

## Appendix: Benchmarks and measures of error by sample

### 2021 American Community Survey

<b>Military service</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Never served in the military	91.9		-2.9	-4.8	-3.7		-12.4	-12.6	-9.5
Only on active duty for training in the Reserves or National Guard	1.2		+0.7	+1.4	+0.7		+5.4	+4.8	+3.2
Now on active duty	0.5		+0.2	+0.9	+0.2		+1.8	+2.6	+1.6
On active duty in the past, but not now	6.4		+1.5	+2.5	+1.9		+4.5	+3.5	+3.9
<i>Average absolute error</i>		1.8	1.3	2.4	1.6	5.5	6.0	5.9	4.5
<b>Type of dwelling</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
A mobile home	5.0		+0.2	+0.6	+1.4		+4.7	+4.0	+2.4
A one-family house detached from any other house	67.8		-1.5	-4.4	-5.9		-12.0	-10.7	-6.1
A one-family house attached to one or more houses	6.2		+2.1	+3.3	+2.6		+4.2	+4.6	+3.6
A building with two or more apartments	20.9		-2.1	-0.9	+0.2		+0.5	-1.7	-2.2
Boat, RV, van, etc.	0.1		+0.5	+0.6	+0.8		+1.7	+1.8	+1.0
<i>Average absolute error</i>		1.8	1.3	1.9	2.2	4.1	4.6	4.6	3.0
<b>Housing tenure</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Owned by you or someone in your household with a mortgage or loan (include home equity loans)	43.9		+0.0	+0.9	-3.1		-8.2	-9.0	-5.9
Owned by you or someone in your household free and clear (without a mortgage or loan)	25.3		-1.1	-2.9	-1.4		+0.5	+4.7	+5.6
Rented	29.3		-1.5	+1.1	+2.3		+4.4	-0.3	-1.9
Occupied without payment of rent	1.5		+0.9	+0.2	+1.2		+2.0	+1.8	+1.0
<i>Average absolute error</i>		1.4	0.9	1.3	2.0	3.8	3.8	3.9	3.6

Note: Benchmark estimates are based on noninstitutionalized adults.

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**2021 American Community Survey (continued)**

<b>Number of cars in household</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
No cars	6.1		+1.4	+3.5	+5.2		+7.5	+7.5	+3.8
1 car	23.8		+2.7	+1.9	+2.7		+15.3	+14.8	+15.0
2 cars	39.0		-1.6	-2.0	-2.5		-7.8	-8.2	-5.2
3 cars	19.1		-2.5	-1.7	-3.6		-9.1	-9.5	-7.9
4 cars	8.0		-1.1	-1.2	-0.9		-5.0	-4.4	-4.2
5 cars	2.6		-0.1	-0.7	-1.1		-1.5	-1.3	-1.4
6+ cars	1.4		+0.4	-0.5	-0.6		-0.7	+0.0	-0.8
<i>Average absolute error</i>		1.8	1.4	1.6	2.4	6.2	6.7	6.5	5.5

<b>English proficiency</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Speaks very well	12.7		+1.8	+3.2	+0.2		+4.4	+2.7	+3.8
Speaks well	4.4		-0.3	+0.0	+0.0		+0.0	+0.1	-1.5
Does not speak well	3.2		+0.0	-1.1	-1.5		-2.2	-1.4	-2.5
Does not speak at all	1.5		-0.9	-1.4	-1.3		-1.2	-1.0	-1.2
Speaks only English at home	78.2		-1.2	-1.1	+1.7		-1.9	-2.1	+0.6
<i>Average absolute error</i>		1.1	0.8	1.4	1.0	1.8	2.0	1.5	1.9

<b>U.S. citizenship</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
U.S. citizen	92.5		-2.2	-1.0	+1.1		+1.5	+0.1	+1.8
<i>Average absolute error</i>		1.4	2.2	1.0	1.1	1.1	1.5	0.1	1.8

<b>Number of adults in household</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
1 adult	18.1		+1.4	-3.2	+3.7		+10.0	+8.5	+11.6
2 adults	50.5		+0.4	+0.2	-0.8		-2.4	-0.5	-3.4
3-4 adults	26.8		-0.6	-0.5	-4.3		-7.2	-9.5	-7.7
5+ adults	4.6		-1.2	-0.5	-0.3		-2.2	-1.4	-1.6
<i>Average absolute error</i>		1.4	0.9	1.1	2.3	5.5	5.4	5.0	6.1

Note: Benchmark estimates are based on noninstitutionalized adults.

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**2021 American Community Survey (continued)**

Number of children in household	Benchmark (%)	Prob. mean	Prob. 1	Prob. 2	Prob. 3	Opt-in mean	Opt-in 1	Opt-in 2	Opt-in 3
No children	66.9		+3.1	-3.3	+0.2		+0.6	+0.6	+5.5
1 child	14.6		-0.1	-0.6	-0.7		-0.3	-1.8	-3.0
2 children	11.6		-1.7	-0.4	-1.2		-0.9	+0.0	-1.3
3-4 children	6.1		-1.1	+0.3	+0.3		-0.9	-1.6	-2.2
5+ children	0.7		-0.2	+0.0	-0.2		-0.2	-0.2	+0.0
<i>Average absolute error</i>		0.9	1.3	0.9	0.5	1.3	0.6	0.8	2.4

Note: Benchmark estimates are based on non-institutionalized adults.

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**Centers for Disease Control and Prevention COVID Data Tracker**

COVID-19 vaccination status	Benchmark (%)	Prob. mean	Prob. 1	Prob. 2	Prob. 3	Opt-in mean	Opt-in 1	Opt-in 2	Opt-in 3
<i>June 29, 2021</i>									
Fully vaccinated	57.2		+8.9	+5.7			-0.1	+2.7	+4.7
Partly vaccinated	9.0		-6.0	-4.6			-2.5	-1.8	-2.8
Not vaccinated	33.8		-4.4	-2.8			+2.0	-2.1	-2.4
<i>July 21, 2021</i>									
Fully vaccinated	59.6				+5.4				
Partly vaccinated	8.8				-6.4				
Not vaccinated	31.6				+0.0				
<i>Average absolute error</i>		4.9	6.4	4.4	3.9	2.3	1.5	2.2	3.3

Note: Due to its later field date, probability panel 3 was compared to a benchmark dated July 21, 2021. All other samples were compared to a benchmark from June 29, 2021.

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**2021 Current Population Survey Annual Social and Economic Supplement**

<b>Worked last year</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Worked at a job or business in 2020	64.2		-3.9	+1.0	-1.1		-11.7	-12.5	-8.1
<i>Average absolute error</i>		2.0	3.9	1.0	1.1	10.8	11.7	12.5	8.1
<b>Unemployment compensation</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Received state or federal unemployment compensation at any time during 2020	9.3		+3.1	+7.9	+3.7		+9.6	+11.7	+7.7
<i>Average absolute error</i>		4.9	3.1	7.9	3.7	9.6	9.6	11.7	7.7
<b>Workers' compensation</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Received workers' compensation or other payments as a result of a job-related injury or illness in 2020	0.4		+1.0	+2.5	+1.2		+9.7	+11.2	+7.2
<i>Average absolute error</i>		1.6	1.0	2.5	1.2	9.4	9.7	11.2	7.2
<b>Food stamps</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Anyone in household received benefits from the Supplemental Nutritional Assistance Program (SNAP) or used a SNAP benefit card in 2020	11.1		+2.9	+7.9	+7.4		+18.9	+18.8	+10.6
<i>Average absolute error</i>		6.1	2.9	7.9	7.4	16.1	18.9	18.8	10.6
<b>Social Security</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Received Social Security payments in 2020	21.8		+3.8	+5.9	+3.9		+17.0	+15.7	+12.8
<i>Average absolute error</i>		4.6	3.8	5.9	3.9	15.2	17.0	15.7	12.8

Note: With the exception of union membership, benchmark estimates are weighted using the [entropy balanced weights](#) to correct for nonresponse due to the coronavirus pandemic. The benchmark for union membership uses the weight for the outgoing rotation group.

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**2021 CPS ASEC (continued)**

<b>Where lived one year ago</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Same house or apartment	92.4		-4.5	-7.1	-7.6		-9.7	-10.5	-7.0
Lived somewhere else in the U.S. or Puerto Rico	7.4		+3.1	+6.0	+5.7		+5.4	+5.3	+3.8
Lived outside the U.S.	0.2		+0.7	+0.8	+1.0		+3.4	+3.0	+2.2
<i>Average absolute error</i>		4.1	2.8	4.6	4.8	5.6	6.2	6.3	4.3
<b>Marital status</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Married	51.8		+2.0	+1.0	-0.9		-10.7	-5.9	-7.6
Living with a partner	8.1		-0.2	+2.0	+3.5		+2.6	+1.6	-0.9
Divorced	8.4		-1.1	+0.1	+1.9		+2.8	+2.1	+2.0
Separated	1.6		-0.3	+0.5	-0.2		+1.4	+1.1	+0.8
Widowed	5.9		-1.7	-1.1	-0.7		-0.9	-0.6	+0.8
Never been married	24.2		+0.6	-2.9	-3.5		+3.9	+0.2	+4.3
<i>Average absolute error</i>		1.3	1.0	1.3	1.8	2.8	3.7	1.9	2.7
<b>Union membership</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Member of a labor union or employee association similar to a union	5.6		+2.8	+4.3	+2.2		+6.2	+7.2	+4.8
<i>Average absolute error</i>		3.1	2.8	4.3	2.2	6.1	6.2	7.2	4.8

Note: With the exception of union membership, benchmark estimates are weighted using the [entropy balanced weights](#) to correct for nonresponse due to the coronavirus pandemic. The benchmark for union membership uses the weight for the outgoing rotation group.

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## June/July 2021 Basic Monthly Current Population Survey

<b>Job status last week</b>	<b>Benchmark (%)</b>	<b>Prob. Mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
<i>June 2021</i>									
Worked for pay last week	56.1		-4.0	-1.2			-13.0	-11.9	-9.6
Absent from work last week	2.9		+0.9	+1.7			+2.9	+3.5	+3.0
Not employed last week	40.3		+3.1	-0.2			+10.0	+7.3	+7.0
<i>July 2021</i>									
Worked for pay last week	55.5				-4.1				
Absent from work last week	4.0				+1.5				
Not employed last week	39.9				+2.7				
<i>Average absolute error</i>		2.2	2.7	1.0	2.8	7.6	8.6	7.6	6.5
<b>Work affected by COVID-19*</b>									
<i>June 2021</i>									
Employed last week but unable to work during the last four weeks because employer closed due to the coronavirus	1.3		+0.6	+1.5			+7.4	+8.8	+6.0
Employed last week and work was not affected by the coronavirus in the last four weeks	57.7		-3.7	-1.2			-17.9	-17.7	-13.1
<i>July 2021</i>									
Employed last week but unable to work during the last four weeks because employer closed due to the coronavirus	1.1				+0.1				
Employed last week and work was not affected by the coronavirus in the last four weeks	58.3				-2.8				
<i>Average absolute error</i>		1.7	2.2	1.3	1.5	11.8	12.7	13.3	9.6

\* Estimates are based on all adults; however, the category "Not employed last week" is excluded from the average absolute error. This because that category is already included in the benchmark for job status last week.

Note: Due to its later field date, probability panel 3 is benchmarked against the July 2021 Basic Monthly CPS data. All other surveys are benchmarked against the June 2021 Basic Monthly CPS data.

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## 2020 Presidential Election

<b>Voter turnout</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Voted (among eligible voters)	66.2		+8.9	+7.6	+8.2		-0.6	-0.4	+3.0
<i>Average absolute error</i>		8.2	8.9	7.6	8.2	1.3	0.6	0.4	3.0
<b>Presidential vote choice</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Voted Trump	46.9		-5.0	-0.8	-3.7		-3.8	-2.6	-2.6
Voted Biden	51.3		+0.3	-1.6	+0.1		+1.4	+0.1	-0.1
Voted Jorgensen	1.2		+1.6	+0.3	+1.1		+0.9	+1.2	+1.3
Voted Hawkins	0.3		+0.5	+0.2	+0.8		+1.3	+0.7	+0.9
Voted other	0.4		+0.7	+0.4	+1.3		-0.1	+0.2	+0.2
<i>Average absolute error</i>		1.2	1.6	0.7	1.4	1.2	1.5	1.0	1.0

Note: The benchmark for turnout in the 2020 presidential election comes from the [U.S. Elections Project](#) as of May 16, 2021. The benchmarks for presidential vote choice are from the [Federal Election Commission](#).

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## 2010 National Health and Nutrition Examination Survey

<b>Food allergy</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Has a food allergy	9.4		+2.9	+3.6	+3.4		+6.8	+6.4	+5.0
<i>Average absolute error</i>		3.3	2.9	3.6	3.4	6.1	6.8	6.4	5.0

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**2020 National Health Interview Survey**

	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
<b>Health insurance</b>									
Covered by health insurance	90.8		-1.1	-3.4	-1.9		-4.1	-4.7	-3.6
<i>Average absolute error</i>		2.1	1.1	3.4	1.9	4.1	4.1	4.7	3.6
<b>Smoking status</b>									
Now smoke every day	9.2		-1.4	+0.4	+0.3		+10.8	+9.2	+5.2
Smoke some days	3.0		+0.0	+1.7	+0.8		+3.9	+3.7	+2.2
Do not now smoke	22.2		+1.1	+1.3	+0.4		-3.9	-5.4	-1.3
Never smoked 100 cigarettes	63.5		+1.4	-1.9	-0.4		-9.7	-7.0	-4.7
<i>Average absolute error</i>		0.9	1.0	1.3	0.5	5.6	7.1	6.3	3.4
<b>E-cigarette usage</b>									
Now vape every day	1.7		+0.8	+1.8	+0.8		+4.8	+4.6	+4.4
Vape some days	1.9		+0.5	+3.8	+2.1		+10.5	+8.4	+6.1
Do not now vape	13.4		+0.9	+5.7	+4.0		+1.1	-1.2	-2.6
Never vaped	81.0		-1.2	-10.3	-5.5		-15.8	-11.8	-6.9
<i>Average absolute error</i>		3.1	0.9	5.4	3.1	6.5	8.1	6.5	5.0
<b>High blood pressure</b>									
Ever diagnosed with high blood pressure	31.1		-0.9	+4.2	+2.3		+8.2	+6.2	+4.7
<i>Average absolute error</i>		2.5	0.9	4.2	2.3	6.4	8.2	6.2	4.7
<b>Parental status</b>									
Parent of child in household	26.0		-1.6	+1.9	-0.9		-0.4	-0.7	-4.3
<i>Average absolute error</i>		1.5	1.6	1.9	0.9	1.8	0.4	0.7	4.3

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## 2021 Survey of Income and Program Participation

<b>Retirement account</b>	<b>Benchmark (%)</b>	<b>Prob. mean</b>	<b>Prob. 1</b>	<b>Prob. 2</b>	<b>Prob. 3</b>	<b>Opt-in mean</b>	<b>Opt-in 1</b>	<b>Opt-in 2</b>	<b>Opt-in 3</b>
Had a retirement account such as a 401(k), 403(b), IRA or other account designed specifically for retirement savings at any time during 2020	49.9		+3.2	+1.5	-0.3		-7.0	-3.5	-2.2
<i>Average absolute error</i>		1.7	3.2	1.5	0.3	4.2	7.0	3.5	2.2

Note: The question wording and benchmark value for these estimates was originally taken from the Current Population Survey (CPS) Annual Social and Economic Supplement. Initial analyses showed all samples exceeding the CPS benchmark by a large margin. Investigation of this finding revealed several studies showing that the CPS severely underestimates [retirement income](#) and [account possession](#), and that the large errors were most likely due to an unreliable benchmark. Consequently, this report instead uses a comparable benchmark from the Survey of Income and Program Participation determined to be [more reliable](#).

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