Office of the State Economist: Preliminary Intercensal Population Estimates for Maine and its counties, 2010-2019

Intercensal Estimates

Every ten years, the Decennial Census provides a complete count of population in the United States. In non-decennial years, the U.S. Census Bureau Population Estimates Program provides estimates of the population for the nation, states, counties and towns. These estimates serve as a more timely source for population statistics and are based on the complete count in the most recent Decennial Census.

In August 2021 the Census Bureau released 2020 redistricting data, which included total population statistics for states and counties among other statistics and offered complete information for the "bookends" of the 2010-2020 decade. Given the complete information for the beginning and end of the decade, population estimates from July 1, 2010-July 1, 2019 (postcensal estimates) must be revised in order to reflect a continuous series of population figures. Without these revised, or intercensal estimates, past population estimates should be considered outdated and are not comparable to post-2020 population estimates.

While official intercensal estimates are yet to be released by the Census Bureau, the Office of the State Economist has created a set of preliminary intercensal estimates to be used in the interim, which can be used to compare past population statistics (2010-2019) to newer estimates for 2021 in a continuous longitudinal series. This data product is intended to be replaced by the Census Bureau's intercensal estimates once available in late 2022 or early 2023.

Methods

These preliminary intercensal estimates were produced using a standard approach commonly employed by the Census Bureau and other states, the Das Gupta Method[1]. The six variations of this method distribute the "error of closure", or the error between decennial counts and postcensal estimates, in different ways. We employed the Das Gupta Method #2, which arithmetically distributes the error in a way that is directly proportional to the time elapsed since the start of the series.

This variation of the method was chosen due to the expectation that it will be used by the Census Bureau on their production of official intercensal estimates later this year. Additionally, this method is simple and produces reasonable results for both large and small populations. In mathematical terms, this can be written as:

$$P_t = Q_t + \left[(P_{10} - Q_{10}) * \frac{t}{10}\right]$$

Where:

t=time (in years) elapsed since April 1, 2010

Q_t=postcensal estimate at time t

P_t=intercensal estimate at time t

Meaning that:

P_{10}= actual decennial census count as of April 1, 2020 and

Q_{10}= postcensal estimate (Census evaluation estimates) for April 1, 2020

Such that the error increases arithmetically over time.

[1] Das Gupta, P. (1981, February 26). *Intercensal Estimates for the States* [Memorandum]. Bureau of the Census, Department of Commerce.

Results

Postcensal population estimates for 2020 for Maine showed a population of 1,350,141, over 12,000 fewer than found in the 2020 Decennial Census, leading to upward revisions for the state in the preliminary intercensal product. Overall, ten counties faced upward revisions while six were revised down. The following maps detail the direction and scale of revisions for Maine's 16 counties.

Figure 1. Difference between Decennial Count and Postcensal Estimate for April 1, 2020.

Counties colored green were revised up, meaning the Decennial count was higher than the final postcensal estimate for 2020. Counties colored red were revised down, meaning that the Decennial count was lower than the final postcensal estimate for 2020.

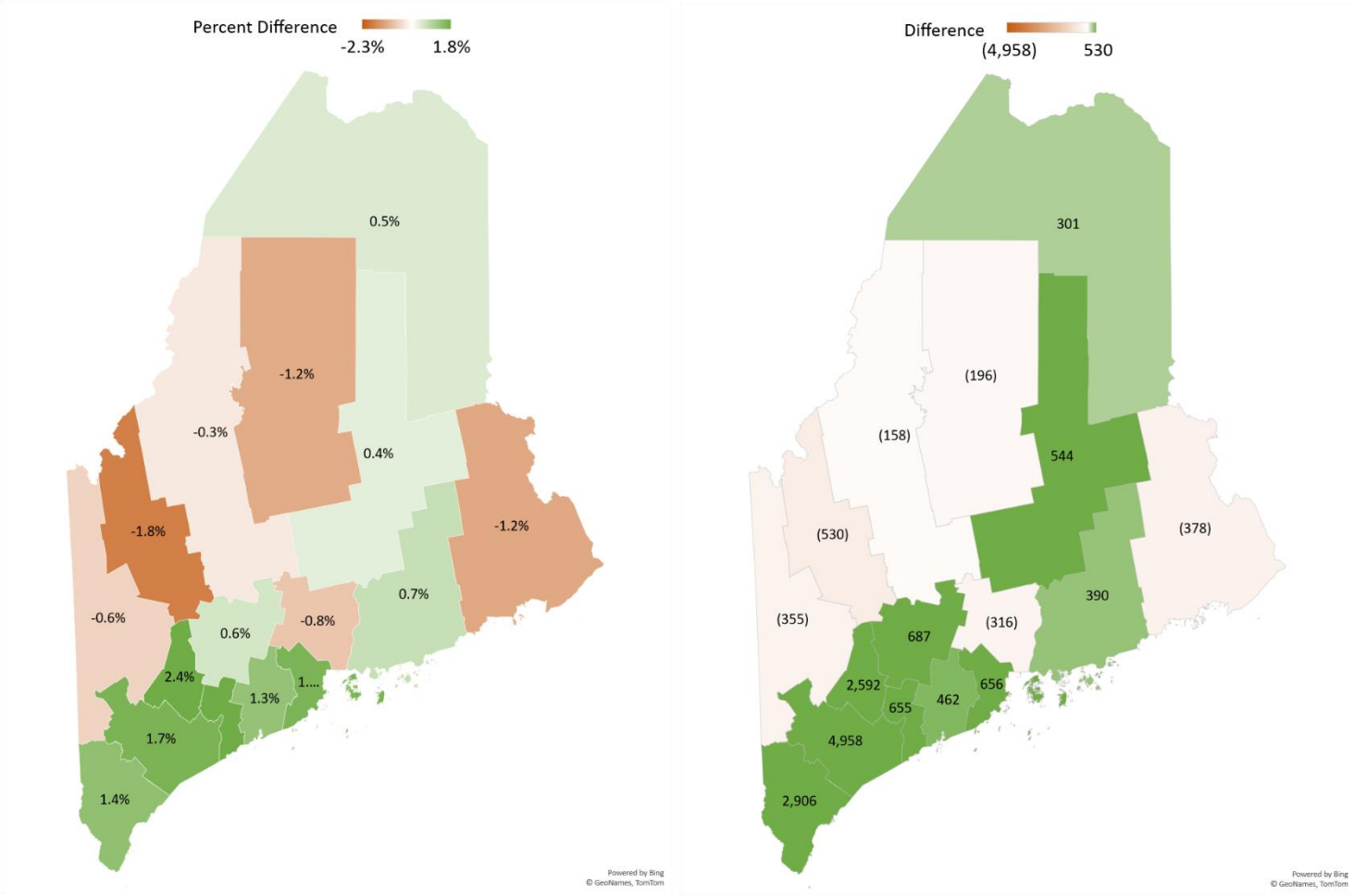
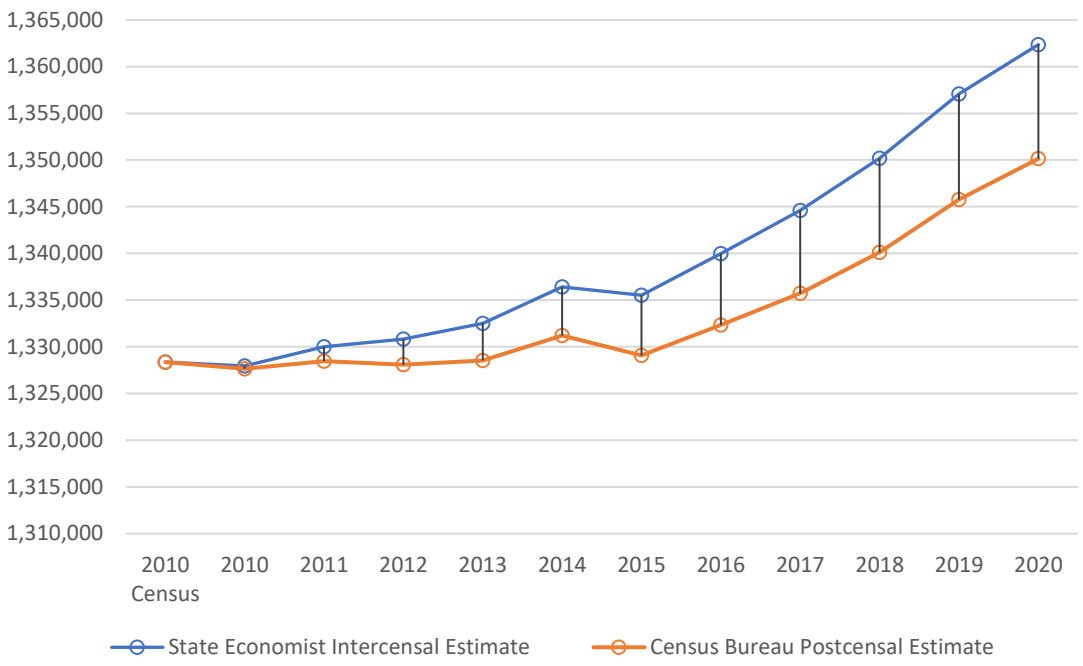


Figure 2 shows Maine's upward revisions throughout the decade, and demonstrates how the error has been distributed arithmetically over time.

Figure 2. State Economist Preliminary Intercensal Estimates compared to Census Bureau Postcensal Estimates, Maine



Full preliminary intercensal estimate series for each county are available on the State Economist website. For questions, please contact Angela Hallowell, economic analyst, angela.hallowell@maine.gov.