

The Challenge of Accurately Estimating the Population of Illegal Immigrants

By NANCY BOLTON

Estimates of the size of the illegal alien population currently living in the U.S. range from about 12 million to over 20 million. The lower number is based on Census Bureau estimates of the foreign-born population in various Census Bureau surveys. The larger number is based on methodology that is not reliant on a respondent's candor. While the Census Bureau makes a Herculean effort to get a complete count, it is virtually impossible to get an accurate count of populations who are resistant to being identified. Given the problem of porous borders and incentives to avoid detection, the higher estimate is not unreasonable. The most definitive conclusion is that determining the size of the population residing illegally in the U.S. is subject to very large inaccuracies.

In the debate about illegal immigration in the U.S., the Census figures are the most widely quoted and assumed to be the most complete and accurate accounting available of both the total population and the social and economic characteristics of the population of the United States. A recent analysis by the PEW Hispanic Center uses the March 2005 Current Population Survey from the Census Bureau and estimates the unauthorized population at 11.1 million in March 2005 and 11.5–12 million as of March 2006.

Two researchers at Bear Stearns Asset Management have estimated that the number of

illegal immigrants in 2005 could be as high as 20 million. Their figures are based on an analysis of the large discrepancy between official census estimates and growth in indicators such as remittances to the countries of origin, school enrollment and building permits. The question is how accurate are the estimates from any of these sources and consequently

how well do we actually know the size of the illegal immigrant population in the U.S.? A review of the strengths and weaknesses of Census Bureau data will help us understand the strengths and weaknesses of the information they provide.

The Census Methods

The decennial Census is primarily a mail-out/mail-back survey and depends almost entirely on self reporting. The Census Bureau starts with address information from the prior Census, and updates the file with information from the U.S. Postal Service, local governments, and canvassing by field personnel. The Census Bureau is both methodical

and thorough in trying to make sure that every housing unit in the nation receives a Census form and is represented on a completed form. Even with all the effort, however, there is always some uncertainty about whether the Census count is complete. Even more uncertain is the tally of "hard to count" segments of the population such as illegal immigrants.

The Census form asks information about each person and each housing unit. Some questions are asked of every person—such as age, sex, race, and ethnicity, such as Hispanic/Not Hispanic. More



Census Bureau workers using IBM Type 1 keypunch machines in 1940.

detailed socioeconomic information is asked of the 16 percent of the households that receive the long form. The long form asks questions of the foreign born population about year of entry into the U.S. and citizenship status. The question that is not asked is whether an immigrant is in the U.S. legally. The Census Bureau estimates this statistic by what is called the “residual method,” as follows.

From the sample of the population that answers the long form, an estimate is made of the total foreign-born population. The Office of Immigration Statistics (OIS) has documentation on the number of legal residents admitted each year. The number of legal migrants reported by OIS is adjusted for mortality and emigration to the Census year. To estimate the number of illegal immigrants, the Bureau can then subtract the number of survived legal immigrants from the total foreign born as estimated by the Census. The accuracy of the estimate of illegal immigrants (the residual) is dependent on how well the total foreign-born population is counted in the census and how many of the legal foreign born are still living in the U.S.

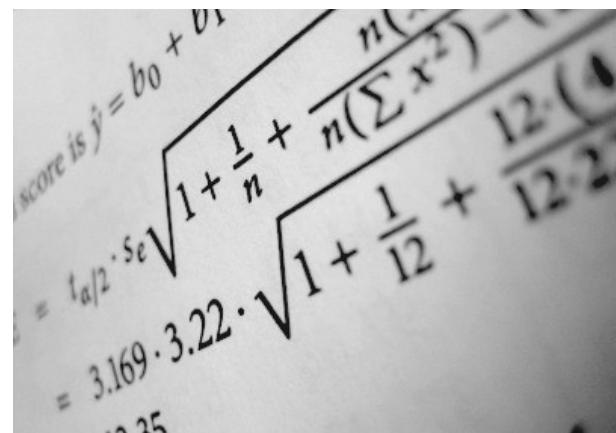
The Census Bureau has developed a vast store of expertise in conducting population counts and calculating who is missed, but a complete count remains an elusive target. The mail-back response rate to the Census has declined over the past 30 years, requiring ever-increasing efforts to enumerate the population. In the 2000 census the mail response rate (the percent of mailed census forms that were returned) was 67.4 percent. For addresses where forms were undelivered and returned to the Census Bureau, field personnel were sent to deliver the



forms. During that process addresses are either validated as an occupied unit or eliminated as a valid address. After eliminating addresses that would not be expected to return a form, e.g., vacant units, non-existent addresses, non-residential addresses, etc., the final mail return rate as of December 31, 2000, was 78.4 percent. (By contrast the mail return rate was 87 percent in 1970.) Response rates were different, however, for the long and short forms. The final mail return rate for the short form was 80.1 percent, while the rate for the long form was 70.5 percent.

For units to which the census form was delivered but was not returned, field personnel attempt to contact the household either on the phone or in person. Of the 106 million occupied housing units, only about 1.5 million, 1.39 percent, never yielded a contact. For those housing units with no household data available, the Bureau has a substitution procedure that assigns those households the characteristics of nearby households. After the Census is complete, the Bureau then conducts studies to try to determine the completeness and accuracy of the data collected.

Despite this enormous effort to make the Census both complete and accurate there is always an undercount. The Bureau estimates the undercount



with two methods. One method, called demographic analysis, uses administrative records such as birth, death, and immigration records to estimate the undercount. The second method is through post-census surveys.

In 1970 the demographic analysis estimates

of the undercount rates anticipated that 2.7 percent of the population was missed in the Census. In 1980 the rate dropped to 1.2 percent, and in 1990 the estimate was 1.8 percent. In the 2000 census the demographic analysis indicated that only 0.12 percent of the population was uncounted in the census. (To achieve this, the inflation-adjusted cost per residential unit for the Census rose from \$13 in 1970 to \$56 in 2000).

Demographic analysis, however, has some rather large unverifiable assumptions attached to the estimates. While birth and death records are well maintained in the U.S., international migration records both into and out of the country are less well known. The Office of Immigration Statistics can tell the Bureau how many legal immigrants were admitted, but the Bureau must make an estimate of how many illegal immigrants arrived during the decade. This puts a considerable degree of uncertainty in demographic estimates.

The other method used to check the completeness of the Census is a post-enumeration survey. In this analysis the Census Bureau picks a sample of units to be re-surveyed. The new survey data are then matched to the Census records. The methods of the post-enumeration surveys have varied over the years, making a comparison difficult, but in the 2000 Census, the Accuracy and Coverage Evaluation (ACE) survey indicated a small (0.49 percent) "over-count" by the Census. The "over-count" was concentrated in older, home-owning, Non-Hispanic White households and was attributed to duplication of Census records. The ACE showed that Non-Hispanic Black renters and Hispanic renters were still undercounted by the Census, but at lower rates than in previous censuses. For Non-

Hispanic Blacks the total undercount was estimated at 1.8 percent and for renters at 3.1 percent. For Hispanics the total undercount was estimated at 0.7 percent and for Hispanic renters at 2.4 percent.

Even if the Bureau has completely identified every residential address, there is no way to force a household to return the Census form. And even when information is obtained the Bureau is dependent on the household responder to completely identify

the members of the household.

Larger percentages of households in recent Censuses had to be enumerated through interviews by Census Bureau personnel, and research has shown that information obtained by interviewers tends to be more inconsistent than

information voluntarily supplied by the household (mail-back responses).

Households containing immigrants who are not legal residents have an incentive not to identify those members. The 16 percent sample of households that received the long form (which is the source of information on the foreign born) had an even lower mail-back response rate than other households, thus increasing the possible error rate in the estimation of the foreign-born population. While the demographic analysis and post-enumeration surveys both indicate that the coverage in 2000 was more complete than in 1990, it is those issues that cause the uncertainty in the Census counts of the illegal alien population.

The foreign-born population is composed of those individuals who are legal permanent residents, temporary migrants (such as students), migrants who are in the process of obtaining legal status (refugees for example), and unauthorized aliens. In the 2000 Census the Bureau estimated the foreign-born population at 31,098,945. After adjusting for



the undercount of foreign migrants the foreign-born population was estimated at 33,901,988. After subtracting legal migrants, temporary migrants, and migrants applying for legal status, the “residual” number of presumably illegal aliens was estimated at 8.5 million. The Census undercount rate for illegal aliens was estimated at 12.5 percent. Using varying assumptions about the undercount rate the estimates ranged from 7.7 million to 8.8 million.

The Current Population Survey (CPS), which was the basis of the estimate of 11.1 million undocumented migrants reported in March of 2005, is in turn tied to the Census. The CPS is a stratified random sample whose primary purpose is to measure monthly unemployment in the U.S. The March sample is expanded in both sample size and survey length to obtain socio-economic data for the entire civilian non-institutional population. The March survey has a sample size of about 99,000 households in the nation. While the CPS is a well-constructed survey instrument for measuring employment/unemployment, the survey design is tied to Census data and the CPS also relies on the candor of respondents.

The Alternative Estimates

So where does this leave us as to size of the illegal population? The Bear Stearns report correctly points to a recent upsurge in illegal immigrants, one that also shows up in the Current Population Survey and the American Community Survey. Using those data sources, the Pew Hispanic Research Center released a report in September 2005 that estimated that since 1999 the annual number of illegal

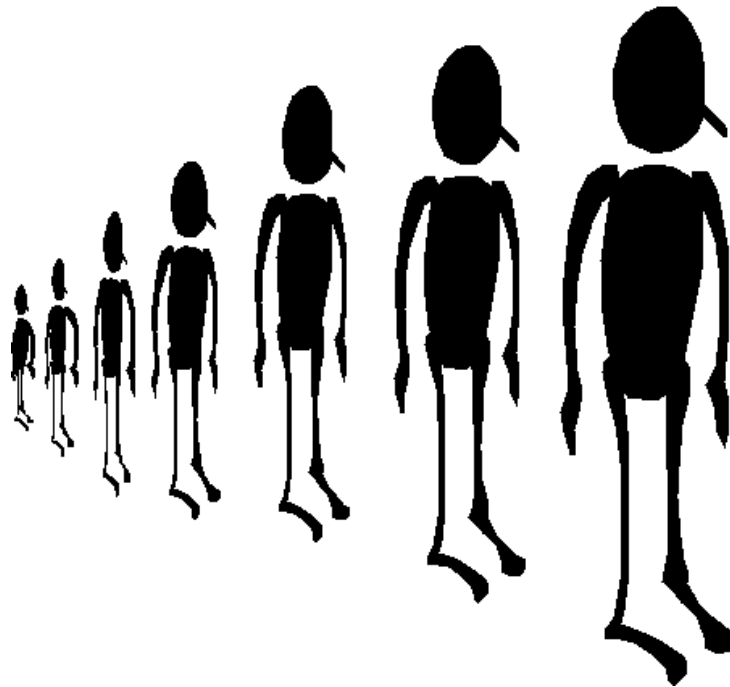
immigrants coming to the U.S. has been higher than the number of legal permanent immigrants admitted. The authors estimated that in 1999–2000 the flow of illegal immigrants was 662,000 annually; but that

in 2002–2004 the flow declined to an average of 488,000 annually, (but was still higher than the authorized flow). In 2004 it appeared to again be increasing. Adding these flows to the Census 2000 estimate of unauthorized immigrants gives a number consistent with the 11.5–12 million illegal immigrants estimated by the Pew Center in March 2006.

Could the number of unauthorized immigrants be as high as the Bear Stearns estimate of 20 million? The Bear Stearns report cites statistics that indicate a much faster rate of growth than the Census Bureau counts in either the 2000 census or the annual Current Population Survey. The authors indicate that:

- From 1995 to 2003, the official tally of Mexicans in the U.S. climbed by 56 percent and the median wage increased by 10 percent, but total remittances increased by 199 percent.
- New housing permits and school enrollment growth in immigrant gateway communities are growing faster than official population counts would dictate.
- An investigative report by *Time* magazine in 2004 concluded “the number of illegal immigrants flooding into the United States in 2004 would total 3 million.”

The last observation is the most straightforward to translate to a count of people that bolsters the



Bear Stearns estimate. The *Time* conclusion is based in part on the fact that in both 2004 and 2005 the U.S. Border Patrol reported more than 1.1 million apprehensions of illegal immigrants attempting to cross the southern border into the U.S. The *Time* reporters estimated that for every apprehension, three illegal immigrants make it into the country. By contrast, the Census based estimates of flows would indicate that less than one-third of all attempts are successful. That is a huge discrepancy.



One explanation could be that many of these unauthorized foreigners go back and forth across the border each year. If that is the case, it implies that coming and going across the border is relatively easy and bolsters the argument that many more people successfully make it across the border than are apprehended.

If even one person is successful for every apprehension, it implies over 1 million foreigners per year illegally cross our southern border. In addition, there are roughly 30 million foreign nationals admitted to the U.S. each year on temporary visas. There are no data on the percentage of these visitors who overstay their visas, but data from the Australian Department of Immigration and Multicultural Affairs indicate about 8 percent of those admitted to that country on temporary visas overstay their visa and about 86 percent of those overstay by a year or more. If just 1 percent of the

30 million admitted on temporary visas to the U.S. do not leave as they are required to, that adds another 300,000 foreigners illegally in the U.S. each year.

If it is assumed that the undercount of illegal immigrants was 25 percent in the 2000 Census (the Census Bureau has used estimates as high as 30 percent in the past) and that the number of unauthorized immigrants has been increasing by 1.3 million a year since 2000 (about double the estimates from the CPS data, but not an unreasonably

high number considering the above data), then the number of illegal immigrants in the U.S. in 2005 would be about 18 million. That is closer to the Bear Stearns estimate of 20 million than the CPS based estimate of 11 million.

Given the nature of the problem—counting a population composed of individuals that have considerable incentive to be invisible to government authorities—it is probably impossible to know with a high level of precision the size of that population. Although the Census Bureau puts enormous effort into making a complete count, they can only be successful if there is a high level of co-operation from the population being counted. One thing that all sources agree on is that the size of the illegal immigrant population has grown rapidly since the early 1990s. There are indications that the official sources could be underestimating the size of this rapidly growing population. ■

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