

## **TRENDS IN SKILLED MIGRATION TO THE UNITED STATES**

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### **SKILLED MIGRATION TO THE UNITED STATES**

During the second half of the 20<sup>th</sup> century, the United States granted more lawful permanent residency (LPR) based on family re-unification than on employment. By the late 1980s, however, concern about the number of visas available for high-skilled workers grew and it ultimately led to the passage of the 1990 Immigration Act. For the first time since passage of the 1965 amendments to the Immigration and Nationality Act, the employment-based LPR system was expanded, almost tripling the number of immigrant visas for workers and their families, from 56,000 to 140,000 (Bean & Brown 2005). Moreover, the system identified five types of workers eligible for LPR status. These included those with extraordinary ability, professionals with advanced degrees, those with bachelor's degrees as well as others who are skilled and unskilled, special immigrants such as religious leaders, and persons who will invest at least \$1 million, or \$500,000 in rural or high-unemployment areas.

Research on the topic has begun to grow (Espenshade & Shin 2001; Bean & Brown 2005; Hazen & Haiké 2006; Regets 2001) and is certain to continue in the 21<sup>st</sup> century for several reasons. First, skilled migration is substantial. Among the foreign-born age 25 and older, 27.3% (about 7.4 million individuals) have a bachelor's degree or higher, a percentage that matches the proportion of college graduates among U.S. natives of the same age (Larsen 2004). Also noteworthy is the foreign born share of those highly skilled (Bean & Brown 2005); among those with doctoral degrees working in science and engineering, 52 percent are foreign born (Freeman 2005). Second, recent debates on immigration reform include proposals that would further increase skilled immigration despite the fact that many are not well understood. Some argue for the implementation of a point system designed to encourage skilled immigration; others argue for a return to the higher annual caps of visas issued under the H-1B program that were in place in 1999-2003. Coupled with ups and downs in the information technology industry and the economy in general, these policies may affect the size and occupational

composition of the skilled immigrant population in specific ways. For example, expansion of the H-1B program as a result of the 1990 Immigration Act may have already led to a rise in the proportion of foreign-born workers with particular graduate degrees.

Of all highly skilled fields, science and engineering (S&E) has received most attention in migration studies. This research has explored questions concerning productivity, wages, labor conditions, job displacement of natives, the state of American science education, and the returns to alternative professional careers in the United States (Espenshade, Usdansky & Chung 2001; North 1995; Stephan & Levin 2001; Teitelbaum 2003; Wadhwa et al. 2007). Complementing these studies is the STEM (Science, Technology, Engineering and Mathematics) Workforce Data Project, which in recent years has identified and distributed reliable statistics on these types of workers in the United States, including the foreign born (see, for example, Lowell 2005). After science and engineering, studies have focused on the migration of nurses and policies to promote their migration and alleviate shortages found in U.S. hospitals (General Accounting Office 2001; U.S. Department of Health and Human Services 2002). In fact, despite significant immigration of foreign nurses, their numbers have not been enough to meet demand. Some observers claim that changes in immigration law are needed to further facilitate the immigration of nurses (Mailman and Yale-Loehr 2003); others are more concerned with the depletion of the nursing workforce in developing countries as a consequence of their migration to the industrialized world (Aiken et al. 2004).

In this paper, we track changes in the composition of the skilled immigrant population in the United States. To our knowledge, despite a growing number of case studies (such as those focused on scientists and nurses as listed above) no studies have examined trends in the “big picture,” i.e. how the composition of the skilled foreign born population has shifted, and how these shifts vary by occupation, education, and region of origin. Using CPS data from 1994 to 2006, we will examine changes in the composition of skilled migration and link these shifts to U.S. immigration policy and other macro-level developments that occurred during this period.

## DATA

We use the Merged Outgoing Rotation Groups (MORG) from the Current Population

Survey (CPS). The CPS is a household survey conducted monthly by the Census Bureau for the Bureau of Labor Statistics (BLS) to measure labor force participation, employment and related variables. The CPS collects data on nativity since 1994, which sets the first year of our analysis. Every household that enters the CPS is interviewed each month for 4 months, then ignored for 8 months, then interviewed again for 4 more months. The MORG data sets, available from the National Bureau of Economic Research, are annual data files that include only those households which were in their 4th and 8th interview each month. Since the 4th and 8th interviews are a year apart, in the MORG extracts no household is recorded twice in the same survey year.

Although most researchers who use the CPS work with the March file because it includes a larger number of variables and a larger sample size than the monthly basic survey (Schmidley & Robinson 2003), the present analysis relies on variables available in the basic monthly survey. Producing estimates using the MORG extracts is advantageous because the data contain households interviewed throughout the year, reducing the effect of occasional large sampling errors in any given month.

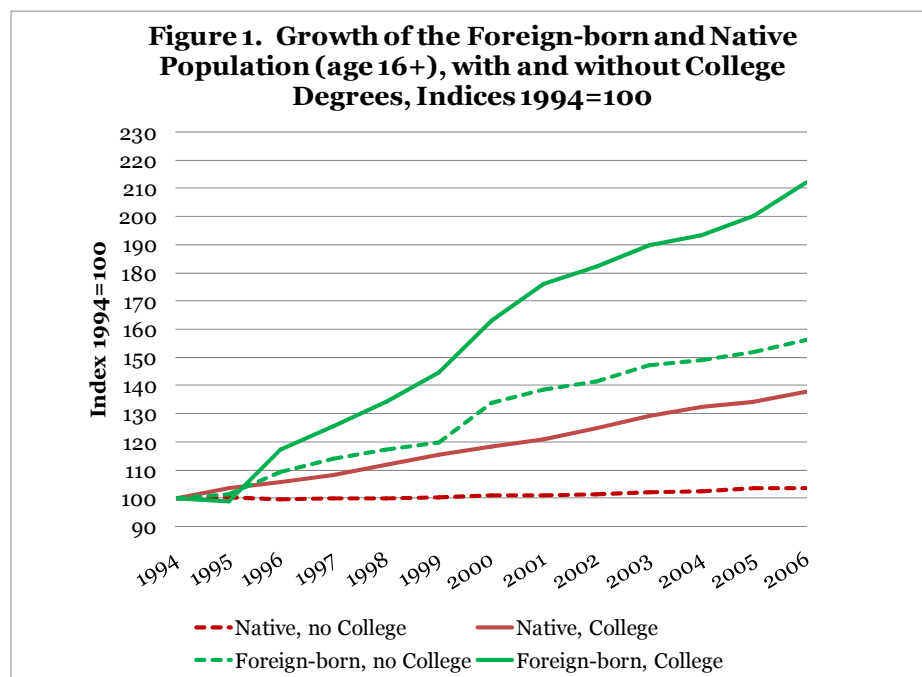
When producing annual CPS estimated counts of attributes present in the monthly CPS, researchers often calculate averages from the twelve monthly surveys for the year in question. Because each month covers one-fourth of all CPS households surveyed that month, each MORG annual data set has about three times as many households as the average monthly CPS. After adjusting weights (simply using  $1/3$  of the CPS final weight variable), our estimated cell counts in any given year produced with the MORG extracts may differ very slightly from counts estimated from annual averages of twelve CPS surveys.

Comparability between estimates from different years of the survey is affected by a change in the population controls used to produce the sample weights. CPS data are weighted to produce population counts. The weights depend on “population controls,” derived from population projections benchmarked to the last census, adjusted for omission, limited to the civilian non-institutionalized population, and distributed by demographic characteristics including age, sex, race, Hispanic origin and residence, but not nativity (U.S. Bureau of the Census 2002, Appendix D). In other words, estimates of population totals obtained from the CPS ultimately depend on population projections prepared by the Census Bureau. The 2000 census revealed that the projections based

on the 1990 census were underestimated, especially with respect to the Hispanic population. Using 2000 census results, the CPS population controls were corrected. Schmidley and Robinson (2003) show estimates of the foreign-born population based on the old and the new weights for the monthly CPS surveys from October 1999 to December 2002. Therefore, when the new weights are used, results show a consistent increase in estimates of the foreign-born. Proportionally, the increase among the foreign-born that results from the new weights was found to be much larger than the proportional increase recorded for natives. We have yet to decide what adjustments (if any) we will implement to account for the change of weights in 2000. For the time being, we will keep in mind that a disproportionate increase of the foreign-born in 2000 results in part from the use of the new set of weights.

### OVERALL TRENDS

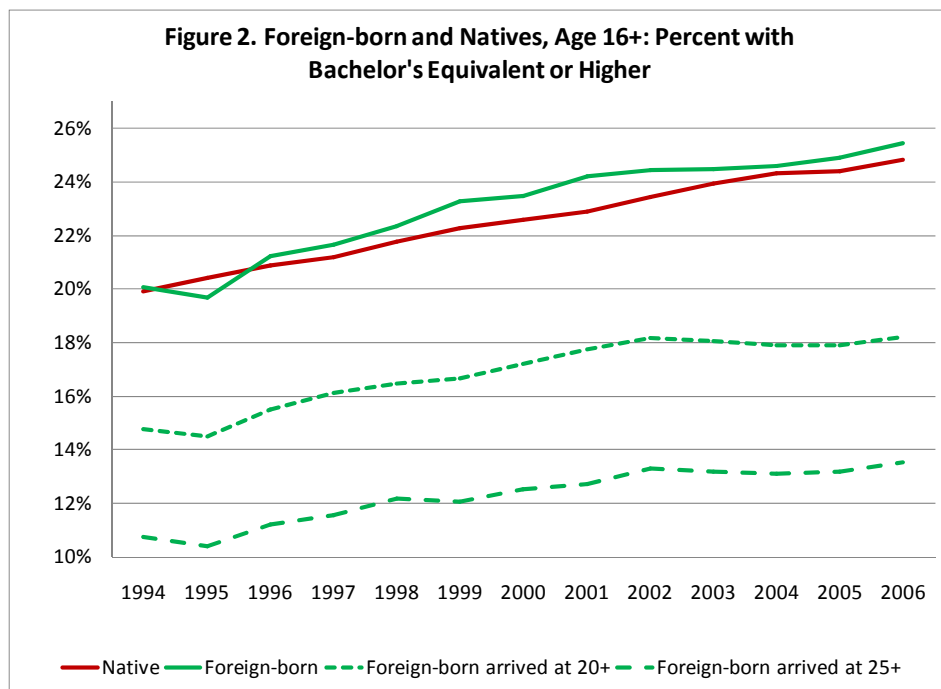
Figure 1 presents indices of growth based in 1994 for four subpopulations: the college-educated and those without college, among the foreign-born and U.S. natives. The figure illustrates three noteworthy findings. First, the foreign born population grew faster than the U.S. native population. Irrespective of skill level, the foreign born population grew at a faster pace than the U.S. born. Second, among the foreign-born,



the number of immigrants with college degrees has been growing at a much faster rate than the number of immigrants without college degrees. We also see the same pattern among natives. Third, the subpopulation of college-educated foreign-born has been growing at a much faster rate than the population of college-educated natives.

Growth of the skilled foreign born is especially dramatic. They are the fastest-growing demographic group of the four considered in Figure 1, and this trend stands in stark contrast to the common perception that migration skills are declining. Defined as a bachelor's degree or equivalent, migrant skill is actually on the rise. Therefore, it is clear that, as far as higher education goes, migrant skills have improved.

What is not clear, however, is whether this trend reflects foreign-born persons who attend and obtain degrees from U.S. colleges or whether it reflects those who have these skills when they enter the United States. Figure 2 addresses this issue. It shows the percent with college degrees among U.S. natives and three groups of migrants: all of them, those who arrived in the country at age 20 and older, and those who arrived at age 25 and older. We show the 20+ group separately because they may include those who started higher education in their countries of origin but finished in the U.S. The 25+ group most likely captures migrants who already held a college degree or equivalent at time of arrival.



Our results show an upward shift in the percentage for all groups. Since 1994, shares of the foreign born and U.S. born populations with a college degree have increased and differences between them are trivial. Looking at the three immigrant populations, the gap between them suggests that many foreign-born individuals do indeed earn their college degrees in the United States. On the other hand, the figure clearly shows that immigration is becoming more skilled irrespective of where we set the cutoff age at entry.

#### NEXT STEPS

During the fall and winter terms, we will continue our work on this analysis. We will track changes in the composition of the college-educated immigrant population by occupation, education, and region of origin during 1994-2006. After examining these trends, we will examine how specific events that took place during this period affected them. These include increases in the H-1B visa cap in 1999 and 2001 and exemptions from this cap for universities, nonprofits and government research labs introduced in 2000. We will also examine these trends pre- and post-9/11, during the economic boom of the late 1990s when the United States had record GDP growth, and during the economic slowdown that succeeded it.

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