

United Nations Expert Group Meeting on
Measuring international migration: Concepts and methods
4–7 December 2006
United Nations, New York

Estimation of emigration from the United States using
international data sources *

Prepared by

Jason P. Schachter
International Labour Office

* This document is being reproduced without formal editing.

Estimation of emigration from the United States using international data sources ¹

I. INTRODUCTION

The U.S. Census Bureau does not collect data on the number of people, either citizens or non-citizens, who emigrate from the United States, thus has no reliable source for these numbers. This causes a problem when attempting to estimate net international migration. The collection of emigration data for the United States would be problematic and expensive, thus this task uses pre-existing international migration data sources to try to fill-in currently missing data. Specifically, this task investigates the feasibility of using international data sources to estimate the number of U.S. born and/or U.S. citizens moving abroad. Using “stock” data from two recent Censuses in a small number of test countries, this deliverable uses a residual methodology to estimate net migration between the United States and these other countries. The countries chosen for this exercise have relatively large numbers of U.S. citizens/born and include Canada, France, Italy, Poland, and the United Kingdom. This analysis only looks at net migration of U.S. citizens and/or U.S. born, and does not consider the emigration of the foreign born from the United States.

This paper also looks at a number of issues involved with measuring the number of U.S. persons living outside the United States, as well as the availability and validity of these statistics as collected from the U.S. State Department and U.S. military. Next, this paper looks at the “stock” of U.S. born/citizens from existing international data sources. Finally, we use these international data sources to estimate annual net immigration of U.S. born/citizens between the U.S. and a select number of countries.

II. MEASUREMENT ISSUES

There are a number of issues to be addressed before beginning this type of research, including discussions on the way universes are defined, data comparability problems (within and between countries), and the methodology used to estimate net international migration.

U.S. Citizens vs. U.S. Born

Previous research on emigration from the United States has made little distinction between U.S. citizens and U.S. born. From a United States perspective, all people born in the United States are U.S. citizens by birth, thus the concept is often treated synonymously. While true from a legal standpoint, given that Census data is self-reported, people born in the U.S. often do not report having U.S. citizenship in international data sources. For example, in the 2001 Spanish Census, of 21,000 people born in the United States, 9,000 were Spanish citizens, while 12,000 were counted as foreigners. That those who hold both U.S. and Spanish citizenship are only counted as Spanish further complicates the matter. In addition, the use of U.S. born as your defining universe potentially misses a number of U.S. citizens who were born outside the United States, either to American parent(s), or those who have since become naturalized U.S. citizens.

Dual Citizens

¹ Paper submitted by Jason P. Schachter, a senior statistician in ILO’s Bureau of Statistics. It is an abridged version of a paper written for the U.S. Census Bureau while under contract with Sabre Systems Inc, while working as an external consultant for ILO. The full version of the paper is available at www.sabresystems.com/whitepapers/IDSEM_6-4.pdf

As shown above, further complicating the concept of “citizenship” is the possibility of dual citizenship, and the different ways this is measured and legally recognized by countries. Dual citizenship is when you are recognized as a citizen by more than one country and is a relatively recent concept. Dual citizenship was only legally recognized, for example, in Canada starting in 1977 and in Switzerland in 1992 (both countries collect dual citizenship data on their Census forms). Every country has its own rules regarding dual citizenship. In the Swiss case, while 1992 Swiss law permits foreigners to acquire Swiss citizenship and simultaneously retain their original citizenship, the same is not always granted in reverse and depends on prevailing law in the country of origin.

While the U.S. does not formally recognize dual citizenship, it does not take a stand against it. In the United States, for example, a child born in a foreign country to U.S. citizen parent(s) may be both a U.S. citizen and a citizen of the country of birth. Also, a U.S. citizen may acquire foreign citizenship by marriage, or a naturalized U.S. citizen may not lose the citizenship of their country of birth. U.S. law does not mention dual nationality or require a person to choose one citizenship over another.

International data sources do not normally count dual citizens as foreigners. This leads to the potential under representation of people the U.S. considers to be citizens in these data sources. However, in a few countries dual citizens can be identified. Countries which collect dual citizenship on their Censuses include: Austria, Canada, Greece, Ireland, Japan, Malta, Portugal, Switzerland, and most of Eastern Europe. However, dual citizens are not included in other migration data sources for these countries, such as registers of the foreign population or residence permit and/or visa data.

Though the emigration of U.S. citizens is of prime interest to the U.S. Census Bureau, there are inherent problems using this universe with international data sources. Thus, I recommend the use of U.S. born data, given that it is not dependent on how countries define citizenship. Though it misses naturalized citizens and those born abroad of American parents, it is a consistent measure, comparable across countries. Unfortunately, many countries do not collect or report country of birth data, meaning only citizenship data is available. As discussed later, caution must be used when comparing country of birth, citizenship, and/or dual citizenship data.

Use of International Data Sources

In addition to citizenship laws, there are a number of issues to keep in mind when thinking about the comparability of international migration statistics, both within and between countries. This section only briefly discusses some of these issues.

Countries collect migration data from a number of different sources, including national population Censuses, other household surveys, population or foreigner registers, and numerous administrative data sources (such as border crossing data, entrance visas, or residence and work permits). Within countries, when comparisons of migration data from different sources are made, the results often differ. These sorts of discrepancies are particularly salient with migration “flow” data, which is normally only provided by country of citizenship. As such, this research limits itself to one consistent data source (Census data) and only uses “stock” data about U.S. persons.

Data quality can be affected by a number of factors, including both sampling and measurement error. In the case of decennial Censuses and household surveys there is often undercoverage of immigrant populations. Every country will differ in the amount of error present in their survey, as well as how well they compensate for this error. This research makes the potentially dangerous assumption international Census data are of high quality, and does not try to evaluate the validity or reliability of these international data sources.

Definitions of usual residence can differ between countries, and caution must be taken to avoid comparing different populations between two Census dates and between different countries. For example, the 1991 United Kingdom Census counted a *de facto* (actually present) population, while the 2001 Census counted a *de jure* (usual resident) population. Most European *de jure* Censuses consider “usual residents” to be those who have lived in the country for at least one year and also include household members who might be temporarily absent. Other data sources, like population registers, often use a six month threshold. Population covered by data sources can differ, and caution must be taken when making international comparisons.

Because of difficulties outlined above, this research only utilizes stock data (for U.S. born and U.S. citizens) from population Censuses. Care was taken to compare similar populations between Census years. More detail on this topic is discussed later in the paper.

The Estimation Procedure

While the estimation procedure is discussed in much greater detail later in the text, it should be noted that the methodology used in this paper is rather simplistic and makes a number of assumptions that could be problematic. A time one (T1) population of either U.S. born or U.S. citizens is survived to a future time (T2) for which we have a comparable observed population total (e.g. from a Census). The difference between the survived and observed population is used to measure net migration. This residual method relies on the assumption that the T1 universe and the observed T2 universe are exactly the same, thus care must be taken to make sure they are as comparable as possible. This method also makes assumptions about the age distribution of the U.S. population living abroad and that they had death and birth rates similar to the U.S. population living in the United States.

A potential danger with this method is that something as simple as improved coverage from one Census to the next could be the actual reason for a measured net migration gain of U.S. persons. Though our test countries have rather sophisticated Census programs and we expect this problem to be minimized, this issue must still be kept in mind. Another potential source of “false migration” could be measurement error around the actual figures themselves, especially for Census numbers based on sample data. This analysis treats Census counts as “true” figures, not taking into account possible variation or confidence intervals surrounding the numbers, which could be particularly high for a small population like U.S. persons. However, if confidence intervals around observed figures are similar at both T1 and T2, then the difference between the two figures should still be a fair representation of net international migration.

III. HOW MANY U.S. CITIZENS CURRENTLY LIVE ABROAD?

U.S. State Department Data

There is currently no reliable estimate of the number of U.S. citizens living abroad. The U.S. State Department occasionally publishes data about U.S. nationals living abroad based on registrations at embassies and missions, but there are major questions concerning its validity.

According to U.S. State Department data there were 4.1 million U.S. citizens living abroad in 1999 (see Table 1). Nearly one-quarter (1 million) of these people lived in Mexico, while 687,000 were in Canada. Other countries with large numbers of Americans included the United Kingdom (224,000), Germany (211,000), Israel (184,000), Italy (169,000), Philippines (105,000), Australia (103,000), France (102,000), and Spain (95,000). In fact, according to these State Department data, these ten countries contain about 70% of all U.S. citizens living abroad.

However, when State Department figures are compared to international Census data huge discrepancies are found. State Department estimates of U.S. citizens seem to be on average about two to three times larger than the enumerated population. For example, from the 2000 round of Censuses or population registers, among countries with the largest number of U.S. citizens from State Department data, all had far fewer U.S. born or U.S. citizens. Mexico only counted 344,000 U.S. born residents, Canada 238,000 U.S. born permanent resident (and 208,000 U.S. citizens, 68,000 of whom were dual US-Canadians citizens), the United Kingdom 158,000 U.S. born (and 109,000 U.S. citizens estimated from their Labor Force Survey), Germany 112,000 U.S. citizens, Israel up to 124,000 citizens from the “Americas,” Italy 33,000 U.S. citizens, Australia 54,000 U.S. born, France 39,000 U.S. born, and Spain 21,000 U.S. born (15,000 U.S. citizens).

Why do these numbers differ so greatly? As discussed previously, U.S. born is not synonymous with U.S. citizen, and dual citizens are not normally included in these Census figures, but even this does not sufficiently explain the large discrepancies. Several suggestions have been offered by people who have worked with these data, including a Census working paper² and an OECD paper³ on the topic.

According to notes provided by an author of the Census paper, he posits discrepancies exist because State Department figures are simply “best guess estimates.” State Department figures come from two sources, the number of Americans who voluntarily register with Consulates and Embassies, plus an estimated number of non-registered U.S. citizens. The purpose of these estimates is for the evacuation of U.S. citizens in case of emergency and they are not meant to be completely accurate. State Department figures include dual national citizens, and the estimation of non-registered citizens is not done by demographically trained personnel or is its accuracy of high priority to the State Department. The OECD paper suggests discrepancies are not only due to the voluntary nature of the registration system, but overestimation can also be a problem because people do not necessarily deregister and some people may register even for short stays abroad (especially in countries where there is some risk), while Census and population register data is often based on usual residents.

U.S. Military Abroad

The inclusion or exclusion of U.S. military personnel to or from international data sources adds to the difficulties of measuring the number of U.S. citizens abroad. The military, and its support staff, make up a large percentage of U.S. citizens living outside the United States. Estimates are often sketchy, but before the military presence in Iraq and Afghanistan, there were reportedly 253,000 U.S. military personnel abroad, plus an equal number of dependents and Department of Defense civilian personnel.

It is not always clear whether U.S. military personnel living on bases abroad are included in Censuses or population registers, due to usual residency rules, but they are probably often not. However, off-base military personnel would likely be included in these counts. Figures reported by the U.S. military show over 200,000 military personnel abroad, the majority stationed in Germany, Japan, and South Korea. This military base structure report does not include military personnel known to be stationed in Kosovo, Afghanistan, Iraq, Israel, Kuwait, Kyrgyzstan, Qatar, and Uzbekistan, thus underreports the total number abroad. The distribution of U.S. military forces abroad can change rapidly, as former cold-war interests adapt to focus on combating global “terrorism”

² Evaluating Components of International Migration: Native-Born Emigrants, by Jim C. Gibbs, Gregory S. Harper, Marc J. Rubin, and Hyon B. Shin. 2003. <http://www.census.gov/population/www/documentation/twps0063.pdf>

³ Counting Immigrants and Expatriates in OECD Countries: a New Perspective, by Jean-Christophe Dumont and Georges Lemaître. 2004. <http://www.oecd.org/dataoecd/27/5/33868740.pdf>

While it is not known to what extent U.S. military personnel are included in the population register data of Germany, Japan, and S. Korea, given the high number of U.S. citizens in those countries, it seems many U.S. military-related personnel are counted by these sources. This highlights the importance of the U.S. military when counting U.S. citizens living abroad, particularly when using international data sources.

IV. USING INTERNATIONAL DATA SOURCES TO MEASURE THE STOCK OF AMERICANS LIVING ABROAD

What is found when international data sources are used to measure the stock of U.S. born or U.S. citizens living abroad? Keeping in mind measurement and data comparability issues discussed previously, it seems international data sources put the number of Americans living abroad at closer to 2 million, rather than the 4 million State Department estimate. Searching international publications and Internet sites of national statistical agencies, data on the stock of the U.S. population were found by country of birth for 44 countries and country of citizenship for 33 countries (see Table 1, again).

Data were available for most countries believed to have significant numbers of Americans, with the exceptions of China, Saudi Arabia, the Dominican Republic, the United Arab Emirates, and India. Countries with available U.S. stock data contain 90% of the total number of U.S. citizens living abroad according to State Department data. Taking the greater of U.S. born or U.S. citizens when both figures were available for a country, the total number of Americans seems to be about 1.5 million worldwide according to these international sources. If U.S. military and dependents are not included in these Census figures, another half million would be added to the total, giving 2 million, which is still about half the State Department estimate.

Even though the actual numbers of U.S. born and U.S. citizens were far lower than State Department figures on U.S. citizens, rankings between international data and State Department data were similar. From international sources, the top ten countries with the largest number of U.S. born were Mexico, Canada, United Kingdom, Israel (though this includes all of North America), Australia, France, Greece, Switzerland, Ireland, and Spain. For countries which provided U.S. citizenship data (which tended to be lower than U.S. born figures), not including dual citizens, the top ten countries were again similar to State Department rankings, that is Canada, Israel (all of North America), Germany, the United Kingdom, Japan, Italy, Hong Kong, South Korea, Philippines, and Greece. If dual citizens are included then Ireland and Poland would also be on the list.

While these findings question the validity of the actual numbers produced by the U.S. State Department, they also suggest the relative rankings of State Department data match those of international data sources. The next section of this paper uses international Census stock data, from two points in time for a limited number of countries, to attempt to estimate net international migration between the U.S. and these countries.

V. ESTIMATION OF NET INTERNATIONAL MIGRATION

Background

The next phase of this project was to acquire detailed data from a limited number of countries with relatively high numbers of U.S. citizens and see if the estimation of net international migration between these countries and the United States was possible. With input from the U.S. Census Bureau's Immigration Statistics Staff, the countries chosen for this exercise were Canada, France, Italy, Poland,

and the United Kingdom. At a joint ECE/Eurostat seminar on migration statistics held in March of 2005, there was a proposal to create a group of countries to exchange migration data. One of these groups consisted of the United States, Canada, Poland, and the United Kingdom, and it was expected this would facilitate the acquisition of data for this project.

To ameliorate data comparability issues, it was decided all data would come from a single source if possible, namely population and housing Censuses. Further, we would use stock data of U.S. born and/or U.S. citizens from two points in time and use a residual method to estimate net international migration. All five countries conducted Censuses circa 1990 and 2000, though Canada also had one in 1996.

During the 2000 round of Censuses, all five countries collected country of birth and/or country of citizenship information. Canada, France, and Italy asked both “country of citizenship” and “country of birth” on their two most recent Censuses, though only Canada collected information on dual citizens. The United Kingdom only asked country of birth (no country of citizenship) on its 1991 and 2001 Censuses, while Poland only collected country of birth and country of citizenship (including dual citizenship) on its 2002 Census. Poland’s 1988 Census asked none of these questions. Data requests were sent to each of the five countries to obtain detailed age and sex information for U.S. born and/or U.S. citizens (and dual citizens if possible) from their two most recent Censuses, though detailed age-sex data was only critical for the earlier Census in our estimation procedure.

As mentioned above, Poland did not collect country of birth or citizenship data on its 1988 Census. I explored two alternative sources, the Polish Labor Force survey and Polish foreigner registration system (PESEL). Foreigners have only been included in the Polish Labor Force Survey since 2004, when questions on country of birth and citizenship were introduced, and the Polish government has yet to assess the quality of this data. As for the PESEL, the Polish government has doubts regarding its quality, as the number of U.S. citizens according to the register is lower than the number obtained from Census, most likely due to all people not filing in the “citizenship” field on the registration form. Nonetheless, Poland remains an interesting case due to the large number of dual U.S.-Polish citizens in its population. Canada was not able to provide data on dual U.S.-Canadian citizens due to confidentiality restrictions.

Descriptive Data from International Censuses

Canada

Data were obtained from the 1991, 1996, and 2001 Canadian Censuses. Detailed U.S. born data by age and sex were provided from the 1991 and 2001 Censuses, while detailed age and sex for U.S. citizens were provided from 1996 and 2001. Data on dual U.S.-Canadian citizenship were available, but deemed confidential and not able to be released.

Tabulations from the 2001 Canadian Census (see Table 3) found 278,600 U.S. born residents in the Canadian population, including permanent and non-permanent residents. More than half (148,000) of the U.S. born were Canadian citizens, of which most were naturalized Canadian citizens (the rest being born in the U.S. as Canadian nationals). There were 208,000 U.S. citizens living in Canada in 2001, of which 165,000 were born in the United States.

The age and sex distribution of U.S. born and U.S. citizens living in Canada were essentially the same. The majority of Americans living in Canada were female (56% of U.S. born and 57% of U.S. citizens), and evenly distributed across the naturalized and non-Canadian population. The bulk of the American population in Canada is a bit older than the total U.S. population, particularly in the 35 to 54 year age range (37% of all U.S. born in Canada vs. 33% of the total U.S. population). Females were especially predominant among those over 25 years of age.

France

While not as much data was received as requested from the French government, they did provide detailed age and sex data for those born in the United States from the 1990 French Census. French Census tabulations of foreign-born do not normally include those “born abroad, born French,” but these figures were included for both the 1990 and 1999 Censuses (see Table 4). As well as French by birth, totals for those born in the U.S. and French by naturalization, and those born in the U.S. and not French were also provided. Though France does ask country of nationality on its Census, no citizenship data were provided. However, “born in the U.S., not French” is a close approximation to this category, though it misses dual nationals and U.S. citizens who were not born in the United States.

From the 1999 Census, there were 39,500 U.S. born living in France; 22,700 of these U.S. born were foreigners, 10,200 were French at birth (likely having a French father or mother), and 6,600 French by naturalization. Age and sex details were only provided for those “born in the U.S., French at birth,” and they tended to be younger, with over 40% under the age of 20.

Greater age and sex detail was provided from the 1990 Census, with the majority (56%) of U.S. born being female. This was especially evident among 20 to 24 year olds, of which there were twice as many U.S. born women than men. These sex ratios were even more pronounced among U.S. born foreigners and naturalized French citizens.

Italy

Italy provided data on the age and sex distribution of resident U.S. born and U.S. citizens from the 1991 and 2001 Italian Censuses (see Table 5). According to most recent Census figures there were 51,000 U.S. born residents of Italy in 2001. The number of U.S. citizens was much lower at 17,000. While Italy does not forbid a person from holding dual citizenship, the Italian Census does not collect this information, thus those with both U.S. and Italian citizenship would only be considered Italian citizens with Census data.

More women than men living in Italy were born in the United States (almost 60% were female) in both 1991 and 2001. Further, almost one-fifth of U.S. born living in Italy were at least 75 years of age, particularly among women (in 2001, 23% of all U.S. born females were 75 years or older). Otherwise, U.S. born living in Italy tended to be between the ages of 25 and 39 (33% of all U.S. born in 2001) for both men and women. U.S. citizens were also more likely to be female (57% in 2001), but less likely than U.S. born to be 75 years or older. In 2001, the highest age concentration of U.S. citizens, both male and female, was for those between the ages of 30 and 44. As with the U.S. born population, the 2001 U.S. citizen population was somewhat older than the 1991 U.S. citizen population.

Poland

Though no data on U.S. born or U.S. citizens were available from the 1988 Polish Census, these questions were asked on 2002 Census. Poland provided detailed age, sex, marital status, and education data for U.S. citizens in Poland, those born in the U.S., and dual U.S.-Polish citizens. According to the 2002 Polish Census (see Table 6) there were 9,600 people registered for permanent residence in Poland who were born in the United States, while there were only 1,300 U.S. citizens. Of interest, were the large number of dual U.S.-Polish citizens, of which there were 30,100 (almost 25 times as many as U.S. citizens).

The vast majority (80%) of U.S. born living in Poland was under the age of 14 or over the age of 65, while over half (about 60%) of the U.S. born in Poland were women (though this sex difference was all concentrated in the over 65 age category). U.S. citizens in Poland tended to be equally distributed across sex and age groups, as did dual citizens, though there were a higher percentage of dual national women in the 25 to 34 and 65 and over age categories.

Also of note is the extremely high number of dual U.S.-Polish citizens. Some of this might be due to inconsistent Census residency rules, in that persons usually resident in the United States were also included on the 2002 Polish Census. In this case, any analysis of U.S. citizens alone would miss a large part of the expatriate population, though differences in universe coverage must be taken into account. More familiarization with Polish citizenship law and Census coverage would be helpful in this regard.

United Kingdom

Separate Censuses are conducted by each country that makes up the United Kingdom, including England, Scotland, Wales, and Northern Ireland. Great Britain only consists of England, Scotland, and Wales. Data were provided for people born in the United States from the 1991 Great Britain and 2001 United Kingdom Censuses, though three adjustments were made. First, since the 1991 Censuses were *de facto* (actual population) and the 2001 Censuses were *de jure* (usual residents), non-usual residents (persons not in communal establishments or in households) were excluded from both tabulations. Second, since the provided 1991 Census data did not include Northern Ireland, residents of Northern Ireland were tabulated separately from the 2001 data. Finally, in 2001 the United States country of birth code included U.S. island territories like the U.S. Virgin Islands, Guam, and Palau. Since these island territories were not included in the 1991 Censuses U.S. country of birth code, they were not included as born in U.S. for the 2001 tabulations.

As seen in Table 7, the United Kingdom supplied age and sex data of usual resident U.S. born from the 1991 Censuses of England, Wales, and Scotland, as well as the total usual resident U.S. born population from the 2001 Censuses for those same countries, plus Northern Ireland. From the 2001 Censuses of the United Kingdom, there were 158,434 people born in the United States, with 2,055 living in Northern Ireland.

Age and sex detail were provided from the 1991 and 2001 Censuses. From the 1991 Census of Great Britain, the distribution of males and females was about equal, though females were a bit more likely to be over the age of 65 (7% of all U.S. born females, vs. 5% of all U.S. born males). In general, the age distribution of U.S. born living in Great Britain (circa 1991) was similar to the total U.S. population in 1990, though they were more likely to be between the ages of 20 and 39 (46% of all U.S. born in Great Britain, compared with 33% of the total U.S. population).

The results from the 2001 Censuses of the United Kingdom were slightly different from 1991, as U.S. born residents were more likely to be female (53%) than male. Excluding Northern Ireland U.S. born residents from the 2001 data did little to reduce this difference. Excluding Northern Ireland, the age distribution from 2001 also differed from 1991, with only 38% of the 2001 U.S. born population being between the ages of 20 and 39, compared with 46% in 1991. The 2001 U.S. born population was somewhat older than the 1991 U.S. born population, with 26% of the 2001 U.S. born Great Britain population being 45 years or older, compared with 20% of the 1991 U.S. born Great Britain population.

Methodology to Estimate Net International Migration

A rather simple method was used to estimate net migration between the United States and the four test countries. A Year 1 (T1) population (Census 1990) of people born in the United States or U.S. citizens,

with age and sex distribution, was established. A Year 2 (T2) observed population (Census 2000) of the same universe was established as well. For U.S. born, the T1 population was survived (using age and sex specific death rates) a number of years equal to the difference between T1 and T2, to come to a survived T1 population at the time of T2. For each year, an equal proportion of people from each age cohort were moved into the next age cohort (to capture the effect of an aging population). It was assumed people were equally distributed among each age cohort to begin with. The total survived population from T1 was then compared to the T2 total. The difference between the survived T1 population and the observed T2 population was then used to measure “net international migration” over the given period of time. This figure was then divided by the difference in years between T1 and T2 to yield an average annual net migration figure.

In the case of Canada and Italy, the only countries who provided U.S. citizenship data at two points in time, an additional estimate was made for U.S. citizens. For U.S. citizens the same methodology was applied, but there were two additional components: birth of children to U.S. female citizens (who by law, in Canada, have the right to become U.S. citizens) and the naturalization of U.S. citizens to another country of citizenship (of which Canada has a relatively high number compared to other countries). U.S. citizens who were born abroad to American parent(s) after T1 will be counted as U.S. citizens at T2 (if they are not dual citizens), thus they should be added to the survived population when calculating net migration. Conversely, those U.S. citizens who naturalized to another country between T1 and T2 are counted as U.S. citizens at T1 but not at T2, so they should be subtracted from the survived population when calculating net migration.

These two components proved to be difficult to incorporate. Since children born abroad to U.S. female citizens can also often be considered citizens of the country they were born in, depending on the laws of each country (e.g. Canada), and since citizenship data is self-reported, the number of births to U.S. females does not necessarily equate to an equivalent increase in U.S. citizens. This means children born abroad to an American parent might not be included in the observed Year 2 U.S. citizen population. Further, statistics on the number of U.S. citizens who became naturalized Canadians over a given period of time are not publicly available. Given Canada only requires three years of permanent residence before being eligible for Canadian citizenship, even over a five year period, the survived U.S. citizen population will tend to overestimate the actual U.S. citizen population. Given these two problems, the estimates for U.S. citizens in Canada are only shown for methodological purposes, and are not a true measure of net migration of U.S. citizens between the U.S. and Canada.⁴

Death and birth rates for the U.S. population were obtained for 1990, 1991, and 1996 from the National Center of Health Statistics, and were applied based on the year of the T1 population. When age categories provided by countries did not match age specific death and birth rates from NCHS two methods were used to correct this. For death rates, age specific death rates were combined (averaged using the 1990 age and sex distribution of the U.S. population) to match the age categories provided by countries, and for birth rates age categories were disaggregated to match the age-specific birth rates provided by NCHS (using the 1990 age distribution of the female population of the United States).

Estimation of Migration Flows between the United States and Other Countries

Using data from Table 2, Place of Residence 5 years ago Outside the United States, it is possible to use these in-migration flows in conjunction with our annual net migration estimate to estimate annual out-migration flows. To arrive at an annual in-migration flow, we divide the 5 year migration figure by five. The size of the annual outflow is simply the difference between the annual inflow to the United States from a particular country and the annual net migration between the US and that particular country.

⁴ The same applies for the case of Italy

These estimates of annual gross migration are relatively crude, for it is possible that the U.S. Census and international censuses are measuring different universes (e.g. international censuses might not treat students and military as usual residents). In addition, simply dividing the number of people who lived abroad 5 years previously by five is not equivalent to an actual one-year figure, since a person could have returned to the United States at any time during the five year period. Further, a person could have moved to and returned from a country after 1995 (thus would not be counted as either an out- or in-migrant), or moved to several countries during the five-year period, which would underestimate to true size of the country-specific migration flows. However, in lieu of other data, this is our best guess of the size of migration flows to and from the United States of U.S. born persons living abroad.

Results of Net International Migration between the U.S. and Four Countries

Canada

Table 8 details the results of the procedure to estimate net emigration from the United States. For Canada, the difference between the 1991 survived U.S. born population and the 2001 enumerated U.S. born population was 28,985 over the ten year period. This gives an average annual net migration of 2,899 more U.S. born people who moved from the United States to Canada, than who moved from Canada to the United States; in other words, a net outmigration of 2,899 people per year from the United States to Canada.

Table 2 shows that according to Census 2000 96,540 U.S. born previously lived in Canada in 1995. This is equivalent to an average annual inflow of 19,300 people. This means there was an annual outmigration (emigration) of 22,200 U.S. born from the United States to Canada. Again, it is important to remember that these figures likely underestimate the actual size of migration flows between the U.S. and Canada.

Using the same method for U.S. citizens in Canada, the net difference between the 1996 survived U.S. citizen population and the 2001 enumerated U.S. citizen population was 1,144, which results in an average annual net outmigration of only 229 people from the U.S. to Canada. However, this figure must be adjusted by births to U.S. citizen mothers and naturalization of U.S. citizens to Canada, who no longer consider themselves U.S. citizens. Applying birth rates to U.S. citizen women aged 10 to 49 there were 18,600 births to U.S. citizen females. Adding these births to the survived population would create total net outmigration of U.S. citizens from Canada, rather than to Canada, of about 4,000 per year. No data were found to measure the number of naturalizations of U.S. citizens to Canadian citizenship.

As mentioned earlier, the problem of directly applying these figures to the estimate is that children born to U.S. citizen mothers in Canada, though they have the legal right for American citizenship, also have the legal right for Canadian citizenship. Since the Census is self-reporting, some of these children would be reported as U.S. citizens, some as Canadian citizens, and even more as dual U.S.-Canadian citizens. Add to this the lack of data on the number of U.S. citizens who become naturalized Canadian citizens (and who unless they revoked their U.S. citizenship, remain U.S. citizens in the eyes of the United States) and things get more complicated. As such, these net migration estimates should not be considered representative of net international migration between the U.S. and Canada.

France

The calculation for France is simpler than Canada, since they did not provide U.S. citizenship data. For France, the difference between the 1990 survived U.S. born population and the 1999 enumerated U.S. born population was 8,062 over the nine year period. This translates into an average annual net outmigration of 896 people from the United States to France.

Table 2 shows that according to Census 2000 23,936 U.S. born previously lived in France in 1995. This is roughly equivalent to an average annual inflow of 4,800 people. This means there was an annual outmigration (emigration) of 5,700 U.S. born from the United States to France. Again, these figures probably under represent the true size of the migration flows between the United States and France.

Italy

For Italy, the difference between the 1991 survived U.S. born population and the 2001 enumerated U.S. born population was 4,193 over the ten year period. This translates into an average annual net outmigration of 419 people from the United States to Italy.

Table 2 shows that according to Census 2000 45,347 U.S. born previously lived in Italy in 1995. This is roughly equivalent to an average annual inflow of 9,100 people. This means there was an annual outmigration (emigration) of 9,500 U.S. born from the United States to Italy. Again, these figures likely underestimate the true size of gross migration between the United States and Italy.

As in the case of Canada, it is difficult to estimate net migration for U.S. citizens. Using the same method used for U.S. born, the net difference between the 1991 survived U.S. citizen population and the 2001 enumerated U.S. citizen population was 3,720, which results in an average annual net outmigration of 372 people from the U.S. to Italy, which is quite close to results for the U.S. born. This suggests that using U.S. citizenship data for some countries might yield similar results to place of birth data.

However, this figure must still be adjusted by naturalization of U.S. citizens to Italy (presumably a small number) and births to U.S. citizen parents (mothers). While children born to U.S. citizen parents born in Italy are not normally considered Italian citizens, if one parent is Italian or of Italian descent, then they could be. Applying birth rates to U.S. citizen women aged 10 to 49 there were 3,100 births to U.S. citizen females, many of whom would not be considered Italian citizens. Adding these births to the survived population would greatly reduce net immigration of U.S. citizens from the United States to Italy, though it is impossible to know exactly how many born to U.S. citizen females in Italy were solely U.S. citizens. No data were found to measure the number of naturalizations of U.S. citizens residing in Italy to Italian citizenship.

United Kingdom

The United Kingdom does not collect citizenship data on its Censuses. Limited to Great Britain (England, Scotland, and Wales), the difference between the 1991 survived U.S. born population and the 2001 enumerated U.S. born population was 21,982 over the ten year period. This translates into an average annual net outmigration of 2,198 people from the United States to Great Britain.

Table 2 shows that according to Census 2000, 95,877 U.S. born previously lived in Great Britain in 1995.⁵ This is roughly equivalent to an average annual inflow of 19,200 people. This means there was an annual outmigration (emigration) of 21,400 U.S. born from the United States to Great Britain, though the actual size of these in- and out-flows was likely higher.

VI. CONCLUSIONS

Using a small number of test countries, at face validity, this methodology seems to yield reasonable results when looking at emigration of U.S. born from the United States, though it becomes far more complicated when looking at the emigration of U.S. citizens, who are truly our population of interest. While it has been shown “born in the United States” does not necessarily equate to “U.S. citizen,” U.S. citizenship data has potential problems when counting dual nationals, as well as when “surviving” this population. Using U.S. born data not only helps catch some of these “dual citizens,” but it could also serve as the population of interest to the U.S. Census Bureau, if they are mainly concerned with measuring people born the United States who have left at some point in their life. While more countries are beginning to collect country of birth data on their Census forms (and population registers), most other sources for international migration data only collect country of citizenship information.

⁵ This number was derived by adding the total number of U.S. born who had previously lived in England, Scotland, and Wales in 1995, as well as an equivalent proportion of those who lived in the United Kingdom (excluding the proportion living in Northern Ireland, relative to Great Britain).

The evaluation of international Census data was beyond the scope of this project, but data quality issues must be kept in mind. If sources other than decennial censuses are used (like population registers, other household surveys, and administrative record data) then there will be even greater data comparability issues. I do not think this methodology to estimate emigration would work using different “types” of migration data sources, except for the case of population registers (for which it might in fact work better).

Data on U.S. citizens living abroad collected by the U.S. State Department seem to overestimate the American presence abroad. However, these data do seem useful for identifying the distribution of U.S. citizens living abroad, if not their actual numbers. The U.S. Census can also be used to identify the distribution of Americans living abroad by looking at return migration data of those who lived abroad 5 years previously. However, this utility might diminish with the change to the American Community Survey and a one-year migration interval. Characteristics of return migrants from Census 2000 give some insight into the characteristics of those living abroad, but it is possible return migrants differ from the total “stock” of Americans abroad. The Census can also be used to identify countries with a large U.S. military presence, as data provided by the Department of Defense tends to be vague on these matters. How international data sources deal with the presence of U.S. military is another area which needs to be examined.

Future work could expand this methodology to cover other countries with a high concentration of Americans living there, as long as they identify U.S. born and/or U.S. citizens from two recent Censuses or similar sources. Since most countries do not publish detailed age and sex characteristics of U.S. persons, special tabulations will most likely be needed from the countries themselves. Some countries have public use micro data, but for a small population like U.S. persons, special tabulations of full Census data sets might be necessary. As experience shows, this will be easier to obtain from some countries than others.

Issues of caution are whether two Censuses at two different dates are comparable, that is whether they cover the same universes. Improved coverage from one Census to the next might explain all “emigration” from the United States, though it is assumed U.S. citizens are not a “hard to find” population. When using citizenship data, knowledge of dual-citizenship and naturalization laws is a plus, though very few countries collect information on dual citizens on their Census. This, combined with difficulties in “surviving” a citizenship population, recommends the use of U.S. born data if possible. The estimation procedure is somewhat crude, and results in net migration over a long period of time. Simply dividing by the number of years to get an average number for net migration can mask fluctuations which occur over time due to international events, which brings into question the reliability of the method. As such, despite the numerous issues involved, it does provide a potential means for the U.S. Census Bureau to use international data sources to estimate the net emigration of its native population outside the United States.

Country	U.S. State Department Data		Number of US born and/or US citizens from 2000 Census or equivalent (or most recent year for which data found)			
	US Citizens living in country	% of all US citizens living abroad	US born	US citizens	Source	Notes
Total	4,163,810	100.0%				
Mexico	1,036,300	24.9%	343,597		2000 Census	
Canada	687,700	16.5%	237,920	208,350 (plus 68,200 dual)	2001 Census	164,885 US citizens born in US (35,690 of dual citizens born in US)
United Kingdom (England/Wales/Scotland/N Ireland)	224,000	5.4%	158,434	109,000	2001 Census	2,055 US born in N Ireland
Germany	210,880	5.1%		112,939	1999 pop register	
Israel	184,195	4.4%	74,400	124,500	2003 pop register	Total for N America (citizens include Jews born in N America, and Israel born Jews)
Italy	168,967	4.1%		33,000	2001 Census	
Philippines	105,000	2.5%		19,529	1990 Census	
Australia	102,800	2.5%	53,694		2001 Census	
France	101,750	2.4%	39,464		1999 Census	
Spain	94,513	2.3%	21,320	15,283	2001 Census	
Dominican Republic	82,000	2.0%				
Greece	72,500	1.7%	23,091	18,100	2001 Census	
Japan	70,350	1.7%		42,802 (38,804)	1999 alien register (2001 Census)	
China	65,157	1.6%				
Ireland	46,984	1.1%	21,541	11,384 (plus 12,387 dual)	2001 Census	
Brazil	40,640	1.0%	11,363		1991 Census	
Poland	39,300	0.9%	9,010	1,294 (plus 30,087 dual)	2001 Census	
Taiwan	38,000	0.9%		4,398	2000 foreigner registration	All of N America
Saudi Arabia	35,989	0.9%				
Belgium	35,328	0.8%	13,925	11,852	2001 GSS/1999 pop register	
Colombia	30,680	0.7%	13,878		1993 Census	
Republic of Korea (South)	30,000	0.7%		25,827	1999 pop register	
Argentina	27,600	0.7%	9,757		1991 Census	
Venezuela	25,000	0.6%	10,716		1990 Census	
Netherlands	23,707	0.6%	16,077	14,074	1999 pop register	
Costa Rica	19,800	0.5%	5,369		1984 Census	
Panama	19,700	0.5%	3,241		1990 Census	
Thailand	18,100	0.4%		2,679	2000 Census	All of N America
Sweden	18,000	0.4%	14,413	9,972	2000 pop register	
United Arab Emirates	16,500	0.4%				
India	15,369	0.4%				
Yemen	15,300	0.4%				
Hungary	15,000	0.4%	2,294		2000 foreigner registration	
Norway	15,000	0.4%	14,956	8,325	1999 pop register	
Singapore	15,000	0.4%	3,777		2000 Census	US and Canada combined
New Zealand	14,540	0.3%	13,344		2001 Census	
Peru	14,143	0.3%	5,595		1993 Census	
Austria	14,000	0.3%	7,371	6,108	2001 Microcensus	
Ecuador	13,824	0.3%	8,021		1990 Census	
Romania	13,152	0.3%	1,463		2002 Census	