

Estimates of Net International Migration for Demographic Analysis 2010

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Introduction

Demographic Analysis (DA) is an important tool used by the Census Bureau to evaluate the quality of the decennial census. For DA to provide an accurate estimate of the population, reliable estimates of births, deaths, and net international migration are essential. Because of issues with data quality and availability, reliable estimates of net international migration have, historically, been difficult to produce. For DA 2010, the Census Bureau is using a variety of methods and assumptions about migration along with a combination of survey, census, and administrative data to develop estimates of net international migration from 2000 to 2010.

Through this sensitivity analysis, high and low estimates are produced and the range is evaluated in an effort to better understand the uncertainty that exists in the estimates. This paper discusses the methods and data used to estimate the components of net international migration. These components include: net migration of the foreign-born population (which is composed of the immigration and emigration of the foreign born), net migration between the United States and Puerto Rico, and the net migration of natives. Estimates of the Armed Forces overseas population are also discussed in addition to estimates of the stock of the population in the United States who were born abroad of U.S. citizen parents, which are included in some series of estimates. Finally we discuss additional data sources and methods which are used not to produce DA estimates, but to further validate the levels and trends of our estimates.

Net Foreign-Born Migration

Net foreign-born migration is the largest component of net international migration and thus will be the focus of much of this paper. Immigration estimates are developed using survey data from the American Community Survey (ACS), 2000-2009. One series of immigration estimates is based on the question of place of prior residence. Using this method, which is currently used by the U.S. Census Bureau in its annual population estimates program, the foreign-born population whose residence one year ago was abroad are considered immigrants. Immigration can also be measured using information on year of entry to the United States. Specifically, immigrants can be defined as the foreign born whose year of entry was the year prior to the survey year. For DA 2010, estimates of net international migration are produced using both the residence one year ago (ROYA) and year of entry (YOE) methods of calculating foreign-born immigration.

In addition to discussing the range of estimates produced when using these two methods, further variation of the estimates results from consideration of the representation of the foreign-born population in the ACS. The ACS is controlled to Census 2000 – based population estimates produced by the population estimates program. An assumption of these methods is that the controlling the ACS fully accounts for any potential under-representation of foreign-born immigrants in the ACS. This paper will describe the development of alternate assumptions of under-representation and present additional ROYA- and YOE-based estimates of foreign-born immigration incorporating these assumptions.

Foreign-born emigration is estimated using data from Census 2000 and the ACS along with a residual method that produces rates of emigration by period of entry. These rates are applied to the foreign-born population in the ACS to estimate annual foreign-born emigration. Annual net foreign-born migration is calculated by subtracting these emigration estimates from the various estimates of immigration. Net foreign-born migration can also be calculated across the decade by comparing the stock of the foreign-born population in Census 2000 and ACS 2009 and accounting for deaths. This provides an estimate of the net foreign-born migration from 2000 to 2009 which will be compared to the other estimates produced.

Net Migration Between the U.S. and Puerto Rico

To estimate net migration between the United States and Puerto Rico, data on place of prior residence from the ACS and Puerto Rico Community Survey (PRCS) are used, where possible. The PRCS was first implemented in 2005. For 2005 and later years, we estimate annual migration flows directly using data from the ACS/PRCS question on place of residence one year ago. For 2000 to 2004, we use prior research to establish a base estimate of net migration between the United States and Puerto Rico for 2000 and linearly interpolate between the 2000 net estimate and the 2005 net estimate to generate the estimates for 2001 to 2004.

Net Migration of Natives, the Native Population Born Abroad of U.S. Citizen Parents, and the Armed Forces Overseas Population

The net migration of natives is especially difficult to measure due to a lack of data. For DA 2010, estimates are included from two research projects using data from other countries. The reliability

of these estimates is dependent on the consistency and quality of census data in other countries as well as the response rates of U.S. citizens living abroad. Additional estimates will be presented which use data from the U.S. Census Bureau – including ACS data on the place of residence in the prior year of natives, and a residual method that compares data on natives from Census 2000 and ACS 2009 and incorporates administrative data on births and deaths. In addition to these estimates, the paper discusses the population living in the United States who were born abroad of U.S. citizen parents and the Armed Forces population who are living abroad on April 1, 2010.

Developing Estimates of Net International Migration

After using various methods to produce estimates of the components of net international migration, the estimates are combined in various ways to evaluate the range and develop a high and low estimate of net international migration from 2000 to 2010. This paper presents this range, noting which methods were used in their development.

Additional research

In addition to producing a range of estimates of net international migration from 2000 to 2010, additional research is presented which is used to further assess the estimates. A series of estimates of legal permanent residents by year of entry to the United States is used to assess the estimates of foreign-born immigration. Additionally a stock estimate of the foreign- and native-born populations in 2010 is developed using a combination of administrative, census, and survey data for comparison.