# The Number of Hispanic Children in the Population Estimates Program Blended Base Compared to the 2020 Census Count 

## By

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## Executive Summary

In the past few decades, the Census Bureau has produced yearly population estimates for states and counties including data for Hispanic children (ages birth to 17). The 2020 Decennial Census also released data for Hispanic children. This allows us to compare the number of Hispanic children from these two data sources for states and counties.

The Census develops post-census estimates by starting with a population base then adding births, subtracting deaths, and adjusting for net migration every year to that base over the decade. In the past, the Decennial Census counts have provided the estimates base, but the 2020 Census detailed data needed for the base was not available in time to use with the 2021 and 2022 population estimates. Thus, the Census Bureau developed a new PEP (Population Estimates Program) methodology called the blended base.

The differences between the 2020 Census counts and the PEP blended base have different implications for different populations. This study examines the

[^0]implications for the Hispanic child population. The PEP blended base produced somewhat different counts for Hispanic children than the 2020 Decennial Census counts.

This descriptive report focuses on differences between the PEP blended base and the 2020 Census counts in the number and the national share of Hispanic children. It does not evaluate the accuracy of these two data series. It will be difficult to definitively assess whether the Census count or the PEP blended base provides a more accurate reflection of the true number of Hispanic children in states and counties. However, this report describes which data source provides a larger number and/or a larger national share of Hispanic children for states and counties. This report also includes comparisons for the child population in Puerto Rico and its municipios. The Census Bureau does not develop population estimates for other U.S. territories like the U.S. Virgin Islands or Guam, therefore the analyses shown in this report cannot be developed for these geographies.

Two key measures are used in this descriptive study. The first measure is the number of Hispanic children in each state or county, and the second measure is the share or percentage of the total U.S. Hispanic child population in each state or county. We call this second measure "national share." The analysis here compares the number of Hispanic children in a state or county from the 2020 Census count to the corresponding number from the PEP blended base. We also compared the shares of all Hispanic children in the nation that was in each state or county. It is important to examine both the raw numbers and the share of the national population because the implications may not be the same. Just because the number of Hispanic children in a
state or county was higher in the PEP blended base compared to the Census, it does not necessarily mean it was a larger share of the national population because the total child population in the PEP blended base was different from the total child population in the Census count.

In terms of absolute numbers, the PEP blended base provided a larger number of Hispanic children than the 2020 Census count nationally. At the national level, the number of Hispanic children from the PEP blended base for April 1, 2020, was 19,004,979 compared to 18,757,252 in the 2020 Census count. In other words, the number of Hispanic children in the PEP blended base was 247,727 higher than the count in the 2020 Decennial Census. That amounts to a difference of 1.3 percent.

In examining states, the results are mixed. ${ }^{4}$ There were 30 states where the Census counts were larger than the PEP blended base and 29 percent of the Hispanic children in the U.S. lived in one of those 30 states. The PEP blended base estimates were larger than the 2020 Census counts in 21 states and 71 percent of all Hispanic children in the country lived in one of those states.

However, in terms of the national share of Hispanic children in a state, the results are somewhat different. There were 36 states where the Census count was larger than the PEP blended base estimate in terms of national shares and 39 percent of the national Hispanic child population lived in one of those states. In 15 states, the PEP

[^1]blended base was larger than the Census count and 61 percent of all Hispanic children lived in these states.

The 2020 Census count was larger than the PEP blended base in 1,520 counties which were home to 32 percent of the nation's Hispanic children. On the other hand, there were 1,592 counties where the PEP blended base provided a larger number of Hispanic children than the 2020 Census count and 68 percent of the national Hispanic child population lived in those counties.

When national shares were examined, we found that the 2020 Census counts were larger than the PEP blended base in 647 counties, and over a third (36 percent) of all Hispanic children lived there. On the other hand, there were 327 counties where the PEP blended base produced a higher national share than the Census, and 57 percent of all Hispanic children lived in those counties. There was no difference by national share in many counties, but only 7 percent of Hispanic children lived in those counties.

This report also includes analyses of the total Puerto Rico child population because despite that population estimates for this territory do not include Hispanic origin detail, the vast majority ( 99.2 percent) of children in the Census 2020 were Hispanic. In Puerto Rico, the PEP blended base was larger than the Census 2020 by 12,376 children, or 2.2 percent. The PEP blended base estimate was also larger than the Census 2020 in 55 out of all 78 municipios (county equivalents).

The findings, especially for the U.S., suggest that assessing the impact of the PEP blended base on the Hispanic child population will be complicated. Results differ depending on whether one examines the nation, states, or counties and focuses on
absolute numbers of Hispanic children or the share of the national child population in a state or county. All these perspectives are important.

This paper provides guidance for child advocates, researchers, and data analysts on the potential impact of the Census Bureau's new blended base methodology for the Hispanic child population. Additionally, this research provides background regarding the decisions that will have to be made by the Census Bureau in the next year or so about the methodology for the PEP estimates for the remainder of the decade. The Census Bureau might decide to revert to the 2020 Census counts for the base, continue with the current blended base as is, or decide on a third alternative.

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Introduction

Since the 1970s, the Census Bureau has produced yearly population estimates for states and counties for the decade following each Decennial Census. ${ }^{8}$ However, Hispanic Origin data has only been included in county-level estimates, since 2000. ${ }^{9}$ The estimates allow us to identify the number of Hispanic children for states and counties compared to the 2020 Census. ${ }^{10}$ In this paper, we define the child population as those under the age of 18. This study is closely related to a recent study focused on all children (O'Hare \& Aneja, 2022).

[^2]The estimation method used by the Census Bureau starts with a population base and then adds or subtracts the estimated yearly incremental change from births, deaths, and net migration to that base over the decade following the Census.

In the past, the Decennial Census counts have provided the estimates base, but the 2020 Census detailed data needed for the base were not available in time to use with the 2021 and 2022 population estimates. Thus, the Census Bureau developed a new PEP (Population Estimates Program) methodology called the blended base.

The move from the Decennial Census counts to PEP blended base was based largely on the fact that the detailed 2020 Census data needed for the base were not available in time to use for the 2021 and 2022 Vintage estimates. However, according to one report from the Census Bureau (Hartley \& Velkoff, 2022), "there are questions about the quality of the 2020 Census results."

The quality of the 2020 Census is suspect because several vulnerable populations had higher net undercounts in the 2020 Census than in the 2010 Census, based on the Census Bureau's Demographic Analysis and Post-Enumeration Survey, as shown in Figure 1 below. The decreasing quality of the Census between 2010 and 2020 may have encouraged a new approach to post-census population estimates (Khubba et al., 2022; U.S. Census Bureau, 2022).

Figue 1. Census Undercount Rates Increased in Four Vulnerable Populations Between 2010 and 2020


Source: U.S. Census Bureau, Demographic Analysis and Post-Enumeration Survey

A Census Bureau report (Bolender \& Jensen, 2022) showed the PEP blended base seems to correct the high net undercount of young children in the 2020 Census and may have a positive impact on data for older children (ages 10-17) at the national level. A report by O'Hare (2022) provides more granular documentation for the differences between the PEP blended base and the 2020 Census for specific age groups of all U.S. children.

We believe the two figures that matter most in terms of assessing the comparison between the PEP blended base estimates and the Census counts for Hispanic children are the number of Hispanic children in a state or county and the share or percentage of all Hispanic children in the nation that are in each state or county. To
be clear, the vintage 2021 population estimates include blended base data for April 1, 2020, which are used here. ${ }^{11}$ We compared the number of Hispanic children in the PEP blended base to the number of Hispanic children in the 2020 Census count in terms of the absolute number of Hispanic children, as well as the national shares of all Hispanic children in the country as of April 1, 2020. We examined differences numerically and in percentage terms.

The yearly Census Bureau estimates are often referred to as PEP (Population Estimates Program). The term we use in this paper for this data source is the PEP blended base. Data from the 2020 Decennial Census is referred to as Census counts.

We call the children in this study Hispanic rather than Latino for two reasons. First, most Hispanics (61 percent) prefer the term Hispanic to describe the Hispanic or Latino population in the United States, and another 29 percent prefer the term Latino, but only 4 percent prefer the term Latinx (Noe-Bustamante et al., 2020). Second, Hispanic is the term used most often by the Census Bureau, and the term Hispanic is consistent with most of the literature cited for this paper. Nevertheless, we acknowledge that the labels Latino or Latinx are sometimes preferred by researchers.

This paper aims to provide descriptive information for researchers, data analysts, and child advocates on the potential impact of the Census Bureau's new blended base methodology for the Hispanic child population.

[^3]
## Why Focus on Hispanic Children?

We focus on Hispanic children for three reasons. First, Hispanic children make up a large share of the U.S. child population. More than one-quarter (26 percent) of the nation's total child population are Hispanic (The Annie E. Casey Foundation, 2022). Second, the number of Hispanic children is growing rapidly and 1 in 3 children is projected to be Hispanic by 2050 (Lopez et al., 2017). Third, the Hispanic population was undercounted at a high rate in the 2020 Census. The net undercount of the total Hispanic population was 5.0 percent compared to an overcount of 1.6 percent for the Non-Hispanic White population, and the net undercount for Hispanic children in the 2020 Census was 4.1 percent compared to 2.1 percent for all children (O'Hare, 2021). ${ }^{12}$

The high net undercount of Hispanics in the 2020 Census is not surprising given the anti-immigrant rhetoric and action in the years leading up to the 2020 Census. In particular, the attempt by the Secretary of Commerce (over the objections of the Census Bureau) to add a question on citizenship to the 2020 Census at the last-minute elevated fears in immigrant communities of participating in the 2020 Census. Litigation on the issue revealed that the attempt to add a question on citizenship was motivated by a belief that it would suppress census participation among immigrants, including Hispanics (Topaz, 2019).

[^4]
## PEP blended base in the Population Estimates Program (PEP)

The Census Bureau has produced yearly postcensal population estimates for states and counties for the past several decades. The postcensal estimates have many uses (Bolender \& Jensen, 2022; U.S. Census Bureau, 2021a) including:

- Allocation of federal funds,
- Controls for Census Bureau surveys,
- Community development,
- Aid to business planning,
- Denominators for statistical rates,
- Enforcing government regulations,
- Academic and business research, and
- Program planning in the public and private sectors.

Perhaps the most important use is the distribution of federal funds through funding formulas. Census Bureau data are used in 316 programs that distributed $\$ 1.5$ trillion to states and localities in FY 2017 (Reamer, 2020). Two-thirds of these programs use sub-state data to direct dollars to places so the accuracy of substate data is vital (Reamer, 2019). Census data are also used by states to distribute funds to substate geographic units (O'Hare, 2020).

The population estimates are not only used in some funding formulas but they are also used as control totals of the American Community Survey (ACS) and other surveys. Thus, the PEP population estimates indirectly influence any funding formula that uses the ACS data. The connection between Census Bureau data and funding to
states and localities for most funding formulas is very complicated and beyond the scope of this study. It is worth noting that each federal program has its own funding allocation formula, so changes might increase funds to a particular state or locality for some programs and decrease them for others.

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 annual population estimates use the base and add births, and subtract deaths based on birth and death certificate data. Then it adjusts for international migration and estimated migration between states and counties based on changes of address in U.S. Internal Revenue Service tax records and Medicare records. 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. The population base used for post-census population estimates in the past has been the Decennial Census count.

However, the Census Bureau is using a new method commonly called the "PEP blended base" for the 2021 and 2022 estimates, and possibly for the remainder of the decade. The PEP blended base involves combining data from three different sources (U.S. Census Bureau, 2021a, 2021b). The PEP blended base uses:

- the 2020 Census total population counts for states and counties blended with
- age and sex characteristics distribution from the middle series of the national Demographic Analysis (DA) estimates and
- the race and Hispanic Origin characteristics distribution from the Vintage 2020 Population Estimates.

Because the yearly estimates are a product of the base population and the yearly incremental changes, 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. Thus, differences in the PEP blended base compared to the Census counts are important. The switch from the use of the Decennial Census base to the PEP blended base could have different impacts on different populations. This paper examines how this change impacts Hispanic children.

This descriptive study describes the impact the switch to the PEP blended base had on Hispanic children at the state and county level when compared to the 2020 Census. Analyses of the child population in Puerto Rico are shown in Appendix A on page $30 .{ }^{13}$

## Results

Nationwide, the PEP blended base produced a larger number of Hispanic children than the 2020 Census count. We calculated the difference as the Census count

[^5]minus the PEP blended base. So, a negative figure means the PEP blended base was larger than the Census.

Table 1 shows that at the national level, the number of Hispanic children for April 1, 2020, from the PEP blended base was 19,004,979 compared to $18,757,252$ in the Census. In other words, the PEP blended base was 247,727 higher than the count in the 2020 Decennial Census for Hispanic children. That amounts to a difference of 1.3 percent.

Table 1 also shows 25.5 percent of the total U.S. child population were Hispanic children according to the PEP Blended Base, which was slightly lower than the 25.7 percent in the 2020 Census.

| Table 1. Comparison of the Number of Hispanic Children (Ages 0-17) Between the April 1, 2020 Population Estimate Program |
| :--- |
| (PEP) Blended Base and the 2020 U.S. Census |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov Note: Negative numbers mean PEP is larger than Census.

However, the gap between the 2020 Census count and the 2020 PEP blended base for Hispanic children is not spread evenly across the country.

## Data for States

Table 2 shows the states ranked by the numeric difference between the 2020 Census count of Hispanic children and the number of Hispanic children in the PEP blended base. We calculated differences as the Census count minus the PEP blended base. State differences ranged from -156,296 Hispanic children in Texas to 19,335 in

Florida. In two states -California and Texas- the PEP blended base estimated more than 100,000 additional Hispanic children than the Census counts. In five states (New York, Arizona, Hawaii, Pennsylvania, and Nevada) the PEP blended base differences were 10,000 to 100,000 higher than the Census count. There were five states (Tennessee, Louisiana, Indiana, Virginia, and Florida) where the Census count was at least 10,000 larger than the PEP blended base.

Table 2. U.S. States Ranked by Numeric Difference Between April 1, 2020 Population Estimate Program (PEP) Blended Base Estimates and 2020 U.S. Census Counts for Hispanic Children (0-17)

| Rank | State | U.S. Census | PEP Blended Base | Numeric Difference (CENSUS - PEP) | Percent Difference ((CENSUS-PEP)/PEP)*100 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Texas | 3,534,398 | 3,690,694 | -156,296 | -4.2 |
| 2 | California | 4,496,358 | 4,637,182 | -140,824 | -3.0 |
| 3 | New York | 1,022,146 | 1,048,185 | -26,039 | -2.5 |
| 4 | Arizona | 702,636 | 725,271 | -22,635 | -3.1 |
| 5 | Hawaii | 45,816 | 60,551 | -14,735 | -24.3 |
| 6 | New Mexico | 284,047 | 298,039 | -13,992 | -4.7 |
| 7 | Pennsylvania | 345,357 | 358,485 | -13,128 | -3.7 |
| 8 | Nevada | 280,861 | 288,900 | -8,039 | -2.8 |
| 9 | Washington | 368,539 | 375,539 | -7,000 | -1.9 |
| 10 | District of Columbia | 17,277 | 21,721 | -4,444 | -20.5 |
| 11 | Colorado | 399,194 | 401,779 | -2,585 | -0.6 |
| 12 | Massachusetts | 266,177 | 268,648 | -2,471 | -0.9 |
| 13 | Rhode Island | 56,113 | 58,091 | -1,978 | -3.4 |
| 14 | South Dakota | 14,886 | 16,734 | -1,848 | -11.0 |
| 15 | Alaska | 16,383 | 18,228 | -1,845 | -10.1 |
| 16 | North Dakota | 11,809 | 13,212 | -1,403 | -10.6 |
| 17 | Nebraska | 89,418 | 90,410 | -992 | -1.1 |
| 18 | Wisconsin | 163,221 | 164,047 | -826 | -0.5 |
| 19 | Montana | 15,291 | 15,813 | -522 | -3.3 |
| 20 | New Jersey | 566,576 | 566,794 | -218 | 0.0 |
| 21 | North Carolina | 394,285 | 394,478 | -193 | 0.0 |
| 22 | Wyoming | 20,893 | 20,797 | 96 | 0.5 |
| 23 | Oklahoma | 176,310 | 175,749 | 561 | 0.3 |
| 24 | Vermont | 4,391 | 3,551 | 840 | 23.7 |
| 25 | Mississippi | 36,583 | 35,732 | 851 | 2.4 |
| 26 | Idaho | 87,707 | 86,775 | 932 | 1.1 |
| 27 | Georgia | 380,539 | 379,601 | 938 | 0.2 |
| 28 | Delaware | 36,384 | 35,436 | 948 | 2.7 |
| 29 | Maine | 8,953 | 7,938 | 1,015 | 12.8 |
| 30 | West Virginia | 11,344 | 10,308 | 1,036 | 10.1 |
| 31 | Oregon | 199,363 | 198,261 | 1,102 | 0.6 |
| 32 | New Hampshire | 19,654 | 18,267 | 1,387 | 7.6 |
| 33 | Connecticut | 192,598 | 191,060 | 1,538 | 0.8 |
| 34 | lowa | 81,882 | 80,061 | 1,821 | 2.3 |
| 35 | Utah | 176,302 | 172,441 | 3,861 | 2.2 |
| 36 | Arkansas | 94,845 | 90,375 | 4,470 | 4.9 |
| 37 | Minnesota | 126,873 | 122,219 | 4,654 | 3.8 |
| 38 | Alabama | 97,191 | 92,114 | 5,077 | 5.5 |
| 39 | Kansas | 141,017 | 135,549 | 5,468 | 4.0 |
| 40 | Michigan | 196,777 | 191,015 | 5,762 | 3.0 |
| 41 | Kentucky | 74,779 | 68,570 | 6,209 | 9.1 |
| 42 | Missouri | 105,895 | 99,548 | 6,347 | 6.4 |
| 43 | Illinois | 717,098 | 710,143 | 6,955 | 1.0 |
| 44 | Ohio | 185,280 | 176,402 | 8,878 | 5.0 |
| 45 | South Carolina | 121,714 | 112,569 | 9,145 | 8.1 |
| 46 | Maryland | 237,483 | 227,507 | 9,976 | 4.4 |
| 47 | Tennessee | 173,470 | 159,577 | 13,893 | 8.7 |
| 48 | Louisiana | 98,887 | 82,696 | 16,191 | 19.6 |
| 49 | Indiana | 203,262 | 186,306 | 16,956 | 9.1 |
| 50 | Virginia | 294,435 | 276,391 | 18,044 | 6.5 |
| 51 | Florida | 1,364,555 | 1,345,220 | 19,335 | 1.4 |
|  | U.S. Total | 18,757,252 | 19,004,979 | -247,727 | -1.3 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov

Note: Negative numbers mean PEP is larger than Census.

Table 3 provides a summary of the state-level data shown in Table 2. For 30 states, the Census count was larger than the PEP blended base estimates, and 29 percent of Hispanic children live in those states. In 21 states the PEP blended base estimate was larger than the Census count, and 71 percent of Hispanic children lived in those states.

| Table 3. Distribution of U.S. States by Difference Between the 2020 U.S. Census Count and April 1, 2020 Population Estimate Program (PEP) Blended Base Estimates of the Hispanic Child Population |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Comparison | Number of States | Percent of States | Hispanic Child Population based on PEP | Percent of Hispanic Child Population |
| Census Count is Larger than PEP Blended Base Estimate | 30 | 59 | 5,492,178 | 29 |
| PEP Blended Base Estimate is Larger than the Census Count | 21 | 41 | 13,512,801 | 71 |
| Total | 51 | 100 | 19,004,979 | 100 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at Note: Estimates include D.C. as a state.

Table 4 shows U.S. states ranked by the percentage difference between the number of Hispanic children in the 2020 Census and the number in the PEP blended base. A negative number indicates the PEP blended base was larger than the Census Count. The percentage difference among the states ranged from -24.3 percent in Hawaii to 23.7 percent in Vermont.

Table 4. U.S. States Ranked by Percent Difference Between April 1, 2020 Population Estimate Program (PEP) Blended Base Estimates and 2020 U.S. Census Counts for Hispanic Children (Ages 0 to 17)

| Rank | State | U.S. Census | PEP Blended Base | Numeric Difference (CENSUS - PEP) | Percent Difference ((CENSUS-PEP)/PEP)*100 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Hawaii | 45,816 | 60,551 | -14,735 | -24.3 |
| 2 | District of Columbia | 17,277 | 21,721 | -4,444 | -20.5 |
| 3 | South Dakota | 14,886 | 16,734 | -1,848 | -11.0 |
| 4 | North Dakota | 11,809 | 13,212 | -1,403 | -10.6 |
| 5 | Alaska | 16,383 | 18,228 | -1,845 | -10.1 |
| 6 | New Mexico | 284,047 | 298,039 | -13,992 | -4.7 |
| 7 | Texas | 3,534,398 | 3,690,694 | -156,296 | -4.2 |
| 8 | Pennsylvania | 345,357 | 358,485 | -13,128 | -3.7 |
| 9 | Rhode Island | 56,113 | 58,091 | -1,978 | -3.4 |
| 10 | Montana | 15,291 | 15,813 | -522 | -3.3 |
| 11 | Arizona | 702,636 | 725,271 | -22,635 | -3.1 |
| 12 | California | 4,496,358 | 4,637,182 | -140,824 | -3.0 |
| 13 | Nevada | 280,861 | 288,900 | -8,039 | -2.8 |
| 14 | New York | 1,022,146 | 1,048,185 | -26,039 | -2.5 |
| 15 | Washington | 368,539 | 375,539 | -7,000 | -1.9 |
| 16 | Nebraska | 89,418 | 90,410 | -992 | -1.1 |
| 17 | Massachusetts | 266,177 | 268,648 | -2,471 | -0.9 |
| 18 | Colorado | 399,194 | 401,779 | -2,585 | -0.6 |
| 19 | Wisconsin | 163,221 | 164,047 | -826 | -0.5 |
| 20 | North Carolina | 394,285 | 394,478 | -193 | 0.0 |
| 21 | New Jersey | 566,576 | 566,794 | -218 | 0.0 |
| 22 | Georgia | 380,539 | 379,601 | 938 | 0.2 |
| 23 | Oklahoma | 176,310 | 175,749 | 561 | 0.3 |
| 24 | Wyoming | 20,893 | 20,797 | 96 | 0.5 |
| 25 | Oregon | 199,363 | 198,261 | 1,102 | 0.6 |
| 26 | Connecticut | 192,598 | 191,060 | 1,538 | 0.8 |
| 27 | Illinois | 717,098 | 710,143 | 6,955 | 1.0 |
| 28 | Idaho | 87,707 | 86,775 | 932 | 1.1 |
| 29 | Florida | 1,364,555 | 1,345,220 | 19,335 | 1.4 |
| 30 | Utah | 176,302 | 172,441 | 3,861 | 2.2 |
| 31 | Iowa | 81,882 | 80,061 | 1,821 | 2.3 |
| 32 | Mississippi | 36,583 | 35,732 | 851 | 2.4 |
| 33 | Delaware | 36,384 | 35,436 | 948 | 2.7 |
| 34 | Michigan | 196,777 | 191,015 | 5,762 | 3.0 |
| 35 | Minnesota | 126,873 | 122,219 | 4,654 | 3.8 |
| 36 | Kansas | 141,017 | 135,549 | 5,468 | 4.0 |
| 37 | Maryland | 237,483 | 227,507 | 9,976 | 4.4 |
| 38 | Arkansas | 94,845 | 90,375 | 4,470 | 4.9 |
| 39 | Ohio | 185,280 | 176,402 | 8,878 | 5.0 |
| 40 | Alabama | 97,191 | 92,114 | 5,077 | 5.5 |
| 41 | Missouri | 105,895 | 99,548 | 6,347 | 6.4 |
| 42 | Virginia | 294,435 | 276,391 | 18,044 | 6.5 |
| 43 | New Hampshire | 19,654 | 18,267 | 1,387 | 7.6 |
| 44 | South Carolina | 121,714 | 112,569 | 9,145 | 8.1 |
| 45 | Tennessee | 173,470 | 159,577 | 13,893 | 8.7 |
| 46 | Kentucky | 74,779 | 68,570 | 6,209 | 9.1 |
| 47 | Indiana | 203,262 | 186,306 | 16,956 | 9.1 |
| 48 | West Virginia | 11,344 | 10,308 | 1,036 | 10.1 |
| 49 | Maine | 8,953 | 7,938 | 1,015 | 12.8 |
| 50 | Louisiana | 98,887 | 82,696 | 16,191 | 19.6 |
| 51 | Vermont | 4,391 | 3,551 | 840 | 23.7 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov
Notes: Negative numbers mean PEP is larger than Census. Rankings are based on unrounded data.

## Examination of National Shares

There is another way of looking at the PEP blended base and Census counts for April 1, 2020. One can look at the share of the national Hispanic child population in each state and county based on the PEP blended base and the Census counts. We call this measure the national share.

In some cases, the raw number of Hispanic children may be most important, but in other cases, the share of the national child population in a state or county may be more important. A larger number of Hispanic children does not necessarily mean a larger share of the national population because the total number of Hispanic children is different in the PEP blended base and the Census counts.

Shares are expressed as a percentage of the national child population. Many of the percentages were small, which means that the difference between the PEP blended base and the 2020 Census count was very small. The differences were examined using three decimal places.

Table 5 shows states ranked by the percentage point difference between the PEP blended base and the Census counts in terms of the share of the national child population in each state. A negative sign in the difference column means the PEP blended base national share was larger than the Census count. The differences ranged from -0.577 in Texas to 0.197 percent in Florida.

Table 5. U.S. States Ranked by Percent Difference in National Shares Between April 1, 2020 Population Estimate Program (PEP) Blended Base Estimates and U.S. Census Count for Hispanic Children (Ages 0 to 17)

| Rank | State | U.S. Census |  | PEP Blended Base |  | Percentage Point Difference of National Shares (CENSUS-PEP) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Number of Hispanic Children | Share of U.S. Hispanic Children | Number of Hispanic Children | Share of U.S. Hispanic Children |  |
| 1 | Texas | 3,534,398 | 18.84 | 3,690,694 | 19.42 | -0.577 |
| 2 | California | 4,496,358 | 23.97 | 4,637,182 | 24.40 | -0.429 |
| 3 | Hawaii | 45,816 | 0.24 | 60,551 | 0.32 | -0.074 |
| 4 | Arizona | 702,636 | 3.75 | 725,271 | 3.82 | -0.070 |
| 5 | New York | 1,022,146 | 5.45 | 1,048,185 | 5.52 | -0.066 |
| 6 | New Mexico | 284,047 | 1.51 | 298,039 | 1.57 | -0.054 |
| 7 | Pennsylvania | 345,357 | 1.84 | 358,485 | 1.89 | -0.045 |
| 8 | Nevada | 280,861 | 1.50 | 288,900 | 1.52 | -0.023 |
| 9 | District of Columbia | 17,277 | 0.09 | 21,721 | 0.11 | -0.022 |
| 10 | Washington | 368,539 | 1.96 | 375,539 | 1.98 | -0.011 |
| 11 | South Dakota | 14,886 | 0.08 | 16,734 | 0.09 | -0.009 |
| 12 | Alaska | 16,383 | 0.09 | 18,228 | 0.10 | -0.009 |
| 13 | North Dakota | 11,809 | 0.06 | 13,212 | 0.07 | -0.007 |
| 14 | Rhode Island | 56,113 | 0.30 | 58,091 | 0.31 | -0.007 |
| 15 | Montana | 15,291 | 0.08 | 15,813 | 0.08 | -0.002 |
| 16 | Nebraska | 89,418 | 0.48 | 90,410 | 0.48 | 0.001 |
| 17 | Wyoming | 20,893 | 0.11 | 20,797 | 0.11 | 0.002 |
| 18 | Vermont | 4,391 | 0.02 | 3,551 | 0.02 | 0.005 |
| 19 | Massachusetts | 266,177 | 1.42 | 268,648 | 1.41 | 0.005 |
| 20 | Maine | 8,953 | 0.05 | 7,938 | 0.04 | 0.006 |
| 21 | West Virginia | 11,344 | 0.06 | 10,308 | 0.05 | 0.006 |
| 22 | Wisconsin | 163,221 | 0.87 | 164,047 | 0.86 | 0.007 |
| 23 | Mississippi | 36,583 | 0.20 | 35,732 | 0.19 | 0.007 |
| 24 | Delaware | 36,384 | 0.19 | 35,436 | 0.19 | 0.008 |
| 25 | New Hampshire | 19,654 | 0.10 | 18,267 | 0.10 | 0.009 |
| 26 | Idaho | 87,707 | 0.47 | 86,775 | 0.46 | 0.011 |
| 27 | Colorado | 399,194 | 2.13 | 401,779 | 2.11 | 0.014 |
| 28 | Oklahoma | 176,310 | 0.94 | 175,749 | 0.92 | 0.015 |
| 29 | lowa | 81,882 | 0.44 | 80,061 | 0.42 | 0.015 |
| 30 | Oregon | 199,363 | 1.06 | 198,261 | 1.04 | 0.020 |
| 31 | Connecticut | 192,598 | 1.03 | 191,060 | 1.01 | 0.021 |
| 32 | North Carolina | 394,285 | 2.10 | 394,478 | 2.08 | 0.026 |
| 33 | Arkansas | 94,845 | 0.51 | 90,375 | 0.48 | 0.030 |
| 34 | Georgia | 380,539 | 2.03 | 379,601 | 2.00 | 0.031 |
| 35 | Utah | 176,302 | 0.94 | 172,441 | 0.91 | 0.033 |
| 36 | Minnesota | 126,873 | 0.68 | 122,219 | 0.64 | 0.033 |
| 37 | Alabama | 97,191 | 0.52 | 92,114 | 0.48 | 0.033 |
| 38 | Kentucky | 74,779 | 0.40 | 68,570 | 0.36 | 0.038 |
| 39 | New Jersey | 566,576 | 3.02 | 566,794 | 2.98 | 0.038 |
| 40 | Kansas | 141,017 | 0.75 | 135,549 | 0.71 | 0.039 |
| 41 | Missouri | 105,895 | 0.56 | 99,548 | 0.52 | 0.041 |
| 42 | Michigan | 196,777 | 1.05 | 191,015 | 1.01 | 0.044 |
| 43 | South Carolina | 121,714 | 0.65 | 112,569 | 0.59 | 0.057 |
| 44 | Ohio | 185,280 | 0.99 | 176,402 | 0.93 | 0.060 |
| 45 | Maryland | 237,483 | 1.27 | 227,507 | 1.20 | 0.069 |
| 46 | Tennessee | 173,470 | 0.92 | 159,577 | 0.84 | 0.085 |
| 47 | Illinois | 717,098 | 3.82 | 710,143 | 3.74 | 0.086 |
| 48 | Louisiana | 98,887 | 0.53 | 82,696 | 0.44 | 0.092 |
| 49 | Indiana | 203,262 | 1.08 | 186,306 | 0.98 | 0.103 |
| 50 | Virginia | 294,435 | 1.57 | 276,391 | 1.45 | 0.115 |
| 51 | Florida | 1,364,555 | 7.27 | 1,345,220 | 7.08 | 0.197 |
|  | U.S. Total | 18,757,252 | - | 19,004,979 | - | - |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov

Notes: Negative numbers mean PEP is larger than Census. Rankings are based on unrounded data.

Table 6 provides a summary of the data in Table 5 . For 36 states, the share of all U.S. Hispanic children was higher using the Census counts compared to the PEP blended base, and 39 percent of all Hispanic children lived in those states. There were 15 states where the share of all U.S. Hispanic children was higher using the PEP blended base and 61 percent of Hispanic children lived in those states.

Table 6. Distribution of U.S. States by Difference in National Shares of the Hispanic Child Population (0-17) Between 2020 U.S. Census Count and April 1, 2020 Population Estimate Program (PEP) Blended Base

| Comparison | Number <br> of States | Percent <br> of States | Hispanic Child <br> Population <br> Based on PEP | Percent of <br> Hispanic Child <br> Population |
| :--- | ---: | ---: | ---: | ---: |
| Census Count is Larger than PEP Blended Base Estimate | 36 | 71 | $7,378,334$ | 39 |
| PEP Blended Base Estimates is Larger than Census Count | 15 | 29 | $11,626,645$ | 61 |
| Total | 51 | 100 | $19,004,979$ | 100 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov
Note: Analysis was carried out to three decimal places.

## Data for Counties

This section focuses on counties using a similar approach to the one used in the section on states. Table 7 shows the distribution of counties by whether the PEP blended base or the 2020 Census count of Hispanic children is larger. We calculated differences as the Census count minus the PEP blended base.

According to our analysis, the number of counties in which the PEP blended base estimate of Hispanic children was larger than the Census count was very similar to the reverse. There were 1,592 counties where the PEP blended base was larger than the Census and there were 1,520 counties where the Census count was larger than the PEP blended base.

However, Table 7 also shows that 68 percent of the Hispanic child population lived in the counties in which the PEP blended base was larger than the Census count,
while nearly a third of Hispanic children (32 percent) lived in counties where the Census was larger than the PEP blended base. There were 30 counties where there was no difference ${ }^{14}$ between the two sources of data.

Table 7. Distribution of Counties by Difference in the Number of Hispanic Children (Ages 0-17) Between 2020 U.S. Census Count and April 1, 2020 April 1, 2020 Population Estimate Program (PEP) Blended Base

| Comparison | Number of <br> Counties | Percent of <br> Counties | Hispanic Child <br> Population <br> Based on PEP | Percent of <br> Hispanic Child <br> Population |
| :--- | ---: | ---: | ---: | ---: |
| No Difference | 30 | 1 | 11,460 | 0 |
| Census Count is Larger than PEP Blended Base Estimate | 1,520 | 48 | $6,104,068$ | 32 |
| PEP Blended Base Estimate is Larger than Census Count | 1,592 | 51 | $12,889,451$ | 68 |
| Total | 3,142 | 100 | $19,004,979$ | 100 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov
Notes: Analysis was carried out to three decimal places. Kalawao County in Hawaii was not included because there were zero children living there.

Map 1 shows the counties in the U.S. color-coded by the relationship between the number of Hispanic children in the PEP blended base and the number in the 2020 Census count.

The largest differences (more than 5 percent) are shown in bright pink and bright green. There appears to be a pattern of the PEP blended base being at least 5 percent higher than the Census (bright green) in much of the "black belt" of the South from the Carolinas to the Mississippi delta. There is also a second cluster of counties along the Texas-Mexican border where the PEP blended base is higher than the Census count. A third cluster with the pattern described previously can be found in the northern plains (the Dakotas, northern Nebraska, and eastern Montana).

[^6]Map 1. County-Level Percent Differences between the 2020 Census Counts and the 2020 Census PEP Blended Base Estimates for Hispanic Children (Ages 0 to 17)


There were fewer counties where the Census count of Hispanic children was at least 5 percent higher than the PEP blended base (those in bright pink). In the Northeast, Great Lakes, and Eastern Gulf of Mexico regions of the country, there are more counties where the Census Count was at least 5 percent higher than the PEP blended base estimate.

These geographic patterns generally follow the overall quality of the 2020 Census across the country. Several states in the Northeast had statistically significant
census overcounts (for the total population) and several in the South had statistically significant census net undercounts based on the Census Bureau's Post-Enumeration Survey analysis.

Table 8 shows the 21 counties where the PEP blended base estimated at least 2,000 more Hispanic children than the Census count. It is not surprising these are all large counties. There were no counties where the Census count was at least 2,000 larger than the PEP blended base estimate.

| Rank | State | County | U.S. Census | PEP Blended Base | Numeric Difference (Census-PEP) | Percent Difference ((CENSUS-PEP)/PEP)*100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | FLORIDA | Palm Beach County, Florida | 93,061 | 88,204 | -4,857 | -5.5 |
| 2 | INDIANA | Marion County, Indiana | 48,153 | 43,912 | -4,241 | -9.7 |
| 3 | TENNESSEE | Davidson County, Tennessee | 32,608 | 28,630 | -3,978 | -13.9 |
| 4 | NEW YORK | Westchester County, New York | 75,359 | 71,560 | -3,799 | -5.3 |
| 5 | TEXAS | Denton County, Texas | 59,877 | 56,271 | -3,606 | -6.4 |
| 6 | FLORIDA | Broward County, Florida | 137,726 | 134,214 | -3,512 | -2.6 |
| 7 | LOUISIANA | Jefferson Parish, Louisiana | 23,573 | 20,311 | -3,262 | -16.1 |
| 8 | NEW YORK | Suffolk County, New York | 98,866 | 96,068 | -2,798 | -2.9 |
| 9 | NEW YORK | Nassau County, New York | 72,100 | 69,567 | -2,533 | -3.6 |
| 10 | UTAH | Utah County, Utah | 33,021 | 30,606 | -2,415 | -7.9 |
| 11 | NEW JERSEY | Morris County, New Jersey | 21,256 | 18,867 | -2,389 | -12.7 |
| 12 | KANSAS | Johnson County, Kansas | 19,524 | 17,200 | -2,324 | -13.5 |
| 13 | NEW JERSEY | Mercer County, New Jersey | 25,824 | 23,552 | -2,272 | -9.6 |
| 14 | INDIANA | Lake County, Indiana | 32,929 | 30,658 | -2,271 | -7.4 |
| 15 | LOUISIANA | Orleans Parish, Louisiana | 7,861 | 5,625 | -2,236 | -39.8 |
| 16 | MARYLAND | Baltimore County, Maryland | 21,303 | 19,116 | -2,187 | -11.4 |
| 17 | TEXAS | Collin County, Texas | 56,408 | 54,232 | -2,176 | -4.0 |
| 18 | FLORIDA | Seminole County, Florida | 28,633 | 26,516 | -2,117 | -8.0 |
| 19 | TENNESSEE | Rutherford County, Tennessee | 13,766 | 11,693 | -2,073 | -17.7 |
| 20 | COLORADO | Douglas County, Colorado | 11,936 | 9,925 | -2,011 | -20.3 |
| 21 | VIRGINIA | Fairfax County, Virginia | 60,107 | 58,105 | -2,002 | -3.4 |
|  |  | Total of 21 counties | 973,891 | 914,832 | -59,059 | -222 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov

Collectively, these 21 counties accounted for almost one-quarter ( 24 percent)
of the 247,727 differences between the national PEP blended base estimates and the Census counts for Hispanic children. The counties in Table 8 are clustered in just a few states. There were only 12 states with one of these counties, and two states - Florida
and New York - each had three counties. The states of Indiana, Louisiana, New Jersey, Tennessee, and Texas have two each. Interestingly, none were in California.

## County National Shares

Table 9 provides a summary of the distribution of county national shares of Hispanic Children for PEP blended base and Census counts. This analysis is like the previous section on counties. To get the estimates shown in Table 9, we calculated the percent each county made up of the total Hispanic child population in each data series (PEP blended base and Census). We rounded percentages to 0.001 . Then we compared which percent (the PEP blended base or the Census) was larger, and finally, we compared how many counties had smaller or larger shares of Hispanic children.

For most of the counties $(2,169)$ there was no difference between the two data sources (with comparisons carried out to three decimal places) in the share of Hispanic children. For instance, using the PEP blended base counts, Prince George's County in Maryland accounted for 0.352 of all Hispanic children. Using the 2020 Census counts, Prince George's County accounted for the same share of all Hispanic children.

There were 647 counties where the Census count national share of Hispanic children was larger than the PEP blended base. For example, Palm Beach County in Florida accounted for 0.496 of the total Hispanic child population using the 2020 Census count. In contrast, the same county accounted for 0.464 percent of the total Hispanic child population when we used the PEP blended base.

There were 327 counties where the county's national share of Hispanic children was larger in the PEP blended base compared to the Census count.

Table 9 also shows that 57 percent of the Hispanic child population lived in the 327 counties where the PEP blended base share of Hispanic children was larger than the Census, while only 36 percent lived in the 647 counties where the Census share of Hispanic children was larger than the PEP blended base. Finally, 7 percent of children lived in counties with no difference.

Table 9. Distribution of County National Shares of Hispanic Children (Ages 0-17) in the 2020 U.S. Census and April 1, 2020 Population Estimate Program (PEP) Blended Base

| Comparison | Number of <br> Counties | Percent of <br> Counties | Hispanic Child <br> Population <br> Based on PEP | Percent of Total <br> Hispanic Child <br> Population |
| :--- | ---: | ---: | ---: | ---: |
| No Difference | 2,169 | 69 | $1,325,100$ | 7 |
| Census Count is Larger than PEP Blended Base Estimate | 647 | 21 | $6,772,877$ | 36 |
| PEP Blended Base Estimate is Larger than Census Count | 327 | 10 | $10,906,402$ | 57 |
| Total | 3,143 | 100 | $19,004,379$ | 100 |

Source: Vintage 2021 PEP Blended Base was supplied by the U.S. Census Bureau; 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4, available at census.data.gov Note: Analysis was carried out to three decimal places.

## Summary and Conclusions

The implications of using the number of Hispanic children in the PEP blended base instead of the number counted in the 2020 Census for post-census estimates are complicated. Results differ depending on whether one is examining the nation, looking at states or counties, and whether one is focused on absolute numbers of Hispanic children or the share of the national child population in a state or county. All these perspectives are important.

At the national level, the number of Hispanic children counted in the PEP blended base is 1.3 percent larger than the number in the Census count. This is not surprising given the high net undercount of Hispanic children in the 2020 Census.

At the state level, the Census count is larger than the PEP blended base for 30 states, but less than a third (29 percent) of Hispanic children lived in those states. In
contrast, there were 21 states where the PEP blended based estimates were larger than the Census count, and over two thirds (71 percent) of Hispanic children lived in those states.

At the county level, there were 1,592 counties where the PEP blended base was larger than the Census count, and about two third thirds (68 percent) of Hispanic children lived in those counties. There were 1,520 counties where the Census count was larger than the PEP blended base estimates, but slightly less than a third (32 percent) of Hispanic children lived in those counties. The point is, counties vary a lot in terms of whether the PEP blended base or the Census count provides a larger number of Hispanic children, but it is clear most Hispanic children were in counties where the PEP blended base estimates were higher than the Census count for Hispanic children.

Examining differences in the national shares of Hispanic children by state offers a somewhat different story. The Census count of Hispanic children yielded a larger share of the national child population than the PEP blended base in 36 states and 39 percent of the Hispanic child population lived in those 36 states. On the other hand, the PEP blended base estimate of Hispanic children yielded a larger share of the national child population than the Census count in 15 states and 61 percent of Hispanic children lived in those states.

It is important to recognize that this descriptive analysis only focuses on one population: Hispanic children. Further assessment of the PEP blended base may yield different results for other populations.

As mentioned earlier, one of the biggest issues that needs to be examined in the context of the PEP blended base is the impact of federal funding. Census Bureau data is used in 316 programs that distributed $\$ 1.5$ trillion to states and localities in FY 2017 (Reamer, 2020). The connection between Census Bureau data and funding to states and localities is very complicated, and a detailed examination is beyond the scope of this study. The population estimates are not only used in some funding formulas but they are also used as control totals of the American Community Survey (ACS) and other surveys. Thus, the PEP population estimates indirectly influence any funding formula that uses the ACS data. It's worth noting that each federal program has its own funding allocation formula, so changes might increase funds to a particular state or locality for some programs and decrease them for others.

As stated previously, the 2020 Census counts could not be used as the base for the post-2020 Census population estimates because the detailed data needed from the 2020 Census were not available in time for use in the 2021 and 2022 PEP estimates. The lack of these detailed data also makes a more comprehensive analysis of the impact of the PEP blended base compared to the 2020 Census impossible. For example, the lack of age groups of Hispanic children makes it impossible to assess the implications of the blended base for young Hispanic children (ages 0 to 4) compared to Hispanic teenagers. Such an analysis will be possible when the data for young Hispanic children become available later in 2023.

The Census Bureau used the PEP blended base methodology for the 2021 series of population estimates and will be used for the 2022 round of estimates and
probably for 2023. However, it is still unclear what method will be used by the Census Bureau for the remainder of the decade.

The Census Bureau has established a Base Evaluation and Research Team (BERT) to explore options for producing a base population including the feasibility of taking coverage measures from the DA and Post-Enumeration Survey (PES) into account in the development of the population estimates (Hartley, 2022). When detailed data from the 2020 Census become available (probably May 2023) the Census Bureau will have to decide if it wants to:

1) continue using the PEP blended base as is for the post-2020 Census population estimates,
2) begin using the 2020 Census counts as the base (and perhaps revise the estimates already produced), or
3) devise some other method for producing a base.

We hope this analysis will help Census stakeholders and the Census Bureau discern the best option for going forward.

## Appendix A. The 2020 Child Population in Puerto Rico

In this appendix, we discuss the 2020 Puerto Rico (P.R.) resident child population ages 0 to 17. Puerto Rico is a U.S. territory and by law (8 United States Code 1402) everyone born there is a U.S. citizen. Unfortunately, the Census Bureau only publishes estimates for Puerto Rico by sex and age, it does not include data by Hispanic Origin or race. However, most of Puerto Rico's child population is of Hispanic Origin. There were 560,971 children in Puerto Rico as counted by the 2020 Census, of which 99.2 percent $(556,300)$ were Hispanic children. So, comparing the P.R. PEP blended base estimates and P.R. 2020 Census count for all children in the territory provides useful insights regarding Hispanic children in Puerto Rico.

In Puerto Rico, the PEP blended base estimate for April 1, 2020, shows a larger number of children than the Census Count. Table A1 shows that in the Commonwealth of Puerto Rico, the number of children for April 1, 2020, from the PEP blended base was 573,347 compared to 560,971 in the Census. In other words, the PEP blended base was 12,376 higher than the 2020 Decennial Census. This amounts to a difference of 2.2 percent.

Table A1. Comparison of the Number of Children (Ages 0-17) Between the April 1, 2020 Population Estimate Program (PEP) Base and the 2020 Census for Puerto Rico (P.R.)

| Characteristic | U.S. Census | PEP Blended <br> Base | Numeric Difference <br> (Census-PEP) | Percent Difference <br> $(($ Census-PEP $) / P E P) * 100 ~$ |
| :--- | :--- | ---: | ---: | ---: |
| Total P.R. Child Population | 560,971 | 573,347 | $-12,376$ | -2.2 |
| P.R. Hispanic children | 556,300 | NA | NA | NA |
| Percent of All P.R. children who are Hispanic | 99.2 | NA | NA |  |

Source: 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4; 2020 PEP from the Puerto Rico Vintage 2021 Population Estimates (PRC-EST2021-SYASEX).

Municipios are county equivalents and comprise the main geographic and legal subdivisions within Puerto Rico. Municipio-level analyses remain relevant for the P.R.

Hispanic child population because the percentage that Hispanic children in the 2020 Census made up of the total child population across municipios varied between 95.3 and 99.9 percent. In other words, most children in Puerto Rico and across all municipios are Hispanic.

The gap between the 2020 Census count and the 2020 PEP blended base for children is not spread evenly across municipios in Puerto Rico. Table A2 shows that there were 55 municipios in which the PEP blended base estimates for all children was larger than the Census count. These municipios made up 71 percent of all municipios in Puerto Rico. Almost three-quarters (74 percent) of children lived in municipios in which the PEP blended base was larger than the Census count. In contrast, there were only 23 municipios where the Census count was larger than the PEP blended base estimate, and about one-quarter (26 percent) of children lived there.

Table A2. Distribution of P.R. Municipios by Difference Between the 2020 U.S. Census Count and April 1, 2020 Population Estimate Program (PEP) Blended Base Estimates of the Child Population in Puerto Rico

| Characteristic | Number of <br> Municipios | Percent of <br> Municipios | Child Population <br> based on PEP | Percent of Child <br> Population |
| :--- | ---: | ---: | ---: | ---: |
| Census Count is Larger than the PEP Blended Base Estimate | 23 | 29.5 | 151,114 | 26.4 |
| PEP Blended Base Estimate is Larger than the Census Count | 55 | 70.5 | 422,233 | 73.6 |
| Total | 78 | 100.0 | 573,347 | 100.0 |

Source: 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4; 2020 PEP from the Puerto Rico Vintage 2021 Population Estimates (PRC-EST2021-SYASEX).

There were only 3 municipios where the 2020 PEP blended base estimated at least 1,000 more children than the Census (shown in Table A3): San Juan, Ponce, and Toa Baja. The percent difference between the PEP blended base and the 2020 Census for these municipios ranged between 4.1 to 7.7 percent, much larger than for the whole territory (2.2 percent). Despite comprising a small number of municipios, these are all quite large in population. Collectively, these municipios accounted for 16.5 percent of
the total child population in Puerto Rico. There were no municipios where the 2020 Census counted more than 1,000 children compared to the PEP blended base.

Table A3. P.R. Municipios Ranked by Numerical Difference where the PEP Blended Base Estimate was at least 1,000 Children Larger than the 2020 Census Count in Puerto Rico

| Rank | Municipio | U.S. Census | PEP Blended <br> Base | Numeric Difference <br> (Census-PEP) | Percent Difference <br> $(($ Census-PEP)/PEP)*100 |
| :---: | :--- | ---: | ---: | ---: | ---: |
| 1 | San Juan | 53,987 | 56,293 | $-2,306$ | -4.1 |
| 2 | Ponce | 23,653 | 25,068 | $-1,415$ | -5.6 |
| 3 | Toa Baja | 12,132 | 13,149 | $-1,017$ | -7.7 |

Source: 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4; 2020 PEP from the Puerto Rico Vintage 2021 Population Estimates (PRC-EST2021-SYASEX).

Table A4 provides a summary of the analysis of P.R. shares of all children using both data series. As noted in the full report, to get the estimates shown in Table A4, we calculated the percent each municipio made up of the total P.R. child population in each data series (PEP blended base and Census). We rounded percentages to 0.001 . Then we compared which percent (the PEP blended base or the Census) was larger, and finally, we compared how many municipios had smaller or larger shares of children.

Overall, the differences are well split between municipios with higher shares of children using the Census counts compared with municipios with higher shares of children using the PEP blended base, but most children live in municipios where the PEP blended base share of children was higher than the Census.

For 38 municipios, the share of all P.R. children was higher using the Census counts compared to the PEP blended base, and 44 percent of all children lived in those municipios. For example, the municipio of Bayamon accounted for 5.5 percent of the total P.R. child population using the 2020 Census count. In contrast, the same municipio
accounted for 5.3 percent of the total child population when we used the PEP blended base.

There were 37 municipios where the share of all P.R. children was higher using the PEP blended base and 54 percent of children lived in those municipios. For example, the municipio of San Juan accounted for 9.8 percent of the total child population when we used the PEP blended base. In contrast, the same municipio accounted for 9.6 percent of the total P.R. child population using the 2020 Census count.

In 3 municipios there were no differences between the PEP blended base and Census counts in the share of children with comparisons carried out to three decimal places.

Table A4. Distribution of P.R. Municipios by Difference in Commonwealth Shares of the Child Population (0-17) Between 2020 U.S. Census Count and April 1, 2020 Population Estimate Program (PEP) Blended Base

| Comparison | Number of <br> Municipios | Percent of <br> Municipios | P.R. Child <br> Population <br> Based on PEP | Percent of P.R. <br> Child <br> Population |
| :--- | ---: | ---: | ---: | ---: |
| No Difference | 3 | 4 | 13,942 | 2 |
| Census Count is Larger than PEP Blended Base Estimate | 38 | 49 | 250,365 | 44 |
| PEP Blended Base Estimates is Larger than Census Count | 37 | 47 | 309,040 | 54 |
| Total | 78 | 100 | 573,347 | 100 |

Source: 2020 Census data derived from U.S. Census Bureau, 2020 Census Redistricting Data (Public Law 94-171), Tables P2 and P4; 2020 PEP from the Puerto Rico Vintage 2021 Population Estimates (PRC-EST2021-SYASEX).
Note: Analysis was carried out to three decimal places.

Like the full study reflected in this report, the implications of using the number of children in the PEP blended base instead of the number counted in the 2020 Census are complicated in Puerto Rico. Yet, for the most part, in Puerto Rico, the PEP blended base offers larger numbers of the child population than the Census 2020 count.

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[^0]:    ${ }^{1}$ University of Missouri
    ${ }^{2}$ Georgetown University
    ${ }^{3}$ Consultant to the Count All Kids Campaign

[^1]:    ${ }^{4}$ In this paper the District of Columbia is treated as a state.

[^2]:    ${ }^{5}$ University of Missouri
    ${ }^{6}$ Georgetown University
    ${ }^{7}$ Consultant to the Count All Kids Initiative
    ${ }^{8}$ Access the main Population Estimates website of the Census Bureau here:
    https://www.census.gov/programs-surveys/popest.html
    ${ }^{9}$ The Census Bureau has produced estimates and projections of the Hispanic Origin population since 1986 as part of their P25 report series (See P25-995, P25-1040, and P25-1045 reports available here:
    https://www.census.gov/library/publications/1980/demo/p25-1980s.html). However, the full combination of age, sex, race, and Hispanic Origin characteristics at the county level was first published in 2000 for the years 1990-1999. For more information on Census estimates with file descriptions go here: https://www2.census.gov/programssurveys/popest/FTP2_Key.xIsx
    ${ }^{10}$ The Vintage 2021 PEP blended base data for Hispanics ages 0 to 17 used in this report were provided by the Census Bureau through an external data request program.

[^3]:    ${ }^{11}$ The term vintage is used by the Census Bureau to identify the year of population estimates. Each vintage includes a base estimate for the April $1^{\text {st }}$ census date, the population estimate for July $1^{\text {st }}$ of the census year, and the mid-year population estimate for all subsequent years until the most recent. So, the vintage 2021 population estimates include three sets of estimates: April $1^{\text {st }}, 2020$, July $1^{\text {st, }} 2020$, and July $1^{\text {st, }}$ 2021.

[^4]:    ${ }^{12}$ It should be noted that net undercounts are NOT the same as people missed in the Census. The net undercounts include people missed as well as those double-counted (O’Hare, 2019).

[^5]:    ${ }^{13}$ The Census Bureau does not develop population estimates for other U.S. territories like the U.S. Virgin Islands or Guam, therefore the analyses shown in this report cannot be developed for these geographies.

[^6]:    ${ }^{14}$ To estimate differences, calculations were rounded to 0.001 .

