Does the Census Bureau's Blended Base Correct the High Undercount of Young Children in the 2020 Census? A Look at States and Counties

by

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Introduction

In March 2022, the Census Bureau (2022a) released data showing a net census undercount of 5.4 percent for the population ages 0 to 4. This was not only the highest net undercount of any age group in the 2020 Census; but it was also an increase from a 4.6 percent net undercount for this age group in the 2010 Census. Looking over a longer stretch, young children are the only population group to have a higher net undercount it the 2020 Census than In the 1950 Census. In short, the net undercount of young children is high and increasing.

The Census Bureau has recognized the high net undercount of young children in the Census and updated the way it produces yearly post-census population estimates to correct for this problem. This new method for population estimates is called the blended base. The population estimates play a big role in allocating federal funds to states and localities. In many cases, the population estimates are used to allocate federal funding directly. In addition, since the population estimates shape the data from the American Community Survey which are also used to allocate funding, the estimates also impact fund allocation indirectly. This study compares the results of the blended base methodology to the 2020 Census count. Analysis is done at the national, state and county levels. These are the only geographic units where estimates of the population ages 0 to 4 are produced.

At the national level, the blended base clearly produces a larger number of young children than the Census. Equally important, the blended base figure is very similar to the figure from Demographic Analysis (DA), which is generally thought to be the most accurate reflection of the number of young children in the country.

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But the most significant data from the decennial census are numbers for states, counties, and other substate areas. Substate demographics are used to allocate political power through redistricting, and they also drive a lot of federal funding. It may be the case that the differences between the blended base and the 2020 Census are highly concentrated in just a few states or counties. Or it may be the case that the differences are seen in most states and counties.

This study is similar to an earlier study that examined the relationship between the blended base and the 2020 Census counties for all children ages 0 to 17 (O'Hare 2022). The same comparison has also been done for Hispanic children ages 0 to 17 (Quiros et al. 2023). Those studies showed the relationship between blended base and 2020 Census count for states and counties is complicated for children ages 0 to 17. The situation for young children may be different.

In this study the 2020 Census counts for young children are compared to the Census Bureau's blended base that is being used for Census Bureau's post-2020 Census population estimates. The blended base has been adjusted to try and correct known flaws in the 2020 Census counts including an adjustment to compensate for the high net undercount of young children in the 2020 Census.

Preliminary evidence looks promising. According to the Census Bureau (U.S. Census Bureau 2023 , slide 7), "The undercount for young children in the 2010 Census (ages 10 to 14 in 2020) and the 2020 Census (ages 0 to 4) is somewhat mitigated in the blended base, "This analysis will help us understand how well that process worked for states and counties.

Blended Base in the Census Bureau's Population Estimates Program (PEP)

The Census Bureau has been producing yearly post-Census population estimates for states and counties for the past several decades. The estimation method used by the Census Bureau starts with a base population and estimates the change from the base to the date being

estimated. For example, the Census Bureau produced estimates for July 1, 2011, using a base population from April 1, 2010 and the change between April 1, 2010 and July 1, 2011. The base used for post-Census population estimates in the past has been the Decennial Census count.

But the Census Bureau is using a new method commonly called the “blended base” for the 2021 and 2022 estimates, and possibly for the remainder of the decade. The blended base involves data from three different sources (U. S. Census Bureau 2021). The blended base uses the 2020 Census total population for states and counties blended with the distribution of age and sex characteristics from the middle series of the national Demographic Analysis (DA) estimates, and the distribution of race/Hispanic characteristics from the Vintage 2020 Population Estimates. Use of DA in the blended base has the impact of increasing the number of young children relative to the Census count.

For the blended base, state estimates are adjusted to make sure they sum to the national estimate and county estimates are adjusted to make sure they sum to the state estimates.

Because the yearly estimates are a product of the base population and the yearly increments, should there be an undercount or overcount in the base for any demographic group or given location, there is likely to be an undercount or overcount in the yearly estimates for those groups or locations for the decade in which the base is used. The switch from the use of the Decennial Census base to the blended base could have different impacts on different populations. This paper examines the situation for young children (ages 0 to 4).

The move from the Decennial Census count to blended base was based partly on the fact that the detailed 2020 Census data needed for the base were not available in time to use for the 2021and 2022 Vintage estimates. There were also questions about the accuracy of the 2020 Census data in terms of their use in the PEP base. Several vulnerable populations had

higher net undercounts in the 2020 Census than in the 2010 Census. According to one report from the Census Bureau (Hartley 2021), “there are questions about the quality of the 2020 Census results.”

National Results

Table 1 shows national level number of young children for April 1, 2020 from four Census Bureau sources: The Decennial Census, the Census Bureau’s blended base, the Vintage 2020 Population Estimates, and Demographic Analysis.[2]

The Census Count is the outlier among these four figures. The count of population ages 0 to 4 from the 2020 Census was 18,400,235, while the figures from the other three sources are all around 19.4 million.

The distribution of the population by age shows that the data from Demographic Analysis estimates, the blended base, and the Vintage 2020 estimates are 5.9 percent of the total U.S. population were young children; this is higher than the 5.6 percent in the 2020 Census.

Table 1. 2020 Census Count of the Population Ages 0 to 4 (Young Children) Compared to the PEP Blended Base estimate, Vintage 2020 Population Estimate and Demographic Analysis Estimate

	Decennial Census *	Blended Base for Population Estimates **	Vintage 2020 PEP***	DA MiddlesSeries
Number of Young Children (ages 0 to 4)	18,400,235	19,392,551	19,377,059	19,458,000
Total Population	331,449,281	331,449,281	329,398,742	332,601,000
Young Children as a Percent of Total Population	5.6	5.9	5.9	5.9

* Source. U.S. Census Bureau, 2020 Census Demographic and Housing Characteristics, Table P12 Sex by Ages for Selected Age Categories

**Source: U.S. Census Bureau, https://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-

*** Source: U.S. Census Bureau, Popultion Estimatse file CC-EST2020-AGESEX-[ST-FIPS]

**** U.S. Census Bureau, Demographic Analysis Tables released December 2020

[2] The Vintage 2020 estimates and the 2020 blended base are different. The Vintage 2020 estimates are based on the traditional method of incorporating demographic changes since the 2010 Census. The blended base is a new way of creating a base population for the post-2020 census estimates.

Examination at the national level shows the number of young children for April 1, 2020 from the blended base (19,392,551) was 992,551 higher than the Census (18,400,235) and this amounts to a 5.4 percent difference. The 5.4 percent difference between the blended base and 2020 Census is identical to the size of the undercount of young children based on comparison of the 2020 census count to the middle series DA estimates.

The point of Table 1 is to underscore the high net undercount of young children in the Census based on comparison to multiple benchmarks. Data in Table 1 also shows that the figure from the blended base (19,392,551) is very close to the figure from Demographic Analysis (19,458,000) a difference of about 65,000 or less than 0.3 percent. The DA figure, derived largely through vital statistical data, is thought to be the most accurate data on young children. The similarity of figures from blended base and DA underscores the likely accuracy of the blended base figures. There are no state or county figures for age 0 to 4 from Demographic Analysis at this time, but Table 1 suggests the data from the blended base are likely to be similar to subnational DA data.[3] This study uses the Census Bureau's new blended base population estimates to provide data which can be seen as a proxy measure for coverage of young children in states and counties.

The two figures that matter most in terms of assessing the comparison between the blended base estimates and the Census counts are the number of young children in a state or county and the share of all young children in the nation that are in a given state or county. So, this study compares the number of young children in the blended base are to the number of young children in the 2020 Census count and it compares national shares of all young children in the country as of April 1, 2020 from the blended base are compared to those from the 2020 census.

[3] The Census Bureau plans to release an experimental series of state and county DA estimates for the population ages 0 to 4 later in 2023.

State Data

As stated above, using the data from the blended base rather than the Decennial Census produces a much larger number of young children nationwide. But the national numbers are not the most important ones from the Decennial Census. The most important data from the Decennial Census are subnational data for states and localities. Data examined below show the gap between the 2020 Census count and the 2020 blended base for young children is not spread evenly across the country.

Table 2 shows the states ranked by the numeric difference between the 2020 Census count of young children and the number of young children provided by the blended base. The Census figures are subtracted from the corresponding figures from the blended base, so a positive figure means the blended base is larger than the 2020 Census. A negative difference means the 2020 Census was larger than the blended base. Another way of looking at Table 2, shows how much the number of young children changed using the blended base instead of the 2020 Census. The differences range from 183,861 more young children in California to 394 fewer in Wyoming. Wyoming is the only state where the Census count was higher than the blended base. In other words, in almost every state the blended base produces a higher number of young children than the 2020 Census.

The average state difference between the blended base and the Census for young children was 19,457 more young children and the average percent difference was 4.4 percent. However, the average masks some extremes. There were two states (California and Texas) where the blended base estimates is more than 100,000 young children larger than the Census count and 21 states where blended base estimate was more than 10,000 young children above the census count.

Large differences are highly concentrated in a few states. The top five states in Table 2 account for 55 percent of the total difference between the blended base and the 2020 Census. The total difference is 992,316 young children and the top five states account for 541,927 young children.

Keep in mind the national net undercount of young children in the 2020 Census was 5.4 percent. There are only 10 states where the net undercount of young children is above 5.4 percent This indicates large population states have bigger differences than smaller states.

Table 2. States Ranked by Numeric Difference Between the 2020 Census Count and 2020 Blended Base for Population Ages 0 to 4

		Population ages 0 to 4			
Rank	**State**	2020 Blended Base	2020 Census	Number of Young Children Gained (or Lost) using Blended Base instead of 2020 Census (Blended Base- Census)	Pecent of Young Children Gained or Lost as a Percentage of 2020 Census ((Blended Base-Census)/Census)*100
1	**California**	2,321,300	2,137,439	183,861	8.6
2	**Texas**	1,952,947	1,819,260	133,687	7.3
3	**New York**	1,156,054	1,060,610	95,444	9.0
4	**Florida**	1,125,005	1,030,284	94,721	9.2
5	**Illinois**	739,830	705,616	34,214	4.8
6	**New Jersey**	535,285	502,046	33,239	6.6
7	**Georgia**	646,376	614,218	32,158	5.2
8	**Pennsylvania**	699,727	667,816	31,911	4.8
9	**Virginia**	504,643	481,405	23,238	4.8
10	**Ohio**	688,843	666,434	22,409	3.4
11	**North Carolina**	596,371	574,468	21,903	3.8
12	**Maryland**	365,119	345,047	20,072	5.8
13	**Massachusetts**	358,128	340,020	18,108	5.3
14	**Arizona**	410,291	392,370	17,921	4.6
15	**Michigan**	564,074	548,875	15,199	2.8
16	**Louisiana**	296,402	281,257	15,145	5.4
17	**Tennessee**	407,943	393,767	14,176	3.6
18	**Washington**	450,649	437,231	13,418	3.1
19	**Missouri**	366,963	355,024	11,939	3.4
20	**Oklahoma**	251,897	241,242	10,655	4.4
21	**Alabama**	297,161	286,529	10,632	3.7
22	**Hawaii**	87,011	77,352	9,659	12.5
23	**Mississippi**	180,753	171,647	9,106	5.3
24	**Nevada**	182,569	174,032	8,537	4.9
25	**South Carolina**	285,542	277,144	8,398	3.0
26	**Minnesota**	348,520	340,357	8,163	2.4
27	**Colorado**	322,701	314,580	8,121	2.6
28	**Indiana**	416,290	408,828	7,462	1.8
29	**Kentucky**	271,123	264,254	6,869	2.6
30	**Wisconsin**	329,134	322,285	6,849	2.1
31	**Oregon**	221,383	215,252	6,131	2.8
32	**District of Columbia**	42,909	37,068	5,841	15.8
33	**Arkansas**	184,922	179,575	5,347	3.0
34	**Kansas**	184,458	179,446	5,012	2.8
35	**Connecticut**	181,584	176,831	4,753	2.7
36	**New Mexico**	119,463	114,806	4,657	4.1
37	**Iowa**	194,142	190,064	4,078	2.1
38	**Rhode Island**	55,736	51,903	3,833	7.4
39	**Utah**	243,519	239,780	3,739	1.6
40	**Nebraska**	130,288	126,605	3,683	2.9
41	**Delaware**	54,604	51,230	3,374	6.6
42	**West Virginia**	91,651	89,207	2,444	2.7
43	**Maine**	63,903	61,477	2,426	3.9
44	**South Dakota**	60,026	57,742	2,284	4.0
45	**New Hampshire**	63,520	61,480	2,040	3.3
46	**Alaska**	49,893	48,104	1,789	3.7
47	**North Dakota**	54,070	52,366	1,704	3.3
48	**Montana**	60,242	59,224	1,018	1.7
49	**Idaho**	114,892	114,128	764	0.7
50	**Vermont**	29,134	28,555	579	2.0
51	**Wyoming**	33,561	33,955	-394	-1.2
	U.S. Total	19,392,551	18,400,235	992,316	5.4

Table 3 shows states ranked by percent difference between the 2020 Census count and the blended based. Census figures are subtracted from the blended base, so a positive figure means the blended base was larger than the census. DC has the largest difference at -13.6 percent and Wyoming is the only state where the 2020 Census was larger than the blended base (1.2 percent). While DC is included in the rankings in Table 3, in many ways DC is more like a large city than a state. After DC, Hawaii has the second highest net undercount of young children at -11.1 percent.

Again, the differences between the 2020 Census and the blended base can be seen as a good approximation for census coverage of young children.

Table 3. States Ranked by Percent Difference Between the 2020 Census Count and 2020 Blended Base for Population Ages 0 to 4					
		I Population ages 0 to 4			
Rank	State	2020 Blended Base	2020 Census	Number of Young Children Gained (or lost) using Blended Base instead of 2020 Census (Blended Base- Census)	Pecent Gained or Lost as a Percentage of 2020 Census ((Blended Base-Census)/Census)*100
1	**District of Columbia**	42,909	37,068	5,841	15.8
2	**Hawaii**	87,011	77,352	9,659	12.5
3	**Florida**	1,125,005	1,030,284	94,721	9.2
4	**New York**	1,156,054	1,060,610	95,444	9.0
5	**California**	2,321,300	2,137,439	183,861	8.6
6	**Rhode Island**	55,736	51,903	3,833	7.4
7	**Texas**	1,952,947	1,819,260	133,687	7.3
8	**New Jersey**	535,285	502,046	33,239	6.6
9	**Delaware**	54,604	51,230	3,374	6.6
10	**Maryland**	365,119	345,047	20,072	5.8
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13	**Mississippi**	180,753	171,647	9,106	5.3
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18	**Pennsylvania**	699,727	667,816	31,911	4.8
19	**Arizona**	410,291	392,370	17,921	4.6
20	**Oklahoma**	251,897	241,242	10,655	4.4
21	**New Mexico**	119,463	114,806	4,657	4.1
22	**South Dakota**	60,026	57,742	2,284	4.0
23	**Maine**	63,903	61,477	2,426	3.9
24	**North Carolina**	596,371	574,468	21,903	3.8
25	**Alaska**	49,893	48,104	1,789	3.7
26	**Alabama**	297,161	286,529	10,632	3.7
27	**Tennessee**	407,943	393,767	14,176	3.6
28	**Missouri**	366,963	355,024	11,939	3.4
29	**Ohio**	688,843	666,434	22,409	3.4
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33	**South Carolina**	285,542	277,144	8,398	3.0
34	**Arkansas**	184,922	179,575	5,347	3.0
35	**Nebraska**	130,288	126,605	3,683	2.9
36	**Oregon**	221,383	215,252	6,131	2.8
37	**Kansas**	184,458	179,446	5,012	2.8
38	**Michigan**	564,074	548,875	15,199	2.8
39	**West Virginia**	91,651	89,207	2,444	2.7
40	**Connecticut**	181,584	176,831	4,753	2.7
41	**Kentucky**	271,123	264,254	6,869	2.6
42	**Colorado**	322,701	314,580	8,121	2.6
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45	**Wisconsin**	329,134	322,285	6,849	2.1
46	**Vermont**	29,134	28,555	579	2.0
47	**Indiana**	416,290	408,828	7,462	1.8
48	**Montana**	60,242	59,224	1,018	1.7
49	**Utah**	243,519	239,780	3,739	1.6
50	**Idaho**	114,892	114,128	764	0.7
51	**Wyoming**	33,561	33,955	-394	-1.2
	U.S. Total	19,392,551	7,112,239	12,280,312	172.7

Examination of National Shares

There is another way of looking at the blended base estimates and Census counts for Apirl 1, 2020. It may be the case that the number of young children in a given state or county is larger in the blended base than in the 2020 Census, but it may be smaller as a national share of the young child population because the total number of young children is much larger in the blended base. One can look at the share of the national young child population in each state for the blended base and the Census. This measure is called national share.

National shares are important for understanding the allocation of federal funds based on Census-derived data. For programs where the total amount appropriated by Congress does not change based on increases or decreases in the number of young children, it is the share of young children in a state or localities that impacts the amount of funding received.

Table 4 shows states ranked by the percentage point difference between blended base and Census counts in terms of the share of the national young child population in each state. The Census was subtracted from the blended base, so a positive sign in the difference column means the blended base is a larger national share than the 2020 Census and a negative sign in the difference column means the Census count is larger than the blended base. The differences range from 0.353692 in California to -0.0752214 in Indiana.

I carried analysis out to 6 decimal places because the national shares are likely to be multiplied by large sums of money in any federal funding formula (The Annie E. Casey Foundation 2018). Recall federal funding formulas distributed over $1.5 trillion in FY 2016 (Reamer 2020). Data reflecting young children (O'Hare and Rashid 2022) are often used in the formulas. In addition to distribution of federal funds, many state programs use population estimates to distribute state funds (O'Hare 2020). When figures are multiplied by large sums of money, small percentages can make a substantial difference.

There are four states (California, Florida, New York, and Texas) where the national share for the blended base is at least 0.1 percent higher than the national share from the 2020 Census. Note all four of these states have large Hispanic populations and the national undercount for young Hispanic children in the 2020 Census is nearly 8 percent. There are no states where the 2020 Census is at least 0.1 percent larger than the blended base in terms of national shares.

Table 4. States Ranked by Gain in National Shares of Population Ages 0 to 4 from 2020 Census and 2020 Blended Base				
Rank*	**State**	National Share 2020 PEP Blended base	National Share 2020 Census	Gain or loss in national share using blended base instead of the 2020 Census (blended base - Census)
1	**California**	11.97	11.62	0.353692
1	**Florida**	5.80	5.60	0.201924
2	**New York**	5.96	5.76	0.197219
3	**Texas**	10.07	9.89	0.183448
4	**New Jersey**	2.76	2.73	0.031785
5	**Hawaii**	0.45	0.42	0.028297
6	**District of Columbia**	0.22	0.20	0.019811
7	**Maryland**	1.88	1.88	0.007548
8	**Rhode Island**	0.29	0.28	0.005331
9	**Delaware**	0.28	0.28	0.003152
10	**Louisiana**	1.53	1.53	-0.000119
11	**Mississippi**	0.93	0.93	-0.000778
12	**Massachusetts**	1.85	1.85	-0.001181
13	**Alaska**	0.26	0.26	-0.004152
14	**South Dakota**	0.31	0.31	-0.004280
15	**Nevada**	0.94	0.95	-0.004375
16	**Maine**	0.33	0.33	-0.004586
17	**Vermont**	0.15	0.16	-0.004955
18	**Georgia**	3.33	3.34	-0.004984
19	**North Dakota**	0.28	0.28	-0.005776
20	**New Hampshire**	0.33	0.33	-0.006578
21	**New Mexico**	0.62	0.62	-0.007912
22	**Montana**	0.31	0.32	-0.011220
23	**Wyoming**	0.17	0.18	-0.011474
24	**Oklahoma**	1.30	1.31	-0.012144
25	**West Virginia**	0.47	0.48	-0.012205
26	**Virginia**	2.60	2.62	-0.014046
27	**Nebraska**	0.67	0.69	-0.016216
28	**Arizona**	2.12	2.13	-0.016704
29	**Illinois**	3.82	3.83	-0.019799
30	**Pennsylvania**	3.61	3.63	-0.021163
31	**Arkansas**	0.95	0.98	-0.022366
32	**Kansas**	0.95	0.98	-0.024058
33	**Connecticut**	0.94	0.96	-0.024666
34	**Alabama**	1.53	1.56	-0.024857
35	**Idaho**	0.59	0.62	-0.027799
36	**Oregon**	1.14	1.17	-0.028245
37	**Iowa**	1.00	1.03	-0.031827
38	**South Carolina**	1.47	1.51	-0.033767
39	**Tennessee**	2.10	2.14	-0.036404
40	**Missouri**	1.89	1.93	-0.037165
41	**Kentucky**	1.40	1.44	-0.038067
42	**Colorado**	1.66	1.71	-0.045606
43	**North Carolina**	3.08	3.12	-0.046811
44	**Utah**	1.26	1.30	-0.047401
45	**Washington**	2.32	2.38	-0.052400
46	**Minnesota**	1.80	1.85	-0.052558
47	**Wisconsin**	1.70	1.75	-0.054308
48	**Ohio**	3.55	3.62	-0.069777
49	**Michigan**	2.91	2.98	-0.074263
50	**Indiana**	2.15	2.22	-0.075214
	U. S. Total	100.00	100.00	41.000000
* Ranks based on unrounded data				

Table 5 provides a summary of the detailed data in Table 4. Table 5 shows that for most states (80 percent), the 2020 Census would produce a larger national share than the blended base. There were only 10 states in which the blended base produced a national share that was larger than the Census, but 39 percent of all young children live in those ten states which indicates those are large states. (Again, differences were calculated at six decimal points because small differences are likely to be multiplied by large sums of money, so small differences are important).

Table 5. Distribution of States by Difference in National Shares Between Census Count and PEP Blended Base Estimates of the Young Child Population in 2020

	Number of States*	Percentage of States	Young Child Population based on PEP	Percentage of National Young Child Population
National Share from Census Count is Larger than PEP Blended Base Estimate	41	80	11,287,996	61
National Share from PEP Blended Base Estimate is Larger than Census Count	10	20	7,112,239	39
Total	51	100	18,400,235	100
* includes DC as a state				

In summary for states, the blended base provides a larger number of young children in every state except one (Wyoming). But in terms of national shares, the Census data provides larger shares than the blended base for more states. In terms of numbers of children, 99.8 percent of young children lived in a state where the blended base produced a higher figure than the census count. In terms of national shares, only 39 percent of children lived in a state where the blended base produced a larger national share than the 2020 Census count.

Data for Counties

This section focuses on counties using a similar approach to the one used in the section on states. Table 6 shows the distribution of counties by whether the blended base or the 2020 Census count of young children is larger.

There are more counties in which the blended base estimate of children is larger than the Census count (2,220 compared to 904).[4] Table 6 shows that in 71 percent of the counties, the blended base is larger than the Census count. Table 6 also shows 89 percent of the young child population (according to the PEP estimates) were living in the counties in which the blended base was larger than the Census count.

Table 6 Distribution of Counties Based on Difference Between Number of Children Based on Census Count and PEP Blended Base for thePopulation Ages 0 to 4

	Counties		Child Population (based on PEP)	
	Number of Counties	Percent or Total Counties	Number	Percent of Total Child Population
Census Count is Larger than PEP Blended Base Estimate	904	29	2,039,215	11
No Difference	19	1	11,269	0
PEP Blended Base Estimate is Larger than Census Count	2,220	71	17,342,067	89
Total	3,143	100	19,392,551	100

Table 7 shows the 16 counties where the blended base estimate was at least 10,000 young children larger than the Census count. It is not surprising these are all large counties. There were no counties where the Census count was at least 10,000 larger than the blended base estimate.

[4] There are 19 counties where the number of young children is the same in the blended base and the Census.

Table 7. Counties Where the PEP Blended Base Was At Least 10,000 Young Chidlren Larger Than the 2020 Census				
County Name	State	Total Ages 0 to 4 in PEP Blended Base	Total Ages 0 to 4 in 2020 Census	Difference Census - Blended Base
Los Angeles County	California	558,271	501,341	56,930
Harris County	Texas	340,947	313,859	27,088
Cook County	Illinois	310,437	284,422	26,015
Orange County	California	181,139	156,601	24,538
Miami-Dade County	Florida	153,685	129,651	24,034
Kings County	New York	192,774	169,016	23,758
Queens County	New York	143,681	122,122	21,559
Dallas County	Texas	186,765	166,466	20,299
San Diego County	California	195,011	174,765	20,246
Bronx County	New York	102,530	89,023	13,507
San Bernardino County	California	148,532	135,299	13,233
Philadelphia County	Pennsylvania	101,344	88,967	12,377
Broward County	Florida	109,704	97,385	12,319
Hidalgo County	Texas	72,734	62,136	10,598
Maricopa County	Arizona	264,297	253,703	10,594
Bexar County	Texas	135,807	125,535	10,272

Collectively these 16 counties account for about one-third (327,367 out of 992,316) of the difference between the national blended base estimates and the Census counts for young children.

The counties in Table 7 are clustered in just a few states. There are 4 in Texas, 4 in California, 3 in New York, 2 in Florida, and 1 each in Illinois, Pennsylvania, Arizona.

Counties where the blended base is larger than the Census count are not distributed evenly across the county. Table 8 shows the states ranked by percent of counties in each state where the blended base figure for young children was larger than the 2020 Census count. The states ranged from 100 percent of all counties in Delaware, DC, Maryland, and New Hampshire and Rhode Island to 30.4 percent of counties in Wyoming.

Table 8. States Ranked by Percent of Counties in State Where Blended Base Number of Young Children is Larger Than 2020 Census				
Rank	State	Total Number of Counties in State	Number of Countis Where Blended Base is Larger than Census	Percent of Counties Where Blended Base is Larger than Census
1	Delaware	3	3	100.0
1	District of Columbia	1	1	100.0
1	Maryland	24	24	100.0
1	New Hampshire	10	10	100.0
1	Rhode Island	5	5	100.0
6	Maine	16	15	93.8
7	Massachusetts	14	13	92.9
8	Florida	67	62	92.5
9	New Jersey	21	19	90.5
10	California	58	51	87.9
11	Oregon	36	31	86.1
12	Mississippi	82	70	85.4
13	Louisiana	64	53	82.8
14	Hawaii	5	4	80.0
15	Oklahoma	77	61	79.2
16	New Mexico	33	26	78.8
17	Texas	254	200	78.7
18	Vermont	14	11	78.6
19	South Carolina	46	35	76.1
20	Connecticut	8	6	75.0
21	Virginia	133	99	74.4
22	Washington	39	29	74.4
23	Ohio	88	65	73.9
24	Colorado	64	47	73.4
25	Arizona	15	11	73.3
26	Pennsylvania	67	49	73.1
27	North Carolina	100	73	73.0
28	South Dakota	66	48	72.7
29	Georgia	159	114	71.7
30	Wisconsin	72	51	70.8
31	Tennessee	95	67	70.5
32	North Dakota	53	37	69.8
33	Minnesota	87	60	69.0
34	Alabama	67	46	68.7
35	West Virginia	55	37	67.3
36	Arkansas	75	50	66.7
36	Iowa	99	66	66.7
38	Michigan	83	55	66.3
39	New York	62	41	66.1
40	Missouri	115	75	65.2
41	Kansas	105	67	63.8
42	Alaska	30	19	63.3
43	Kentucky	120	74	61.7
44	Montana	56	33	58.9
45	Illinois	102	60	58.8
46	Utah	29	16	55.2
47	Indiana	92	50	54.3
48	Nebraska	93	49	52.7
49	Nevada	17	7	41.2
50	Idaho	44	18	40.9
51	Wyoming	23	7	30.4
	U.S.Total	3,143	2,220	70.6

National Shares by County.

Table 9 summarizes the analysis of county national share differences between the 2020 Census and the blended base. The number of counties where the national share based on the Census is larger than the national share based on the blended base is 2,186, compared to only 956 counties where the reverse is true. However, the number of young children are split pretty evenly in these two kinds of counties (51 percent to 49 percent). For reasons stated earlier in this paper, analysis was conducted with six decimal places.

Table 9. Distribution of Counties by Difference Between Census Count and PEP Blended Base National Shares of the Young Child Population in 2020

	Number of Counties	Percentage of Counties	Young Child Population Based on PEP	Percentage of National Young Child Population
Census Count is Larger than PEP Blended Base Estimate	2,186	70	9,942,972	51
No Difference*	1	rounds to zero	314	rounds to zero
PEP Blended Base Estimate is Larger than Census Count	956	30	9,449,265	49
Total	3,143	100	19,392,551	100

*analysis carried out to six decimal places

Summary and Conclusions

The implications of using the number of young children in the blended base instead of the number counted in the 2020 Census are complicated. The implications depend a lot on whether one is looking at the number of young children or the national share of young children. The implications also depend on whether one is looking at the national level, states, or counties. The implications also vary if one is using states or counties as the unit of analysis or whether one is using the young child as a unit of analysis.

At the national level, the number of young children in the blended base is much larger than the number counted in the 2020 census. The 2020 census reported 18,400,235 young children compared to 19,392,551 in the blended base. In addition, the number of young children in the blended base is nearly the same as the number from the middle series of the

Census Bureau's Demographic Analysis estimates which suggests the blended base is highly accurate, at least at the national level.

Table 3 shows there are 50 states (including DC) where the blended base shows a larger number of young children than the Census count, Only in Wyoming was the Census count larger than the blended base estimate. The vast majority of young children (99.8 percent) lived in a state where the blended base produced a larger number than the 2020 census count.

On the other hand, Table 5 shows that in most states (41 out of 51) the Census produces a larger national share than the PEP blended base and 61 percent of all young children live in one of those 41 states.

Table 6 shows there are 2,220 counties where the blended base estimate is larger than the Census count. About 17.3 million young children (89 percent of the total young child population) live in those counties.

In terms of national shares, 70 percent of counties (2,186 out of 3,143) experienced a larger share from the 2020 Census than from the blended base. But only 51 percent of all young children resided in the 2,186 counties where the Census produced a larger national share than the blended base.

Now that detailed data from the 2020 Census is available, the Census Bureau will have to decide if it wants to, 1) continue using the blended base for the post-2020 Census population estimates for the remainder of the decade, 2) begin using the 2020 Census counts as the base (and perhaps change the estimates already produced) or 3) devise some other method for producing a base. This decision will be informed by the Census Bureau's Base Evaluation Research Team (U.S Census Burearu 2022c).

Given the many uses of the post-Census estimates (U.S. Census Bureau 2021, page 1; Reamer 2020, O'Hare 2020) recent changes in methodology that impact the estimates are likely

to have important implications for many demographic groups, including young children. Understanding the impact of the change from the 2020 Census to the blended base is important.

This paper is meant to provide readers with some background regarding the impact of switching from the 2020 Census count to the blended base for post-2020 Census estimates for young children.

References

Hartley, Christine (2021). “Methodology Updates for the Vintage 2021 Estimates,” *U.S. Census Bureau.* https://www.census.gov/data/academy/webinars/2021/methodology-updates-for-the-vintage-2021-estimates.html

O’Hare William P. (2020). “Many States Use Decennial Census Data to Distribute State Money,” *The Census Project*. https://thecensusproject.org/2020/01/09/many-states-use-decennial-census-data-to-distribute-state-money/

O’Hare William . P. and Alysha Rashid (2022). “Selected Federal Programs that Use Figures for the Population Ages 0 to 5 for Distribution of Federal Funds to States and Localities,” *Count All Kids*. https://countallkids.org/selected-federal-programs-that-use-the-population-size-for-ages-0-to-5-for-the-distribution-of-federal-funds-to-states-and-localities/

O’Hare, W. P. (2022) .”Comparing the Accuracy of the 2020 Census Counts to Population Estimates Program Blended Base for Age Groups of Children, ” November 10, Posted on Count All Kids Website https://countallkids.org/resources/comparing-the-accuracy-of-the-2020-census-counts-to-population-estimates-program-blended -base-for-age-groups-of-children/

Quiros, S. Mayol-Garcia, Y. and O’Hare W.P. (2023) The Number of Hispanic Children in the Population Estimates Program Blended Base Compared to the 2020 Census Count,” Posted on the Count All Kids website, https://countallkids.org/resources/the-number-of-hispanic-children-in-the-population-estimates-program-blended -bas

Reamer, Andrew (2020). “Counting for Dollars: The Role of the Decennial Census in the Geographic Distribution of Federal Funds,” *GW Institute of Public Policy*. https://gwipp.gwu.edu/counting-dollars-2020-role-decennial-census-geographic-distribution-federal-funds

The Annie E. Casey Foundation (2018). “2018 KIDS COUNT DATA BOOK: 2018 State Trends in Child Well-Being,” *The Annie E. Casey Foundation*. https://www.aecf.org/resources/2018-kids-count-data-book

U.S. Census Bureau (2021). “METHODOLOGY FOR THE UNITED STATES POPULATION ESTIMATES: VINTAGE 2021 Nation, States, Counties, and Puerto Rico – April 1, 2020 to July 1, 2021, December 2021,” *U.S. Census Bureau*. https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/2020-2021/methods-statement-v2021.pdf

U.S. Census Bureau (2022a). “Census Bureau Releases Estimates of Undercount and Overcount in the 2020 Census,” *U.S. Census Bureau*. https://www.census.gov/newsroom/press-releases/2022/2020-census-estimates-of-undercount-and-overcount.html

U.S. Census Bureau (2022b). “National Census Coverage Estimates for People in the United States by Demographic Characteristics,” *U.S. Census Bureau*. https://www2.census.gov/programs-surveys/decennial/coverage-measurement/pes/national-census-coverage-estimates-by-demographic-characteristics.pdf

U.S. Census Bureau (2022c) . Briefing on the Base Evaluation and Research Team Christine Hartley Assistant Division Chief for Estimates & Projections Marc Perry Senior Advisor Population Division Census Scientific Advisory Committee Meeting Fall 2022

https://www2.census.gov/about/partners/cac/sac/meetings/2022-09/presentation-briefing-on-base-evaluation-and-research-team.pdf

U.S. Census Bureau (2023). ”Incorporating 2020 Census Data into the Population Estimates,” Christine Hartley, and Luke Rogers, Presentation at Population Association of America, Annual Conference, April 13, 2023, New Orleans. LA