1997 only about one-fourth (26.4 percent) of this group were covered by Medicaid. Similarly, over 90 percent indicated that they received food stamps in 1993, but only slightly more than one-fourth reported receiving food stamps in 1997. The proportion that reported receiving energy assistance dropped from approximately 23 percent in 1993 to slightly under 12 percent in 1997.

#### Where Were They in 1997

In 1997, an estimated 1.1 million individuals who received public assistance and were not working in 1993, were working and not receiving public assistance in 1997. More than one-third (36.6 percent) of these individuals were working in service occupations in 1997. Similarly, more than one-fourth (25.3 percent) were working in either administrative support or sales occupations, and nearly one-fifth (19.4 percent) were in health diagnosing occupations or working as operators, fabricators and laborers, machine operators, assemblers and inspectors.

#### Several Points in Time: 1993-1997

Merging the *SPD: 1<sup>st</sup> longitudinal* and the *1993 SIPP longitudinal files* resulted in a subsample of slightly more than 17,770 individuals representing a population of approximately 256.7 million individuals using 1993 adjusted population weights.<sup>4</sup> With regard to continuous participation, approximately 5.9 million

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<sup>4</sup> Re-weighting the reduced sample that resulted from matching the *SPD: 1<sup>st</sup> longitudinal* and the *1993 SIPP longitudinal files* used the following procedure. A ratio resulting from comparing those in full SPD longitudinal sample to those from the reduced sample was estimated. This value, (2.061), was then used to compute a new sample weight for the reduced sample based upon the SPD first longitudinal weight. Then for selected demographic characteristics, such as gender and race, (white and non-white), ratios were estimated comparing the full SPD longitudinal sample with the reduced sample. These ratios were then used to further adjust the weights for the reduced sample.

individuals were on the public assistance rolls in 1993 with nearly 83 percent also participating in 1994. Similarly, over two-thirds of the 6.3 million people participating in public assistance programs in 1994 also reported participation in 1995, over half participating in 1995 also participated in 1996 and over two-thirds participating in 1996 participated in 1997.

Between 1993 and 1994 approximately half a million more people moved onto the rolls than off and between 1994 and 1995 and 1996 and 1997 about an equal number of individuals moved off the rolls as on. The most notable change in participation in public assistance programs occurred between 1995 and 1996 with approximately 3.7 million more people leaving the rolls than entering them.

For those individuals from the match file, data from three distinct groups were analyzed; those who stayed on the public assistance rolls for 1993-1997; those who never were on the public assistance rolls from 1993-1997; and those who moved on and off the rolls between 1993-1997. Those individuals on the rolls for all years were younger, more likely to be female, as well as more likely to be a minority than either individuals who were not on rolls or moved on-and-off the rolls during this time period.<sup>5</sup> Similarly, the observed increase in (real) median income between 1993 and 1997 was not significant for those who stayed on the rolls, but is statistically significant for those who were not on the rolls, as well as those who moved on-and-off the rolls (see Figure 3).

Looking into factors that could increase household income, even though the increase in median household income was not significant for those on the rolls for all years, the increase in the those working full-time and part-time, full-year and the subsequent decline in the non-worker category is statistically significant. For those moving on-and-off the public assistance rolls between 1993 and 1997 the observed increase in the full-time work status and the decline in the non-worker category is significant. It is not surprising, however, that for those not on the public assistance rolls only the increase in the part-time, part-year employment and decrease in the full-time, part-year work status is statistically significant (see Figure 4).

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<sup>5</sup> The difference in proportions across the three groups for age, gender, and race/ethnicity is statistically significant at a 90 percent confidence-level.

Looking at changes in marital status, for individuals who stayed on the rolls the differences for all categories are not statistically significant. For the other two groups the changes in marital status over time is statistically significant: for those not on the rolls the changes in all categories is significant; for those moving on and off the rolls the increases in married, spouse present and spouse absent, as well as the decrease in the never married category is statistically significant.

The merged file does provide useful information at the aggregate level but any additional analyses are limited because of the increase in variance from the reduction in sample size. This trade-off of between additional information at the cost of less efficiency in the estimates is best seen when investigating issues that require a more focused use of the data. For example, an interesting question surrounding welfare reform is assessing individual outcomes for individuals who left the public assistance rolls and did not return. The merged file does facilitate such analyses and, moreover, allows for focusing on those who reported receiving public assistance and were not employed in 1993.

To further illustrate this trade-off an investigation of poverty ranking, continued participation in other social welfare programs and occupations are investigated for three mutually exclusive groups: those on the rolls during 1993-1995, but off the rolls in the subsequent years; those on the rolls for 1993 and 1994, but off the rolls from 1995-1997; and those on the rolls in 1993, but off the rolls from 1994-1997.

An estimated 1.6 million individuals indicated that they received public assistance in 1993-1995 but did not receive it in 1996 and 1997. Of this group over one-third were not working in 1993 but working in 1997 with over three-fourths (76.6 percent) having a family income less than 125 percent of their established poverty threshold in 1993. By 1997 this dropped to slightly over 41 percent, a statistically significant decline. Similarly, more than half a million individuals indicated they received public assistance in 1993 and 1994, but were off the rolls from 1995-1997, with one-third reporting not working in 1993, but subsequently working in 1997. In 1993, eight-out-of-ten reported a family income below 125 percent of their poverty threshold; however, by 1997 this declined only slightly more than 8 percent, a statistically significant change. Lastly, an estimated 630,000 individuals indicated they

received public assistance in 1993 but did not receive it in 1994-1997. Of this group, under 10 percent were not working in 1993 but were in 1997, and all reported that their family income was below 125 percent of their poverty threshold. By 1997 only slightly more than 57 percent were reporting this poverty ranking, but this change was not statistically significant.

Turning to the issue of continued participation in other social welfare programs after leaving the public assistance rolls, all three groups experienced statistically significant declines in Medicaid coverage and food stamps receipt.<sup>6</sup> When looking at the occupational distribution for those who left the public assistance rolls and were employed in 1997, 30 to 40 percent were employed in low-paying service-related occupations. In only the last group was the difference between the major occupational classification not statistically significant.

### Conclusion

The Census Bureau has conducted a nationally representative survey, SPD, which provides data to policy makers and researchers and provides a different perspective to understanding who makes it off the welfare rolls and what policy and program responses might better help those who do not. One shortcoming of the SPD longitudinal data is the lack of 1995 information and another is sample attrition. While it is possible to use the 1993 SIPP panel to supplement missing information, it does raise some new issues of concern – a decrease in sample size and an increase in sample variance.

Nevertheless, by using the *SPD: 1st longitudinal file* it is possible to investigate the obvious targets of welfare reform; changes in adult work, welfare receipt and household income. Between 1993 and 1997, those participating in public assistance programs in 1993 and 1997 experienced an 8.8 percent drop in their median (real) household income and were more likely to be younger, female, and a minority compared to those who never receive public assistance or moved on-and-off the public assistance rolls. On the other hand, those who received public assistance in 1993 but not receiving it in 1997 experienced an increase in

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<sup>6</sup> This finding was expected given that participation in public assistance programs is an automatic qualification for eligibility for Medicaid coverage and food stamps.

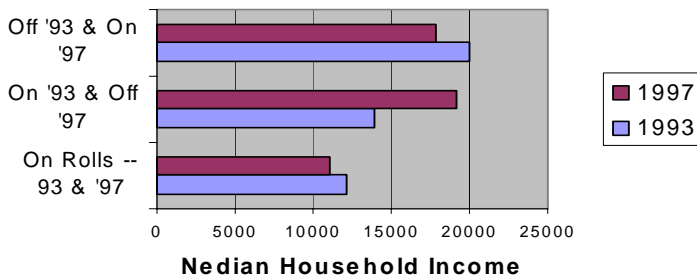
their employment status were less likely to be participating in other social welfare programs and their (real) median household income increased by one-third. The share of married, spouse present, increased 13 percentage points and while a considerable proportion were working in 1997, more than one-third were in low-paying service occupations. All proportional changes were statistically significant.

Turning to the merged file, individuals on the public assistance rolls for all five years were more likely to be younger, female and a minority. For this group, the change in median (real) household income between 1993 and 1997 was not statistically significant, whereas for the other two groups discussed the change was significant. At a more detailed level of analysis information gained from the merging comes at a cost. The prior discussion assessing outcomes

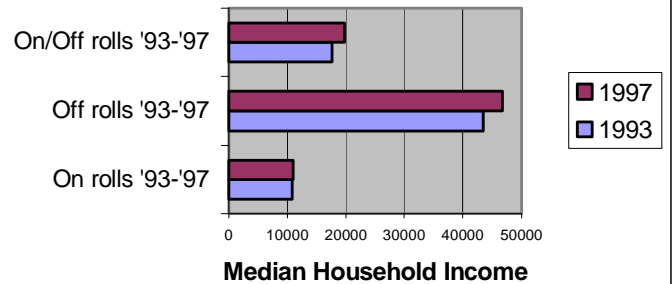
for individuals on the public assistance rolls and having been off the rolls for two, three and four years highlights the concerns that resulted from the merged file – a reduced sample size, an increase in sample variance and statistical insignificance.

While missing data is always a concern in any empirical analysis, in working with the *SPD: 1st longitudinal file* the issue of missing data can be overcome by merging the file with the *1993 SIPP longitudinal file*. As discussed above, supplementing missing data does raise other issues and concerns; a reduction in the SPD sample size and an increase in sample variance. On a more positive note, however, with future SPD releases more information will be available for the longitudinal cohort that will provide additional insights into the impact of welfare reform.

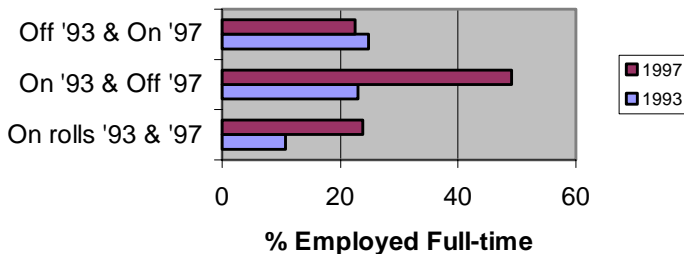
**Figure 1: Two Points in Time: Comparing Median Household Income By Public Assistance Participation**



**Figure 3: Over Time Analysis, Comparing Median Household Income by Public Assistance Participation**



**Figure 2: Two Points in Time, Full-time Employment by Public Assistant Participation**



**Figure 4: Over Time Analysis, Full time Employment by Public Assistance Participation**

