NPG Forum

The Impact of Immigration on United States' Population Size: 1950 to 2050

By Dr. Leon F. Bouvier

This brief demographic analysis looks at the period 1950-2050 in order to assess the impact of immigration, both direct and indirect, on United States' population size and growth. In the year 2000, our U.S. population will be 43 million larger than it would have been if there had been no immigration after 1950. Over one-third (35%) of our total population growth during the period 1950-2000 will have been caused by immigration, either directly or from births to post-1950 immigrants residing in the U.S. In the fifty year period 2000-2050, if immigration continues at the present level, our population is projected to grow by 119 million. Immigration would account for about two-thirds of that enormous growth. By 2050 our U.S. population would reach almost 394 million and still be growing rapidly.

Introduction

Much has been written about the growing level of immigration into the United States over the past two decades. Since the mid-1950s, both the absolute and net numbers of such in-migration have equaled and surpassed those noted at the turn of this century. Far too little attention, however, has been paid to quantifying the importance of immigration as an engine of U.S. population growth. Due to the uncertainties in the data on illegal immigration and on emigration (out-migration) as well as the difficulties in ascertaining information on immigrant fertility, there has been disagreement on immigration's full impact on our population growth. Some previous efforts to assess its demographic impact have tended to focus only on direct immigration and have thus underestimated its affect. We know that currently nearly one million immigrants enter the country every year – legally or illegally – and stay here permanently. But of our total population growth, how much can be attributed to immigration?

First, growth can only come from natural increase (that is, births minus deaths) and/or through net migration (that is immigration minus emigration). The fact that two variables are involved must be considered when trying to determine the impact of immigration. For example, if fertility is so low that deaths equal births, then 100 percent of population growth could be attributable to immigration. Today, fertility, which just went through a so-called "baby bust" period, is now back to replacement level – women are averaging just over two births and life expectancy keeps climbing. Taken together, natural increase (or decrease, for that matter) and net migration are the two components fundamental to any discussion of the impact that immigration has on population size and growth.

Second, the effect of immigration is not limited solely to those who move here, an especially important consideration in the case of the United States. Since many of the immigrants are young adults, they often have children after arriving in the United States. These offspring are not considered immigrants; they are simply added to the native-born births in any given year. Yet, they are the result of immigration. By 2000, almost one in five U.S. births will be to foreign-born parents. As these children themselves reach child-bearing age, many will go on to reproduce and thus further contribute to U.S. population growth.

But here too, we must be careful with how the indirect impact of immigration is calculated. In one sense, aren't all residents of the United States "indirect" immigrants, including those who are descended from Native Americans who, historians tell us, came across the Bering Strait from Asia

many centuries ago? Noted Census Bureau demographer Campbell Gibson has calculated the share of the U.S. population that is attributable (directly and indirectly) to the various waves of immigrants who have entered the U.S. since 1790.[1] For instance, Gibson finds that of the 248,710,000 Americans enumerated in the 1990 census, 127 million are attributable to the net 47,698,000 immigrants who have arrived since 1790. The remainder of the population is thus attributable to the 3,929,000 U.S. residents in 1790. Gibson's methodology in these calculations reflects not only net immigration but also the natural increase component attributable to immigration, by comparing population growth both with and without immigration under given fertility and mortality patterns. This report uses a methodology similar to that developed by Gibson.[2]

Calculating the indirect impact of immigration can become meaningless if it is carried to extremes or done without the appropriate parameters. Given this "caveat," and the variety of potential variables available, a number of estimates on the impact of immigration have been developed with the results often exhibiting considerable difference. In what year does the calculation begin? What rates of fertility, mortality and migration are used, and for whom: the native-born and/or the foreign born? How many generations are included? As a result, there has been a significant amount of disagreement over the impact that immigration has had on U.S. population size and growth.

As we conclude this fifty-year period, it is evident that immigration has played a major role in the rapid growth occurring in the United States.

This is not that surprising. Not only are the factors just mentioned likely to yield different answers; migration data are the least reliable of all demographic variables. We don't know for certain exactly how many people enter the country illegally; we only have indirect estimates of how many leave (emigration). Furthermore, the age-sex composition of these two groups are seldom totally accurate. So, while most demographers do their best to arrive at reasonable results, such estimates unavoidably have some margin of error. This applies to this study as well. While we use the most reasonable measurements available, we are aware of the fact that migration statistics are not as reliable as are those for fertility and mortality.

Parameters

In this study, we are concerned solely with immigrants and their offspring. The question therefore is simply: what is the impact, direct and indirect, of immigration on the population size of the United States? To almost assure that generation upon generation are not included, we limit our analysis to two fifty year periods: 1950-2000 and, for the future 2000-2050. The question is asked: of our total population growth between 1950 and 2000, how much is attributable to immigration – direct and indirect? Then the same question is asked for the period 2000-2050 according to given assumptions about fertility, mortality, and migration.

For the first period, we rely on the demographic rates published by the Census Bureau in their series of projections. Thus, fertility and mortality rates from 1950 to 2000 are similar in both sets of projections (with adjustments made for the impact of immigration to be discussed later): those with immigration and those without immigration. The difference between the two projections (once differences in the fertility of immigrants is accounted for) is thus attributable to immigration.

For the second period (2000-2050) we emphasize that these are projections and not predictions. In one sense, if the mathematics are correct, a projection can never be wrong. When some people insist that projections are "always wrong," they are confusing projections with predictions and it is really the assumptions that they disagree with. In this analysis' projections, we make clear exactly what assumptions are being used and it is up to the reader to judge their soundness.

According to the Census Bureau, the United States currently has about 26 million foreign-born inhabitants, accounting for about 10 percent of its population. This is the largest number ever and the largest as a proportion of the total population since 1930. Furthermore, the number of foreign-

born has tripled just in the last thirty years. According to the Federation for American Immigration Reform's *Immigration Report*, "In a new and dramatic testimony to immigration's impact on the nation's population growth and composition, the Census study suggests that, if current patterns hold, almost one-third of the nation's population increase this decade will come from immigration. Counting the U.S.-born offspring of immigrants brings the total closer to fifty percent."[3]

Methodology

Our approach is straightforward. First, we look at the actual Census Bureau total population counts for the years 1950-60-70-80-90 and their projected median population for 2000. These, of course, include immigration and its direct and indirect impacts. We then use the same levels of fertility and mortality (adjusted for no immigration) as does the Census Bureau but with no migration to calculate the hypothetical population in the same years. The difference is attributable to immigration, both direct and indirect.

For the 2000-2050 period, we rely on the latest projections prepared by the Census Bureau.[4] From this excellent and carefully thought out demographic monograph, we selected two series of projections that seem to be the most reasonable. One projection is without immigration and one with immigration. In both models, fertility and mortality are the same. The fertility rates rise from 2.055 in 1995 to 2.245 in 2050 reflecting the growing immigrant population and its higher fertility. Life expectancy is expected to rise from 75.9 in 1995 to 82.0 in 2050. Net immigration is assumed to be 820,000 annually. This results from immigration of 1.042 million immigrants minus 222,000 emigrants. Thus, any difference in population size between the two models would be the result of immigration, direct and indirect.

It should be noted that the Census Bureau projections do not lower fertility in their no immigration scenario. Since higher immigrant fertility is a significant and growing contributor to total births, the immigration impact from 2000 to 2050 is thus conservatively represented. That is, without immigration the U.S. fertility rate could be expected to drop rather than rise as in the Census Bureau projections. Thus, in relying on the Census Bureau projections for 2000 to 2050 we are presenting the minimum impact that continuing current immigration policies would have on U.S. population growth.

Without immigration the U.S. fertility rate could be expected to drop rather than rise as in the Census Bureau projections.

An analysis of the impact of immigration going back fifty years, and then going forward fifty years (1950 to 2050) gives us a broader idea of how important this demographic variable actually is.

Immigration and U.S. Population Growth: 1950-2000

According to the Census Bureau, between 1950 and 1990 the United States population increased from 152,271,000 to 249,910,000. By 2000, that population is projected to increase to 274,634,000 based on the middle series of projections from the Census Bureau for the period, 1995-2050.[5]

Our question then is: what would the population have been in 1990 and will be in 2000 if there had been no immigration since 1950? That seems like a relatively simple question to answer – simply take out immigration from the Census Bureau projection. As mentioned earlier, however, immigrants generally have higher fertility than the native-born. This is especially true of the first generation, and for some groups the second generation as well. Unfortunately, data are not published for fertility rates by place of birth (i.e. native born and foreign born). Thus we must make as reasonable an effort as possible to estimate the fertility rate for the 1950-2000 period assuming no immigration. Over the period, the number of immigrants, and their proportion of our population, expand and thus have an increasing effect on the overall fertility rate.

For this exercise, we feel that it is better to err on the low side rather than on the high side.

In other words, we don't want to overemphasize the effect of immigration on overall fertility. Nevertheless there is an impact. In the no immigration projection, the overall total fertility rate was kept at its actual level through 1980. After 1980 total fertility was reduced from one percent to four percent to account for the fact that no immigration was included. For example, for the 1980-84 period, the actual overall total fertility rate was 1.82 and we assumed that it would have been 1.80 without any immigration. We repeated the same process for all five-year periods, assuming that the actual rise in U.S. fertility during the later two decades of this century would have slowed if there had been no immigration. We feel that this is a fair and conservative assessment of the impact of immigration on the fertility rate of the nation during this period.

For life expectancy, we made similar assumptions about the effect of immigration.[6] However, differences are quite minimal. For example, in 1980 the life expectancy for the nation was 73.7 years at birth. Without immigration, we raised it slightly to 75.5 years at birth. A similar pattern is followed throughout the assumptions. Given these assumptions about fertility and mortality, we then proceeded to calculate what would have been the population of the United States in the period 1950-2000. The results are presented in Table 1 below.

As can be expected, the proportion of the U.S. population attributable to post-1950 immigrants and their descendants increases over time as more people enter the country every year. By 1990, it was 13.9 percent of the population. That is to say, of the population in 1990, 13.9 percent were post-1950 immigrants and their descendants. Likewise, of the 93,221,000 people added to the U.S. population between 1950 and 1990, 30,561,000 or 32.8 percent were post-1950 immigrants and their descendants. By 2000, the direct and indirect impact of post-1950 immigration will amount to an additional 43 million people added to the U.S. population (15.6 percent of the our total population). Of the some 122,944,000 people to be added to the U.S. population between 1950 and 2000, about 35 percent will be due to post-1950 immigrants and their descendants, a percentage that is steadily increasing due to our continued high immigration. Recall that the Census Bureau projected that over the decade of the 1990s, about half of the population growth would be accounted for by immigrants and their offspring.

Thus, over one-third of the growth in the nation's population in the period 1950-2000 is explained by post-1950 immigration – both direct and indirect. This is particularly remarkable given that part of that period included the baby boom era (1950-1964) when fertility was quite high among all groups. As we conclude this fifty-year

Table 1

Population of the U.S. 1950-2000 With and Without Immigration (in 000s)

Year	Actual Population	Actual Growth	With No Immigration	Growth With No Immigration	Immigration's Share of Growth (% of growth)
1950	151,690	—	151,690	—	—
1955	165,980	14,290	164,770	13,080	1,210 (8.5%)
1960	180,671	14,691	176,340	11,570	3,121 (21.2%)
1965	194,303	13,632	186,480	10,140	3,492 (25.6%)
1970	205,052	10,749	193,380	6,900	3,849 (35.8%)
1975	215,973	10,921	199,590	6,210	4,711 (43.1%)
1980	227,726	11,753	205,620	6,030	5,723 (48.7%)
1985	238,466	10,740	212,610	6,990	3,750 (34.9%)
1990	248,911	10,445	219,350	6,740	3,705 (35.5%)
1995	262,820*	13,909	225,890	6,540	7,369 (53.0%)
2000	274,634*	11,814	231,621	5,730	6,084 (51.5%)
Total		**122,944**		**79,930**	**43,014 (35.0%)**

* Based on Census Bureau "middle series" projections

Table 2

Census Bureau Alternative Projections
U.S. Population 1995 to 2050 (in 000s)

Year	Population with No Immigraton	Growth (from previous date)	Population with 820,000 Immigration[1]	Growth (from previous date)	Immigration Share of Growth[2] (% growth)	Population with 1,370,000 Immigration[1]	Growth (from previous date)	Immigration Share of Growth[2] (% growth)
1995	262,820	—	262,820	—	—	262,820	—	7,503
2000	269,299	6,479	274,634	11,814	5,335 (45%)	276,802	13,982	8,303 (54%)
2005	275,481	6,182	285,981	11,347	5,165 (46%)	291,287	14,485	9,139 (57%)
2010	281,499	6,018	297,716	11,735	5,717 (49%)	306,444	15,157	9,817 (60%)
2015	287,746	6,247	310,134	12,418	6,171 (50%)	322,508	16,064	10,449 (61%)
2020	293,744	5,998	322,742	12,608	6,610 (52%)	338,955	16,447	11,172 (64%)
2025	298,935	5,191	335,050	12,308	7,117 (58%)	355,318	16,363	11,991 (68%)
2030	303,106	4,171	346,899	11,849	7,678 (65%)	371,480	16,162	12,825 (74%)
2035	306,424	3,318	358,457	11,558	8,240 (71%)	387,623	16,143	13,606 (79%)
2040	309,181	2,757	369,980	11,523	8,766 (76%)	403,986	16,363	14,339 (83%)
2045	311,645	2,464	381,713	11,733	9,269 (79%)	420,789	16,803	15,070 (85%)
2050	314,085	2,440	393,931	12,218	9,778 (80%)	438,299	17,510	124,214 (86%)
Total Growth —		**51,265**	—	**131,111**	**79,846 (61%)**	—	**175,479**	— **(71%)**

[1] Total population with annual net immigration of 820,000/1,370,000.

[2] Share of population growth attributable to direct immigration and descendants of post-1995 immigrants (and as a percentage of total growth).

period, it is evident that immigration has played a major role in our rapid population growth. Indeed, it is the prime reason that this country is the fastest growing industrial nation in the world. Without any immigration since 1950, the population as we approach the millennium would be 232 million rather than the expected 275 million – a truly substantial difference of 43 million in the year 2000.

Without immigration, the U.S. population would have a slightly older age structure. For example, without immigration, the elderly age group (65 and over) would have increased its share of the population from 8.1 percent in 1950 to 14.0 percent in 2000. In actuality, that is with immigration, that group will increase from 8.2 to 12.6 percent of the total population. However, the total number of elderly, many of whom are beneficiaries of Social Security, would be slightly lower without immigration since 1950 – 32.5 million compared to almost 34.7 million with immigration. Thus, while the population may age slightly without immigration, the total number of elderly would be greater.

A similar situation holds true for the other dependent age group, children. For example, without immigration, young children under age five would make up 6.5 percent of the population in the year 2000. With immigration their share will rise to just 6.9 percent. Their numbers, however, will increase from under 15.1 million to almost 19 million. That amounts to a considerable difference in the number of future school-age children with or without immigration.

In sum, the impact of post-1950 immigration in the second half of the 20th century has been enormous. When we consider that some 43 million persons will have been added to the 2000 population because of immigration since 1950, it becomes clear how significant immigration has been as a contributor to population growth. If immigration had stopped in 1950, today's population would be much more manageable and far less of a threat to our environment and to our quality of life in general.

Immigration and U.S. Population Growth: 2000-2050

Turning now to the future, our question becomes: what will be the impact of immigration for the fifty year period between 2000 and 2050? The Current Population Report of the Bureau of the Census (prepared by a staff headed by Gregory Spencer) provides us with sophisticated and detailed projections of the United States' population

beginning in 1995 and ending in 2050. (The slight difference in total population in 2000 between the two projections is attributable to the fact that the projection process actually began five years earlier.)

Of the total growth between 2000 and 2050, 62.5% would be accounted for by post-2000 net immigration of 820,000 annually.

First, we examine the assumptions used to produce the results. As noted earlier, the total fertility rate (TFR) is assumed to be 2.055 per 1,000 women in 1995. It is expected to rise to 2.245 by 2050. Interestingly, the Bureau foresees no change in the TFR of each ethnic group, whether native-born or foreign-born. Contrary to previous projections from the Census Bureau, this study does not foresee any convergence of minority fertility toward the majority rate over the next half-century. For Non-Hispanic Whites the TFR is set at 1.826; for Blacks 2.398; for Native Americans and Others 2.114; for Asian and Pacific Islanders 1.919; for Hispanics 2.977. One might question why the rate is the same for native and foreign born, irrespective of racial background. The fact that the convergence is not assumed, however, would account for that fact, although it is not stated as such in the text.

Another question that may confuse the reader concerns the fact that although the fertility rates for each group do not change over the fifty-year period, the overall rate is expected to rise by almost 10 percent (from 2.055 to 2.245). This rise reflects what can be called "shifting shares" of the population.[7] Even if the rate remains constant for all groups, as the share of those with the higher rate (Hispanics, in this case) rises through immigration, the overall rate will be affected. Thus the almost 10 % increase in the projected TFR is attributed solely to immigration – yet another confirmation of immigration's impact on population growth.

Life expectancy is projected to increase from 75.9 years at birth in 1995 to 82.0 in 2050. This improvement replicates that noted during the 1980s with the impact of AIDS taken into account. Again, no race-origin/sex convergence is assumed. Slight differences are noted among the racial/ethnic groups however and, again, this affects the final life expectancy in 2050. Non-Hispanic White male life expectancy in 1995 is assumed to be 73.6; for Blacks 64.5; Native American and Other 71.5; Asian and Pacific Islanders 79.6; Hispanics 74.9. These are all assumed to rise somewhat over the next fifty years. It is noteworthy that both Hispanics and Asians and Pacific Islanders have slightly higher life expectancy than do Non-Hispanic Whites.

It might be noted here that these mortality projections (as well as those from other government sources) have been criticized in some quarters as being too conservative. Clearly, there is room for improvement especially among African-Americans and improvement should be a goal of the government. However, some critics are also concerned that AIDS and increased assaults on the environment could result in lowered life expectancy. Significant changes in life expectancy can contribute to major changes in population size.

As mentioned earlier, the middle series of the Census projections assumes net immigration of 820,000 annually. Of these, 186,000 are Non-Hispanic Whites; 57,000 are Black; 350,000 are Hispanic; 226,000 are Asian; and 1,000 are Other. These proportions remain constant over the projection period. The age-sex composition of the immigrant component of population growth is consistent with the most recent information gathered by the Immigration and Naturalization Service (INS). It too remains constant.

Census Bureau Alternative Projections of U.S. Population 2000-2050

The Census Bureau projections also include a high-immigration model assuming that annual net immigration is 1,370,000. This has the same ethnic distribution as the middle-series assumptions. While we are convinced that 820,000 is on the low side, we will rely on that model for our analysis. However, we will also include the projected population that would result for the higher level of immigration, since that too has the same assumptions regarding fertility and mortality. Fur-

thermore, such high levels of immigration are not impossible given the present mood of Congress and the intent of proposed legislation such as a bill currently before Congress that would afford asylee status to certain people based on a presumption of religious persecution. Thus, the three projections (no migration, and annual net levels of 820,000 and 1,370,000) all rely on the same levels of fertility and mortality and are thus comparable.

We are completely satisfied with these assumptions and feel that the future population of the United States will fall within these boundaries. Table 2 on the page 5 specifies what the actual U.S. population from 2000 to 2050 would be according to these assumptions. Again, note that the Census Bureau "no immigration" projection does not lower the overall fertility rate to compensate for the absence of higher immigrant fertility and thus probably overestimates total growth from 2000 to 2050.

As we have seen, immigration has already accounted for a substantial portion of the growth of the nation's population since 1950. That is in the past and nothing can be done about it. However, there is still time to take control of our demographic future. As we approach the millennium, we must decide whether our nation can support any more people at a decent quality of life. We must determine if our environment and resources can support any more inhabitants at all.

We expect that the nation's population in 2000 will be approximately 275 million. By 2050, based on reasonable assumptions about fertility and mortality, it would approach 315 million – an increase of close to 45 million people over that half-century – *without immigration.* Although, many experts have concluded that we are already overpopulated,[8] population momentum from our past growth dictates that we will be adding some 45 million more people in the near future even if we immediately put an end to immigration.

Now, let's examine the added impact if immigration continues beyond 2000. If immigration remains at current levels, the nation's population would approach 394 million by 2050 – that's close to 75 million more than if immigration came to a halt around the turn of the century. Thus, of the total growth between 2000 and 2050, 62.5% would be accounted for by post-2000 net immigration of 820,000 annually. By 2050, over one in five inhabitants of the United States would be post-2000 immigrants or their descendants.

The conclusion is obvious: immigration is far and away the chief contributor to population growth in the United States.

If we look at the higher series from the Census Bureau, the numbers become even more startling. Should immigration rise to 1.37 million per year (a possible scenario), the nation would grow by more than 175 million between 2000 and 2050. By the end of that period, our population would reach 438 million and still be growing rapidly. Post-2000 immigration would account for 71 percent of this enormous growth. In actuality, the immigration total (direct and indirect) would be somewhat higher since a certain number are included in 2000 that would still be alive in 2050.

The Census Bureau also prepared a low-immigration series assuming net immigration of 300 thousand per year (with the same levels of fertility and mortality as in the other models). Even under such a low assumption about future net immigration, the population would soar from 274 million in 2000 to 326 million in 2025 and 368 million in 2050. When we stop and consider the difference between 315 million (without immigration) in 2050 and either 394 million or 438 million (with different levels of immigration), it becomes clear that it is time to put severe limits on immigration, if not declare a moratorium.

Conclusion

To summarize briefly, during the 50 years between 1950 and 2000, over one-third of our population growth will come from net immigration; between 2000 and 2050, we anticipate, very conservatively, that close to two-thirds of our population growth will be attributable to immigration (direct and indirect) even if levels are limited to 800,000 per year (below current levels). The conclusion is obvious: immigration is far and away the chief contributor to population growth in the United States.

Notes

1. Gibson Campbell. 1992. "The Contribution of Immigration to the Growth and Ethnic Diversity of the American Population," (Revised version of a paper presented at the Autumn General Meeting of the American Philosophical Society, Philadelphia, Pennsylvania, Nov. 7-8,1991), *Proceedings of the American Philosophical Society*, Vol. 136, No. 2, pp.157-175.

2. Gibson, Campbell. 1975. "The Contribution of Immigration to United States Population Growth: 1790-1970," *International Migration Review*, Vol. 9, No. 2 (Summer), pp. 157-177.

3. Federation for American Immigration Reform. 1998. "Census Bureau Spotlights Explosive Growth of Immigrant Population," *Immigration Report*, Vol. 18, No. 4, May 1998.

4. Day, Jennifer Cheeseman. 1996. "Population Projections of the United States by Age, Sex, Race, and Hispanic Origin: 1995 to 2050," U.S. Bureau of the Census, *Current Population Reports*, P25-1130, U.S. Government Printing Office, Washington, DC.

5. Day.

6. Improvements in life expectancy can also seriously affect future population size. For example, demographers Samuel Preston and Kevin White recently calculated what the population of the United States would have been in 1995 if the mortality rates at the turn of the twentieth century had not changed. They concluded that there would be about half as many Americans as in today's population, 139 million instead of 276 million. Half of the missing people would not have been born because their parents would not have survived to reproductive age. And the other half would have been born but would have died young. Kevin M. White and Samuel H. Preston, "How many Americans are alive because of twentieth-century improvements in mortality?," *Population and Development Review*, Vol. 22, No. 3, September 1996.

7. For a detailed explanation of this concept, see L. Bouvier, "Shifting Shares and Increasing Fertility," *Population and Environment*, Summer 1991.

8. For a detailed discussion, see Lindsey Grant, *Juggernaut*, Seven Locks Press, 1998.

NPG Forums are long articles and essays featuring the most prominent writers in the field.

We also publish:
NPG Footnotes, short topical articles about population, immigration and the environment;
NPG Booknotes, reviews of books we believe deserve our members' attention; and
NPG Position Papers.

The views expressed by the author do not necessarily reflect those of NPG.

NPG is a national membership organization founded in 1972. Annual dues are $30 and are tax-deductible to the extent the law allows. Please write or call for a list of available publications.

About the author Dr. Leon Bouvier is an adjunct professor of demography at Tulane University. Currently an NPG senior advisor, Dr. Bouvier has been published widely. His books include *Peaceful Invasions* and the 1994 Sierra Club book, *How Many Americans*, which he co-authored with Lindsey Grant.

Negative Population Growth, Inc.
1608 20th Street, NW
Suite 200
Washington, DC 20009
voice: 202-667-8950
fax: 202-667-8953
internet: www.npg.org
e-mail: npg@npg.org

NPG