

State Undercount Rates for Young Children in the 2020 Census

By

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Over the past decade there has been growing interest among researchers and Census stakeholders in the high and growing net undercount of young children (ages 0 to 4) in the U.S. Census which has resulted in a stream of research on this topic (O'Hare 2015; U.S. Census Bureau 2022; Jensen 2022; Griffin and O'Hare 2022). This paper extends that stream of research by providing newly available estimates of state net undercounts for ages 0 to 4 in the 2020 Census.

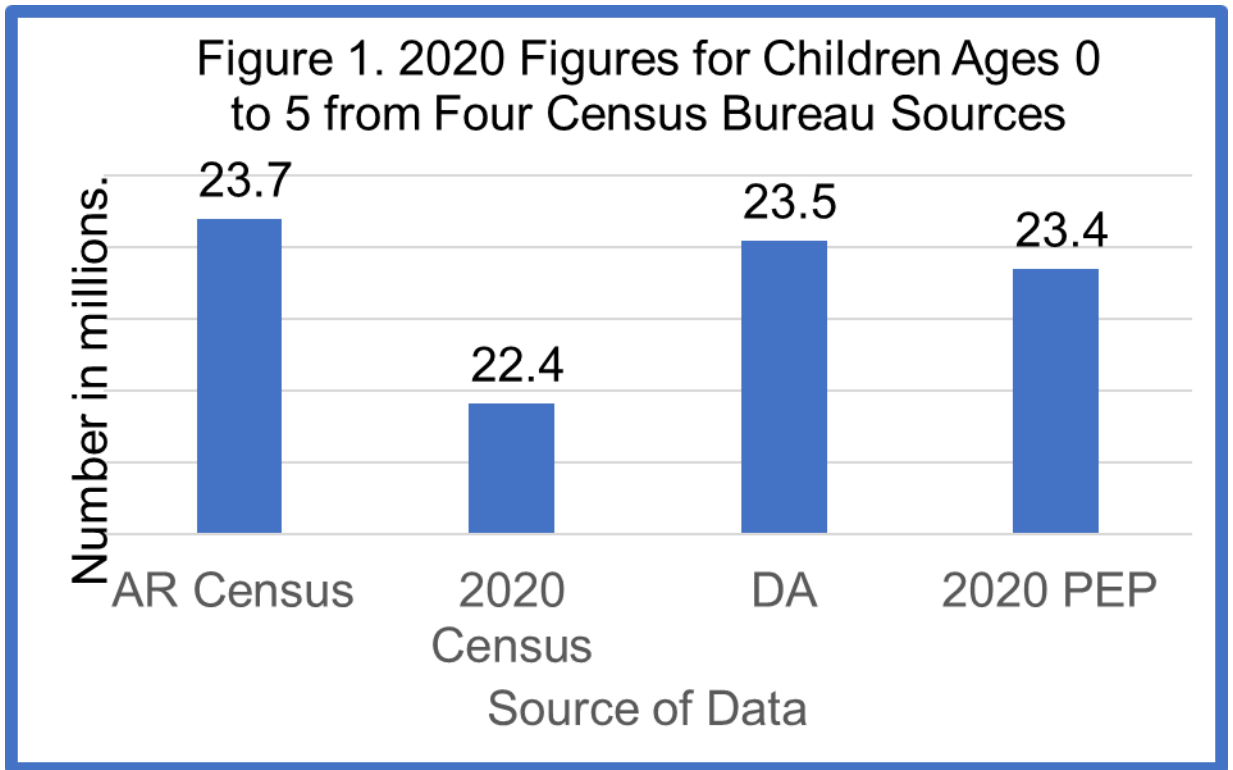
The undercount estimates used here are derived by comparing the Census counts to the Vintage 2020 Population Estimates. The population estimates are thought to be more accurate than the Census for two main reasons. First, there is clearly a high net undercount of young children in the 2020 Census. Second, the population estimates for ages 0 to 4 are largely based on birth certificate data which is widely thought to be very reliable. The Census Bureau's 2020 Demographic Analysis tables show 99 percent of the population ages 0 to 4 are accounted for by births (U.S. Census Bureau 2020). This method has also been used by other researchers (O'Hare, 2014; Jensen and Johnson 2022; King et al. 2018; Hartley et. al. 2021).¹

¹ Later this year, the Census Bureau is likely to release an experimental DA series with DA data for ages 0 to 4 for all states and counties. That series is likely to be more accurate than the Population Estimates data used here, but the differences are likely to be minor.

National Data

Figure 1 shows the number of children ages 0 to 5 from the Vintage 2020 Population Estimates, 2020 Administrative Records (AR) Census, the 2020 Census, and the Census Bureau's Demographic Analysis (DA). The age group 0 to 5 is used in Figure 1 instead of 0 to 4, because that is the only age grouping reported in the AR Census. DA estimates are usually seen as the most accurate source of national data for young children, in part because they are largely based on birth certificate data and that data source is very reliable.

There are a couple of implications from the data in Figure 1. First, examining all four series together it is clear the 2020 Census count is the outlier. For ages 0 to 5, the total count of young children from the AR census, DA, and the 2020 PEP are all well over 23 million while the figure from the 2020 Census is 22.4 million. All these comparisons suggest a 2020 Census undercount of young children in the neighborhood of one million or more. This underscores the extent to which the 2020 Census figure for the young child population is a serious undercount based on comparisons with multiple sources of data. Also, the Vintage 2020 population estimate is very similar to DA estimate for ages 0 to 5 (23.4 million for Vintage 2020 PEP and 23.5 million for DA), which suggests that the population estimate figure is credible and is probably a more accurate figure for young children than the Census.



At a national level, the net undercount of young children based on comparison of Census counts to Vintage 2020 population estimates was 5.2 percent (“Total” row in Table 1) . This is very similar to the “official” young child undercount rate of 5.4 percent based on DA (Jensen 2022). This bolsters the belief that using state population estimates is an effective way to assess geographic variation in coverage for young children in the 2020 Census.

State Rankings

Table 1 shows the states ranked by net coverage rates for young children in the 2020 Census. The rates range from a 9.3 percent net undercount in Florida to a 0.5 percent net overcount in Vermont. Vermont was the only state with a net overcount, but it is quite small.

Table 1. States Ranked by 2020 Census Undercount Rates for Ages 0 to 4

Rank***	State	Number of children ages 0 to 4 from 2020 Census *	Number of children ages 0 to 4 from Census Bureau Vintage 2020 Population Estimates**	Numeric Difference (Census - Population Estimate) a negative number implies an Undercount	Percent Difference (Numeric Difference / Population Estimate)*100
1	Florida	1,030,284	1,136,528	-106,244	-9.3
2	Hawaii	77,352	84,616	-7,264	-8.6
3	California	2,137,439	2,326,607	-189,168	-8.1
4	Texas	1,819,260	1,975,115	-155,855	-7.9
5	Arizona	392,370	425,967	-33,597	-7.9
6	Delaware	51,230	54,573	-3,343	-6.1
7	Nevada	174,032	185,025	-10,993	-5.9
8	Mississippi	171,647	182,411	-10,764	-5.9
9	Louisiana	281,257	297,590	-16,333	-5.5
10	North Carolina	574,468	607,724	-33,256	-5.5
11	Georgia	614,218	649,412	-35,194	-5.4
12	Oklahoma	241,242	254,354	-13,112	-5.2
13	South Carolina	277,144	291,887	-14,743	-5.1
14	South Dakota	57,742	60,684	-2,942	-4.8
15	New York	1,060,610	1,114,159	-53,549	-4.8
16	Virginia	481,405	504,902	-23,497	-4.7
17	Maryland	345,047	360,121	-15,074	-4.2
18	Alaska	48,104	50,115	-2,011	-4.0
19	Arkansas	179,575	186,976	-7,401	-4.0
20	Rhode Island	51,903	53,966	-2,063	-3.8
21	New Mexico	114,806	119,355	-4,549	-3.8
22	Massachusetts	340,020	353,112	-13,092	-3.7
23	Missouri	355,024	368,547	-13,523	-3.7
24	Illinois	705,616	732,395	-26,779	-3.7
25	Colorado	314,580	325,912	-11,332	-3.5
26	Tennessee	393,767	407,944	-14,177	-3.5
27	Pennsylvania	667,816	691,701	-23,885	-3.5
28	Maine	61,477	63,605	-2,128	-3.3
29	Oregon	215,252	222,411	-7,159	-3.2
30	Washington	437,231	451,433	-14,202	-3.1
31	Ohio	666,434	686,542	-20,108	-2.9
32	New Hampshire	61,480	63,309	-1,829	-2.9
33	West Virginia	89,207	91,777	-2,570	-2.8
34	New Jersey	502,046	515,150	-13,104	-2.5
35	Kentucky	264,254	270,964	-6,710	-2.5
36	Kansas	179,446	183,952	-4,506	-2.4
37	Michigan	548,875	561,267	-12,392	-2.2
38	Nebraska	126,605	129,357	-2,752	-2.1
39	Alabama	286,529	292,574	-6,045	-2.1
40	Minnesota	340,357	347,406	-7,049	-2.0
41	Connecticut	176,831	180,221	-3,390	-1.9
42	Indiana	408,828	416,635	-7,807	-1.9
43	North Dakota	52,366	53,363	-997	-1.9
44	Iowa	190,064	193,506	-3,442	-1.8
45	Montana	59,224	60,208	-984	-1.6
46	Wisconsin	322,285	327,595	-5,310	-1.6
47	Utah	239,780	242,865	-3,085	-1.3
48	Wyoming	33,955	34,033	-78	-0.2
49	Idaho	114,128	114,285	-157	-0.1
50	Vermont	28,555	28,424	131	0.5
	Total****	18,363,167	19,377,059	-1,013,892	-5.2

*Source: 2020 Census Demographic and Housing Characteristics file, Table P12

** U.S. Census Bureau, Vintage 2020 Population Estimates, file CC-EST2020-AGESEX-[ST-FIPS]

*** ranks are based on unrounded data

****Totals do not include DC and DC is not included in this state ranking. The net undercount rates for ages 0 to 4 in DC was 16.7 percent

Table 2 shows states ranked by numeric size of the young child undercount (as opposed to percentages). The figures range from a net undercount of 189,168 in California to an overcount of 131 in Vermont. Three states (California, Texas, and Florida) all have young child net undercounts of more than 100,000. These three states account for about 45 percent of the national net undercount for ages 0 to 4 in the 2020 Census. Table 1 also shows these three states have above average young child net undercount rates.

In terms of identifying places to focus attention in the 2030 Census, these three states are a good start. If these three states had experienced the national net young children undercount rate in 2020 (5.4 percent) rather than the rate they actually experienced, the number of undercounted young children would have been reduced by about 158,000. This represents about a 15 percent reduction in undercounted young children.

Table 2. States Ranked by Numeric Size of 2020 Census Net Undercount for Ages 0 to 4

Rank***	State	Number of children ages 0 to 4 from 2020 Census *	Number of children ages 0 to 4 from Census Bureau Vintage 2020 Population Estimates**	Numeric Difference (Census - Population Estimate) a negative number implies an Undercount	Percent Difference (Numeric Difference / Population Estimate)*100
1	California	2,137,439	2,326,607	-189,168	-8.1
2	Texas	1,819,260	1,975,115	-155,855	-7.9
3	Florida	1,030,284	1,136,528	-106,244	-9.3
4	New York	1,060,610	1,114,159	-53,549	-4.8
5	Georgia	614,218	649,412	-35,194	-5.4
6	Arizona	392,370	425,967	-33,597	-7.9
7	North Carolina	574,468	607,724	-33,256	-5.5
8	Illinois	705,616	732,395	-26,779	-3.7
9	Pennsylvania	667,816	691,701	-23,885	-3.5
10	Virginia	481,405	504,902	-23,497	-4.7
11	Ohio	666,434	686,542	-20,108	-2.9
12	Louisiana	281,257	297,590	-16,333	-5.5
13	Maryland	345,047	360,121	-15,074	-4.2
14	South Carolina	277,144	291,887	-14,743	-5.1
15	Washington	437,231	451,433	-14,202	-3.1
16	Tennessee	393,767	407,944	-14,177	-3.5
17	Missouri	355,024	368,547	-13,523	-3.7
18	Oklahoma	241,242	254,354	-13,112	-5.2
19	New Jersey	502,046	515,150	-13,104	-2.5
20	Massachusetts	340,020	353,112	-13,092	-3.7
21	Michigan	548,875	561,267	-12,392	-2.2
22	Colorado	314,580	325,912	-11,332	-3.5
23	Nevada	174,032	185,025	-10,993	-5.9
24	Mississippi	171,647	182,411	-10,764	-5.9
25	Indiana	408,828	416,635	-7,807	-1.9
26	Arkansas	179,575	186,976	-7,401	-4.0
27	Hawaii	77,352	84,616	-7,264	-8.6
28	Oregon	215,252	222,411	-7,159	-3.2
29	Minnesota	340,357	347,406	-7,049	-2.0
30	Kentucky	264,254	270,964	-6,710	-2.5
31	Alabama	286,529	292,574	-6,045	-2.1
32	Wisconsin	322,285	327,595	-5,310	-1.6
33	New Mexico	114,806	119,355	-4,549	-3.8
34	Kansas	179,446	183,952	-4,506	-2.4
35	Iowa	190,064	193,506	-3,442	-1.8
36	Connecticut	176,831	180,221	-3,390	-1.9
37	Delaware	51,230	54,573	-3,343	-6.1
38	Utah	239,780	242,865	-3,085	-1.3
39	South Dakota	57,742	60,684	-2,942	-4.8
40	Nebraska	126,605	129,357	-2,752	-2.1
41	West Virginia	89,207	91,777	-2,570	-2.8
42	Maine	61,477	63,605	-2,128	-3.3
43	Rhode Island	51,903	53,966	-2,063	-3.8
44	Alaska	48,104	50,115	-2,011	-4.0
45	New Hampshire	61,480	63,309	-1,829	-2.9
46	North Dakota	52,366	53,363	-997	-1.9
47	Montana	59,224	60,208	-984	-1.6
48	Idaho	114,128	114,285	-157	-0.1
49	Wyoming	33,955	34,033	-78	-0.2
50	Vermont	28,555	28,424	131	0.5
	Total****	16,225,728	19,377,059	-3,151,331	-16.3

*Source: 2020 Census Demographic and Housing Characteristics file, Table P12

** U.S. Census Bureau, Vintage 2020 Population Estimates, file CC-EST2020-AGESEX-[ST-FIPS]

*** ranks are based on unrounded data

****Totals do not include DC and DC is not included in this state ranking. The net undercount rates for ages 0

Many of the states with high net undercount rates for young children are states where a large share of the young child population is Hispanic. This is noteworthy because the young Hispanic population was undercounted at a high rate in the 2020 Census. The net undercount rate for the Hispanic population 0 to 4 in the 2020 Census was 8.6 percent.²

Change 2010 to 2020

Figure 2 shows the relationship between the young child net undercount rates in the 2010 and the 2020 Censuses. The data shows a relatively high positive correlation (+0.84). This means the states with the highest young child undercount rates in 2010 tended to have the highest rates in 2020 and states with the lowest young child undercount rates in 2010 tended to have the lowest rates in 2020. Another way to say this is that the states where it was most difficult to get a complete count of young children in 2010 were also the states where it was most difficult to get a complete count of young children in 2020.

The geographic consistency of net young child undercounts between 2010 and 2020 suggest these are likely to be good predictors of young child undercounts in the 2030 Census unless there is some intervention to change the trajectory.

² The Census count for Hispanics ages 0 to 4 is 4,635,698 and the Middle Series DA estimate is 5,072,000. The difference is 8.6 percent.

Figure 2. Comparison of 2010 and 2020 Net State Coverage Rates for Population Ages 0 to 4

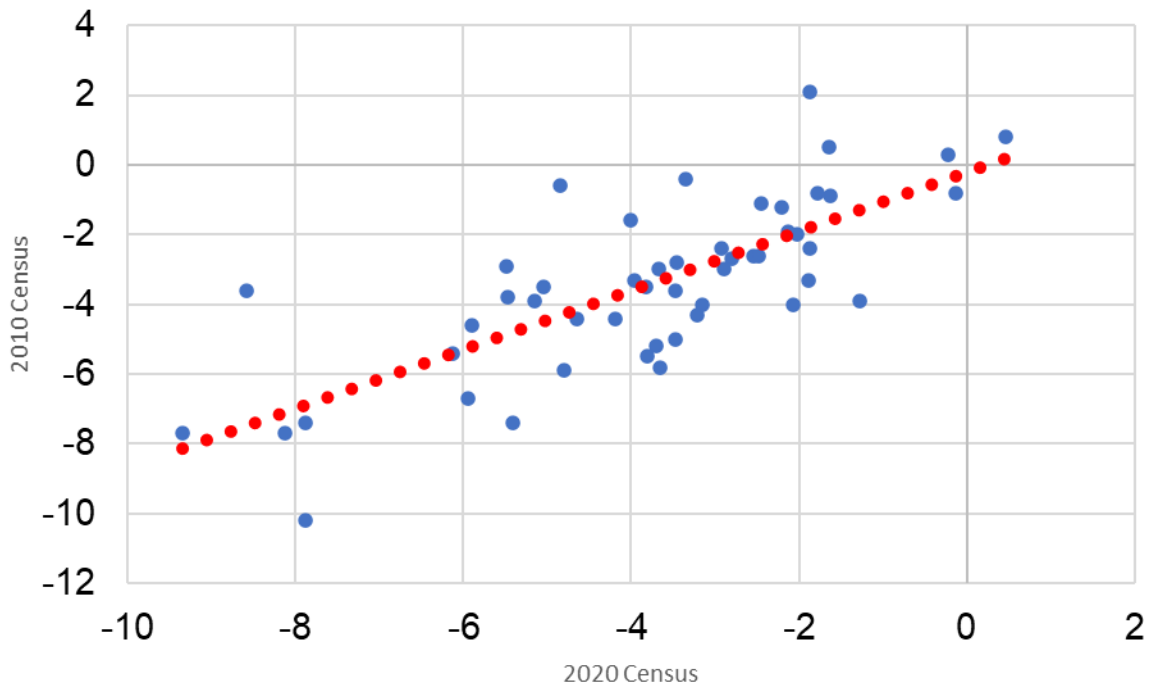


Table 3 shows the changes in the young child net undercount rates between 2010 and 2020 and can be used to examine which states had big improvements and which states had a big deterioration. Those with negative numbers in the difference column experienced deterioration and those with a positive number experienced improvement.

Table 3 State Ranked by the Size of the Difference Between the 2010 and 2020 Census Coverage Rates for Ages 0 to 4

Rank*	State	2020 Coverage Rate for Ages 0 to 4	2010 Coverage Rate for Ages 0 to 4	2020 Rate minus 2010 Rate
1	Utah	-1.3	-3.9	2.6
2	Arizona	-7.9	-10.2	2.3
3	Illinois	-3.7	-5.8	2.1
4	Georgia	-5.4	-7.4	2.0
5	Alabama	-2.1	-4.0	1.9
6	New Mexico	-3.8	-5.5	1.7
7	Colorado	-3.5	-5.0	1.5
8	Massachusetts	-3.7	-5.2	1.5
9	Connecticut	-1.9	-3.3	1.4
10	New York	-4.8	-5.9	1.1
11	Oregon	-3.2	-4.3	1.1
12	Washington	-3.1	-4.0	0.9
13	Nevada	-5.9	-6.7	0.8
14	Idaho	-0.1	-0.8	0.7
15	Indiana	-1.9	-2.4	0.5
16	Maryland	-4.2	-4.4	0.2
17	Tennessee	-3.5	-3.6	0.1
18	Kentucky	-2.5	-2.6	0.1
19	New Hampshire	-2.9	-3.0	0.1
20	New Jersey	-2.5	-2.6	0.1
21	Minnesota	-2.0	-2.0	0.0
22	West Virginia	-2.8	-2.7	-0.1
23	Nebraska	-2.1	-1.9	-0.2
24	Virginia	-4.7	-4.4	-0.3
25	Rhode Island	-3.8	-3.5	-0.3
26	Vermont	0.5	0.8	-0.3
27	California	-8.1	-7.7	-0.4
28	Texas	-7.9	-7.4	-0.5
29	Ohio	-2.9	-2.4	-0.5
30	Wyoming	-0.2	0.3	-0.5
31	Pennsylvania	-3.5	-2.8	-0.7
32	Arkansas	-4.0	-3.3	-0.7
33	Missouri	-3.7	-3.0	-0.7
34	Wisconsin	-1.6	-0.9	-0.7
35	Delaware	-6.1	-5.4	-0.7
36	Iowa	-1.8	-0.8	-1.0
37	Michigan	-2.2	-1.2	-1.0
38	Oklahoma	-5.2	-3.9	-1.3
39	Mississippi	-5.9	-4.6	-1.3
40	Kansas	-2.4	-1.1	-1.3
41	South Carolina	-5.1	-3.5	-1.6
42	Florida	-9.3	-7.7	-1.6
43	North Carolina	-5.5	-3.8	-1.7
44	Montana	-1.6	0.5	-2.1
45	Alaska	-4.0	-1.6	-2.4
46	Louisiana	-5.5	-2.9	-2.6
47	Maine	-3.3	-0.4	-2.9
48	North Dakota	-1.9	2.1	-4.0
49	South Dakota	-4.8	-0.6	-4.2
50	Hawaii	-8.6	-3.6	-5.0

* Ranks are based on unrounded data

The five states with the biggest improvements in terms of net young child undercount rates between 2010 and 2020 are Utah, Arizona, Illinois, Georgia, and Alabama. It is difficult to see what these states have in common. It may be worth taking a closer look at these states to see what is responsible for the improvements in the young child undercount rate between 2010 and 2020 as we plan for outreach in the 2030 Census.

The five states with the largest deterioration in net young child undercount rates between 2010 and 2020 were Hawaii, North Dakota, South Dakota, Maine, and Louisiana. It is difficult to see what these states have in common.

It is intriguing that two states in the Deep South (Georgia and Alabama) were among the five states that showed the most improvement between 2010 and 2020 in the young child undercount, while another state in the Deep South (Louisiana) was one of the five states that showed the biggest deterioration. Finding more information about the differences related to census-taking in these three states might be illuminating.

Summary

The undercount of young children (ages 0 to 4) in the 2020 Census was 5.4 percent which is not only higher than any other age group, it is an increase from the 4.6 percent undercount for this group in the 2010 Census. However, the national rate masks considerable variation across the states. The net undercount rate for young children ranges from a 9.3 percent net undercount in Florida to a 0.5 percent net overcount in Vermont. Vermont was the only state with a net overcount, but it was quite small. The number of young children undercounted ranges from a net undercount of

189,168 in California to an overcount of 131 in Vermont. Three states (California, Texas, and Florida) all have young child net undercounts of more than 100,000. In terms of outreach in the 2030 Census related to the undercount of young children, these three states should be the focus.

Across the states, there is a strong positive correlation between the net undercount rate for young children in the 2010 and 2020 Censuses. The data shows a relatively high positive correlation (+0.84). Meaning the states with the highest young child undercount rates in 2010 tended to have the highest rates in 2020 and states with the lowest young child undercount rates in 2010 tended to have the lowest rates in 2020.

One important implication of state census undercounts is clear in the context of a recent report from the Census Bureau indicating \$2.8 trillion was distributed based on Census Bureau data in Fiscal Year 2021 (U.S. Census Bureau 2023). Similar distributions will continue every year until the 2030 Census. Places that are undercounted are unlikely to get their fair share of resources.

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