APPENDIX A: 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 definitions of earned and asset income is detailed below.

In later years, the PSID does not separately report Asset and Labor portions of Farm Income, Market Gardening Income, and Income from Roomers and Boarders. Thus, to create consistent measures of earned and asset income, both the Asset and Labor portions of these particular 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 describe the construction of head and spouse measures separately because of differences in the construction of measures for each individual. We sum the incomes of a head and spouse in any year they are married, to calculate income taxes for each couple, and then we equally divide tax burdens between the head and spouse. We also sum and evenly split transfer income between married individuals in years that transfer income is reported separately for household heads and spouses.

After constructing these income variables, we Winsorize each by year at the 99.9 percent level. That is, we replace each variable’s values above the 99.9th percentile with the value at the 99.9th percentile.

A1. 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.” The labor part of market gardening income was included with labor income from roomers and boarders in early years and then became its own component of Total Labor Income starting in 1979.

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. Other parts are not report later, so they cannot be added in later years (Labor Part of Farm Income, Labor Part of Roomers and Boarders Income, and Labor Part of Market Gardening Income). Thus, for 1970 through 1993, Labor Part of Farm Income and Labor Part of Roomers and Boarders Income are subtracted. After 1979, when it is reported separately from Labor Part of Roomers and Boarders Income, the Labor Part of Market Gardening Income is subtracted as well. Thus, Head’s Labor Income for 1970 through 1993 is:

\[
\text{Labor Income} = \text{Total Labor Income} - \text{Labor Part of Farm Income} - \text{Labor Part of Roomers and Boarders Income} - \text{Labor Part of Market Gardening Income}
\]

Until 1975, the PSID bracketed the Labor Part of Farm Income, Labor Part of Business Income, and Labor Part of Roomers and Boarders Income. The midpoints of the brackets were used for 1970 through 1975. We cap the sum of the Labor Part of Farm and Roomers and Boarders Income at Total Labor Income.

**Definition of Labor Income for the Head for years 1994 through 2011**

For these years, Total Labor Income now no longer includes Labor Part of Farm Income, Labor Part of Business Income, and Labor Part of Roomers and Boarders Income. 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 – Labor Part of Market Gardening Income

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

Between 1968 and 1992, the Total Labor Income variable includes components that are later no longer part of Total Labor Income. As 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, since income components are not reported separately for wives, we cannot subtract Labor Part of Farm Income, Labor Part of Business Income, and Roomers and Boarders Income. Thus, the Spouse’s Labor Income for 1970 through 1993 is:

\[ \text{Labor Income} = \text{Total Labor Income} \]

Definition of Labor Income for the Spouse for years 1994 through 2011

For these years, Total Labor Income no longer includes Labor Part of Farm Income, Labor Part of Business Income, and Labor Part of Roomers and Boarders Income. 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:

\[ \text{Labor Income} = \text{Total Labor Income} + \text{Labor Part of Business Income} \]

A2. Asset Income

Definition of Asset Income for the Head for years 1970 through 1983

From 1970 through 1983, the household head’s income from Rent, Interest, Trust Funds, and Royalties are reported together and not reported separately. In later years the asset and labor parts of Farm Income, Income from Roomers and Boarders, and Market Gardening are not separated and are counted as part of asset income. Thus, we replicate this aggregation in the earlier years. Starting in 1979, Market Gardening Income is broken out from Roomers and Boarders Income, and so then it is added as well. Thus, the Head’s Asset Income for 1970 through 1983 is:

\[ \text{Asset Income} = \text{Head's Income from Rent, Dividends, Interest, Trust Funds, and Royalties} + \text{Asset Part of Business Income} + \text{Asset Part of Farm Income} + \text{Labor Part of Farm Income} + \text{Asset Part of Roomers and Boarders Income} + \text{Labor Part of Roomers and Boarders Income} + \text{Asset Part of Market Gardening Income} + \text{Labor Part of Market Gardening Income} \]
Until 1975, the PSID bracketed Income from Rent, Dividends, Interest, Trust Funds, and Royalties, Asset Part of Business Income, Asset Part of Farm Income, and Asset Part of Roomers and Boarders Income. Therefore, midpoints of the brackets were used for 1970–1975.

Definition of Asset Income for the Head for years 1984 through 1992

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:

\[
\text{Asset Income} = \text{Head’s Income from Dividends, Interest, Trust Funds and Royalties} + \text{Income from Rent} + \text{Asset Part of Business Income} + \text{Asset Part of Farm Income} + \text{Labor Part of Farm Income} + \text{Asset Part of Roomers and Boarders Income} + \text{Labor Part of Roomers and Boarders Income} + \text{Asset Part of Market Gardening Income} + \text{Labor Part of Market Gardening Income}
\]

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

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 these categories. Starting in 1993, the Labor and Asset portions of Farm, Roomers and Boarders, and Market Gardening are no longer reported separately. Thus, the Head’s Asset Income for 1993 through 2011 is:

\[
\text{Asset Income} = \text{Head’s Income from Dividends} + \text{Interest of Head} + \text{Head’s Income from Rent} + \text{Trust Fund and/or Royalty Income} + \text{Asset Part of Business Income} + \text{Asset and Labor Parts of Farm Income} + \text{Asset and Labor Parts of Roomers and Boarders Income} + \text{Asset and Labor Parts of Market Gardening Income}
\]

Definition of Asset Income for the Spouse for years 1970 through 1984

Asset income of the spouse is reported in aggregate from 1970 through 1984. Thus, the Spouse’s Asset Income for 1970 through 1984 is:

\[
\text{Asset Income} = \text{Spouse’s Income from Assets}
\]

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 1985 through 1992

In addition to the spouse’s share of asset income, a second variable called Other Income from Assets was added in 1985. Thus, the Spouse’s Asset Income for 1985 through 1992 is:
\[ Asset\ Income = \text{Spouse’s Income from Assets} + \text{Spouse’s Other Income from Assets} \]

**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. In addition, the spouse’s asset part of business income is broken out separately. Thus, the Spouse’s Asset Income for 1993 through 2011 is:

\[ Asset\ Income = \text{Spouse’s Income from Dividends} + \text{Spouse’s Income from Interest} + \text{Spouse’s Income from Rent} + \text{Spouse’s Income from Trust Fund and/or Royalty Income} + \text{Spouse’s Asset Part of Business Income} \]

**A3. 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, Unemployment Insurance (UI), and Other Welfare.\(^1\) Thus, the Head and Spouse Transfer Income for 1970 through 1974 is:

\[ Transfer\ Income = \text{Amount of AFDC} + \text{Income of Head and Spouse from Social Security} + \text{UI Income} + \text{Income of Head and Spouse from Other Welfare} \]

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

Starting in 1975, income from UI and Social Supplemental Insurance (SSI) is reported separately for Heads and Spouses. Thus, the Head and Spouse Transfer Income for 1975 through 1985 is:

\[ Transfer\ Income = \text{Amount of AFDC} + \text{Income of Head and Spouse from Social Security} + \text{UI Income for Head and Spouse} + \text{SSI Income for Head and Spouse} + \text{Income of Head and Spouse from Other Welfare} \]

From 1975 and 1984, only aggregate UI income is available for all individuals in the

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\(^1\) 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.
family who are not the household head. For 1985 and after, the PSID reports the UI income of wives separately, and we use these disaggregated measures.

**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:

\[
\text{Transfer Income} = \text{Amount of AFDC/TANF to Head} + \text{Income from Social Security of Head} + \text{UI Income for Head} + \text{SSI Income for Head} + \text{Other Welfare Income for Head}
\]

**Definition of Transfer Income for the Spouse for years 1986 through 2011**

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:

\[
\text{Transfer Income} = \text{Amount of AFDC/TANF to Spouse} + \text{Income from Social Security of Spouse} + \text{UI Income for Spouse} + \text{SSI Income for Spouse} + \text{Other Welfare Income for Spouse.}
\]

**APPENDIX B: THE IMPACT OF INCUDING ITEMIZED DEDUCTIONS**

Because data on itemized deductions are not available in all years, in the main analysis we opt to assume that all individuals take the standard deduction. In this appendix, we evaluate the impact of including itemized deductions in the years they are available.

In determining itemized deductions, we generally follow the procedure of Kimberlin, Kim, and Shaefer (2015). PSID respondents report several data items that help us calculate itemized deductions and evaluate whether the respondent would choose to itemize or take the standard deduction. These data are not, however, available in all years. Respondents report whether they itemize or take the standard deduction (since 1984), property tax paid (since 1968), itemized charitable contributions (since 1999) and itemized medical expenses (since 1999). Mortgage interest paid can be determined using several PSID variables: monthly mortgage payment (available since 1994), current mortgage interest rate (available since 1999), year obtained (available since 1999), and years to pay (available since 1994 on up to two mortgages).

Using these variables, we are able to include four types of itemized deductions in the following years:

- Property tax—all years
We sum the measurable itemized deductions of each married couple or single individuals and use the total itemized deduction rather than the standard deduction when appropriate. Because we model individuals, the tax liabilities of any married couples as calculated by NBER TAXSIM are split evenly, and we proceed with individual-level analysis as described in the text.

The figures below illustrate the impact of incorporating itemized deductions on average calculated income tax (Figure B1) and the share of individuals not owing federal income tax (Figure B2). In each figure, the solid line plots how average tax liability and the share with zero tax liability vary over time if we assume all PSID respondents opt for the standard deduction. Each figure provides two measures for itemizing individuals: one only incorporates itemized deductions for those who report that they itemize (dotted line), and the other incorporates itemized deductions for all those for whom the sum of their itemized deductions exceeds the standard deduction (dashed line).

Each figure includes a vertical line at 1998 (which corresponds to PSID data reported in 1999). Prior to this year, property tax is the only itemized deduction we can incorporate, and thus the three lines in both figures are nearly identical until then. Starting in 2000 (PSID year 2001), we can calculate itemized deductions that include mortgage interest, medical expenses, and charitable giving. Then the lines that reflect itemized deductions show greater differences from the line that uses the standard deduction only.
On average, incorporating itemized deductions reduces income tax liabilities by $277. However, the analysis of the paper is not as concerned with tax liabilities as it is with the status of not owing federal income taxes. Figure B2, which plots the share of individuals not owing tax each year, shows that including itemized deductions has a small impact. Taking itemization into account increases the share of households not owing federal income tax by roughly 0.7 percentage points after 1998 (PSID year 1999).

The reason that the sizeable decrease in average tax liabilities translates into a minor change in the share of individuals not owing federal taxes is partly explained by Figure B3 below. The coordinates of each circle denote the share of taxpayers at different levels of tax liability that itemize, while the size of each circle represents the weighted number of households at each tax liability. As the figure shows, itemizers are less common at the low levels of tax liability, where the difference between the standard deduction and higher itemized deduction could tip a taxpayer from owing to not owing federal income tax.

Figure B3
Percent of households itemizing deductions

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2 To enhance the readability of the figure, it excludes 78 outliers who owe more than $100,000 in federal income tax. The figure includes 27,919 observations.