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The Lifecycle of the 47%

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Abstract

We assess the concentration and duration of zero tax liabilities and of transfer receipts, using data for households with ten to forty years of observations from the Panel Survey of Income Dynamics. We find that neither is strongly concentrated. Nearly 68% owe no federal tax in at least one year, approximately 78% receive some type of transfer in at least one year, and more than 58% receive transfers other than Social Security in at least one year. Of those who do not owe federal tax in any given year, 18% pay tax the following year, and 39% contribute within five years. Of those who receive transfers other than Social Security within a given year, nearly 44% stop receiving such transfers the next year, and more than 90% stop within ten years.

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In any given year, a substantial fraction of the U.S. population either does not pay tax or receives transfers—and in some cases both. The fact that 47% of Americans were estimated to pay no federal income tax in 2009 drew considerable attention during the 2012 presidential election cycle. Most noted was Republican candidate Mitt Romney's comment: "All right, there are 47% who are with him, who are dependent upon government, who believe that they are victims, who believe that government has a responsibility to care for them, who believe that they are entitled to health care, to food, to housing, to you name it. […] These are people who pay no income tax. Forty-seven percent of Americans pay no income tax."[1] Romney's comment led to a public debate about who contributes to society, who takes from government, and whether fiscal policy has created a class of dependent citizens. Since that election, policymakers of both parties have offered reform plans for the tax code, for tax rate progressivity, and for various social safety net programs like food stamps or welfare.

Is paying no federal tax or receiving transfer benefits symptomatic of a culture of dependency, where the federal government is in effect subsidizing the obsolescence of skills and labor force dis-attachment? The answer depends in part on how chronic is such status. Knowing how long these states persist and how they translate into lifetime tax burdens and benefit receipts can help inform concerns about the use and effects of these programs. This paper uses panel income data to assess how concentrated is the distribution of people with zero tax liability and of those receiving transfers. We ask whether such status includes many people for a small part of their lives, or only some people for most of their lives? Answering this question can help us understand the implications of our tax and transfer policies in the near and longer term.

Studies using annual data have detailed the characteristics of those who do not pay tax in a particular year, explaining that many are very low-income individuals, elderly, students, and service members stationed abroad. For those who work, specific tax provisions like the Earned Income Tax Credit (EITC) and the Child Tax Credit may eliminate income tax liabilities, but many of these individuals are still subject to payroll tax.[2] Greenstone and Looney (2012) analyze

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[1] For the full quote see http://www.newyorker.com/news/amy-davidson/mitts-forty-seven-per-cent-problem. This widely reported share of tax filers not owing federal tax is from the Urban-Brookings Tax Policy Center (TPC) Microsimulation Model estimates for 2009. For further background on the TPC estimate, see Williams (2009). As we discuss later, the TPC looks at "tax units" that differ from households in our PSID data.

[2] For example, Williams (2013) finds that two-thirds of tax units without federal income tax liability in 2013 incur payroll tax. Only 14% of Americans pay neither income nor payroll tax—two-thirds of whom are over age 65,

data from 2007 and show that most Americans paid more in payroll tax than in federal income tax. They found that only 22% paid neither federal income nor payroll tax. They also observe that lingering effects of the recession on incomes in 2009 made it easier for deductions and credits to offset tax liabilities of more Americans than is typical.[3] Aron-Dine (2012) also examines the distribution of income tax payments in 2007 but also considers payroll tax and excise taxes on gasoline, alcohol and tobacco. Taking all federal taxes into account, even the lowest fifth of households—whose incomes average roughly $18,000—pay 4% of income in tax. The next quintile—whose incomes average about $43,000—pay 11%, even after the EITC.

Analyzing 2010 data, the U.S. Congressional Budget Office (2013) found that both old-age transfers (Social Security and Medicare) and other transfers largely accrue to low-income households, although old-age benefits are less concentrated among the lowest income groups. CBO determined that households in the lowest quintile received 36.2% of total Social Security and Medicare benefits—an average of $14,200 per household. The middle quintile received 16.7%, and the highest quintile claimed 11.4% of old-age benefits. The bottom 40% of the income distribution receive the bulk of other transfers, a category that includes Supplemental Nutrition Assistance Program (SNAP) benefits, Medicaid and Children's Health Insurance Program benefits, and payments from Temporary Assistance for Needy Families (TANF). Households in the bottom quintile alone claimed 47% of such transfers, averaging $8,500. CBO's analysis also found that the bottom quintile in 2010 paid an average of less than $50 per household in income tax, despite after-tax-and-transfer incomes that averaged $30,800. Unsurprisingly, the top quintile paid the highest share of its income in tax, paying on average $58,900 in tax and retaining $181,900 of after-tax income.

These analyses all show that the lowest income households each year contributed little federal tax and received the overwhelming share of federal transfers. And they all examine tax liabilities in a single year—a snapshot that might not be representative of a person's typical circumstances or lifetime income. For example, a one-year snapshot may catch a person with low income and no tax but who eventually earns higher income and pays higher lifetime tax. Or

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retired, and have insufficient income to keep them on the tax rolls. Those remaining nearly all have very low income (earning less than $20,000 a year). Tax expenditures like the EITC zero out their liabilities.

[3] TPC, the originator of the 47% estimate, found that while roughly half of households failed to owe federal income tax during the recessionary years of 2008 and 2009 and even after the official end of the recession in 2010, the share was only 40% in 2007.

it may catch an individual during an idiosyncratically bad year in which he or she fails to owe tax due to unusually low income or unusually large but temporary medical expense deductions. In other words, a one-year window does not tell us whether and when these individuals start paying tax again or when they leave social safety net programs.

Heim *et al* (2014) assemble a 1-in-1000 random panel sample of individuals from the IRS Compliance Data Warehouse universe of tax return for 2001-2011. From these data that reflect actual realizations, they find that 50.9% of tax units had no positive federal tax liability in 2009. While Heim *et al* have the huge advantage of using actual tax return data for a full ten years, we turn to PSID data for three reasons: (1) the PSID has a longer window of 40 years; (2) we can use the PSID to calculate how long individuals receive transfers before a transition out of that dependency; and (3) the PSID affords rich demographic detail not on tax returns. These three advantages of the PSID come with certain disadvantages, however, as discussed below.

Here, we use these panel data to follow individuals over time and to track how they move in and out of states where they draw benefits or stop paying tax. This type of panel analysis can help us understand whether government policies are leading to chronic non-contribution and dependency, or whether the insurance aspects of the progressive federal income tax and social safety net are providing temporary assistance to individuals who have temporarily low income.

Examining tax liabilities and transfer receipts for a long time rather than for a single year matters for three main reasons. First, a lifetime or multi-year examination better accounts for social mobility. The social safety net and progressive tax system are partly intended to facilitate upward mobility. If low-income individuals receive benefits for some years but then move up the income distribution and no longer receive benefits, the incidence and implications of these subsidies are very different from a situation where the same individuals remain at the bottom of the income distribution and receive transfers for most of their lives. Second, a longer time horizon can account for the social insurance role of both the progressive federal tax and transfer system. In effect, positive tax years may represent payments of insurance premiums to cover some bad years with no tax liability and with transfer receipts. Finally, some benefits and tax provisions themselves have lifecycle patterns, making a long-run assessment of liability and transfer receipt more meaningful. Transfers like Medicare and Social Security are formally targeted to older individuals. Others target households with children, including AFDC or TANF (cash welfare), SNAP (food assistance) and tax provisions like the EITC and Child Tax Credit.

As families enter and exit these programs, their transfer receipts and taxes may rise or fall.

The long panel of data provided by the PSID allows us to take an expansive look at household tax status and benefit take-up and how they evolve over as many as 40 years. To be sure, both tax and transfer rules changed during this period, and we are unable to parse changes in rules from the effects of changes in household incomes. Instead, we just document changes in each household's tax paid or transfers received. We find that many households at some point do not owe federal income tax or do receive public transfers.[4] About 68% of PSID households owe no tax in at least one year. Roughly 78% receive some type of transfer, and more than 58% receive a transfer other than Social Security in at least one year. Social Security transfers are much larger than other transfers and are of course concentrated among the elderly.[5] Households with heads under the age of 30 are the most likely to receive transfers other than Social Security. Not owing tax is much more common among those of retirement age and those very young, compared to those who are middle-aged. Non-taxpayer status includes roughly 21.6% of those under age 25 and 13.3% of those between 25 and 55, but 49.7% of those over age 55. Of all those who pay no tax, more than 18% pay tax the following year, and nearly 47% pay tax within ten years. Of those receiving only transfers other than Social Security, 44% stop receiving such transfers the following year, and more than 90% stop within ten years.[6] It is not the case that a static set of households never pays tax or consistently receives public transfers. Many find themselves not paying tax or receiving public benefits in at least some years. Such statuses appear to be transitory for many households, though they persist for others.

The first section below describes the panel data used to assess transfer receipts and tax payments. Section II examines who receives benefits and who pays no federal income tax. Then Section III details how individuals move between states of paying and not paying federal income and other taxes, and how they move in and out of transfer receipt status. Section IV concludes.

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[4] We do not include Medicare or Medicaid services in our analysis of transfers, as the PSID does not provide a dollar value for publicly provided medial services received.

[5] In the PSID, Social Security transfers include not only old age insurance but also disability insurance through social security (which accounts for an increasing share of social security payments in the time period of this study).

[6] These durations partly reflect time limits on benefit receipt for programs such as cash welfare and SNAP. Time limits differ by state and even with states, as some individuals qualify for waivers. But they are part of the design of safety net programs, so they help determine the degree of dependence the system affords potential recipients.

I. Data

To investigate how chronically individuals face zero income tax liabilities or receive transfers, we require data that follow the same individuals over time. We rely on data from the Panel Survey of Income Dynamics (PSID), which follows individuals and their spouses for many years, providing a wide (though not complete) view of their lifetime earning and income.[7] The PSID began following families in 1968, and by 2010 it covers approximately 8,000 families.[8] Only members of original PSID families are assigned weights, so our weighted analysis examines only households that include original sample members.[9] As the children of original families leave home and form new households, they are added to this PSID sample and followed along with any spouses they marry and children they have.[10] The number of observations varies by year due to aging, mortality, and marriage. By 2010, only 2,234 households remain in this subsample, but we use all available data for all such households available in each year between 1970 and 2010.[11] The data are annual until 1996. Starting in 1998, the survey become biennial, and the data describe only even-numbered years. Over the entire 40-year period, we tabulate an average of 22.2 years of data for each of 4,562 households (101,273 observations).[12]

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[7] The PSID began in 1968 with a nationally representative sample of roughly 18,000 individuals from 5,000 families. These individuals and their spouses and descendants have been followed continuously, with data collected every year until 1997 and then every other year. Collected data include details regarding employment, income, wealth, heath, marriage, childbearing, education and other topics. Data collected in a given year describe income and characteristics of the previous year.

[8] Observations are weighted by their individual weights in each year. These weights are calculated to account for differential sampling rates, mortality rates, non-response rates across demographic groups, and changes in family composition. The resulting cross-sections are representative of 1968 America as it evolved through following years, excluding Alaska and Hawaii. The weights themselves do not attempt to account for immigration since 1968.

[9] In 1990, the PSID added a Latino special sample. As in most longitudinal studies using the PSID data, we exclude this special sample because of its limited data and the lack of weights.

[10] Though spouses are followed, they are considered non-sample family members if they divorce or separate from original sample members and have a weight of zero. Non-sample family members include anyone who joined the study through marriage, cohabitation or as the child of a non-sample member. Sample members are members of a household that was interviewed in the first wave in 1968, were born to an original 1968 sample family, or moved out of a first wave family and formed a new family.

[11] All references to years in this paper refer to years described by the data, not the reporting year. For example, 2010 data describe incomes in 2010 that are reported in the 2011 PSID.

[12] Because the PSID became bi-annual after 1998, a household can only have a maximum of 35 observations between 1969 and 2010 (PSID years 1970 to 2011). Sample members may have fewer than 35 observations if they enter the sample after 1969, leave the sample due to death, divorce or attrition, or if they were not interviewed in a particular year. Because of our interest in transitions, imputing their behavior is not appropriate. Selection effects may occur, but we do not use these data to estimate regression coefficients.

For each household year, we draw variables describing income, transfers, and household characteristics. The key demographic variables collected are age, race, and highest grade completed. All forms of earned and asset income and all public transfers including social security are tracked for household heads and their spouses. Particularly early in the sample period, data for household heads are more detailed, accurate and complete than for other sample members. Nonetheless, our use of aggregate income and basic demographic information means we are able to construct consistent income and other variables. Please see the Data Appendix for more detail on how we construct consistent measures of earned and asset income.

We drop household-year observations if income or demographic data are missing. We limit the sample to individuals who are at some point a household head or spouse, since extensive income data are mainly gathered for these individuals.[13] Data are excluded prior to 1970, when data completeness improved markedly (particularly for variables describing the income of wives). We restrict our sample to households with at least ten years of data. Using the GDP deflator, economic variables are inflated to 2011 dollars. Our unit of analysis is the household. The PSID designates males as household heads, and their wives as spouses; a female is only a household head when unmarried. Of the households in the sample, 74.9% are male headed—73.4% of whom are married—while 25.1% are female headed.

Prior to 1986, the PSID reported only total transfers received by the household head and spouse. These transfers are reported separately for the head and spouse beginning in 1986, but we sum these transfers in later years to construct a measure of total transfers that is comparable across all years. As in Fullerton and Rogers (1993), transfer income here consists of payments from Aid to Families with Dependent Children (AFDC), or in later years Temporary Assistance to Needy Families (TANF), Supplemental Security Income (SSI), Unemployment Insurance (UI) and other welfare payments. In some tabulations, as indicated below, we include Social Security benefits as well. Roughly 30.3% of the pooled sample receives transfers, including Social Security benefits; the fraction falls to 10.6% when Social Security payments are excluded.

Our assessment of the prevalence and duration of zero tax liability among PSID households requires constructing separate measures of labor and asset income, since some asset income is tax-advantaged at the federal level. From the various components of earned income,

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[13] We do not count the incomes of children when determining total income for the tax calculations. We also drop household heads under the age of 18.

we construct a consistent measure of total head and spouse labor income that excludes all returns from capital ownership. It includes the labor part of business income in addition to wages and salary plus overtime and bonuses. Asset income includes investment income such as dividends and rent, the asset portion of business income, and all returns from farming, market gardening, and roomers and boarders.[14] Further details can be found in our Data Appendix. From these income measures and household information regarding marital status and number of dependents, we calculate tax liabilities using TAXSIM, the National Bureau of Economic Research (NBER) simulation program for calculating liabilities under U.S. federal and state income tax laws.[15] While TAXSIM can calculate a household's federal income tax for any year after 1960, which covers our full sample period, it can only provide state tax calculations after 1976. Thus, for consistency across all years, we disregard state taxes.[16] The PSID does not report information regarding mortgage payments, local taxes, or other tax-deductible expenses. Therefore, we assume that all households take the standard deduction. Since some households would have found itemizing advantageous, we may overestimate tax burdens and overstate the fraction of the sample paying taxes (if low income families could wipe out their tax liability by itemizing rather than taking the standard deduction). This bias could impact our transition estimates if during low-income years household make greater use of itemizing. This concern is somewhat mitigated by the fact that the 70% of households who itemized in 2010 were largely drawn from the top income brackets.[17] Because the various forms of asset income such as dividends and capital gains are not separately identified in most years, they are grouped together for all years. Long-

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[14] For farm income and roomers and boarders income, the PSID does not separate labor and asset components after 1994, so we had to aggregate those components in earlier years to be consistent across years. The aggregate for each household-year could have been labeled labor income, but we have chosen to call it capital income. As such, we apply capital income tax rates to this income when determining household tax liabilities.

[15] For further detail please see http://www.nber.org/~taxsim/.

[16] A post-1976 sub-sample could be used in TAXSIM to analyze state income taxes, which tend to be more regressive than federal taxes, but such analysis would miss the fact that other states without an income tax use other taxes with their own distributional effects. In addition, while we use PSID calculations of federal tax for some years to check our TAXSIM calculations of federal tax, the PSID undertakes no comparable calculation of state taxes for us to check. In any case, our goal here is to address questions about federal income tax policy, not all tax policies.

[17] Harris and Baneman (2011) estimate that itemizers constitute 3.9% of taxpayers in the 0% bracket and 16.2% of taxpayers in the 10% bracket. These rates are much lower than the 70.9% of taxpayers in the 33% bracket and the 89.4% of taxpayers in the 35% bracket. Nearly 20% more taxpayers itemized prior to 1986 than afterwards, because the Tax Reform Act of 1986 increased the value of the standard deduction. Still, the decision to itemize was more relevant for higher taxable income groups than for others.

term capital gains are more tax-favored than dividends, and we wish to err toward conservative estimates of tax liability, so we treat this sum as if it were all long-term capital gains.

Until 1990, the PSID tracked their own assumptions about tax payments using income inputs and their own algorithm to determine the tax. These PSID calculations can be used broadly to test our assumptions about tax variable constructions in our TAXSIM tax liability calculations. For the 21 years the PSID provides their calculation of tax liability, the PSID tax liability data show that 23.09% of households have zero federal tax liabilities. By comparison, our assumptions and TAXSIM-based calculations for the same years suggest that 23.36% of households face zero tax liabilities. The similarities of these estimates suggest that our TAXSIM-based tax liability estimates are similar to the PSID's best effort. We therefore use our TAXSIM calculations for consistent assumptions about taxes over all years 1970 to 2010.

Table 1 provides summary statistics for the pooled sample of 101,273 observations. It reports that the average head is roughly 47 years old, with an inter-quartile range from 34 to 58 years. Mean household annual labor income is $49,654, while the median labor income is only $37,639 and the 25th percentile is $10,082. Transfers are received by 30.3% of the pooled sample. The average total transfer over all household-years is $3,359, while the average transfer from programs outside of social security is only $501. Among the 10.6% of the sample that receives transfers from general social safety net programs (not social security), the mean transfer is $4,707. The mean social security transfer among those receiving social security is much higher, $13,426 (not reported in the table). Demographically, 85% of household heads are white, roughly a quarter are female, and 55% are married at the time of the survey.

Based on the same pooled PSID sample of all household-years from 1970 to 2010, we find that 25.1% have zero federal income tax liabilities or receive a net payment from the IRS (also reported in Table 1). This number is quite different from the 47% quoted during the 2012 election season, and so in Table 2 we describe alternative data sources, calculations, and interpretations. In Table 2, the first row explains that the 47% quotation in 2012 referred to a study published by the Urban-Brookings Tax Policy Center (TPC), as described in Williams (2009). This TPC estimate was a projection drawing upon data from the 1999 Public Use File produced by the Statistics of Income (SOI) Division of the Internal Revenue Service (IRS). These 1999 micro data are "aged" using forecasts from CBO and the Census Bureau. Those who do not file returns (non-filers) are added through a statistical match with the March Current

Population Survey (CPS), a monthly survey of roughly 60,000 U.S. households.[18] Thus, the TPC estimate was not based on hard data describing a past year's realized tax burdens but was instead a forecast made in 2009 using the best data available. The analogous TPC estimate for 2010 is 45.0%, as reported in the second row (for comparison with PSID data available only for 2010). Importantly, the TPC estimates consider tax units, while we can only examine households (since the PSID does not report any information on how individuals in a household file taxes).

Because the PSID was biennial after 1997, and data are no longer collected in odd years, we calculate the PSID's share of households with zero tax liabilities in 2010 rather than 2009. While 25.1% pay no income tax in our pooled sample for all years, the third row of the table shows that 38.0% do not pay tax in the low-income recession year of 2010. This 38.0% number is closer to the 45% of TPC, but a substantial difference remains.[19] For further comparison, the next two rows of Table 2 report tabulations from the 2010 and 2009 March CPS. These rows show that 38.6% paid no income tax in 2010 (and 38.3% in 2009). These percentages are quite similar to our 38.0% estimate from the much smaller 2010 PSID sample. Yet the PSID sample differs systematically from a representative cross-section of current U.S. residents like the CPS. Because our sample does not encompass changes in the U.S. population since 1968 (e.g. due to immigration and births), our sample is older and more likely to be white.

As shown in the final row of Table 2, Heim *et al* (2014) draw on administrative IRS data to find that 50.9% of tax units paid no federal income tax in 2009. Both this estimate and the TPC estimate exceed our PSID estimate because of differences in the demographics of individuals covered by the data, adjustments made to the data, and the fact that the IRS and TCP data analyze tax units while we can only examine households. The IRS administrative data may not include undocumented workers who are less likely to pay tax, but they include expatriated workers who likely have income high enough to owe tax. Survey data exclude institutionalized individuals such as prisoners, nursing home residents, or those housed in armed forces barracks, those who typically have lower income and are less likely to owe tax. The adjustments Heim *et al* make to account for these non-filers, like those made by TPC, may capture these populations,

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[18] http://www.census.gov/programs-surveys/cps.html

[19] The 25.1% not paying federal income tax in the pooled share that includes data from earlier decades smaller than the 38.0% we calculate for just 2010, partly because of the recession and at least partly because the recent expansion of the EITC and personal exemptions have zeroed out their tax liabilities (or left them with net tax credits).

while the PSID wholly misses them, leading both Heim *et al* and TPC to higher estimates of the percentage not paying tax. Perhaps more importantly, the PSID data only allow us to conduct our analysis at the level of the household rather than the tax unit, which can affect calculations of who owes tax and who does not. For example, if a household consists of two tax units, only one of which owes federal tax, then our analysis based on households would say this observation owes tax, while Heim *et al* and TPC would find that half of these tax units owe tax.

Whatever the percentage of households paying no federal income tax, only a subset of those households pay neither income tax nor payroll tax. This share is reported in Greenstone and Looney (2012), who draw on data from the March 2008 CPS cross-section describing 2007 incomes. While they find that 22% of tax units owed neither federal income nor payroll tax, we find in our PSID sample that 22.4% of households in 2008 and 20.3% of households in 2006 owed neither tax (based on our calculation of payroll tax from PSID reported wage income). Since young students and the retired are most likely not to be paying tax, Greenstone and Looney also focus just on middle-aged households and find that the share of non-contributors falls to 16%; in our PSID sample, these shares are 8.0 and 8.9% for 2008 and 2006, respectively. The difference between our figures and those of Greenstone and Looney may reflect the fact that our PSID sample starts with households that the PSID started to follow in 1968 (plus those who join or leave those households). This selection bias is the cost of our decision to track the same individuals for 40 years to see how they enter and exit tax rolls and transfer status.

Our PSID sample includes those from the original sample started in 1968, plus those added as spouses, children, and new families started later by those children, but the resulting sample by 2010 is surely not representative of the U.S. population of 2010. Therefore, Table 3 compares variables for the PSID sample in 2010 to the March 2010 CPS. The average head of household in our PSID subsample was 59.4 years old in 2010, while the average CPS sample head was only 50.4; median ages show a similar gap. Our PSID sample is older because PSID weights are only created for members of original 1968 PSID sample households. By 2010, the youngest sample member is 34 years old. Looking only at household heads 34 years and older, the CPS sample average age rises to 55.9, older but still not as old as our PSID sample.

Bear in mind that our PSID sample must be older, simply for us to be able to observe individuals for a large number of years – in order to see who moves in and out of taxpaying status, and to see who moves in and out of transfer recipient status. As a consequence of this age

difference, our sample also has other differences. The PSID sample members in 2010 have higher labor income on average, $56,843, compared to CPS sample members at $45,205, suggesting that PSID income distribution is right-skewed (though median incomes are closer together, $30,000 for the PSID versus $27,000 for the CPS). CPS families have lower federal tax liability on average ($6,315 versus $9,677 for PSID households) but very similar liability at the median ($1,930 versus $1,913 for PSID). For payroll tax, the average and median PSID households pay twice the amount of the respective CPS households. As discussed above and reported in Table 2, based on total income, 38.0% of PSID households and 38.6% of CPS households failed to owe federal income tax in 2010. Yet PSID households receive larger average transfers ($7,311) than CPS households ($4,851). This difference is mirrored in the average for transfers other than Social Security. PSID households on average draw $634 in such benefits, while CPS household collect only $435 in such transfers.

Demographically, PSID households are indeed more frequently white, 83.2% versus 80.4%. Our PSID household heads are 7.9 percentage points more likely to be married and 24.3 percentage points less female.[20] These demographic differences are an artifact of the fixed nature of the PSID sample. Our PSID sample is derived from a 1968 sample of households, so it does not reflect all of the demographic changes the country overall has experienced since then due to immigration and births.[21] Moreover, sample attrition may differ by race and income.

Taken together, the tabulations reported in our first three Tables make clear that while the PSID and current U.S. cross-section have some similarities, they also have real differences. The PSID sample is generally older and on average higher income, as more sample members are in their prime earning years. The share of PSID households that do not owe federal tax in 2010 is strikingly similar to the share estimated from 2010 CPS data, despite these substantial demographic differences. Perhaps the PSID's greater inclusion of older household heads who pay no federal tax on their relatively low retirement income is offset by the inclusion of younger families in the CPS who also have low tax liabilities. By offering a window of up to 40 years

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[20] For any married couple, the PSID defines the head as male, but we track the income and transfers of their female spouses as long as they are married or even after divorce if the female spouses were original sample members.

[21] As the children of original sample households form their own households, they likely marry non-sample members who may reflect some of the general demographic changes the U.S. experienced over this period. Nonetheless, non-sample spouses are small in number compared to the stock of original sample members, so this impact is muted.

into the lifetime incomes of a particular sample of American households, the PSID by structure simply cannot be a representative cross-section of the current U.S. population. It does, however, provide a uniquely long view of the role of fiscal policy in the incomes of U.S. households.

III. Who Pays In and Who Takes Out?

We begin our analysis by examining who receives transfers or pays no federal income tax at any point during their years in the sample.[22] This analysis is based on the pooled sample of PSID data. Prior studies have often relied on a single cross-section of data. Heim *et al* (2014) use a ten-year panel of tax return data to examine the dynamics of tax liabilities, and their analysis draws on more accurate measures of income and tax variables than our estimates based on PSID income measures. The PSID, however, affords us the opportunity to look at a much longer, 40-year, time-horizon, and to look at transfers. The longer period of time allows us to see how many households experience intermittent negative income shocks or more lasting low income or high tax credit events that lead them to owe no federal tax, or to receive transfers.

Because the PSID includes only a few thousand individuals in any given year, any meaningful statement regarding how zero tax liability or benefit receipt varies by age or family composition must pool observations across years. We therefore use different years and different tax and transfer regimes when we report who receives transfers, the size of these transfers, and tax status. A person with an unchanged income level may have qualified for benefits in one year but then become ineligible later due to changes in policy. Similarly, the threshold level of income where an individual has a positive tax liability has changed over time due to changes in the bracket structure as well as changes in tax rules including the EITC. For comparison with other cross-section data, we also provide tabulations for just the most recent PSID year, 2010.

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[22] The question of who gains or loses from tax and transfer policy is a question of economic incidence, while the PSID measures represent statutory incidence. To translate the data into measures of economic incidence, we employ common assumptions also used by the Congressional Budget Office, the Department of Treasury, the Joint Committee on Taxation, and TPC. We assume that individual taxpayers bear the economic burden of income and payroll taxes. Analogously, in our household analysis of PSID data, we assume that each household bears the economic incidence of any taxes they owe, and accrues the economic benefit of any transfers received. Empirical evidence reported in Gruber (1997) confirms the assumption that payroll tax burdens fall entirely on the individual. Kubiak (2004) and Leigh (2010) suggest that employee wages fell in reaction to tax cuts and expansions of the EITC, though they do not establish that workers bear the full economic incidence of income tax changes. Although local prices might react to transfer generosity, we assume that individuals enjoy the full economic benefit of any transfers they receive.

We begin by investigating the age distribution of transfer benefit receipt in the pooled sample. Figure 1 plots the share of the sample receiving any government transfer, with and without including Social Security benefits, by household head age, for all years 1970 to 2010. The difference between the blue and red bar heights for any age is the share receiving only Social Security transfers. This figure shows that transfers markedly increase between age 62, the early entitlement age for Social Security, and age 65, the historic normal retirement age, with the increase entirely attributable to more individuals receiving Social Security retirement benefits.[23] Only 27.3% of 61 year olds receive transfers, with 9.7% receiving transfers other than Social Security. The share rises to 40.9% at age 62, with 9.3% receiving transfer other than Social Security, and it jumps to 79.5% at age 65, where the share receiving transfers other than Social Security actually declines to 6.2%. More than 96.5% of those above age 70 receive government benefits of some kind.

Interestingly, older and younger households receive transfers other than Social Security and Unemployment Insurance at similar rates.[24] Of households headed by someone under the age of 60, roughly 4.3% receive some type of transfer other than Social Security and unemployment insurance (UI); the share rises only to 4.6% for households with a head age 60 or older. Consideration of UI receipt changes these rates considerably. Households with heads younger than 60 years receive some kind of transfer other than Social Security in 11.8% of observation years. Only 6.8% of households with heads 60 or older receive such transfers. UI benefits of course accrue only to working-age individuals; still, the impact of including these transfers is substantial.

Figure 2 displays the same information but for 2010 only. We show these data from 2010 to reflect both more recent economic conditions and more recent fiscal policy, and because this year better approximates the 2009 year relevant to Romney's 47% comment. Because we are examining just one year, the data are too sparse to examine each age separately, so we group the data into 10-year bins. Because the original sample has aged since the inception of the PSID, the

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[23] Any age mentioned here refers to the age of household head.

[24] Transfers other than Social Security include the following cash transfers: AFDC/TANF, Supplemental Security Income, Unemployment Compensation, and Other Welfare Income (as defined by the PSID). The PSID does not delineate what comprises "Other Welfare Income", but since no valuation methods are disclosed we presume it consists of cash transfers and not in-kind benefits.

data for 2010 have no original sample individuals below the age of 32. Despite the age truncation, however, the data for both 2010 and prior years generally show that households with younger heads are more likely than households with older heads to receive transfers and that older households receive transfers other than Social Security at similar rates. Transfers are, however, more common in 2010 than in prior years among younger households. The 20.4% of households with heads younger than 60 that received some type of transfer in 2010 is larger than the 15.8% that receive such transfers in the full sample. In this most recent year, 2010, more families with heads younger than 60 years old received transfers other than Social Security as well. In 2010, 13.2% of households with heads under age 60 received benefits from social safety net programs other than Social Security, compared to 11.8% of the pooled sample of prior years. These higher rates of transfer receipt in 2010 relative to the full sample are likely related to changes in the provisions of transfer programs and possibly lasting economic weakness following the 2008 financial crisis. A nearly identical share of households with heads 60 years or older received such transfers (6.7% in 2010 versus 6.8% over the whole sample period).

All remaining figures are based again on the pooled sample. Not only does the rate of transfer receipt increase markedly after age 60, but Figure 3 shows that the mean size of government transfers increases as well. This figure plots average benefits by age for households that receive some type of transfer. Older households received markedly larger transfers, largely due to Social Security. While non-Social Security transfers comprise the bulk of transfers for households with heads under 30, Social Security, which includes Social Security disability payments, overtakes other programs as the source of the majority of benefits received by those age 58 and over. Certain individuals in the groups aged 37 and 58 have unusually large transfers, leading to high average transfer receipts. These outlier observations, likely due to reporting errors, would bias regression coefficients but have no broader impact on the tabulations on which we focus. Conditional on receiving government benefits, those under the age of 60 receive an average transfer of $6,744, while those 60 and older receive annual benefits of $14,032 on average.

Together Figures 1, 2 and 3 make clear that the bulk of transfer dollars go to older individuals, and Social Security comprises most of these transfers.[25]

Figure 4 shows the fraction of the pooled sample in each age category not paying tax. Much like the transfer distribution, having a zero tax liability is much more common among those who are past retirement age and those who are very young, compared to those who are middle-aged, echoing the analysis of data from 2001 to 2011 by Heim *et al* (2014). Roughly 21.9% of those under age 25 and 13.3% of those between 25 and 55 are not taxpayers, while 49.7% of those over age 55 do not owe federal income tax. Interestingly, we see an increase in the fraction of the sample who do not owe federal tax at late middle-age relative to households with younger heads. As individuals age into their mid-to-late 50s, perhaps their ability to take advantage of tax expenditures offsets their tax liabilities at an increasing rate.

Age is not the only key demographic determinant of benefit receipt or tax liabilities. Whether or not an individual owes federal income tax or receives federal transfers also varies with the number of dependent children in his or her home. Many cash transfer programs such as TANF target families with minor children. Of course, the number of allowable personal exemptions also increases with family size. Figure 5 plots household transfer receipt rates and the frequency of zero tax liabilities by the number of dependent children in the household. Social security transfers are excluded, to isolate transfers that are income-dependent. The sample here is limited to those under age 62. About 11.8% of this pooled sample of households without children pay no federal tax, and 9.7% of childless households receive transfers other than social security.[26] Of households with one or two children, about 16.5% do not owe federal income tax, and about 13.4% have receive transfers other than social security. Not counting UI, these rates fall to about 5.8% for these households.

The largest families, those with four or more dependent children, have the highest rate of zero tax liabilities, a result that can be explained at least partly by their higher than average number of personal exemptions. Transfer receipt rates also increase with the number of children, as we would expect from the design of many welfare programs and the fact that child poverty is

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[25] Of the nearly 31,000 household-year observations that receive transfers, Social Security accounts for more than 63% of their transfers on average.

[26] Only 2.4% of households without children receive a transfer other than Social Security or UI, so those households are more likely to be receiving UI than any other transfer other than Social Security.

concentrated in households with more children. Approximately 23.4% of the pooled sample of households with three children pay no income tax, as do more than 37.3% of households with four or more children. Of families with three children, 16.7% receive social safety net benefits—of which almost half (7%) receive UI. More than 23.2% of those with four or more dependent children receive some type of transfer other than social security. Only 14.6% of households with four or more dependent children receives a transfer other than Social Security and UI. Among families with one or two dependent children, UI is the most commonly received transfer outside of Social Security, while among larger families other transfers are more frequently received than UI.

In comparison, looking at households not in Figure 5 that have heads 62 or older, 66.7% do not owe federal tax; 6.4% receive transfers other than Social Security transfers; and 4.7% receive transfers that are neither Social Security nor UI. For these older households, UI benefits are less common than other social safety net transfers, a pattern reversed for younger households with or without children.

Pooling these data and tabulating who receives benefits and who faces no federal tax liability is akin to the analyses seen in prior work that uses a single year of data. Even looking back in time and averaging over a 40-year period from 1970 to 2010, we see many of the same patterns found in more recent cross-sectional data.

IV. Transitions In and Out of Transfer Receipt and Non-Tax Status

Assessments above use 40 years of pooled annual data to show how zero tax liabilities and transfers vary by age and number of children in the home. They are, however, only annual estimates and do not show how such status changes over longer time horizons. Our key question is whether some people remain for many years with transfer receipts or without tax liability. That is, how many individuals who receive benefits today or pay no federal income tax remain in that status for another year, five years, or longer? In this section we exploit the panel nature of our 40 years of data to analyze whether some individuals receive transfers or pay no tax for a long time or if instead a larger number receive benefits or pays no tax for short times.

Figure 6 presents a histogram showing the years of transfer receipt for households that have received transfers of any kind in at least one sample year. A reason to examine both Social Security and other transfers is that individuals can switch from receiving general safety net

transfers to receiving Social Security. In this figure, the years of benefit receipt are not necessarily consecutive. That is, a household with transfers for ten years may not have received them continuously but simply in ten different years between 1970 and 2010. Because we only see a portion of each person's life, this type of duration or cumulative analysis is censored at some high number of years. After 2010, we don't know whether the household continues to receive transfers.

Those who never receive any kind of transfer comprise 22.1% of the sample and are excluded from the chart to enhance readability. Of the 77.9% who do receive some kind of transfer, 14.4% receive those transfers for only one year over the whole sample period, and 26.0% receive transfers for only one or two years (sum of the first two bars in the figure). Then 48.3% receive transfers in five or fewer years (sum of the first five bars).[27] Mean annual transfers are larger for those who receive transfers for more years. Those who receive transfers for only 1-2 years receive a mean annual transfer of $8,055. Average annual transfers rise to $8,780 for those who receive some kind of transfer for 3-5 years. Those who receive transfers for more than five years have the largest transfers on average, $11,526 per year that transfers are received. These figures describe the receipt of all transfers, so next we examine receipt patterns for transfers other than Social Security.

Transfers other than Social Security benefits are typically received fewer years than are total transfers. While Figure 6 showed that 14.4% of those who ever receive any kind of transfer receive them for only one year, Figure 7 shows that 30.1% of those who receive transfers other than Social Security do so only for a single year. A substantial fraction of households, 41.8%, never receives such transfers and are excluded from this figure. Approximately 48.3% of those who ever receive transfers other than Social Security receive them for only one or two years.[28] More than 76% receive such transfers for five years or less. In other words, of the 58.2% of the

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[27] The figure is tabulated using the full sample of those who receive transfers, while the numbers reported in Table 4 below are conditional on the availability of ten continuous years of data. Thus, receipt patterns are somewhat different. In the full sample, 48.3% of household that ever receive transfers receive them for 5 or fewer years, but in Table 4 approximately 55.6% of households who receive them in one year continue for five consecutive years.

[28] These individuals may or may not receive Social Security in some years. This tabulation describes only their receipt of transfers other than Social Security. Again, these numbers describe the full sample, while the numbers related in Table 4 below describe a sample conditioned on the availability of at least ten consecutive years of data, leading to somewhat differing tabulations. In Table 4, conditional on being in the sample for ten years, 66.5% of those who receive transfers still receive them two years later.

sample who at some point receives cash welfare or other non-social-security transfers from the federal government, more than three-quarters receive such transfers for five years or fewer.

Households that receive transfers other than Social Security for 3-5 years receive larger average annual transfers than households that only receive such benefits for one to two years, though the difference is much smaller than for all transfers discussed above. Households that receive such benefits for one or two years receive an average transfer of $340 per year, and households that receive such transfers for three to five years receive an average benefit of $675. Households that receive transfers other than Social Security for more than five years receive $1,932 on average—substantially more than households that receive transfers for fewer years.

The effects of positive and negative income shocks on after-tax income are compressed by the progressive rate structure of the federal income tax: high incomes are attenuated by higher average tax burdens, while low incomes bear lower average tax burdens. This compression effectively makes the federal income tax into a form of insurance. How we view the insurance value of the income tax system may be influenced by how often and for how long some families find themselves in the low-income state of the world (with low tax or no tax). The distribution of years with zero tax liability is plotted in Figure 8. The one-third of the sample that owes tax in all sample years is excluded from the figure. Of those who ever owe no federal tax, 19.1% face zero tax liability for only one year. Roughly 40% of that group does not pay tax for three or fewer years. Approximately 52% does not pay tax for five years or fewer. A sizable share pays no tax for many years. Of those who ever have a zero tax liability, nearly 30% don't contribute to the federal government for ten or more years.

The cumulative number of years a household owes no tax or receives transfers helps us to understand how concentrated is the distribution of these statuses among U.S. households. The figures above show the total number of years in the sample that a household receives transfers or does not pay federal income tax, but those years may not be contiguous. In contrast, Table 4 reports survival probabilities over continuous years for six different tax and transfer states.[29] For each state, the sample is conditioned on the availability of ten consecutive years of data; for example, in the case of a household with zero tax liability in any year, we tabulate each of ten

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[29] Individuals in the six different states may leave the sample at different rates, meaning that attrition across the six states reported in Table 4 may differ from each other. For each state, the sample is conditioned on the availability of at least ten consecutive years of data for each household.

subsequent years. Thus, we get 8,861 observations describing 831 households that do not owe tax in year zero. Importantly, we do not condition on a "fresh" state. For example, the third year in a three-year consecutive state for a given household could appear twice in our tabulations.

In the first row of Table 4 for those not paying tax, 81.7% remain off the tax rolls a year later, meaning that 18.3% start paying tax the next year. Three years later, 67.9% have yet to pay tax. Ten years later, 53.2% remain off the tax rolls, meaning that 47.8% have paid tax in at least one year within ten years of not owing tax. The survival probabilities show that many people quickly exit the status of not paying tax, but the status is stickier for those who remain off the tax rolls for at least two years.

Paying tax is a more persistent state. Of those who pay federal income tax in any given year, 96.2% still pay the following year, and nearly 80.7% continue to pay tax through the seventh subsequent year. Even those who initially pay tax will advance through age with a normal variation in their income from year to year, and they face a positive threshold for annual income before any tax is due. Thus, over a long window, some fraction of individuals will fail to owe tax in at least one year. Ten years down the line, nearly 26.7% have failed to pay tax in at least one year.

Of those receiving transfers of any kind, including Social Security, Table 4 shows that 76.7% continue to receive transfers of some kind the following year. Five years later, roughly 55.6% are still receiving benefits. This share falls to 48.3% ten years down the line. That is, more than half of those receiving transfers leave the dole for at least one year within ten years. Interestingly, the status of not receiving transfers of any kind is not as persistent as owing federal tax. While only 7.7% of those not receiving public benefits start receiving benefits the next year, within seven years more than 34.4% have received benefits of some kind. By year ten, only 56.1% have yet to receive public transfers; that is 43.9% of those not receiving transfers receive transfers at least once within ten years.

After retirement, Social Security receipt is of course an absorbing state, so the last two rows of Table 4 show tabulations that hone in on the transfers other than Social Security that are not permanent by design. Of those receiving these types of social safety transfer, most quickly exit the public dole. Approximately 43.6% of those receiving such transfers stop receiving them the following year. Seven years later, less than 15% are still receiving transfers, and ten years out only 9.8% are still receiving transfers other than Social Security. Initially, the status of not

receiving transfers other than Social Security is a relatively more persistent state, but over longer horizons a sizable fraction of those not receiving these transfers do eventually receive them. Of those not receiving transfers other than Social Security, 94.2% still don't receive them the following year. While 70.8% continue not receiving such transfers ten years later, nearly 30% do receive such transfers for at least one year within ten years.

The tabulations of Table 4 show a meaningful churn in-and-out of the status of zero tax liability and of transfer receipt. A substantial share of households start to pay tax again within a year, or exit transfer receipt within a year, and many more do so over a ten-year window. For those with zero tax liability in any particular year, 46.8% do owe tax within ten years, and 38.6% within five years. Of those receiving any kind of transfer, 44.4% do not receive transfers in at least one of the five following years, a percentage that rises to 51.7% by year ten. Of those receiving transfers other than Social Security, 80.2% stop within five years and more than 90% within ten. Of those who initially do pay tax or do not receive transfers, a sizable share eventually owe no tax or do receive transfers over the next ten years. More than 25% of those who initially owe income tax do not owe them in one year over the next ten years, and 43.9% of those not receiving transfers eventually do over the following ten years. These patterns show that the tax and transfer systems do in combination effectively provide social insurance against negative income shocks. Though a substantial minority remain in the zero tax liability and transfer receipt state even ten years later, of the many households that enter the no tax or transfer states, Table 4 shows that a sizable share exit such status, and exit quickly.

V. Conclusion and Discussion

Within the discussion among policymakers and in the public discourse following Governor Romney's description of the 47% of Americans who pay no federal tax, major questions were raised about the creation of a class of non-contributors. Of particular concern was the notion that a substantial share of the population does not contribute to general tax revenue; by extension, they may draw transfer benefits each year. Immediate analysis using annual data helped explain who are currently in that 47%, namely, the elderly, students, service members, and those with very low income. Nonetheless, the fundamental question remains: how long does someone paying no federal tax remain in that status?

Using data from the PSID, we assess that question, examining how persistent is the status of paying no federal tax or of receiving government transfers. In the case of transfers, of course, we can exclude Social Security benefits, because individuals are not expected to stop receiving Social Security benefits once they start.[30] Though a substantial fraction of the population pays no tax in any given year, a much smaller share remain off the federal tax rolls or continue to receive benefits for years down the line. Benefit receipt and zero tax liability are not strongly concentrated in the population. Substantially more than 47% of the population faces no tax liability in at least one point of life. In fact, more than two-thirds of the PSID sample falls off of the federal tax rolls in at least one year. Similarly, though only 10.6% of the sample receives transfers other than Social Security in any given year, 41.8% of the PSID sample receives such transfers in at least one year. Households enter such status often, and exit often.

Understanding how concentrated is the distribution of non-taxation and of benefit receipt helps us better to understand the functioning of our social safety net and of the income insurance offered by our tax system. If they are truly providing insurance against short-term shocks, we might expect to see such status for many individuals – but only some of the time. Results here confirm this view. On the other hand, if the same individuals were consistently not paying income tax or consistently drawing benefits, then we would have to conclude that low-income states were long-lived whether by choice or otherwise. Data from the PSID analyzed here show that transfer receipt is not a permanent state: more than 90% of recipients of transfers other than Social Security leave the welfare rolls within ten years. Not paying federal tax is temporary for many but not all households. Roughly 53.2% of those not paying federal tax continue in that status over the subsequent ten years. For most transfer recipients and for many of those not paying tax, these exit rates suggest that these government policies are effectively short-term insurance programs.

Still, a small share of the population remains off the federal tax rolls or receives public transfers long-term. Public policy researchers and public service providers will need to investigate further why some individuals manage to exit and other remain.

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[30] Due to data limitations, we cannot separate out the different types of social security payments an individual may receive, such as disability or regular social security. Though one could conceivably exit from receiving disability insurance, actual recipients rarely leave the disability rolls.

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Data Appendix: Constructing PSID Variables

Because of changes in the definitions of variables collected by the PSID, we had to construct new measures of income and transfers that would be most consistent and comparable from year to year. Differences over time in the aggregation of income measures prohibits the construction of a perfectly comparable income measure for the whole 40 year period. Initially, the PSID's *Labor Income* variable includes categories of earned income that are later not included. These components are reported separately in some cases but not in all; our construction of the most consistent definition of earned income is detailed below.

In later years, the Asset and Labor portions of *Farm Income*, *Market Gardening Income* and *Income from Roomers and Boarders* are not reported separately. Thus, to create consistent measures of earned and asset income, both the Asset and Labor portions of these three income sources are considered Asset income.

The construction of Labor Income, Asset Income and Transfer Income variables for the head and spouse are detailed below. We detail the construction of head and spouse measures separately because of differences in the construction of measures for each individual, but our analysis then combines head and spouse measures for our household-level analysis.

LABOR INCOME

Definition of Labor Income for the Head for years 1970 through 1993

The *Total Labor Income* variable is available for 1968-1992. According to the 1970 codebook, it is the "sum of the actual amounts of labor part of farm income and business income, bonuses, overtime, commissions, professional practice, labor part of income from roomers and boarders or business income".

From 1970 until 1993, *Total Labor Income* includes components that are later no longer reported as part of *Total Labor Income*. *Labor Part of Business Income* is reported separately later and can be added in later years. *Labor Part of Farm Income*, and *Labor Part of Roomers and Boarders Income* are not reported later, so they cannot be added in later years. Thus, for 1970 through 1993, *Labor Part of Farm Income*, and *Labor Part of Roomers and Boarders Income* are subtracted.

Thus, the Head's Labor Income for 1970 through 1993 is:

> Labor Income = *Total Labor Income – Labor Part of Farm Income – Labor Part of Roomers and Boarders Income*

Until 1975, *Labor Part of Farm Income*, *Labor Part of Business Income* and *Labor Part of Roomers and Boarders Income* were bracketed. The midpoints of the brackets were used for 1970 through 1975.

<u>Definition of Labor Income for the Head for years 1994 through 2011</u>

Total Labor Income now no longer includes all the components above; specifically *Labor Part of Farm Income*, *Labor Part of Business Income* and *Labor Part of Roomers and Boarders Income* are no longer included. It is not possible to add back *Labor Part of Farm Income*, and *Labor Part of Roomers and Boarders Income*, since *Farm Income* is no longer divided into labor and asset income, and *Roomers and Boarders Income* is included with other rental income. *Labor Part of Business Income* is reported separately and is added to *Total Labor Income*.

According to the 1994 codebook, "The income reported here is the sum of several labor income components from the raw data, including, in addition to wages and salaries (ER4122), any separate reports of bonuses (ER4124), overtime (ER4126), tips (ER4128), commissions (ER4130), professional practice or trade (ER4132), market gardening (ER4134), miscellaneous job income (ER4136), and extra job income (ER4138). Note that farm income (ER4117) and the labor portion of business income (ER4119) are not included here."

Thus, the Head's Labor Income for 1994 through 2011 is:

>   Labor Income = *Total Labor Income + Labor Part of Business Income*

<u>Definition of Labor Income for the Spouse for years 1970 through 1993</u>

Between 1968 and 1992, the *Total Labor Income* variable includes components that are later no longer part of *Total Labor Income*. Like in the case of household heads, the additional components are *Labor Part of Farm Income*, *Labor Part of Business Income* and *Roomers and Boarders Income*. Unfortunately we cannot subtract off *Labor Part of Farm Income*, *Labor Part of Business Income* and *Roomers and Boarders Income*, since income components are not reported separately for wives.

Thus, the Spouse's Labor Income for 1970 through 1993 is:

>   Labor Income = *Total Labor Income*

<u>Definition of Labor Income for the Spouse for years 1994 through 2011</u>

Total Labor Income no longer includes all the components; specifically *Labor Part of Farm Income*, *Labor Part of Business Income* and *Labor Part of Roomers and Boarders Income* are no longer included. Because *Labor Part of Business Income* is reported separately for wives, Labor Part of Business Income is added back.

Thus, the Spouse's Labor Income for 1994 through 2011 is:

Labor Income = *Total Labor Income + Labor Part of Business Income*

<u>ASSET INCOME</u>

<u>Definition of Asset Income for the Head for years 1970 through 1983</u>

From 1970 through 1983, the household head's income from *Rent*, *Interest*, *Trust Funds*, and *Royalties* are reported together and not reported separately. This is the aggregation we are forced to replicate later in the sample, too.

Thus, the Head's Asset Income for 1970 through 1983 is:

Asset Income =   *Head's Income from Rent, Dividends, Interest, Trust Funds, and Royalties*

Until 1975, the variable was bracketed, so midpoints of the brackets were used for 1970 – 1975.

<u>Definition of Asset Income for the Head for years 1984 through 1992</u>

Starting in 1984, the head's *Income from Rent* is reported separately, so for consistency we added it to *Income from Dividends, Interest, Trust Funds and Royalties*.

Thus, the Head's Asset Income for 1984 through 1992 is:

Asset Income =   *Head's Income from Dividends, Interest, Trust Funds, and Royalties + Income from Rent*

<u>Definition of Asset Income for the Head for years 1993 through 2011</u>

Asset income is reported separately by category starting in 1993. In order to create a variable comparable to the older aggregated asset income measure, we sum the categories.

Thus, the Head's Asset Income for 1992 through 2011 is:

Asset Income =   *Head's Income from Dividends + Interest of Head + Head's Income from Rent + Trust Fund and/or Royalty Income*

<u>Definition of Asset Income for the Spouse for years 1970 through 1992</u>

Asset income of the spouse is reported in aggregate from 1970 through 1992.

Thus, the Spouse's Asset Income for 1970 through 1992 is:

Asset Income = *Spouse's Income from Assets*

Until 1975, the variable was bracketed, so midpoints of the brackets were used for 1970 – 1975.

Definition of Asset Income for the Spouse for years 1993 through 2011

Starting in 1993, asset income is reported separately by category for spouses. In order to create a variable comparable to the older aggregated asset income measure, we sum the categories.

Thus, the Spouse's Asset Income for 1993 through 2011 is:

Asset Income =   *Spouse's Income from Dividends + Spouse's Income from Interest + Spouse's Income from Rent + Spouse's Income from Trust Fund and/or Royalty Income*

TRANSFER INCOME

Information regarding transfer income is initially aggregated across the head and spouse. Starting in 1986, transfers are reported separately for the household head and spouse. For the years 1970-1985, total transfers are divided equally between the head and spouse.

Definition of Transfer Income for the Head and Spouse for years 1970 through 1974

Transfers are reported by the PSID jointly for heads and spouses and divided into Aid to Families with Dependent Children (AFDC), Social Security, and Other Welfare.

Thus, the Head and Spouse Transfer Income for 1970 through 1974 is:

Transfer Income =   *Amount of AFDC + Income of Head and Spouse from Social Security + Income of Head and Spouse from Other Welfare*

Definition of Transfer Income for the Head and Spouse for years 1975 through 1985

Starting in 1975 income from Social Supplemental Insurance (SSI) is reported separately.

Thus, the Head and Spouse Transfer Income for 1975 through 1985 is:

Transfer Income =   *Amount of AFDC + Income of Head and Spouse from Social Security + SSI Income for Head and Spouse + Income of Head and Spouse from Other Welfare*

Definition of Transfer Income for the Head for years 1986 through 2011

Transfer Income in all four categories was reported separately for heads and spouses beginning in 1986. Legislation in 1996 replaced the AFDC program with Temporary Assistance to Needy Families (TANF), which is reported in the same way as AFDC transfers.

Thus, the Head's Transfer Income for 1986 through 2011 is:

Transfer Income = *Amount of AFDC/TANF to Head + Income from Social Security of Head + SSI Income for Head + Other Welfare Income for Head*

<u>Definition of Transfer Income for the Spouse for years 1986 through 2011</u>

Transfer Income in all four categories was reported separately for heads and spouses beginning in 1986.

Thus, the Spouse's Transfer Income for 1986 through 2011 is:

Transfer Income = *Amount of AFDC/TANF to Spouse + Income from Social Security of Spouse + SSI Income for Spouse + Other Welfare Income for Spouse*

Figure 1: Fraction Receiving All Transfers and Non-Social Security Transfers by Age, Pooled
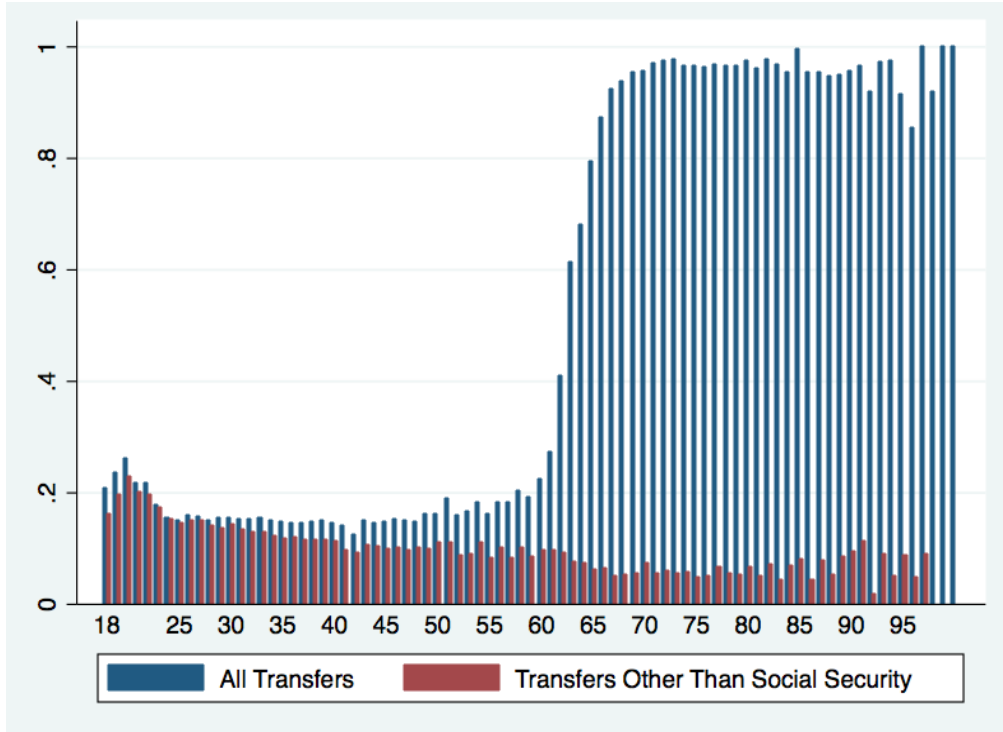

Figure 2: Fraction Receiving All Transfers and Non-Social Security Transfers by Age, 2010
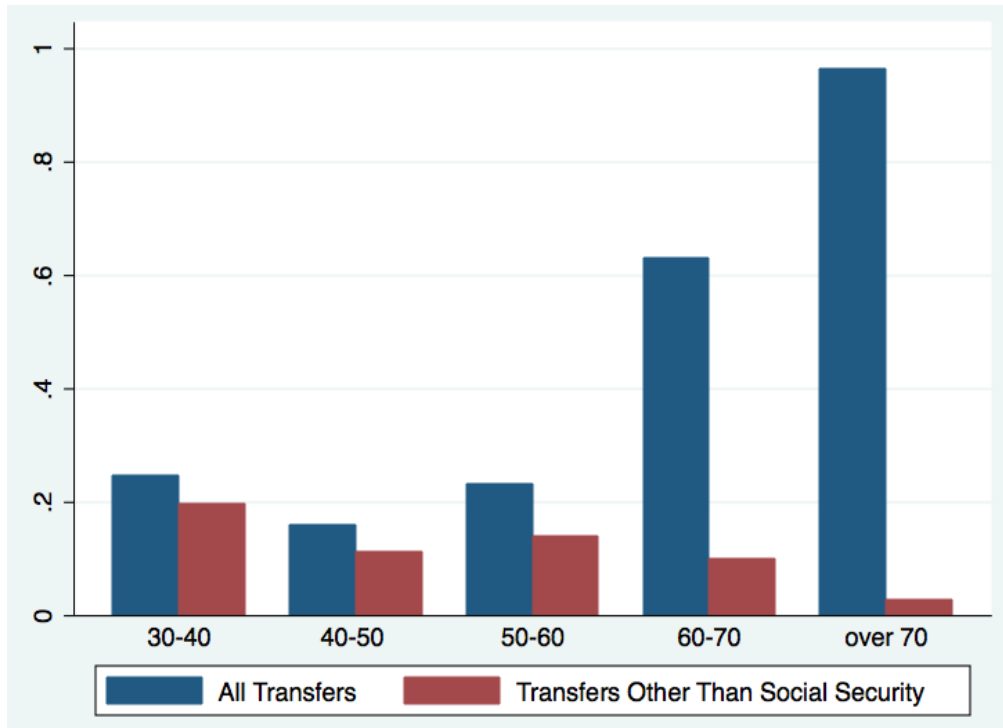
Figure 3: Mean Transfers and Non-Social Security Transfers, By Age

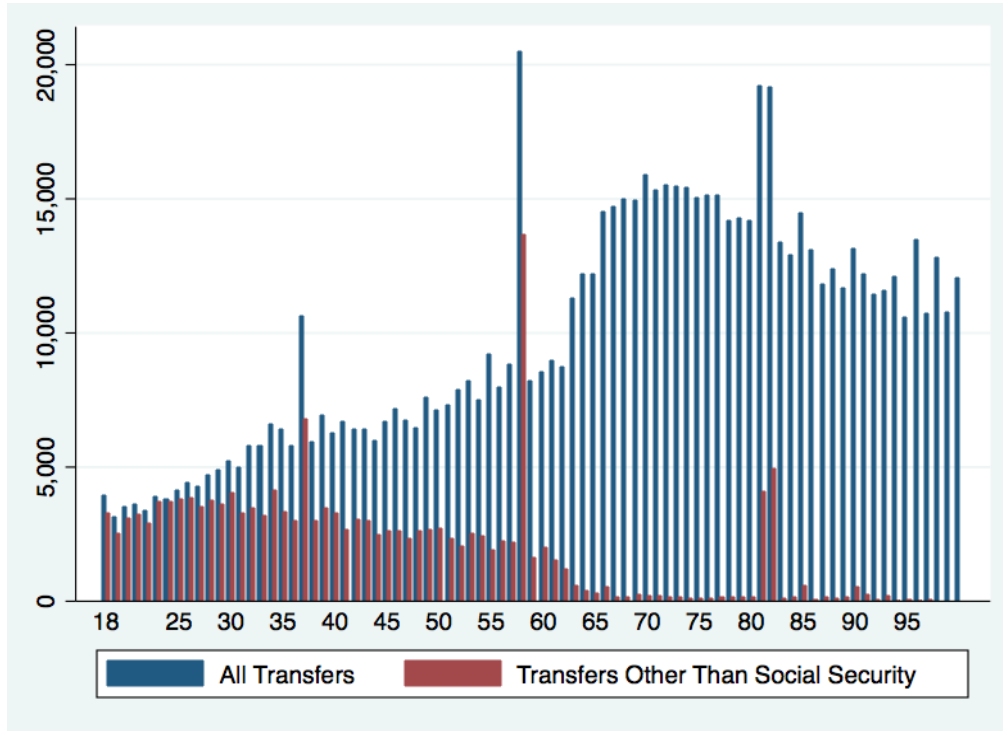All Transfers — Transfers Other Than Social Security

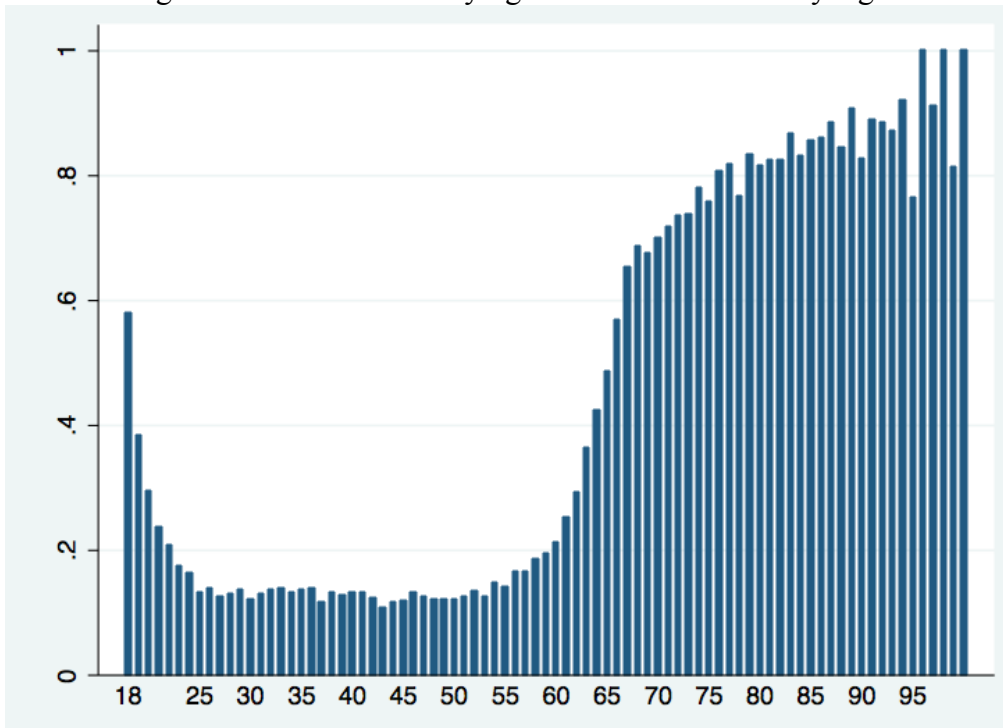Figure 4: Fraction Not Paying Federal Income Tax by Age

Figure 5: Fraction Not Paying Federal Income Tax, and Receiving Transfers, by Number of Dependent Children (for Households with Heads under Age 62)
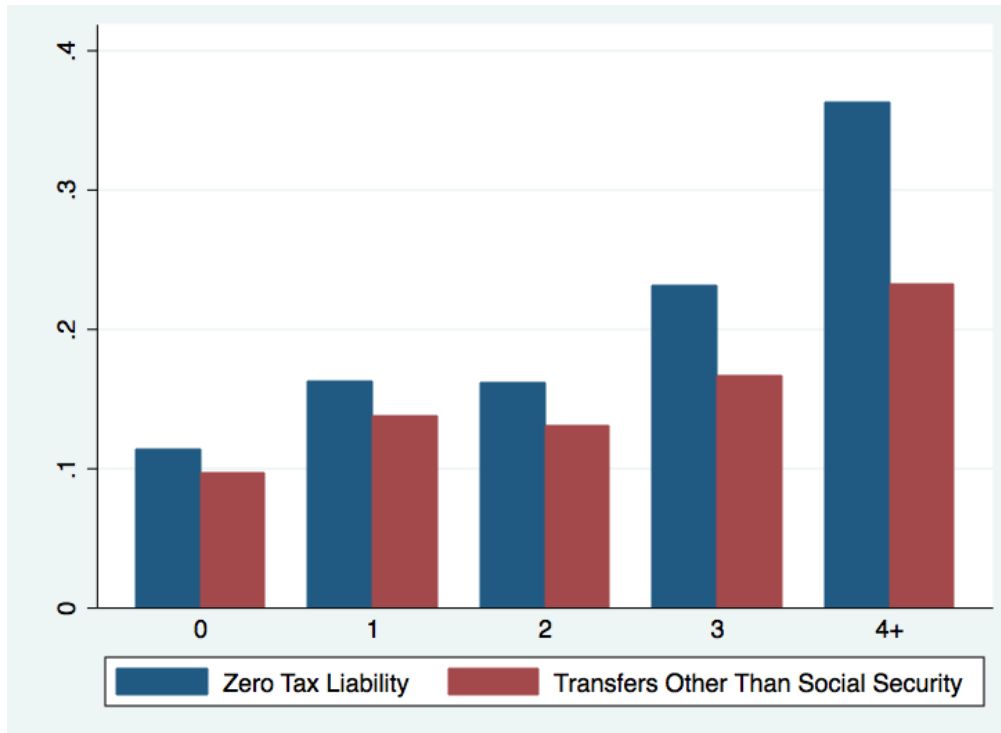

Figure 6: For Households That Ever Receive any Federal Transfers, the Number of Years any Federal Transfer is Received
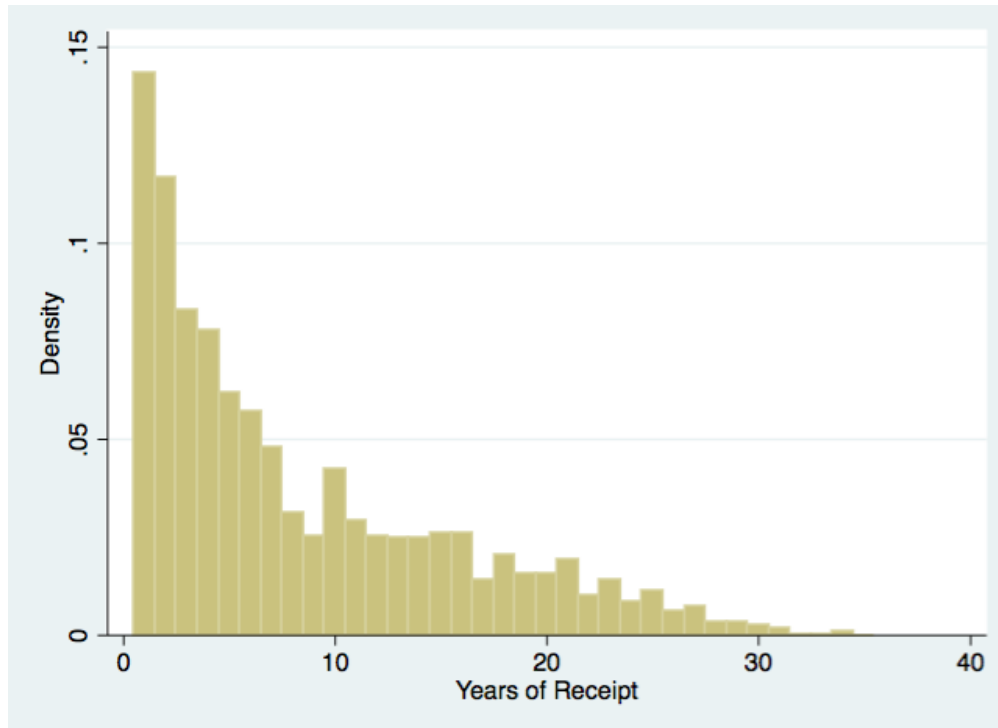
Figure 7: For Households That Ever Receive Transfers Other Than Social Security, the Number of Consecutive Years That Any Such Transfer Is Received
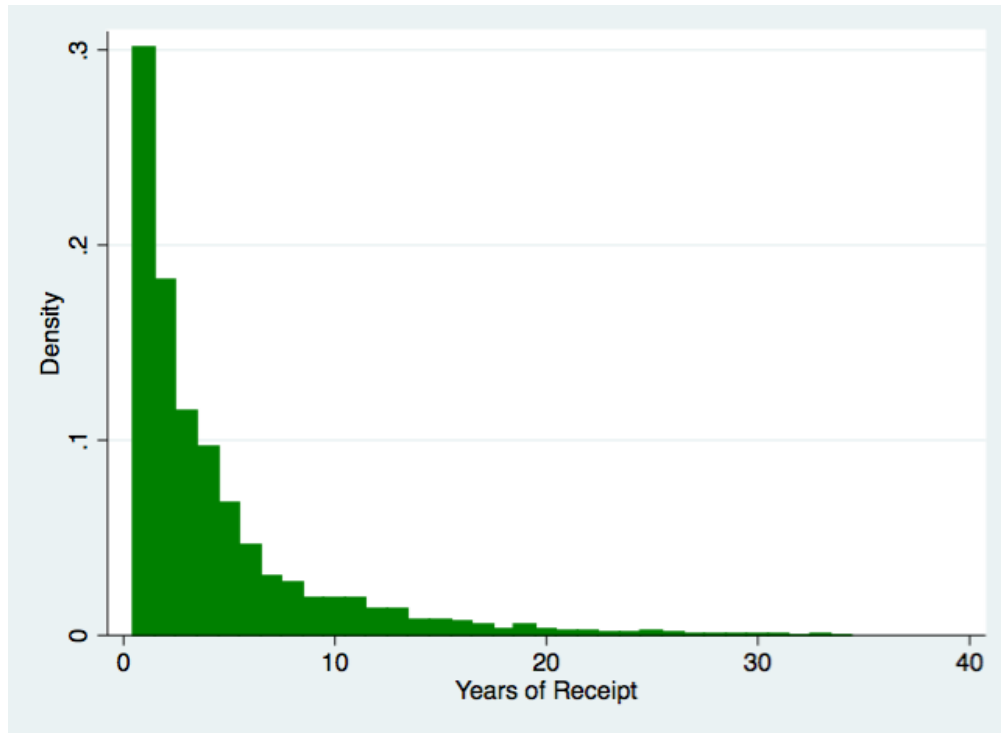

Figure 8: Years of Non-Tax Status, Conditional on Not Paying At Least One Year
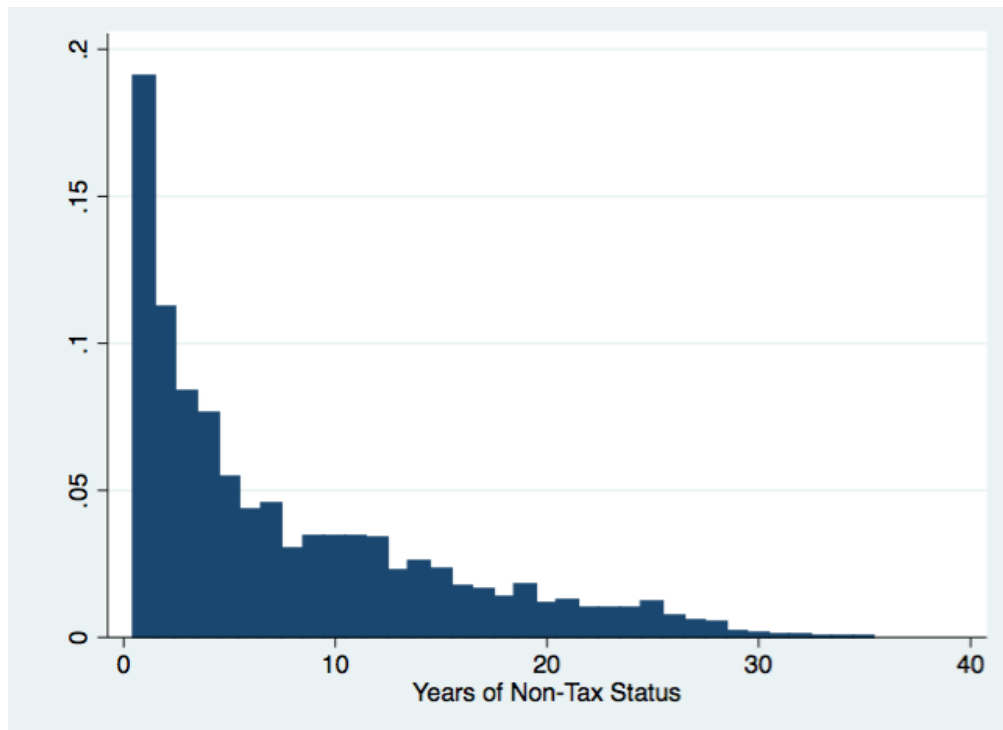
Table 1: Summary Statistics for our sample from the PSID 1970-2010				
	Mean	Median	25th%ile	75th%ile
Age	47.1	45.0	34.0	58.0
Labor Income	$49,654	$37,639	$10,082	$67,930
Labor Income if > 0	$60,084	$46,749	$25,474	$75,924
Total Transfers	$3,359	$0	$0	$2,550
Total Transfers if > 0 (30.3% of sample)	$11,344	$9,677	$4,643	$15,782
Transfers Excluding Social Security	$501	$0	$0	$0
Transfers Excluding Social Security if > 0 (10.6% of sample)	$4,707	$2,445	$737	$5,414
Federal Taxes (zero for 25.1%)	$9,411	$4,378	$99	$10,884
Payroll Taxes	$5,625	$4,791	$1,383	$8,736
Years of Education	13.0	12.0	12.0	16.0
White	0.851	-	-	-
Female	0.251	-	-	-
Married	0.550	-	-	-

Note: The sample consists of all households with at least ten years of data. All income values are inflated to 2011 dollars using the GDP index. All estimates are weighted using PSID person weights.

Each row (such as for transfers) shows the mean percentiles for that row (not the transfers of the household at the mean or median income). The shares White, Female and Married report the fraction of the sample of households that is headed by an individual with the corresponding demographic characteristic.

Table 2: Estimated Share of Households Not Owing Federal Income Tax, Comparing Different Data Sources

Share without Positive Tax Liability	Year and Data	Source
47.0%	2009, Estimate	Urban-Brookings Tax Policy Center (TPC) Microsimulation Model starts with the 1999 Public Use File from the SOI of the IRS. Data are "aged", using forecasts from CBO and Census Bureau, and TPC adds non-filers (see Williams, 2009).
45.0%	2010, Estimate	TPC Microsimulation for 2010.
38.0%	2010, PSID	Authors' tabulations using our PSID sample and TAXSIM calculations for the 2010 year only.
38.6%	2010, CPS	Authors' tabulations from 2011 March CPS data describing 2010 incomes.
38.3%	2009, CPS	Authors' tabulations from 2010 March CPS data describing 2009 incomes (https://cps.ipums.org/cps/).
50.9%	2009, IRS	Heim, *et al* (2014) use confidential IRS data. They assemble a 1-in-1000 random panel sample of individuals from the IRS Compliance Data Warehouse universe of tax return data for years 2001-2011.

Note: All authors' tabulations use the survey's relevant household or family weights.

Table 3: Comparison of 2010 Summary Statistics, PSID Data vs. March CPS

	PSID		U.S.	
	Mean	Median	Mean	Median
Age	59.4	58.0	50.4	50.0
Age if 34 or Older	59.4	58.0	55.9	54.0
Labor Income	$56,843	$30,000	$45,205	$27,000
Federal Income Taxes	$9,677	$1,913	$6,315	$1,930
Payroll Taxes	$6,819	$4,590	$3,384	$2,295
Pays No Federal Income Tax	0.380	-	0.386	-
Transfers	$7,311	$0	$4,851	$0
Transfers Excluding Social Security	$634	$0	$435	$0
Years of Education	Some college (more than a year)	Some college (more than a year)	Some college (more than a year)	Some college (more than a year)
White	0.832	-	0.804	-
Female	0.252	-	0.495	-
Married	0.574	-	0.495	-
Observations	2,234	2,234	75,188	75,188

Note: Our full sample from the PSID includes households with at least ten years of data between 1970 and 2010. This table reports 2010 data for the subset of those households who report income in 2010. Heads and spouses are combined into household tax units. The U.S. statistics come from the 2011 March Current Population Survey which describes 2010 incomes. Both sets of statistics are weighted.

Table 4: Tax and Transfer Status Survival Rates

	1	2	3	4	5	6	7	8	9	10	Obs.	Hh.
No Federal Income Tax	0.817	0.731	0.679	0.641	0.614	0.593	0.575	0.559	0.545	0.532	8,861	831
Pays Federal Income Tax	0.962	0.932	0.905	0.880	0.856	0.832	0.807	0.782	0.758	0.733	29,769	3,130
Receives Any Transfer	0.767	0.665	0.611	0.579	0.556	0.539	0.523	0.508	0.496	0.483	10,253	785
No Transfers	0.923	0.863	0.812	0.768	0.728	0.691	0.656	0.623	0.591	0.561	28,377	3,176
Receives Transfer Other than Social Security	0.564	0.378	0.285	0.232	0.198	0.171	0.148	0.129	0.112	0.098	6,507	605
Receives No Transfer Other than Social Security	0.942	0.897	0.861	0.831	0.804	0.781	0.760	0.741	0.724	0.708	32,123	3,356

Note: This table reports the share of households in each status remaining in that status 1 to 10 years later, without a transition out of that status. The sample includes all households over the 1970 to 2010 period that are ever in each status and for which we have 10 years of continuous data. *Obs.* denotes the number of observations per year, while *Hh.* denotes the number of households. Attrition is not necessarily similar among households in different states. The tabulations are weighted using PSID household weights.