

Technical Report

**Panel Study of Income Dynamics
Construction and Evaluation of the 2023 Longitudinal Individual and Family
Weights**

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This technical report documents the methodological approach to creating the longitudinal weights constructed for the family units and individuals from the 2023 Panel Study of Income Dynamics (PSID-2023).

I. Introduction

The 2023 PSID panel is based on the dynamic, longitudinal follow-up of individuals and their families originally identified in a combination of four probability samples of U.S. households. The PSID started in 1968 and was comprised of two separate samples: an equal probability national sample of households selected from the Survey Research Center 1960 National Sample (SRC sample) and a subsample of families interviewed in 1967 by the Bureau of the Census for the Office of Economic Opportunity (SEO sample) (McGonagle and Schoeni, 2006). Sample persons and their lineal descendants identified in the baseline SRC and SEO samples have been interviewed since 1968. In 1997 and 1999, a baseline sample of post-1968 immigrants (1997 New Immigrant Supplement (NIS-1997)) was added and these immigrant sample persons have been followed continuously since then (Heeringa and Connor, 1998). In 2017 and 2019, a baseline sample of the post-1997 immigrants (2017 New Immigrant Supplement (NIS-2017)) was added to the PSID panel.

Under the “dynamic” sample follow-up design, PSID interviewed 9,152 families in 2023. Included in these 9,152 families are 24,536 individuals: 18,030 PSID “sample persons” (see Table 2) and 6,506 “non-sample” spouses, and family members.

PSID traditionally categorizes individuals into one of two groups: sample persons and nonsample persons. Sample persons are individuals who were living in the original family unit at the time of the very first interview and their lineal descendants¹ born after 1968. For subsequent samples, such as the immigrant samples, the year of the first interview serves as the base for determining who is an original sample member, and all individuals present in the family at that time qualify. For the NIS-1997, the sample status determination for individuals is 1997 or 1999, depending on when the family was first

¹ The definition of sample person, especially linear descendant, has changed slightly over the years. From 1968 to 1993, a sample person was defined as someone who was either an original sample person; i.e., resident of a PSID sample family in 1968, or offspring born to or adopted by a sample individual who was actively participating in the study at the time. A newborn child had to appear in the study at the wave immediately following their birth to be considered a sample person. In 1994, the definition of a sample person was expanded to include children born to or adopted by a sample person even when the sample person was not participating in the study; i.e., the child need not be residing with a responding panel family unit at birth or adoption. The same current PSID definition of sample persons (implemented in 1994) applies to the 1997/1999 Immigrant sample and 2017/2019 Immigrant sample.

interviewed. For the NIS-2017, the sample status determination for individuals is 2017 or 2019, depending on when the family was first interviewed.

PSID sample persons, including all those leaving to establish separate family units (split-offs), are tracked and followed. In 2023, the following rule was the same as in the prior 2021 wave².

Specifically, sample persons who participated in the previous wave survey were followed.

Additionally, the PSID attempted to obtain an interview with sample individuals who did not respond in the prior wave (2021 survey year), but responded in the 2019 survey year.

Each sample person successfully interviewed for 2023 receives a positive value for their 2023 longitudinal individual weight. The PSID rules for following household members were designed to maintain a national sample of families and individual family members at any point in time as well as across time, excluding the immigrants entering the U.S after 1968 (Gouskova et al 2008). The immigrant refreshment samples were added in 1997 and 2017 with the goal of allowing the PSID sample to extrapolate to all U.S. families.

All other members of PSID families are considered nonsample persons. They are typically spouses and partners or other family unit members. See McGonagle and Schoeni (2006) for a detailed background on the PSID. Nonsample persons received a 2023 PSID individual longitudinal weight equal to zero (0), and thus are excluded from any properly weighted longitudinal analysis of the PSID individual data.

II. Methods to construct the longitudinal weights

Longitudinal Individual Weight

The methodology for calculating PSID longitudinal weights follows a four-year (two-wave) cycle. At the beginning of each cycle, the calculation of weights incorporates an explicit adjustment for panel attrition due to nonresponse over the past four years. At the second wave of each four-year weight development cycle, a simpler procedure is used to carry forward the individuals' weights from the

² For more detail on the following rules in 1993-2005 survey years see Table 1 in Gouskova et al. (2008) (<http://psidonline.isr.umich.edu/data/weights/Long-weights-doc.pdf>)

previous wave and to update the weights for new births and for sample panel members who are interviewed again after one or more waves of nonresponse. No explicit nonresponse adjustment is incorporated in the weight computations for the second wave. The current cycle began in 2023, and an attrition adjustment is incorporated in the 2023 longitudinal weights for individuals and families (see Gouskova et al., 2008, for a description of the longitudinal weight attrition adjustment methodology).

Step 1: The sample is divided into strata

Each individual who has ever participated in the study is assigned to one of eight strata (listed in Table 1) depending on their status transition between 2019 and 2023. These strata can be generalized into five main groups: 1) response, those who responded in 2019 and 2023 waves; 2) reentry, those who participated in the study at some point in time, were nonresponse in 2019 but responded in 2023; 3) recent entry, those who first entered the study in 2023; 4) recent exit, those who left the study between the 2019 and 2023 because of mortality or nonresponse; 5) past exit, those who appeared in the study at some point in time but left it before 2019. All groups consist of one stratum except the recent entry, which is described in more detail below.

The study has four main entry routes, so recent entry is categorized into four strata. A) Sample new: One can become a panel sample member by being part of a responding family unit in the recruitment wave, e.g., the SRC/SEO samples in 1968, the NIS-1997, or the NIS-2017³. B) Sample born in: A child born to or adopted by a parent who is a sample member becomes a sample person if the child was born after the initial interview for the specific sample. C) Sample mover in: a child may be born to or adopted by a sample person who has left the panel while that sample person is nonresponse. Also included here are older children who are adopted into responding family units. D) Nonsample: Finally, one can enter the panel by marriage or through cohabitation with a sample person, but such an individual is a nonsample member.

Step 2. Compute nonresponse adjustment factor

³ An appearer is a sample member who, through an error in the initial family listing, is subsequently discovered to have been present in a family unit since the inception of the sample. This situation arises very infrequently and usually happens within a wave or two of the original interview. Appearers are included in the new sample stratum.

Mortality-adjusted response propensities

An adjustment factor is calculated to account for attrition between the 2019 and 2023 waves among the sample respondents who participated in the 2019 study. Table 2 reports the results of a multinomial logistic regression that is used to estimate probabilities of three possible states in 2023 for those who responded in 2019: 1) response, 2) nonresponse, and 3) death. The purpose of the weight is to extrapolate to the 2023 population. The inverse of the probability of an individual responding in 2023, conditional on surviving until 2023, will be the factor used to make attrition adjustments.

Section 4.3 in Gouskova et al. (2008) describes the derivation of the probability of response in time t conditional on survival. In short, let us denote interview outcomes at time t as S_t (1=response, 2=known dead, 3=nonresponse), vital status at time t as A_t , and $\Pr(S_t = j)$ as q_j . The conditional probability can be calculated as the following.

$$\Pr(S_t=1 \mid A_t=1) = \frac{q_1}{q_1 + \Pr(A_t = 1 \mid S_t = 3) \cdot q_3}$$

We can estimate q_j directly from the multinomial logistic regression but not $\Pr(A_t = 1 \mid S_t = 3)$. Since 1993, we have assumed all nonrespondents who responded in the prior wave are living at time t . That is $\Pr(A_t = 1 \mid S_t = 3) = 1$. While this is a strong assumption, it appears to be a reasonable approximation in the PSID case (Gouskova et al., 2008). The model is estimated on the subset of the response and the recent exit groups.

Weighting classes

A propensity score stratification (Little, 1986) is used to decrease the weight variability and reduce reliance on model specification. Ten weighting classes are created based on the decile of the estimated response propensities. The adjustment factors for each class were calculated as the inverse of the average mortality-adjusted response propensities ($\frac{q_1 + q_3}{q_1}$) across both respondents and nonrespondents in each class.

Step 3. Assign individual weight based on the strata

The weight assignment follows the same rule for individuals in the same strata. Table 1 summarizes the weight assignment rules for the 2023 longitudinal individual weight. The most recent non-zero individual weight is referred to as "reference weight." For the sample person who was a nonresponse in 2019, their 2023 weight is assigned with their longitudinal individual weight computed at the most recent wave when they responded. For the sample person who responded in both 2019 and 2023, their 2019 individual weight is multiplied by the nonresponse adjustment factors in their weighting class to obtain the 2023 individual weight. For new sample members (sample born in or sample mover in), the 2023 weight is calculated as an average of reference person's and spouse/partner's weight in 2019; or half of the reference person's weight if there is no spouse/partner in the family.

Longitudinal Family Weight

The longitudinal family weight is computed as the average of the positive individual weights for sample persons and the zero-value weights for the nonsample persons in the family. For example, consider a 2023 PSID family that consisted of a young married couple in which the female spouse was a PSID sample person and had an individual longitudinal weight of 60. Her new spouse was PSID "nonsample" and therefore is assigned a "0" value for his longitudinal individual weight. The 2023 family weight for this two-person family is $(60+0)/2=30$. Note that families do change from wave to wave and family weights are constructed each wave to reflect changes in family composition due to marriage, divorce, death, and other additions of new members. See the PSID family level data set documentation and codebooks for more information.

III. Descriptive Statistics for the 2019 PSID Longitudinal Weights

Tables 3 through 6 provide descriptive information on the 2023 PSID longitudinal weights. To enable comparison of the longitudinal weights across years, the same set of descriptors is reported for the longitudinal weights since 2001.

Tables 3 and 4 summarize the total number of cases with positive, zero, and missing values for individual and family weights and the total numbers of sample and non-sample individuals (families with and without sample members). For individual weights, the number of weights with a positive value is equal to the number of sample persons, and the number of the zero-valued individual weights

is the same as the number of non-sample persons (Table 3). As with the surveys since 2005, in 2019 all families had at least one sample member (Table 4). As a result, all PSID families in 2023 carry a non-zero, positive longitudinal family weight.

Tables 5 and 6 report summary statistics for the longitudinal individual and family weights. Based on the summary statistics, the distributions of the 2023 longitudinal weights are similar to those in the recent survey waves. Across years, the measures of dispersion indicate that there is an increasing trend in variability of the distribution in the individual and family weights. This steady increase in the variability of the PSID longitudinal weights can be attributed to the periodic nonresponse adjustment (every four years) and to the reweighting that is required to reflect changes in family composition (e.g. new family formations).

Table 7 provides a key to the PSID variables names for longitudinal individual and family weight variables.

IV. Evaluation of the PSID Longitudinal Weights: Comparisons with the CPS or the ACS

Tables 8 through 11 compare PSID, the Current Population Survey (CPS) and the American Community Survey (ACS) weighted estimates for selected demographic statistics based on characteristics including age, sex, race and region. Each table reports the unweighted PSID estimates (except for region), PSID estimates weighted (as applicable) by the PSID family or individual longitudinal weight, the CPS weighted estimates and the ACS weighted estimates. For age (Table 8) and race (Table 10), the first panel of the table compares weighted estimates for the family reference person and the second panel of the table provides estimates of mean or percent values for individuals. The statistics in the right most columns of each table are simple ratios of the weighted PSID and CPS estimates and the ratios of the weighted PSID and ACS estimates. These tables are useful for examining three features of the PSID data: consistency of unweighted and weighted estimates across years, the effect of the longitudinal weights on the distributions of estimates of family and individual population characteristics, and, finally, the consistency of the PSID weighted estimates with those

obtained from the CPS data⁴ and from the ACS data⁵. The comparison with ACS estimates have been added to these tables since 2015 when we changed to use ACS data as the benchmark population totals for the cross-sectional weight.

Comparison of the unweighted and weighted PSID distributions with the CPS or with ACS distributions reveals that in a majority of cases, the weighted estimates are closer to CPS or ACS estimates than are the estimates obtained without weights. This is to be expected since due to the 1968 SEO oversample for which the baseline inclusion probabilities for African American and lower income PSID families and individuals were substantially greater than for other domains of the U.S. household population.

While there are some noticeable differences in the weighted distribution by race and region, the weighted PSID, CPS and ACS estimates align fairly closely for age and sex. However, caution is advised in placing too much emphasis on minor differences between the PSID and CPS or between the PSID and ACS weighted distribution. Analysts should keep in mind that for any given wave before 2017, the simple comparison of weighted demographic distributions does not explicitly take into account PSID non-coverage of immigrant populations after 1997. Similarly, for any given wave after 2017, the simple comparison of weighted demographic distributions does not explicitly take into account PSID non-coverage of immigrant populations after 2017. Another limitation of this comparison is that the CPS does not cover the institutionalized population while PSID, due to the dynamic nature of the sample, may include institutionalized persons. There are differences in the definitions that PSID, CPS and ACS use to code household composition and disaggregate households into family and non-family units. Finally, the PSID longitudinal weights for families and individuals

⁴ Some characteristics are not strictly comparable between the two surveys. For example, in the PSID, race is not asked of all individuals while in the CPS data all individuals are asked to provide detailed race information. To calculate proportions of black and non-black individuals in the PSID data, individual race is approximated using the race of the family reference person. Age is top-coded at 85 years old in CPS data while it is not top-coded in PSID data. CPS estimates are calculated based on CPS March supplement data collected in the same year of the PSID data collection.

⁵ Some characteristics are not strictly comparable between the two surveys. For example, in the PSID, race is not asked of all individuals while in the ACS data all individuals are asked to provide detailed race information. To calculate proportions of black and non-black individuals in the PSID data, individual race is approximated using the race of the family reference person. Age is top-coded at 99 years old in ACS data while it is not top-coded in PSID data. ACS estimates are calculated based on ACS one-year PUMS data collected in the same year of the PSID data collection.

do not include any recent adjustment to external population controls (e.g. Census, annual CPS or annual ACS population totals).

V. Recommendations for Using the 2023 PSID Longitudinal Weights

PSID data users are encouraged to use the 2023 PSID Longitudinal Weights in any longitudinal analysis they are performing to obtain near-unbiased estimates. If the unit of analysis is the individual, we recommend using the Longitudinal Individual Weight, whereas if it is the family unit, users should use the Longitudinal Family Weight. See also Duncan and Hill (1985) for a discussion of the issues involved in longitudinal analysis of family units.

References

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Appendix

Table 1. Categories based on sample status change from 2019 to 2023, and the weight assignment rule for each group

Group	Stratum	Data collected in 2019 (t_0)	Data collected at 2023 (t)	Weight Assignment Rule
Response	Responded in the prior and the current wave**	Yes	Yes	weight at t_0 *attrition adjustment
Reentry		No	Yes	Reference weight
Recent Entry	Sample new/ Sample appearer	No	Yes	a) If a member of a newly added sample then the weight is the inverse probability of selection; b) If a sample appears, then the weight is equal to an average of sample family members' individual weights
	Sample born in	No	Yes	Average of reference person's and spouse/partner's weights if there are reference person and spouse/partner in the family; OR 1/2 of reference person's weight if there is no spouse/partner in the family.
	Sample mover in	No	Yes	Average of reference person's and spouse/partner's weights if there are reference person and spouse/partner in the family; OR 1/2 of reference person's weight if there is no spouse/partner in the family
	Nonsample	No	Yes	Zero
Recent Exit	Responded in the prior wave and nonresponse in the current wave; OR Died between the prior and the current wave	Yes	No	Zero
Past Exit		No	No	Zero

Table 2. Multinomial Logistic Regression Using 2015 Covariates to Predict Response, Non-Response or Died in 2019

Died before 2023 Interview ¹					Non-Response in 2023 Interview ¹				
2019 Covariates	Estimate	SE	Wald ChiSq	P Value	2019 Covariates	Estimate	SE	Wald ChiSq	P Value
Intercept	-2.5345	0.7243	12.2468	0.0005	Intercept	0.5933	0.3202	3.433	0.0639
1st Percentile Income	-1.4682	0.6053	5.883	0.0153	1st Percentile Income	-1.6539	0.3729	19.6676	<.0001
Log Income	-0.379	0.0563	45.2861	<.0001	Log Income	-0.2153	0.028	59.2732	<.0001
99th Percentile Income	0.7122	0.6509	1.1972	0.2739	99th Percentile Income	0.825	0.1924	18.3892	<.0001
Age	0.0264	0.0141	3.5033	0.0612	Age	-0.00984	0.00414	5.6349	0.0176
Age*Age	0.000524	0.000124	17.7836	<.0001	Age*Age	0.000072	0.000056	1.6639	0.1971
Northeast	0.0338	0.1831	0.0341	0.8535	Northeast	0.0839	0.08	1.1005	0.2942
North Central	-0.0953	0.1587	0.3602	0.5484	North Central	-0.0477	0.069	0.477	0.4898
West	-0.2212	0.1803	1.5055	0.2198	West	-0.1799	0.0739	5.9219	0.015
Male	0.4499	0.1261	12.7213	0.0004	Male	0.1306	0.0528	6.1183	0.0134
SMSA	-0.2423	0.1315	3.3959	0.0654	SMSA	-0.2123	0.0565	14.1285	0.0002
Might Move	0.5467	0.1487	13.5093	0.0002	Might Move	-0.0153	0.0577	0.0707	0.7904
SEO	-0.927	1.2295	0.5685	0.4508	SEO	-2.5893	0.554	21.8473	<.0001
SEO*1st percentile	-0.5938	0.9735	0.3721	0.5419	SEO*1st percentile	2.0693	0.5601	13.6502	0.0002
SEO*Log Income	0.0551	0.0981	0.315	0.5746	SEO*Log Income	0.2052	0.0496	17.1068	<.0001
SEO*Age	0.0327	0.0242	1.83	0.1761	SEO*Age	0.00807	0.0081	0.9911	0.3195
SEO*Age*Age	-0.00029	0.00022	1.7515	0.1857	SEO*Age*Age	-0.00013	0.000118	1.2713	0.2595
SEO*Northeast	-0.4778	0.4835	0.9769	0.323	SEO*Northeast	0.3359	0.1814	3.4277	0.0641
SEO*North Central	-0.1163	0.3063	0.1442	0.7041	SEO*North Central	0.3221	0.1249	6.6482	0.0099
SEO*West	0.1709	0.3959	0.1863	0.666	SEO*West	0.4866	0.179	7.3867	0.0066
SEO*Male	0.0499	0.2218	0.0507	0.8219	SEO*Male	0.1356	0.0961	1.9907	0.1583
SEO*SMSA	0.0221	0.2351	0.0088	0.9253	SEO*SMSA	0.0392	0.1065	0.1359	0.7124
SEO*Might Move	-0.4445	0.2451	3.288	0.0698	SEO*Might Move	0.149	0.1	2.2221	0.1361
1997/1999 Immigrant Sample	-0.2199	0.2168	1.0282	0.3106	1997/1999 Immigrant Sample	0.3988	0.0826	23.2944	<.0001
2017/2019 Immigrant Sample	-0.5651	0.3277	2.9726	0.0847	2017/2019 Immigrant Sample	1.0543	0.0689	233.9872	<.0001

1. Omitted outcome category is responded in 2023

Bold indicates significant at the alpha=0.05 level

Table 3. PSID Longitudinal Individual Weights, 2001-2023

Year	Total Number of Individuals	Total Number of “Sample Persons”	Total Number of “Nonsample Persons”	Number of Cases with Positive Individual Weight*	Number of Cases with Zero Individual Weight*	Number of Cases with Missing Individual Weight
2001	21400	15646	5754	15646	5754	0
2003	22290	16012	6278	16012	6278	0
2005	22918	16620	6298	16620	6298	0
2007	23508	16906	6602	16906	6602	0
2009	24385	17471	6814	17471	6814	0
2011	24661	17643	7018	17643	7018	0
2013	24952	17785	7167	17785	7167	0
2015	24637	17505	7132	17505	7132	0
2017*	26445	19258	7187	17643	8802	0
2019	26084	19055	7029	19055	7029	0
2021	24669	18031	6638	18031	6638	0
2023	24536	18030	6506	18030	6506	0

* The sample persons from 2017 New Immigrant Supplement did not have longitudinal weights in 2017

Table 4. PSID Longitudinal Family Weights, 2001-2023

Year	Total number of families	Number of families with no “sample person”	Number of families with positive weight	Number of families with zero weight	Number of families with missing weight
2001	7406	211	7195	211	0
2003	7822	257	7565	257	0
2005	8002	0	8002	0	0
2007	8289	0	8289	0	0
2009	8690	0	8690	0	0
2011	8907	0	8907	0	0
2013	9063	0	9063	0	0
2015	9048	0	9048	0	0
2017*	9607	0	9155	0	0
2019	9569	0	9569	0	0
2021	9207	0	9207	0	0
2023	9152	0	9152	0	0

* The sample persons from 2017 New Immigrant Supplement did not have longitudinal weights in 2017. Therefore, 2017 New immigrant families have zero family weight in 2017

Table 5. Summary Statistics for the PSID Longitudinal Individual Weights, 2001-2034 (Sample Persons Only)

Year	N	Mean	Standard Deviation	Min	Max	Coefficient of Variation
2001	15646	25.07	18.97	0.25	167.68	0.76
2003	16012	25.62	19.54	0.25	173.56	0.76
2005	16620	24.81	19.33	0.23	173.56	0.78
2007	16906	25.38	20.09	0.20	181.45	0.79
2009	17471	24.57	19.9	0.23	181.45	0.81
2011	17643	25.65	21.47	0.25	196.44	0.84
2013	17785	24.75	21.11	0.25	196.44	0.85
2015	17505	26.96	23.91	0.28	225.82	0.89
2017*	17643	26.02	23.50	0.20	167.07	0.90
2019	19055	28.88	26.98	0.21	255.16	0.93
2021	18031	28.41	26.60	0.16	255.16	0.94
2023	18030	31.42	30.27	0.18	283.43	0.96

*2017 New Immigrant sample persons did not have longitudinal weights in 2017 so they are excluded from this table

Table 6. Summary Statistics for the PSID Longitudinal Family Weights, 2001-2023

Year	N	Mean	Standard Deviation	Min	Max	Coefficient of Variation
2001*	7195	22.03	16.74	0.06	167.68	0.76
2003*	7565	22.06	17.06	0.12	132.64	0.77
2005	8002	21.04	16.82	0.12	136.03	0.8
2007	8289	21.32	17.4	0.1	139.34	0.82
2009	8690	20.66	17.28	0.1	139.34	0.84
2011	9807	21.71	18.75	0.12	150.89	0.87
2013	9063	20.85	18.44	0.08	150.89	0.89
2015	9048	22.80	21.06	0.10	156.12	0.92
2017**	9155	22.11	20.66	0.08	142.78	0.93
2019	9569	24.73	24.06	0.06	154.57	0.97
2021	9207	24.23	23.57	0.07	166.49	0.97
2023	9152	26.75	26.79	0.07	210.13	1.00

*2001 and 2003 Based on families with positive weights only

**2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from this table

Table 7. Names of the PSID Longitudinal Weight Variables, 1993-2023

Year	Core Longitudinal Weight	
	Individual	Family
1993	ER30864	V23361
1994	ER33119	ER4160
1995	ER33275	ER7000
1996	ER33318	ER9251
	Core/Immigrant Longitudinal Weight	
	Individual	Family
1997	ER33430	ER12084
1999	ER33546	ER16518
2001	ER33637	ER20394
2003	ER33740	ER24179
2005	ER33848	ER28078
2007	ER33950	ER41069
2009	ER34045	ER47014
2011	ER34154	ER52436
2013	ER34268	ER58257
2015	ER34413	ER65492
2017	ER34650	ER71570
	Core/1997 Immigrant/2017 Immigrant Longitudinal Weight	
	Individual	Family
2019	ER34863	ER77631
2021	ER35064	ER81958
2023	ER35264	ER85812

Table 8. Comparison of PSID, CPS, and ACS Weighted Estimates of Mean and Median Age, 2001-2023

A. Family Level Data (age of reference person)

	PSID** unweighted		PSID** weighted***		CPS**** weighted		ACS***** weighted		PSID/CPS Ratio		PSID/ACS Ratio	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Year	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[3]/[5]	[4]/[6]	[3]/[7]	[4]/[8]
2001	44.91	43	49.39	47	48.72	46	Not Used		1.01	1.02	Not Used	
2003	44.98	43	49.6	48	48.69	47			1.02	1.02		
2005	45.08	44	49.96	48	49.04	47			1.02	1.02		
2007	45.04	44	50.13	49	49.30	48			1.02	1.02		
2009	45.79	44	49.82	49	47.60	47			1.05	1.04		
2011	45.21	43	50.60	50	48.11	47			1.05	1.06		
2013	45.68	43	51.21	51	48.56	48			1.05	1.06		
2015	45.65	43	52.02	52	Not Used		51.86	52	Not Used		1.00	1.00
2017*	46.20	43	53.14	54			52.96	53			1.00	1.02
2019	46.44	43	52.36	53			51.93	52			1.01	1.02
2021	47.14	44	53.08	53			51.85	52			1.02	1.02
2023	47.67	44	53.39	53			51.90	52			1.03	1.02

*2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from the 2017 estimates

** Missing value of age of reference person in PSID data was imputed.

*** PSID weighted estimates were weighted by PSID longitudinal family weight

**** Age in CPS data is top-coded at 85 years old.

***** Age in ACS data is top-coded at 99 years old. The families with reference person who was foreign-born and entered the U.S. after 1997 were excluded from the data used for calculating 2017 ACS estimates

‡Prior to 2015, we used CPS estimates as the population totals for post-stratification so CPS data was used as the benchmark for this table. We started to use ACS estimates as the population totals for calibration since 2015 and thus changed the benchmark for the comparison.

B. Individual Level Data (age of individual)

	PSID** unweighted***		PSID** weighted****		CPS***** weighted		ACS***** weighted		PSID/CPS Ratio		PSID/ACS Ratio	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Year	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years	Years
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[3]/[5]	[4]/[6]	[3]/[7]	[4]/[8]
2001	30.86	29	36.30	36	35.65	35	Not Used		1.02	1.03	Not used	
2003	31.25	29	36.53	36	35.82	35			1.02	1.03		
2005	31.41	29	36.93	36	36.17	36			1.02	1.00		
2007	31.61	29	37.35	37	36.44	36			1.02	1.03		
2009	32.30	29	37.90	37	36.80	36			1.03	1.03		
2011	31.95	29	38.75	38	37.00	36			1.05	1.06		
2013	32.91	30	39.27	38	37.64	37			1.04	1.03		
2015	32.55	30	40.18	39	Not Used		38.31	37	Not Used		1.05	1.05
2017*	32.93	31	40.75	39			38.88	38			1.05	1.03
2019	33.04	31	39.69	38			39.10	38			1.02	1.00
2021	33.97	32	40.65	39			39.31	38			1.03	1.03
2023	34.20	33	40.61	39			39.70	39			1.02	1.00

*2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from the 2017 estimates

** Missing value of age in PSID data was imputed

*** Unweighted individual level PSID estimates were calculated based on sample and non-sample individuals

**** PSID weighted estimates were weighted by PSID longitudinal individual weight

***** Age in CPS data is top-coded at 85 years old

***** Age in ACS data is top-coded at 99 years old. The individuals who were foreign-born and entered the U.S. after 1997 were excluded from the data used for calculating 2017 ACS estimates

‡Prior to 2015, we used CPS estimates as the population totals for post-stratification so CPS data was used as the benchmark for this table. We started to use ACS estimates as the population totals for calibration since 2015 and thus changed the benchmark for the comparison.

Table 9. Comparison of PSID, CPS and ACS Weighted Estimates of % Population by Sex, 2001-2023

Year	PSID unweighted**		PSID weighted***		CPS weighted		ACS**** weighted		PSID/CPS Ratio		PSID/ACS Ratio	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[3]/[5]	[4]/[6]	[3]/[7]	[4]/[8]
2001	47.93	52.07	48.08	51.92	48.86	51.14	Not Used		0.98	1.02	Not Used	
2003	47.98	52.02	48.17	51.83	48.92	51.08			0.98	1.01		
2005	47.88	52.12	48.23	51.77	49.03	50.97			0.98	1.02		
2007	47.88	52.12	48.58	51.42	49.08	50.92			0.99	1.01		
2009	47.48	52.52	48.40	51.60	49.10	50.90			0.99	1.01		
2011	47.87	52.13	48.74	51.26	49.21	50.79			0.99	1.01		
2013	47.69	52.31	48.83	51.17	48.96	51.04			1.00	1.00		
2015	47.53	52.47	48.70	51.30	Not Used		49.20	50.80	Not Used		0.99	1.01
2017*	47.69	52.31	48.62	51.38			49.28	50.72			0.99	1.01
2019	47.72	52.28	49.19	50.81			49.23	50.77			1.00	1.00
2021	47.7	52.3	48.88	51.12			49.52	50.48			0.99	1.01
2023	47.5	52.5	49.22	50.78			49.49	50.51			0.99	1.01

*2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from the 2017 estimates

** Unweighted individual level PSID estimates were calculated based on sample and non-sample individuals

*** PSID weighted estimates were weighted by PSID longitudinal individual weight

**** The individuals who were foreign-born and entered the U.S. after 1997 were excluded from the data used for calculating 2017 ACS estimates

‡Prior to 2015, we used CPS estimates as the population totals for post-stratification so CPS data was used as the benchmark for this table. We started to use ACS estimates as the population totals for calibration since 2015 and thus changed the benchmark for the comparison.

Table 10. Comparison of PSID, CPS, and ACS Weighted Estimates of % Population by Race, 2001-2023**A. Family Level Data (age of reference person)**

Year	PSID** unweighted		PSID** weighted***		CPS**** weighted		ACS***** weighted		PSID/CPS Ratio		PSID/ACS Ratio	
	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[3]/[5]	[4]/[6]	[3]/[7]	[4]/[8]
2001	69.60	30.40	87.40	12.60	87.80	12.20	Not Used		1	1.03	Not Used	
2003	68.40	31.60	87.20	12.80	87.90	12.10			0.99	1.06		
2005	66.70	33.30	86.10	13.90	87.80	12.20			0.98	1.14		
2007	65.70	34.30	85.90	14.10	87.60	12.40			0.98	1.14		
2009	64.60	35.40	84.40	15.60	87.50	12.50			0.96	1.25		
2011	62.93	37.07	85.18	14.82	87.35	12.65			0.98	1.17		
2013	61.84	38.16	83.54	16.46	86.97	13.03			0.96	1.26		
2015	61.20	38.80	83.73	16.27	Not Used		87.09	12.91	Not Used		0.96	1.26
2017*	60.62	39.38	83.64	16.36			86.85	13.15			0.96	1.24
2019	60.84	39.16	83.45	16.55			86.53	13.47			0.96	1.23
2021	61.19	38.81	83.50	16.50			86.42	13.58			0.97	1.22
2023	60.41	39.59	83.24	16.76			86.15	13.85			0.97	1.21

*2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from the 2017 estimates

** Black was defined based on the race first mention of reference person for PSID estimates. Missing value of race first mention of reference person in PSID data was imputed.

*** PSID weighted estimates were weighted by PSID longitudinal family weight

**** Black was defined by black alone or in combination with one or more other races for CPS

***** Black was defined by black alone or in combination with one or more other races for ACS estimates. The families with reference person who was foreign-born and entered the U.S. after 1997 were excluded from the data used for calculating 2017 ACS estimates

†Prior to 2015, we used CPS estimates as the population totals for post-stratification so CPS data was used as the benchmark for this table. We started to use ACS estimates as the population totals for calibration since 2015 and thus changed the benchmark for the comparison.

B. Individual Level Data

Year	PSID** unweighted***		PSID** weighted****		CPS***** weighted		ACS***** weighted		PSID/CPS Ratio		PSID/ACS Ratio	
	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[3]/[5]	[4]/[6]	[3]/[7]	[4]/[8]
2001	67.00	33.00	86.90	13.10	87.30	12.70	Not Used		1.00	1.03	Not Used	
2003	66.10	33.90	86.60	13.40	87.50	12.50			0.99	1.07		
2005	64.60	35.40	86.00	14.00	87.40	12.60			0.98	1.11		
2007	64.20	35.80	85.90	14.10	87.40	12.60			0.98	1.12		
2009	63.70	36.30	85.20	14.80	86.70	13.30			0.98	1.11		
2011	63.35	36.65	84.19	15.81	86.43	13.57			0.97	1.17		
2013	61.88	38.12	84.79	15.21	85.95	14.05			0.99	1.08		
2015	61.51	38.49	84.85	15.15	Not Used		86.10	13.90	Not Used		0.99	1.09
2017*	61.19	38.81	84.42	15.58			85.70	14.30			0.99	1.09
2019	62.03	37.97	84.40	15.60			85.75	14.25			0.98	1.09
2021	62.93	37.07	84.58	15.42			85.77	14.23			0.99	1.07
2023	62.39	37.61	84.59	15.41			85.59	14.41			0.98	1.11

*2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from the 2017 estimates

** Individual race in PSID data was approximated using the race of the family reference person. Black was defined based on the race first mention of reference person for PSID estimates. Missing value of race first mention in PSID data was imputed.

*** Unweighted individual level PSID estimates were calculated based on sample and non-sample individuals.

****PSID weighted estimates were weighted by PSID longitudinal individual weight

*****Black was defined by black alone or in combination with one or more other races for CPS

***** Black was defined by black alone or in combination with one or more other races for ACS estimates. The individuals who were foreign-born and entered the U.S. after 1997 were excluded from the data used for calculating 2017 ACS estimates

Table 11. Comparison of PSID and CPS Weighted Estimates of % Population by Region, 2001-2023

Individual Level Data

Year	PSID weighted				CPS weighted(before 2015) or ACS weighted (since 2015)				PSID/CPS Ratio (before 2015) or PSID/ACS Ratio (since 2015)			
	North- east	Mid- west	South	West	North- east	Mid- west	South	West	North- east	Mid- west	South	West
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[1]/[5]	[2]/[6]	[3]/[7]	[4]/[8]
2001	19.3	27.49	31.69	21.52	18.98	22.76	35.57	22.69	1.02	1.21	0.89	0.95
2003	18.86	26.93	31.96	22.26	18.93	22.59	35.60	22.88	1.00	1.19	0.90	0.97
2005	18.02	27.27	32.68	22.02	18.55	22.28	36.09	23.09	0.97	1.22	0.91	0.95
2007	18.26	26.63	32.88	22.23	18.24	22.06	36.40	23.30	1.00	1.21	0.90	0.95
2009	17.41	26.28	33.24	23.07	17.97	21.78	36.77	23.48	0.97	1.21	0.90	0.98
2011	17.44	26.01	33.40	23.16	17.9	21.59	37.00	23.50	0.97	1.20	0.90	0.99
2013	17.37	25.97	33.38	23.28	17.72	21.35	37.33	23.6	0.98	1.22	0.89	0.99
2015	16.88	26.01	33.60	23.51	17.51	21.13	37.70	23.66	0.96	1.23	0.89	0.99
2017*	16.43	26.22	33.93	23.42	17.27	21.05	37.95	23.72	0.95	1.25	0.89	0.99
2019	16.84	24.37	35.12	23.67	17.06	20.82	38.26	23.87	0.99	1.17	0.92	0.99
2021	16.76	24.57	35.38	23.30	17.22	20.74	38.33	23.70	0.97	1.18	0.92	0.98
2023	16.60	23.99	35.37	24.04	17.01	20.58	38.85	23.56	0.98	1.17	0.91	1.02

**2017 New Immigrant families did not have longitudinal weights in 2017 so they are excluded from the 2017 estimates