

**An Examination of National Level Differences Between the Census Counts
and Postcensal Estimates for the American Indian and Alaska Native
and Native Hawaiian and Other Pacific Islander Populations**

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Introduction

The U.S. Census Bureau produces estimates of the total population at the national, state, county, and subcounty levels, and total housing unit estimates at the state and county level. Estimates are also produced by demographic characteristics (age, sex, race, and Hispanic origin) for the nation, states, and counties.¹ The estimates are used for the distribution of federal funds, by state and local governments, and as controls for Census Bureau and other surveys. As part of an ongoing effort to improve the accuracy of these estimates, the Census Bureau undertook a comprehensive research effort to evaluate both its current methods and alternative methods.

Evaluations of these postcensal estimates have shown that for the total population the estimates are quite accurate when compared to the 2010 Census counts. Results from these previous evaluations combined with an evaluation of the estimates by demographic characteristics will provide a complete picture of the accuracy of the estimates.

Estimates by demographic characteristics are produced using a cohort-component method. This approach to producing population estimates utilizes administrative data on births, deaths, domestic

¹ Population estimates are produced for five single-race groups (White alone, Black alone, American Indian and Alaska Native alone, Asian alone, and Native Hawaiian and Other Pacific Islander alone) as well as all possible combinations of those race groups. As a result, the population by race can be aggregated into six groups (i.e., the five single-race groups and one multiple-race group) or five groups composed of each single-race group alone or in combination with any other race.

migration, and international migration to estimate the change in the population for each age, sex, race, and Hispanic origin group since the most recent decennial census. At the national level, total population changes result from births, deaths, and international migration. Change through these components and the aging of the population also alters the demographic characteristics of the population. At levels of geography below the nation, domestic migration further alters the demographic characteristics of the population within each geographic area over time.

Building on the work of Mayol-Garcia and Robinson (2011) and Wengert and Devine (2012), this paper will examine in more detail previously identified patterns of differences for the American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander populations. This paper will also consider possible sources for the differences such as the accuracy of estimates of international migration and changes in racial identification in the census.

Methods and Assumptions

When comparing the estimates to the decennial census, the differences reflect error in the estimates, changes in census coverage, and changes in racial identification. The differences between two censuses, both nationally and locally, reflect both true change and change in net coverage. Additionally, because the census relies on the respondent's racial identification of each individual's demographic characteristics, the true change reflects both actual demographic change and changes in patterns of racial identification. It is also important to note that differences between estimates and 2010 Census counts may reflect changes in data processing between decennial censuses (e.g., edits and imputation) as well as the modification of race in the preparation of decennial census data for use in population estimates production.² In comparing our estimate of change to the changes measured between two censuses, we are not able to separate these effects. Therefore, in this

² For more information on the modification of race for use in population estimates production, see <http://www.census.gov/popest/research/modified.html>.

evaluation, the 2010 Census counts modified by race serve as the standard for comparison, and accuracy will be assessed as the degree of closeness between the estimates and the 2010 Census values.

A series of visual comparisons were made between an evaluation series of population estimates and the 2010 Census counts for the total population by age and for the population by age and sex. This allowed for the identification of broad patterns in the differences by age and sex. Comparisons were then made for individual sex, race, and Hispanic origin categories by age. This allowed for the identification of patterns of differences unique to specific groups. Through these visual comparisons, it was found that the American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander race groups had similar patterns of differences.

Description of Differences

There is a distinct pattern of differences between the 2010 Census count and population estimates for April 1, 2010 for five age ranges: ages 0-9, 10-20, 21-31, 32-74, and 75 and older. The estimates for the population aged 0-9 are consistently higher than the Census count, while the opposite is true for the population aged 10-20. This pattern can be primarily attributed to differences in Census coverage by age. Historically, decennial censuses tend to undercount children under the age of 10 in comparison to population estimates, which utilize birth records to estimate the population of children born since the previous census (West and Robinson, 1999; Robinson, 2001). Not only does this undercount impact the accuracy of the age 0-9 population, but it also affects the accuracy of the age 10-19 population estimates 10 years later. That is, the undercount of children aged 0-9 in Census 2000 lowers the April 1, 2010 estimates of the age 10-19 population, contributing to the underestimate of this population in 2010.

The estimates for the population aged 21-31 are higher than the census count. This age group is strongly affected by international migration, which is likely a factor in these differences, as new immigrants are potentially hard to count and immigration levels can be difficult to estimate.

The estimates for the population aged 32-74 are consistently lower than the census count, although they are generally closer to the census counts than seen in the younger ages. Possible explanations for these differences include an underestimate of immigration, an overestimate of deaths, or an overcount due to duplicate census responses.

Finally, the estimates of the population aged 75 and older are consistently higher than the census counts. Although the percent differences for the oldest ages are very large, it is important to note that these populations are also quite small. These differences may be due to an underestimation of mortality.

Our initial analysis showed that the patterns of accuracy seen in each of the American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander populations were generally very similar to each other, yet quite distinct from the pattern of accuracy for the total population by age. The estimates for the American Indian and Alaska Native population are low compared to the Census counts for almost all ages up to 70 years, while the estimates for the Native Hawaiian and Other Pacific Islander population are lower for almost all ages up to 65 years. Above 70 and 65 years, respectively, the estimates for both populations are higher than the Census counts. While the overestimation of these older ages is consistent with the pattern of differences in the total population, the percent differences for the American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander populations are larger than for the total population, in part reflecting the very small size of these older populations.

Potential Sources of Differences

Although international migration could have a large impact on the size of the American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander populations, it is not a likely source of the observed differences. Other possible sources of the differences include improved census coverage and an increase in respondents reporting that they or members of their household are of one of these race groups, which is not accounted for in the estimates process.

References

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