A Preliminary Analysis of U.S. and State-Level Results From the 2020 Census

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Introduction

The 2020 Census represented the twenty-fourth effort to enumerate the population of the United States as mandated by Article I, Section 2 of the U.S. Constitution. However, it represented one of only a few such efforts to be beset by major operational interruptions. Specifically, in March 2020, the COVID-19 pandemic brought field operations to a halt. The implications of this disruption were vast and numerous. Despite these unprecedented challenges, the U.S. Census Bureau successfully completed enumeration in October 2020. Over the subsequent months, the results of data collection were processed and tabulated by Census Bureau staff to prepare the national and state population totals to be used to apportion the U.S. House of Representatives. With the release of these first 2020 Census results, we have the opportunity to examine how the nation has changed at the highest levels and set the stage for the comprehensive analyses still to come.

In this paper, we consider the 2020 Census national- and state-level resident population counts in historical and evaluative contexts. First, we compare the 2020 Census counts for the nation and states to prior censuses and examine the rate of population change over time. Then, we compare the 2020 Census counts against the Vintage 2020 estimates of the resident population for April 1, 2020, from the Population Estimates Program. Finally, we use the range of 2020 Demographic Analysis (DA) estimates for the national resident population on April 1, 2020, to calculate net coverage error.

Although we examine differences between the 2020 Census and various benchmark data sources, this paper is not intended to provide an assessment of the accuracy or reasonableness of the 2020 Census results. These types of assessment will be undertaken in future reports. In particular, the Post-Enumeration Survey (PES) will be used to calculate estimates of net coverage and the components of census coverage (such as erroneous enumerations and omissions) for major demographic groups across multiple levels of geography. Similarly, the DA estimates of the national resident population as of April 1, 2020, will be used to calculate net coverage error and examine trends in coverage by single year of age, sex, and broad race and Hispanic origin groups. Future analyses, such as PES and DA, also have the flexibility to delve into comparisons at lower levels of geography and by greater characteristic detail, whereas this initial examination is limited to national and state total resident population only.

Additionally, it is important to note that difference relative to a benchmark is not necessarily indicative of error or quality issues in the 2020 Census. Differences may also be attributed to error in the benchmark or may be an artifact of the benchmark's methodology. However, significant or unexpected differences can be useful for identifying areas for further investigation.

The U.S. Resident Population in 2020

The 2020 Census count for the resident population of the United States (defined throughout this paper as the 50 states and the District of Columbia) was 331,449,281 (Table 1). This was an increase of 22.7 million from the 2010 population of 308.7 million. The numeric increase for the decade was lower than the 27.3 million increase for the 2000 to 2010 period, and

Table 1.
Decennial Census Counts and Resident Population Change for the United States: 1790 to 2020

Year	Resident population	Population change	
		Number	Percent
1790	3,929,214	X	X
1800	5,308,483	1,379,269	35.1
1810	7,239,881	1,931,398	36.4
1820	9,638,453	2,398,572	33.1
1830	12,860,702	3,222,249	33.4
1840	17,063,353	4,202,651	32.7
1850	23,191,876	6,128,523	35.9
1860	31,443,321	8,251,445	35.6
1870	38,558,371	7,115,050	22.6
1880	50,189,209	11,630,838	30.2
1890	62,979,766	12,790,557	25.5
1900	76,212,168	13,232,402	21.0
1910	92,228,496	16,016,328	21.0
1920	106,021,537	13,793,041	15.0
1930	123,202,624	17,181,087	16.2
1940	132,164,569	8,961,945	7.3
1950	151,325,798	19,161,229	14.5
1960	179,323,175	27,997,377	18.5
1970	203,302,031	23,978,856	13.4
1980	226,542,199	23,240,168	11.4
1990	248,718,302	22,176,103	9.8
2000	281,424,603	32,706,301	13.1
2010	308,745,538	27,320,935	9.7
2020	331,449,281	22,703,743	7.4

X Not applicable.
Note: Some resident population totals for 1790 to 2010 shown here include revisions and, thus, will differ slightly from the resident population values used in apportionment for that decade.
Source: U.S. Census Bureau, 2010 Census of Population and Housing, Population and Housing Unit Counts, CPH-2-1, Table 12 (1790–2010), <https://www2.census.gov/library/publications /decennial/2010/cph-2/cph-2-1.pdf>, and 2020 Decennial Census (2020), <https://www2.census.gov/programs-surveys /decennial/2020/data/apportionment/apportionment-2020 -table02.pdf>.

similar in size to the 22.2 million increase for the 1980s. In percentage terms, the 7.4 percent gain was the second-lowest decennial rate of increase ever, slightly above the 7.3 percent gain for the 1930s.

2010 to 2020 Population Change

All four regions grew between 2010 and 2020, with the Northeast and Midwest growing more slowly than the U.S. increase of 7.4 percent and the South and West growing faster (Table 2). The South's numeric increase of 11.7 million was the largest of any region and represented just over one-half (51.6 percent) of the national increase of 22.7 million. The West's increase of 6.6 million people was second-largest, followed by the Northeast (up 2.3 million) and Midwest (up 2.1 million). Unlike the other three regions, the Northeast's numeric and percentage growth between 2010 and 2020 were higher than the prior decade.

Among the states, Texas had the largest numeric increase in population this decade, gaining 4.0 million people since 2010. Florida, California, and Georgia all gained at least 1 million in population (increases of 2.7 million, 2.3 million, and 1.0 million, respectively). Eight additional states (Washington, North Carolina, New York, Arizona, Colorado, Virginia, Tennessee, and Utah) gained at least 500,000 people. West Virginia's decline of 59,000 between 2010 and 2020 was the largest loss of any state. Illinois (down 18,000) and Mississippi (down 6,000) also had population declines for the decade. Puerto Rico's population declined by 440,000 or 11.8 percent.

Utah was the fastest-growing state this decade with an 18.4 percent increase in population between 2010 and 2020. This was the slowest decade-to-decade rate of growth ever for a fastest-growing state. Previously, the lowest decade-to-decade rate of growth to earn one of the 50 states the designation of fastest-growing was Florida's 29.2 percent increase between 1930 and 1940. Idaho (up 17.3 percent), Texas (up 15.9 percent), North Dakota (up 15.8 percent), and Nevada (up 15.0 percent) rounded out the top five from 2010 to 2020.

The faster-growing states this decade were typically in the South and West, as is evident in Figure 1. However,
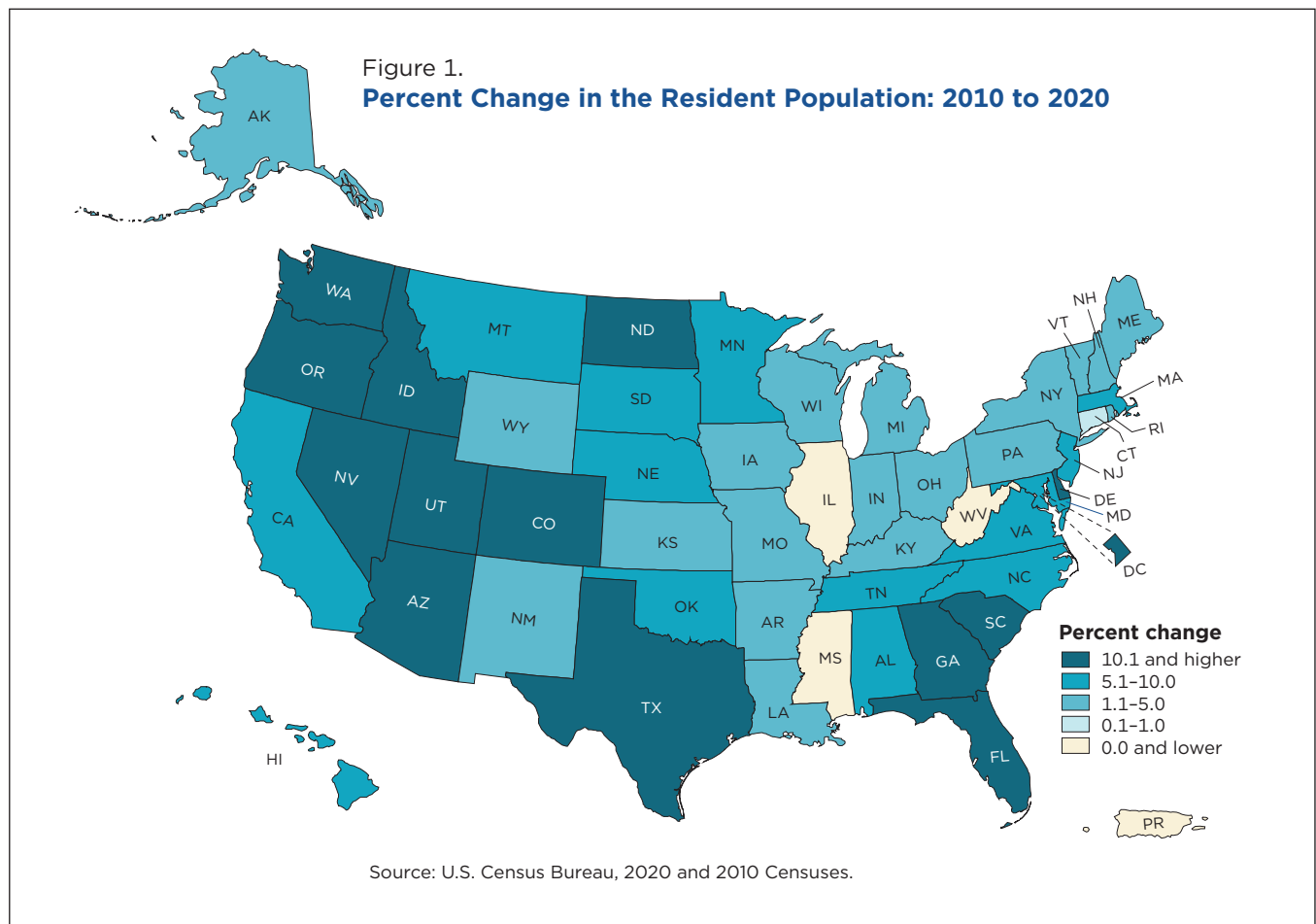

Figure 1.
Percent Change in the Resident Population: 2010 to 2020

Percent change
- 10.1 and higher
- 5.1–10.0
- 1.1–5.0
- 0.1–1.0
- 0.0 and lower

Source: U.S. Census Bureau, 2020 and 2010 Censuses.

Table 2.
Numeric and Percent Change in the Decennial Census Resident Population Counts for the United States, Regions, States, and Puerto Rico: 2000 to 2020

Geographic area	April 1 census count			Difference: 2000 to 2010		Difference: 2010 to 2020	
	2000	2010	2020	Number	Percent	Number	Percent
United States	**281,424,603**	**308,745,538**	**331,449,281**	**27,320,935**	**9.7**	**22,703,743**	**7.4**
Northeast.	53,594,784	55,317,240	57,609,148	1,722,456	3.2	2,291,908	4.1
Midwest	64,395,194	66,927,001	68,985,454	2,531,807	3.9	2,058,453	3.1
South	100,235,846	114,555,744	126,266,107	14,319,898	14.3	11,710,363	10.2
West	63,198,779	71,945,553	78,588,572	8,746,774	13.8	6,643,019	9.2
Alabama	4,447,351	4,779,736	5,024,279	332,385	7.5	244,543	5.1
Alaska.	626,931	710,231	733,391	83,300	13.3	23,160	3.3
Arizona	5,130,632	6,392,017	7,151,502	1,261,385	24.6	759,485	11.9
Arkansas	2,673,400	2,915,918	3,011,524	242,518	9.1	95,606	3.3
California.	33,871,653	37,253,956	39,538,223	3,382,303	10.0	2,284,267	6.1
Colorado	4,302,015	5,029,196	5,773,714	727,181	16.9	744,518	14.8
Connecticut	3,405,602	3,574,097	3,605,944	168,495	4.9	31,847	0.9
Delaware	783,600	897,934	989,948	114,334	14.6	92,014	10.2
District of Columbia	572,059	601,723	689,545	29,664	5.2	87,822	14.6
Florida	15,982,824	18,801,310	21,538,187	2,818,486	17.6	2,736,877	14.6
Georgia	8,186,816	9,687,653	10,711,908	1,500,837	18.3	1,024,255	10.6
Hawaii.	1,211,537	1,360,301	1,455,271	148,764	12.3	94,970	7.0
Idaho	1,293,956	1,567,582	1,839,106	273,626	21.1	271,524	17.3
Illinois.	12,419,647	12,830,632	12,812,508	410,985	3.3	−18,124	−0.1
Indiana.	6,080,517	6,483,802	6,785,528	403,285	6.6	301,726	4.7
Iowa	2,926,382	3,046,355	3,190,369	119,973	4.1	144,014	4.7
Kansas	2,688,824	2,853,118	2,937,880	164,294	6.1	84,762	3.0
Kentucky	4,042,285	4,339,367	4,505,836	297,082	7.3	166,469	3.8
Louisiana	4,468,958	4,533,372	4,657,757	64,414	1.4	124,385	2.7
Maine	1,274,923	1,328,361	1,362,359	53,438	4.2	33,998	2.6
Maryland	5,296,507	5,773,552	6,177,224	477,045	9.0	403,672	7.0
Massachusetts	6,349,105	6,547,629	7,029,917	198,524	3.1	482,288	7.4
Michigan	9,938,480	9,883,640	10,077,331	−54,840	−0.6	193,691	2.0
Minnesota	4,919,492	5,303,925	5,706,494	384,433	7.8	402,569	7.6
Mississippi	2,844,656	2,967,297	2,961,279	122,641	4.3	−6,018	−0.2
Missouri	5,596,683	5,988,927	6,154,913	392,244	7.0	165,986	2.8
Montana.	902,195	989,415	1,084,225	87,220	9.7	94,810	9.6
Nebraska	1,711,265	1,826,341	1,961,504	115,076	6.7	135,163	7.4
Nevada.	1,998,257	2,700,551	3,104,614	702,294	35.1	404,063	15.0
New Hampshire	1,235,786	1,316,470	1,377,529	80,684	6.5	61,059	4.6
New Jersey	8,414,347	8,791,894	9,288,994	377,547	4.5	497,100	5.7
New Mexico.	1,819,046	2,059,179	2,117,522	240,133	13.2	58,343	2.8
New York.	18,976,821	19,378,102	20,201,249	401,281	2.1	823,147	4.2
North Carolina	8,046,485	9,535,483	10,439,388	1,488,998	18.5	903,905	9.5
North Dakota	642,200	672,591	779,094	30,391	4.7	106,503	15.8
Ohio	11,353,145	11,536,504	11,799,448	183,359	1.6	262,944	2.3
Oklahoma	3,450,652	3,751,351	3,959,353	300,699	8.7	208,002	5.5
Oregon.	3,421,436	3,831,074	4,237,256	409,638	12.0	406,182	10.6
Pennsylvania.	12,281,054	12,702,379	13,002,700	421,325	3.4	300,321	2.4
Rhode Island.	1,048,319	1,052,567	1,097,379	4,248	0.4	44,812	4.3
South Carolina	4,011,816	4,625,364	5,118,425	613,548	15.3	493,061	10.7
South Dakota	754,844	814,180	886,667	59,336	7.9	72,487	8.9
Tennessee	5,689,267	6,346,105	6,910,840	656,838	11.5	564,735	8.9
Texas.	20,851,790	25,145,561	29,145,505	4,293,771	20.6	3,999,944	15.9
Utah	2,233,198	2,763,885	3,271,616	530,687	23.8	507,731	18.4
Vermont.	608,827	625,741	643,077	16,914	2.8	17,336	2.8
Virginia.	7,079,030	8,001,024	8,631,393	921,994	13.0	630,369	7.9
Washington.	5,894,141	6,724,540	7,705,281	830,399	14.1	980,741	14.6
West Virginia	1,808,350	1,852,994	1,793,716	44,644	2.5	−59,278	−3.2
Wisconsin	5,363,715	5,686,986	5,893,718	323,271	6.0	206,732	3.6
Wyoming.	493,782	563,626	576,851	69,844	14.1	13,225	2.3
Puerto Rico	**3,808,603**	**3,725,789**	**3,285,874**	**−82,814**	**−2.2**	**−439,915**	**−11.8**

Note: Some resident population totals for 2000 to 2010 shown here include revisions and, thus, will differ slightly from the resident population values used in apportionment for that decade. A list of the states that are included in each region is available at <https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf>.
Source: U.S. Census Bureau, 2010 Census of Population and Housing, Population and Housing Unit Counts, CPH-2-1, Table 12 (2000–2010), <https://www2.census.gov/library/publications/decennial/2010/cph-2/cph-2-1.pdf>, and 2020 Decennial Census (2020), <https://www2.census.gov/programs-surveys/decennial/2020/data/apportionment/apportionment-2020-table02.pdf>.

there were notable exceptions, given that North Dakota—in the Midwest—was among the fastest-growing states, while the South also contained two of the three states with population decline. In the Northeast, Massachusetts was the region's fastest-growing state this decade for the first time ever. North Dakota was the Midwest's fastest-growing state for the first time since the 1900 to 1910 decade. In the South, Texas was the fastest-growing state—a position it also held in the 2000 to 2010 decade. In the West, Utah was the fastest-growing state this decade for the first time ever.

Comparisons With Vintage 2020 Population Estimates

It is a longstanding practice to compare the results of the decennial census against the official estimates of the population produced by the Census Bureau. These estimates of population are typically developed using the last decennial census as a base and then using current data on births, deaths, and migration to measure change to the population over time. Thus, they are not independent of the census nor explicitly designed for purposes of evaluating the census. Instead, comparisons between the two are generally undertaken to evaluate the quality of the estimates and ascertain the effectiveness of method changes applied over the course of the previous decade. The difference between the census and the estimates is called the "error of closure," and it is used to inform future methodological improvements and research for the estimates. However, examining how close the decennial counts are to the estimates for April 1 can still be an informative exercise.

The April 1, 2020, census count for the resident population of 331,449,281 was 2.1 million or 0.6 percent higher than the April 1, 2020, resident population estimate of 329,398,742 (Table 3). Among the regions, the census counts for the Northeast and Midwest were above the estimates, by 3.0 percent and 0.9, respectively. In contrast, the counts for the West (–0.0 percent) and South (–0.2 percent) were below their respective estimates. By comparison, in the 2010 Census, the count for the nation was 0.1 percent above the estimate, and the regions ranged from 0.4 percent above the estimate for the South to 0.2 percent below the estimate for the West.

At the state level, New York's count was 819,000 above its 2020 estimate—the largest numeric difference of any state. Eight other states (New Jersey, Pennsylvania, Illinois, Massachusetts, California, Maryland, Alabama,

and Michigan) and Puerto Rico exceeded their 2020 estimate by at least 100,000 people, and an additional three states (Ohio, Wisconsin, and Minnesota) exceeded their 2020 estimate by at least 50,000.

Arizona's 2020 count was below its 2020 estimate by 242,000. Three other states (Florida, North Carolina, and Texas) were also below their 2020 estimate by at least 100,000 people, and one other state, South Carolina, was below its estimate by at least 50,000.

In percentage terms, New Jersey's 2020 count was above its estimate by 4.5 percent—the most of any state this decade. Other states exceeding their estimate by 2.0 percent or more include New York, Rhode Island, Hawaii, Vermont, and Alabama, as well as Puerto Rico (Figure 2). In Arizona and the District of Columbia, the count fell below their estimate by more than 2.0 percent (–3.3 percent and –3.2 percent, respectively).

Regional variations are also evident in Figure 2, with the greatest concentration of states with 2020 Census counts below their estimates found in the South, followed by the West. Meanwhile, the states of the Northeast exclusively had 2020 Census counts that were higher than their estimates, and similarly, only one state in the Midwest (South Dakota) did not fall into this category.

To place these numbers in historical context, in 2010, two states (Florida and North Carolina) exceeded their estimate by more than 100,000, and seven additional states (California, Pennsylvania, Virginia, New Jersey, Hawaii, Alabama, and Connecticut) exceeded their estimate by more than 50,000. Hawaii's count exceeded its estimate by 4.9 percent in 2010—the most of any state. North Dakota and Wyoming also exceeded their estimates by more than 3.0 percent. Arizona's 2010 count was below its estimate by 262,000. Three other states (Georgia, New York, and Illinois) were below their estimates by more than 100,000, while three additional states (Massachusetts, Utah, and Michigan) and Puerto Rico were below their estimate by at least 50,000. The 2020 range (from Arizona's 3.3 percent below its estimate to New Jersey's 4.5 percent above) is narrower than in the 2010 Census. In 2010, Hawaii's count exceeded its estimate by 4.9 percent and Arizona's count was below its estimate by 3.9 percent. In both 2010 and 2020, the differences between the census count and population estimate for the majority of the states were within 1 percent (positive or negative). However, in 2010, all

Table 3.
Comparison of Resident Population Estimates and Census Resident Population Counts for the United States, Regions, States, and Puerto Rico: April 1, 2020, and April 1, 2010

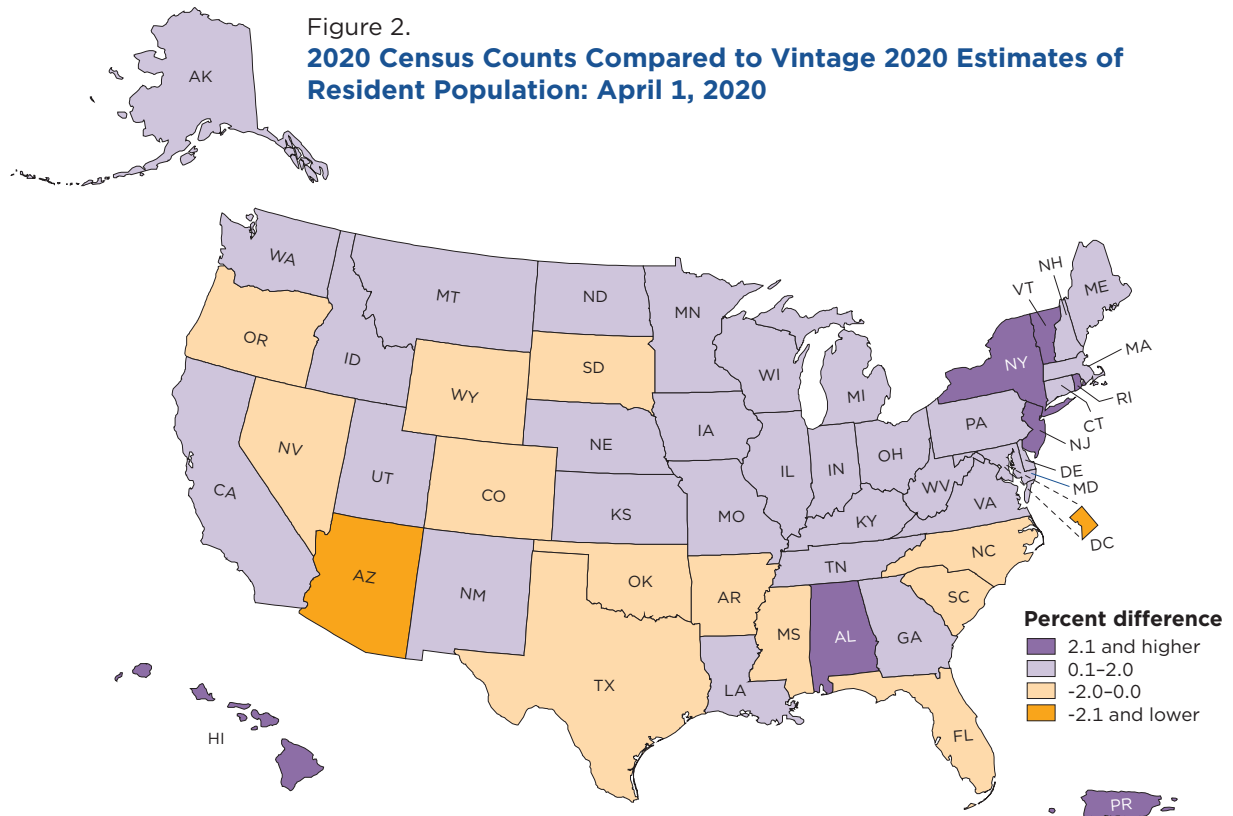| Geographic area	April 1, 2020				April 1, 2010			
			Difference				Difference	
	Census	Estimate	Number[1]	Percent[2]	Census	Estimate	Number[1]	Percent[2]
United States	331,449,281	329,398,742	2,050,539	0.6	308,745,538	308,450,484	295,054	0.1
Northeast.	57,609,148	55,924,275	1,684,873	3.0	55,317,240	55,374,377	−57,137	−0.1
Midwest	68,985,454	68,357,895	627,559	0.9	66,927,001	66,922,299	4,702	Z
South	126,266,107	126,494,232	−228,125	−0.2	114,555,744	114,098,485	457,259	0.4
West	78,588,572	78,622,340	−33,768	Z	71,945,553	72,055,323	−109,770	−0.2
Alabama	5,024,279	4,920,706	103,573	2.1	4,779,736	4,724,112	55,624	1.2
Alaska.	733,391	732,074	1,317	0.2	710,231	705,175	5,056	0.7
Arizona	7,151,502	7,393,900	−242,398	−3.3	6,392,017	6,654,358	−262,341	−3.9
Arkansas	3,011,524	3,029,672	−18,148	−0.6	2,915,918	2,904,540	11,378	0.4
California.	39,538,223	39,418,894	119,329	0.3	37,253,956	37,171,135	82,821	0.2
Colorado	5,773,714	5,798,266	−24,552	−0.4	5,029,196	5,075,295	−46,099	−0.9
Connecticut	3,605,944	3,561,494	44,450	1.2	3,574,097	3,523,925	50,172	1.4
Delaware	989,948	984,899	5,049	0.5	897,934	889,722	8,212	0.9
District of Columbia	689,545	712,185	−22,640	−3.2	601,723	607,918	−6,195	−1.0
Florida	21,538,187	21,688,239	−150,052	−0.7	18,801,310	18,636,368	164,942	0.9
Georgia	10,711,908	10,695,662	16,246	0.2	9,687,653	9,884,534	−196,881	−2.0
Hawaii.	1,455,271	1,410,587	44,684	3.2	1,360,301	1,296,885	63,416	4.9
Idaho	1,839,106	1,818,238	20,868	1.1	1,567,582	1,555,957	11,625	0.7
Illinois.	12,812,508	12,615,162	197,346	1.6	12,830,632	12,931,584	−100,952	−0.8
Indiana	6,785,528	6,752,183	33,345	0.5	6,483,802	6,438,366	45,436	0.7
Iowa	3,190,369	3,164,115	26,254	0.8	3,046,355	3,019,493	26,862	0.9
Kansas	2,937,880	2,915,024	22,856	0.8	2,853,118	2,835,125	17,993	0.6
Kentucky	4,505,836	4,477,899	27,937	0.6	4,339,367	4,332,584	6,783	0.2
Louisiana	4,657,757	4,650,984	6,773	0.1	4,533,372	4,519,356	14,016	0.3
Maine	1,362,359	1,349,647	12,712	0.9	1,328,361	1,313,697	14,664	1.1
Maryland	6,177,224	6,059,529	117,695	1.9	5,773,552	5,724,856	48,696	0.9
Massachusetts	7,029,917	6,898,116	131,801	1.9	6,547,629	6,621,588	−73,959	−1.1
Michigan	10,077,331	9,976,330	101,001	1.0	9,883,640	9,936,913	−53,273	−0.5
Minnesota	5,706,494	5,655,855	50,639	0.9	5,303,925	5,283,424	20,501	0.4
Mississippi.	2,961,279	2,971,253	−9,974	−0.3	2,967,297	2,957,749	9,548	0.3
Missouri	6,154,913	6,151,737	3,176	0.1	5,988,927	6,004,372	−15,445	−0.3
Montana.	1,084,225	1,078,405	5,820	0.5	989,415	978,649	10,766	1.1
Nebraska	1,961,504	1,937,258	24,246	1.3	1,826,341	1,807,012	19,329	1.1
Nevada.	3,104,614	3,128,500	−23,886	−0.8	2,700,551	2,650,677	49,874	1.9
New Hampshire	1,377,529	1,365,533	11,996	0.9	1,316,470	1,323,202	−6,732	−0.5
New Jersey	9,288,994	8,890,883	398,111	4.5	8,791,894	8,723,152	68,742	0.8
New Mexico.	2,117,522	2,106,117	11,405	0.5	2,059,179	2,027,191	31,988	1.6
New York.	20,201,249	19,382,373	818,876	4.2	19,378,102	19,564,202	−186,100	−1.0
North Carolina	10,439,388	10,581,885	−142,497	−1.3	9,535,483	9,432,921	102,562	1.1
North Dakota	779,094	765,224	13,870	1.8	672,591	651,787	20,804	3.2
Ohio	11,799,448	11,699,855	99,593	0.9	11,536,504	11,532,245	4,259	Z
Oklahoma	3,959,353	3,977,682	−18,329	−0.5	3,751,351	3,716,212	35,139	0.9
Oregon.	4,237,256	4,237,408	−152	Z	3,831,074	3,847,469	−16,395	−0.4
Pennsylvania.	13,002,700	12,794,404	208,296	1.6	12,702,379	12,625,433	76,946	0.6
Rhode Island.	1,097,379	1,058,004	39,375	3.7	1,052,567	1,056,987	−4,420	−0.4
South Carolina	5,118,425	5,205,864	−87,439	−1.7	4,625,364	4,586,078	39,286	0.9
South Dakota	886,667	891,688	−5,021	−0.6	814,180	817,760	−3,580	−0.4
Tennessee	6,910,840	6,875,939	34,901	0.5	6,346,105	6,326,403	19,702	0.3
Texas.	29,145,505	29,286,467	−140,962	−0.5	25,145,561	25,101,907	43,654	0.2
Utah	3,271,616	3,239,542	32,074	1.0	2,763,885	2,818,242	−54,357	−1.9
Vermont.	643,077	623,821	19,256	3.1	625,741	622,191	3,550	0.6
Virginia.	8,631,393	8,587,217	44,176	0.5	8,001,024	7,928,720	72,304	0.9
Washington.	7,705,281	7,678,379	26,902	0.4	6,724,540	6,727,469	−2,929	Z
West Virginia	1,793,716	1,788,150	5,566	0.3	1,852,994	1,824,505	28,489	1.6
Wisconsin	5,893,718	5,833,464	60,254	1.0	5,686,986	5,664,218	22,768	0.4
Wyoming.	576,851	582,030	−5,179	−0.9	563,626	546,821	16,805	3.1
Puerto Rico	**3,285,874**	**3,167,851**	**118,023**	**3.7**	**3,725,789**	**3,795,569**	**−69,780**	**−1.8**

Z Rounds to zero.

[1] Census minus estimate. [2] Calculated as (census - estimate)/estimate * 100.

Note: The April 1, 2020, estimates are based on the 2010 Census and were created without incorporation or consideration of the 2020 Census results. The April 1, 2010, estimates are based on the 2000 Census and were created without incorporation or consideration of the 2010 Census results. Population estimates methodology statements are available at <www.census.gov/programs-surveys/popest/technical-documentation/methodology.html>. A list of states that are included in each region is available at <https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf>.

Source: U.S. Census Bureau, 2020 and 2010 Censuses, Vintage 2020 Population Estimates, and Vintage 2010 Population Estimates.

Figure 2.
2020 Census Counts Compared to Vintage 2020 Estimates of Resident Population: April 1, 2020

Percent difference
- 2.1 and higher
- 0.1–2.0
- -2.0–0.0
- -2.1 and lower

Source: U.S. Census Bureau, 2020 Census and Vintage 2020 Population Estimates.

four regions were within 0.5 percent of their 2010 estimate. In 2020, only the South and West were within 0.5 percent of their 2020 estimate.

Such high-level analyses of the results of the 2020 Census relative to these benchmarks reveal that the degree of difference is largely consistent with what we have seen in the past. In future analyses, subject matter experts will deconstruct the difference to determine if, based on demographic trends, this is the difference we would expect to see. Furthermore, future analyses later in 2021 and 2022 will expand the scope to include characteristics of the population—such as age, sex, race, and Hispanic origin.

Comparisons With Demographic Analysis Estimates

DA represents one of the two primary measures of coverage for the decennial census. The DA estimates are based on administrative records: vital records, estimates of international migration, and data from other sources like the Medicare Enrollment Database are used to create an estimate of the resident population

on Census Day (April 1) that is independent of the census and thus can be compared to the census in an evaluative manner.[1]

The 2020 DA estimates of the resident population were produced by single year of age and sex by broad race and Hispanic origin groups. Specifically, the three sets of DA estimates are for the Black and non-Black populations, the Black alone-or-in-combination and non-Black alone-or-in-combination populations, and the Hispanic and non-Hispanic populations. For each set, three different series of estimates—low, middle, and high—were developed by varying the assumptions about the population components used to produce the estimates so as to create a range of plausible values that reflects uncertainty in our data sources and methods.

Although these estimates are an informative tool, their utility is specific to the national level by the broad race and Hispanic origin groups detailed above. This is

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[1] More information on the 2020 DA methodology is available at <https://www2.census.gov/programs-surveys/popest /technical-documentation/methodology/2020da_methodology.pdf>.

because of limitations in the available administrative records used to generate the estimates. Regardless, the calculations of net coverage error and trends in net coverage over time resulting from the DA estimates provide valuable insight into the quality of the census. Net coverage error is calculated as follows:

$$\text{Net coverage error} = (\text{Census count - DA estimate})/\text{DA estimate} * 100$$

This calculation can be made for the total population, as well as for specific demographic groups when additional results of the 2020 Census become available.

Table 4 features the net coverage error by series for the total resident population in the 2020 Census (as compared to the 2020 DA) and the 2010 Census (as compared to the 2010 DA).[2] In 2010, although five series were produced, the three middle series—low middle, middle, and high middle—were distinguished as the more plausible series, while the low and high series were analytical exercises that provided theoretical upper and lower bounds for the range. For the 2020 DA, the low, middle, and high series are all considered plausible. Thus, assessments of net coverage for the past two censuses must be relative to a specific DA series.

The Census Bureau began using DA to calculate estimates of net coverage error in 1960. Since then, coverage for the total population has consistently improved. From 1960 to 2000, DA estimates suggested a net undercount in the total population. In 2010, as evident in Table 4, the census count fell between the middle and high middle estimate. The estimate of net coverage for the middle series (0.13) indicated a slight

overcount, while the estimate for the high middle series (–0.42) indicated an undercount. For the 2020 Census, the count falls between the low and middle series, with the estimate of net coverage for the low series (0.22) suggesting an overcount, and the estimate for the middle series (–0.35) suggesting an undercount.

Future analyses will delve into how the different assumptions used to develop these series inform the notion of an overcount or an undercount for the low and middle series, respectively. They will also explore net coverage by specific demographic groups, and how coverage patterns vary across groups within the 2020 Census or across multiple censuses over time. Evidence of differential coverage for particular groups can inform planning for the subsequent census whereby those groups can be targeted via special programs to improve their coverage.

Conclusion

Ultimately, our evaluations demonstrate that these first population counts from the 2020 Census are generally aligned with benchmark data. More comprehensive and complex evaluations will need to be undertaken to explore whether this alignment is evidence of accurate and reasonable data. As other data products with demographic characteristics, such as age, sex, race, and Hispanic origin, become available moving forward, future analyses conducted by Census Bureau staff and external stakeholders alike can build upon these initial comparisons, granting greater insight into the many dimensions of data quality. The findings will enable us to make data-based determinations regarding what worked well and what didn't work for the 2020 Census, positioning us to improve plans and processes, and helping us to prepare for the most successful 2030 Census possible.

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[2] More information on the 2010 DA methodology is available at <https://www2.census.gov/programs-surveys/popest/technical-documentation/methodology/da_methodology.pdf>.

Table 4.
Census Counts, Demographic Analysis (DA) Estimates of the Resident Population, and Net Coverage Error: April 1, 2020, and April 1, 2010

(Population in thousands. Net coverage error in percent)

Measure	2020 Census	2020 DA series			2010 Census	2010 DA series				
		Low	Middle	High		Low	Low middle	Middle[1]	High middle	High
Population.	331,449	330,730	332,601	335,514	308,746	305,684	307,415	308,346	310,038	312,713
Net coverage error[2]. .	X	0.22	–0.35	–1.21	X	1.00	0.43	0.13	–0.42	–1.27

X Not applicable.
[1] The 2010 middle estimate comes from the May 2012 revision to the DA estimates. The other 2010 DA estimates were part of the original December 2010 release.
[2] Calculated as (Census count - DA estimate)/DA estimate * 100.
Source: U.S. Census Bureau, 2020 and 2010 Censuses, and 2020 and 2010 Demographic Analysis.