

**INNOVATIONS IN ANNUAL DATA PRODUCED
BY THE U.S. CENSUS BUREAU:
THE INTERCENSAL POPULATION ESTIMATES PROGRAM
AND THE AMERICAN COMMUNITY SURVEY**

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Thank you for inviting me to speak to you today. These are exciting times at the U.S. Census Bureau. We are developing new tools and reengineering older data products to provide more accurate and timely information about the population of the United States. Two programs – the Intercensal Population Estimates Program and the American Community Survey or ACS – are critical for achieving our goals.

For almost 60 years, the Intercensal Population Estimates Program has produced estimates of the size and basic population characteristics of the United States, including age, sex, race, and, more recently, Hispanic origin characteristics. These estimates provide fresh data every year to update population counts and characteristics gathered by the U.S. Census of Population and Housing that is taken every ten years. Today, the estimates program provides updated data for states, counties, and other governmental units, as well as for the nation as a whole.

The ACS is part of a newly reengineered 2010 Census Program. It is a very large survey that collects detailed population characteristics every year. Just like the Census 2000 long form – which contained detailed questions that were asked of a sample of the population – the ACS will provide data on families, children, and the elderly; income and poverty; educational attainment and school enrollment; work and unemployment; immigration and language ability; and housing.

These two programs work together. The intercensal estimates are used as population controls for the ACS and data from the ACS can be used to improve the population estimates.

Intercensal Population Estimates Program

The annual population estimates for the United States, states, and counties are prepared using the demographic cohort-component methodology. For the most part, this methodology draws on data available from other federal agencies.

Beginning with population counts from the last census, the Census Bureau adds the number of children born and subtracts the number of people who died since the last census. These vital statistics come from the United States' National Center for Health Statistics (NCHS).

We must also take into account people moving in and out of the United States, such as people in the military, U.S. residents moving abroad, and international migrants. Information on the military population comes from the Department of Defense. The Census Bureau uses its ACS data to measure international migration. I will talk more about how that is done a little later. Internal migration – migration from state to state – is developed from administrative records supplied by the U.S. Internal Revenue Service (IRS).

Estimates for cities and other small areas within counties are developed using the Housing Unit Distributive Approach. Based on our most current estimates of the number of housing units in each area, the official population is distributed among each functioning governmental unit and the remainder of the county.

The population estimates include all people who usually live in the 50 states and the District of Columbia. They do not include tourists or other people visiting the United States for just a short time, people in the United States Armed Forces who are stationed overseas, or U.S. citizens who usually live abroad.

Intercensal estimates function not only as the statistical control for ACS but also as controls for various other federal surveys. The Current Population Survey (CPS), a monthly survey sponsored by the Bureau of Labor Statistics, is probably the most well known of these. The CPS produces the monthly unemployment statistics for the United States among other important statistics such as annual poverty estimates.

Population estimates are also used for a variety of other purposes, including allocating federal funds to state, local, and tribal governments.

In addition, the population estimates provide denominators for important statistical indicators such as vital statistics, cancer incidence rates, poverty rates, and per capita income values. All levels of government, as well as the private sector, use these estimates for planning.

The American Community Survey

The ACS will allow Federal agencies, state governments, tribal officials, and local customers to make decisions based on current information.

After years of development and testing, the Census Bureau implemented the ACS in 2005 at the full nationwide sample of about 3 million housing units per year – about 250,000 housing units per month.

Every month, the ACS collects information that was formerly only available once every ten years from the census long-form. Starting this year, the American Community Survey will provide annual estimates for all states, as well as for specific areas and groups with populations of 65,000 or more.

For smaller areas, it will take three to five years to accumulate sufficient samples to produce appropriate estimates. For example, for areas of approximately 20,000 to 65,000 people, three-year period estimates will be produced starting in 2008. These period estimates will be updated every year thereafter.

For rural areas, city neighborhoods, and other areas of fewer than 20,000 people, we will produce five-year period estimates, starting in 2010. This is 2 to 3 years earlier than these data would normally be available from the decennial census using the long form. After 2010, these estimates will also be updated annually.

How Population Estimates and the ACS Interact With One Another

Each year, the entire set of ACS data is weighted to produce 1-year estimates. The weighting process includes several factors, such as the probability of selection, personal interviewing subsampling, the monthly weighting adjustment, and noninterview adjustment. Finally, the 1-year estimates are controlled to population estimates released for that year by the Census Bureau's official Population Estimates Program.

Because the Census Bureau wants empirical evidence to show that county-level population estimates improve accuracy in the ACS, we are undertaking a comprehensive evaluation of the quality of the official population estimates. This review will include an assessment of the population estimates at various levels of geography – national, state, county, and place – by various levels of demographic detail on population characteristics. This research will include a comprehensive review of our population estimation models and use of administrative records data.

Later in this program, Alfredo Navarro of the U.S. Census Bureau will talk more about ACS weighting and estimation methods. He will also discuss in more detail our research

plans to assess the quality of population estimates at the county level and the effect of using population controls in the ACS weighting.

The ACS Can Improve the Population Estimates

Because the ACS is a sample of 3 million households a year, it can be used to improve the population estimates. Our highest priority is to enhance the accuracy of the international-migration component of the population estimates program. During the 1990s, the Intercensal Estimates Program attempted to estimate the various components of international migration. These included:

- Legal immigration to the United States,
- Emigration of foreign born and native people from the United States,
- Net movement between the United States and Puerto Rico,
- Estimates of temporary migrants, and
- Estimates of the net residual foreign-born population, which include unauthorized migration.

Improving Estimates of International Migration

Unfortunately, timely updated data were available only for one of these components – legal migration. Estimates for the remaining components were developed from 1990 census data and held constant throughout the decade. Evaluations that compared these national estimates of population produced during the 1990s with results from Census 2000 revealed that this method of estimating international migration was not able to keep up with changes in migration patterns.

The ACS has been found to be a viable tool for gathering accurate and timely information on immigration. It collects immigration-related data on country of birth, U.S. citizenship status, year of entry into the United States, and residence one year ago.

For the first few years after Census 2000, we concentrated on ACS measures of the total foreign-born population. When we were producing our 2005 population estimates, annual results were available from the ACS for the years 2000 through 2004.

Using ACS data, we could measure the annual change in the foreign-born population. For example, for the 2003-to-2004 period, we examined the level of the foreign-born population as measured by the 2003 and 2004 ACS. After adjusting for mortality in the foreign-born population, we developed data on changes in the foreign-born population for the 2003-2004 period. Because of the variability that is inherent in data from a sample, we must apply some measures to smooth out the numbers. To do this, we average data for successive years.

This method captured four of the six components of immigration: legal immigration to the United States, emigration of the foreign-born population, temporary migration, and the net residual foreign-born population. For the remaining two components of international migration – net movement between the United States and Puerto Rico and the emigration of native citizens – we relied on analysis of Census 2000 data.

The final analysis resulted in an estimate of annual net international migration of 1.13 million for the 2003-2004 period and 1.03 million for the 2004-2005 period.

In the coming years, we plan to continue analyzing data on the foreign-born population from the ACS. With the goal of developing the best measures possible, we will look at 3 questions from the ACS:

- Residence 1 year ago for foreign-born population,
- Year of entry to the United States for the foreign-born population, and
- Place of birth and citizenship.

The analysis of these questions will help us develop improved measures of annual net international migration that can be applied to the population estimates.

Our next priority is to improve the estimates of internal net migration that are used as inputs to the state and county population estimates. The results from the question on residence one year ago in the ACS can be used to develop annual measures of in- and out-migration for states and large counties. The measures from the ACS can be compared to those developed from the administrative records data base – the tax returns supplied by the IRS. This will help us to identify possible bias in the measure developed from the administrative data, as well as to develop methods and models to correct for bias.

Other Ways the ACS Can Enhance the Population Estimates Program

As mentioned previously, the population estimates for small areas within counties rely on updated estimates of housing units and measures of vacancy rates and occupancy patterns. Before we had the ACS, measures of vacancy and occupancy patterns at the local level were available only once every ten years from the census. The ACS, with 3 million household interviews annually, will provide valuable updated information on vacancy and occupancy patterns at the local level. Information gained from the personal-visit phase of the ACS, as well as information gained from updates to the Census Bureau's Master Address File, will enhance the estimates of housing units.

Later in this program, you'll hear more about the Master Address File or MAF from Robert La Macchia of the Census Bureau. He will discuss how the Census Bureau constructed this instrument for Census 2000 and is maintaining it for the ACS program.

Beginning in 2006, the ACS was expanded to include interviews of people in group quarters facilities. Group quarters include people living in nursing homes, jails, dormitories, and other group facilities. Feedback from the ACS on new group-quarters facilities and current information on the number and demographic characteristics of their residents can supplement the annual updates that we get from the states. They are currently used as inputs to our state and county population estimates.

Before controls are implemented, the results from the ACS on the distribution of the population by age, race, and ethnicity in counties and other small areas provide valuable data for the estimates program on possible deficiencies in its estimating methods for counties and small areas.

Even as we continue to test and evaluate the methodologies that I have discussed here, it is clear that these two programs compliment and enhance one another. The synergism between the Intercensal Population Estimates Program and the American Community Survey has produced innovations that will provide data users with better quality data faster.