Measuring Net Native Migration: The Present and the Future

By

David Armstrong, Renuka Bhaskar, and Christopher Dick
Population Division
U.S. Census Bureau

For submission as a poster presentation to the annual meeting of the Population Association of America, Washington, DC March 31-April 2, 2011

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Net international migration (NIM) estimates are an important part of both population estimates and demographic analysis for the U.S. Census Bureau. In this project we focus on one component of the NIM estimate, net native migration. For the last several years, this component has been measured using census data from other developed countries. We present our estimates using current methods and discuss alternate data sources to measure net native migration. Specifically, we explore additional estimation techniques for the native migrant population using Census, American Community Survey (ACS), and administrative data. Additionally, we evaluate possible ways to update and improve the demographic characteristic and geographic distribution of the estimate including: 1) exploring the use of more specific proxy universes for estimating the distribution of the native migrant population; and 2) using the 5-year ACS data that provide county-level distributions that will allow us to move beyond sole reliance on Census 2000 data.

Extended Abstract

Net international migration (NIM) is an important component of both annual population estimates and decennial demographic analysis for the U.S. Census Bureau. This measure includes several components: net foreign-born migration, net migration between Puerto Rico and the mainland United States, net movement of the armed forces, and net native migration. This project focuses on the last component, net native migration (NNM), and describes research that is currently underway to improve the measures that are used to estimate this component.

Since 2003, the Census Bureau has used the same method to estimate net native migration at the national level, albeit with some updates. This method, exemplified by Gibbs and colleagues, uses Census data from other countries to estimate the number of

U.S. natives who are migrating from the country for a given period.[1] Using data from 16 countries during the 1990s, their estimate of net native migration is an approximate -18,000 per year. For the vintage 2009 population estimates, annual net native migration was assumed to be constant at this level for the 2000 to 2009 time period.

Schachter updated the work of Gibbs and colleagues in 2008 to include more countries (now 84) and newer data.[2] Given these new parameters, particularly the use of more countries (especially Mexico), the estimate of net native migration given by Schachter is higher at approximately -45,000 per year.

For the Census Bureau's annual population estimates program, estimates of net native migration are required at the county level by age, sex, race, and Hispanic origin. For the 2009 population estimates, state-level distributions using the total native population as the proxy universe were applied by age, sex, race, and Hispanic origin. For the year 2000, this distribution was taken from Census 2000. In years after 2005, the distribution was taken from the 2005-2007 three-year ACS. Between 2000 and 2005, ACS 2005-2007 state-level distribution data was partially incorporated using linear interpolation with Census 2000 distribution data. At the county level, Census 2000 distribution data were used for the entire time period. This poster presents estimates based on these geographical and demographic distributions using both Gibbs and colleagues and Schachter's estimates.

[1] Gibbs, J., G. Harper, M. Rubin, and H. Shin. 2003. "Evaluating Components of International Migration: Native-Born Emigrants," Population Division Working Paper No. 63. U.S. Census Bureau.
[2] Schachter, J. 2008. "Estimating Native Emigration from the United States," Memorandum dated December 24, developed during contract work for the U.S. Census Bureau.

Our research focuses on evaluating alternate methods of estimating net native migration and avenues to improve the demographic characteristics and geographic distribution of our estimates.

First, we discuss possible alternate ways to measure net native migration. We use basic demographic methods along with census, ACS, and administrative data to create several new estimates of net native migration. We begin with the total native population in Census 2000 – broken down by single years of age and sex – and survive it forward to an ending point (2005, 2006, 2007, 2008, and 2009) using birth and death records from the National Center for Health Statistics. We compare our expected ending population to the native population enumerated in the ACS in the given year. The difference in our expected and actual populations is then used to create a rate of net migration for natives over the time period. This rate is then applied to the population at risk of migrating (all natives) in the ACS for each year of the time period (2000-2009). We present the results from this methodology and discuss the assumptions and limitations of this method.

We then look at methods to improve the demographic characteristics and geographic distribution of our estimates including the use of alternative proxy universes to distribute the population. Currently, state- and county-level distributions of native net migration are modeled after the distribution of all native-born people. However, there are reasons to believe that native migrants are distributed differently among demographic and geographic categories than are native-born people as a whole. For example, looking at the

characteristics of native-born people based on previous residence may be a better approximation of native born migrant characteristics than looking at the native population as a whole.

Finally, we evaluate the use of the 5-year ACS data as a source for determining the county level age, sex, race, and Hispanic origin distribution of our estimates. We present results using the ACS 2005-2009 file as a source for county-level distributions and discuss the reliability of these estimates.