Projections of the Population of California by Nativity and Year of Entry to the U.S., in Addition to Age, Sex, Race and Hispanic Origin

Paper proposed for presentation at the 2011 Annual Meeting of the Population Association of America
by John Pitkin, Analysis and Forecasting, Inc, Cambridge, MA
email: john_pitkin@earthlink.net
And
Dowell Myers, University of Southern California, Los Angeles, CA
email: dowell@usc.edu

This paper presents new projections of the population of California by age, sex, race and Hispanic origin, nativity, and year of entry to the U.S. for the foreign-born. The first three of these classifications have long been recognized as important for purposes of modeling population change at both the U.S. and subnational levels because of substantial differences among major categories in vital rates as well as rates of migration. These stratifications have also been usefully applied in making population-based projections in a variety of areas ranging from health care utilization to labor force and housing.

With the increase of the foreign-born population to 12.4 percent of the total in the U.S. in 2008, the same considerations apply with equal force for stratification of population projections by nativity, whether foreign or native-born, and foreign-born year of entry to the U.S. Rates of fertility (Johnson, Hill, and Heim 2002), mortality (Sevak and Schmidt 2008), emigration (Ahmed and Robinson 1994, van Hook et.al. 2006), and domestic migration (Pitkin 2004) have each been found to differ substantially between the native and foreign-born populations. Research on immigrant assimilation has found that many dimensions of social, economic, and political status have been found to vary according to nativity and duration of residence in the U.S., as determined by year of entry and the current year. Among these studies are Stevens (1994) and Hakimzadeh and Cohn (2007) on acquisition of English language skills, Portes and Rumbaut (1996) on acquisition and use of English and linguistic isolation, Ramakrishnan and Espenshade (2001) on voting, Wong (2000) on political party identification, Alba and Logan (1992) and Myers and Lee (1998) on homeownership, and White and Glick (2009) on occupational status.

For California, where 26.8 percent of the population (2008) is now foreign-born the advantages in improved accuracy and applications are even greater than for the U.S. as a whole. Indeed, consideration of nativity seems almost a necessity for credible population projections for the state.

The addition of nativity to a cohort component projection model requires a rather straightforward extension of the model. This was in fact done on a trial basis by the U.S. Census Bureau (2000) for a set of projections for the U.S., however the innovation was not continued. Subsequent projections by the Bureau instead have expanded the number of race categories rather than introduce more than the traditional three dimensions of population projections that have been standard since 1960 or even 1940. Early development of the cohort component model was handicapped by a lack of detailed data on vital rates. Immigration also had much less importance at mid-century because it was at historic lows. Recently, Passel and Edmonston (1994) and Passel and Cohn (2008) have produced extensions of the cohort component method that include nativity and

immigrant generation, but that model has been limited to the national level and also does not provide for the details described below.

The California context necessitates more detailed projections than the standard supplied by the Census Bureau or the extension by Passel and associates. We have been developing a model to provide enhanced projections for California since 2001. The new projections to 2040 are an updated and substantially improved version of projections to 2030 made with an earlier version of the model. (Myers, Pitkin and Park 2005) The model is closely patterned on the U.S. Census (2000) projection model and in fact uses the same fertility and mortality schedules with modifications. It is an annual (one-year) model with one-year age and entry cohorts for two regions, California and the rest of the United States.

Nativity classes are defined first by place of birth, whether in the U.S. or abroad into native and foreign-born. The native born are further stratified by state of birth, California or other state, and immigrant generation, second-generation child of foreign-born mother or third or higher generation; and the foreign-born are further categorized by year of entry (single years to 1970 and 1969 or earlier).

The base populations are the National Center for Health Statistics estimates of SF1 counts with multi-race populations bridged to five single race and origin categories: Hispanic and non-Hispanic white, black, American Indian or Alaska Native, and Asian, Hawaiian or Pacific Islander. The foreign-born base population, by Hispanic origin, race, sex, age and year of entry, is from the Census 2000 PUMS 5% data, and the native-born population is calculated as the residual of the NCHS total population and the PUMS-based foreign-born. The native-born populations are in turn split by state of birth in the same proportions as the Census 2000 PUMS 5% data. Current Population Survey estimates are further used to split the native-born by immigrant generation (second or higher generation).

The base projected *fertility* and *mortality* schedules are those used in the U.S. Census Bureau 2000 projections, modified by nativity and location-specific level adjustments.

The distribution of new *immigrants*, by race-origin, age, sex, and state of residence (California / other) is based on that of recent arrivals, in the previous five years, in the 2000 Census. Annual number of immigrants, sex ratios, and regional shares are controlled by parameters of the projection model.

Emigration is calculated at per capita rates for the foreign born that vary by origin and duration since entry to the U.S. These rates of emigration are estimated by residual method from Census and ACS data.

Domestic schedules of 1-year gross *migration* rates are calibrated to the mean of the 5-year gross rates in 1975-80, 1985-90, and 1995-2000 Census 5% PUMS data from question on residence 5 years year ago. Rates from different periods are combined to reflect an average of historic rates in different periods and vary by nativity, birth state, and, for the foreign born, by duration since entry to the U.S.

Annual projection parameters include (1) total immigration to U.S., (2) California's share of U.S. immigration, (3) the total level of fertility, and (4) a domestic migration parameter setting the relative size of total flows to and from California (a proportional adjustment of gross migration rates to and from California). Due to the current severe recession there is uncertainty about the appropriate levels at which to set domestic and especially foreign migration in both the near and long term. Also, for similar reasons the assumption of fixed emigration rates may need to be adjusted to allow for higher rates at least in the near future.

The model is run in simulation mode to estimate population change and characteristics during the 2000-2009 period. The projection parameters for each year are set so that the model matches estimated components of population change for California and the nation.

The following projection results will be reported for 10-year intervals: total population, age composition, race-ethnicity composition, and birthplace-nativity-immigrant generation-duration (CA born generation 3+ / CA born generation 2 / other U.S. born / Foreign born >=30 years in U.S. / 20<30 years / 10<20 years / <10 years).

The projection model can potentially be applied to other large gateway states with substantial foreign born populations such as Texas, New York, or Florida. This has the prospect for improving overall projections for behaviors that are tied to demographic differences. It also can lead to improved understanding of likely advancement and integration among the settled immigrant population.

REFERENCES

Ahmed, Bashir and J Gregory Robinson. 1994. "Estimates of emigration of the foreign-born population 1980-1990." Washington, DC : U.S. Bureau of the Census. Technical paper.

Alba, Richard D., and John R. Logan. 1992. Assimilation and Stratification in the Homeownership Patterns of Racial and Ethnic Groups. *International Migration Review* 26:1314–41.

Hakimzadeh, Shirin and Cohn, D'Vera. 2007. *English Usage Among Hispanics in the United States*. Washington, DC: Pew Hispanic Center.

Johnson, Hans P., Laura Hill and Mary Heim. 2001. "New Trends in Newborns: Fertility Rates and Patterns in California." *Calfornia Counts Population Trends and Profiles.* Vol. 3(1). San Francisco: Public Policy Institute of California.

Myers, Dowell, and Lee, Seong Woo. 1998. Immigrant Trajectories into Homeownership: A Temporal Analysis of Residential Assimilation. *International Migration Review*. 32(3): 593-625.

Myers, Dowell, John Pitkin and Julie Park. 2005. "Projections to 2030, by Immigrant Generations, Nativity, and Time of Arrival in U.S." Report of California Demographic Futures Project. Los Angeles: University of Southern California.

Passel, Jeffrey S. and Barry Edmonston. 1994. "Immigration and Race: Recent Trends in Immigration to the United States." In Edmonston and Passel (eds.), *Immigration and Ethnicity: The Integration of America's Newest Arrivals.* Washington, DC: The Urban Institute Press.

Passel, Jeffrey S. and D'Vera Cohn. 2008. "U.S. Population Projections: 2005–2050." Pew Hispanic Center Report. Washington, DC.

Pitkin, John. 2004. "Three Demographic Waves and the Transformation of the Los Angeles Region, 1970-2000," Population Dynamics Research Group Working Paper No. PDRG04-06. University of Southern California: Los Angeles.

Portes, Alejandro, and Rumbaut, Rubén G. 1996. *Immigrant America*. Berkeley, CA: University of California Press.

Ramakrishnan, S. Karthick, and Espenshade, Thomas J. Immigrant Incorporation and Political Participation in the United States. *The International Migration Review.* 35(3), 870-909.

Sevak, Purvi, and Lucie Schmidt. 2008. "Immigrant-Native Fertility and Mortality Differentials in the United States." WP 2008-181. Ann Arbor: Michigan Retirement Research Center.

Stevens, Gillian. 1994. Immigration, Emigration, Language Acquisition, and the English Language Proficiency of Immigrants in the United States, pp. 163-185 in Edmonston, Barry and Passel, Jeffrey S. (editors). *Immigration and Ethnicity: The Integration of America's Newest Arrivals*. Washington, DC: The Urban Institute Press.

U.S. Bureau of the Census. 2000. Population Projections of the United States by Age, Sex, Race, Hispanic Origin, and Nativity: 1999 TO 2100. Internet release date Jan. 13, 2000. Washington, DC.

Van Hook, Jennifer V. W., Zhang, Weiwei, Bean, Frank D., and Passel, Jeffrey S. 2006. Foreign-Born Emigration: A New Approach and Estimates Based on Matched CPS Files. Demography. 43(2) 361-382.

White, Michael J. and Jennifer E. Glick. 2009. *Achieving Anew: How New Immigrants Do in American Schools, Jobs, and Neighborhoods*. New York: Russell Sage.

Wong, Janelle S. 2000. The Effects of Age and Political Exposure on the Development of Party Identification Among Asian American and Latino Immigrants in the United States. *Political Behavior*. 22(4), 341-371.