Methods and Research on Estimating Foreign-Born Immigration

By

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For submission as a paper presentation to the annual meeting of the Population Association of America, Boston, MA May 1-3, 2014

Short Abstract

The Population Estimates Program of the Census Bureau produces annual estimates of net international migration (NIM) by age, sex, race, and Hispanic origin for the nation, states, and counties. Foreign-born immigration is the largest component of the NIM estimate. In this paper, I present research on the measurement and estimation of foreign-born immigration. First, results of a change in the method used to develop characteristics of the foreign-born immigrant population from processing all immigrants together to processing immigrants from Mexico and "All Other Countries" separately are presented. Next, a new method for combining information from the Residence One Year Ago (ROYA) and Year of Entry (YOE) questions on the ACS into a single method for estimating foreign-born immigration is proposed. The new method produces higher estimates of foreign-born immigration than the ROYA method alone, in part because the new method includes more circular migrants.

Extended Abstract

The Population Estimates Program of the Census Bureau produces annual estimates of net international migration (NIM) by age, sex, race, and Hispanic origin for the nation, states, and counties. Foreign-born immigration is the largest component of the NIM estimate.[1] In this paper, I present research on the measurement and estimation of foreign-born immigration. First, results of a change in the method used to develop characteristics of the foreign-born immigrant population from processing all immigrants together to processing immigrants from Mexico and "All Other Countries" separately are presented. Next, a new method for combining information from the Residence One Year Ago (ROYA) and Year of Entry (YOE) questions on the ACS into a single method for estimating foreign-born immigration is proposed. The new method produces higher estimates of foreign-born immigration than the ROYA method alone, in part because the new method includes more circular migrants.

Mexico and Other Countries

The national-level total estimate of foreign-born immigration during the past year is distributed to states and counties by age, sex, race, and Hispanic origin using "proxy universes" derived from ACS files. The proxy universe is a distribution of a population from the ACS that approximates the characteristics of the foreign-born immigrant population being estimated. In the Vintage 2012 series of estimates, the proxy universe for the foreign-born immigration estimate

[1] Net international migration for the United States, regions, and states includes the international migration of both native and foreign-born populations. Specifically, it includes: (a) the net international migration of the foreign born, (b) the net migration between the United States and Puerto Rico, (c) the net migration of natives to and from the United States, and (d) the net movement of the Armed Forces population between the United States and overseas. Net international migration for Puerto Rico includes only the international migration of native and foreign-born populations between the United States and Puerto Rico.

included the foreign-born population whose year of entry was in the past five years.[2] The distribution of the proxy universe from a 3-year ACS file was used to develop state estimates and a 5-year ACS file to develop county estimates.

Until recently, the proxy universe for the annual estimates of foreign-born immigration was developed for all immigrants as a group; therefore, the percent of the national total that was Hispanic or Asian depended on the race and Hispanic origin distribution from the most recent 3- or 5-year ACS file. However, there is a time lag between the period being estimated and the period from which the proxy universe is constructed. For instance, if the 2008-2010 3-year ACS file was used, then the foreign-born population whose year of arrival was in the past five years would span the period from 2003-2010, a total of eight years. During the past decade, there was a decline in the proportion of new arrivals that were from Mexico and an increase in the proportion of new arrivals from China and India (Jensen and Arenas-Germosén 2012). However, our method for estimating the subnational distributions and characteristics was not sensitive to this change.

Beginning with the Vintage 2012 estimates, the Population Estimates Program started processing the characteristics of foreign-born immigrants from Mexico and "All Other Countries" separately. This has had the effect of lowering the percentage of the foreign-born immigration estimate that is Hispanic and increasing the percentage of the estimate that is Asian. In this paper, I provide detail on the technical aspects of this method change as well as the impact of the change on the estimates of foreign-born immigration.

[2] The Population Estimates Program produces an annual time series of estimates which begin with the most recent decennial census data and extends to the vintage year. As each vintage of estimates includes all years since the most recent decennial census, the latest vintage of data available supersedes all previously-produced estimates for those dates.

Combining ROYA and YOE

The Population Estimates Program uses the residence one year ago question from the ACS (ROYA method) to produce annual national-level estimates of foreign-born immigration. With the ROYA method, the foreign-born immigrant population is identified as the foreign-born population whose residence one year ago was abroad. Immigration flows can also be measured with ACS data by using the year of entry question that asks "when did this person come to live in the United States?" Although both methods measure foreign-born immigration, they produce different estimates.

In this paper, I present an alternative method that combines information from the ROYA and YOE questions into a single measure of foreign-born immigration. The first step is to estimate the ROYA population using the most recent 1-year ACS file. Next, I estimate the foreign-born population whose year of entry was in the most recent year, but would not be included in the ROYA-based estimates because their reported residence one year ago was in the United States. This method—the YOE Addition—may measure circular migration as well as the migration recent arrivals who might have answered the ROYA question incorrectly. Because the YOE Addition is an estimate of immigration for only 6 months, the estimate is multiplied by 2 to obtain a full 12-month estimate. Cases with an imputed value on the year of entry question in the ACS are excluded. Finally, the ROYA and YOE Addition populations are combined to create a final estimate of foreign-born immigration. The strengths and limitations of the alternative method are discussed.

Reference:

Jensen, Eric and Belkinés Arenas-Germosén. 2012. "Recent Trends in the Racial and Ethnic Composition of Immigrant Flows to the United States: 2000-2010." Poster Presented at the Annual Conference of the Population Association of America, May, San Francisco, CA.