

Measuring Migration Across U.S. Borders: A comparison and evaluation of migration data and data sources in Canada and the United States.

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Introduction

Immigration is of increasing importance in many countries and therefore there is a growing interest in the measurement of the levels and characteristics of immigration flows between countries. In addition to focusing on the total immigration and emigration flows for a country, in some cases there is particular interest in migration flows within a region, for example as a result of a regional trade area. An example of this is North America where there is particular interest in migration flows between Canada, the United States and Mexico.

In response to this interest the national statistical agencies of the three countries agreed to the formation of a North American Migration Working Group (NAMWG) with the objective of documenting existing sources of migration data and working towards the development of harmonized data on migration flows between the three countries.

This paper is concerned with one of the projects of NAMWG related to the measurement of migration flows between Canada and the United States. Although administrative data provides one source of data on such flows there are a number of issues with using such data for demographic purposes. These data are collected in administering immigration program and therefore the concepts and definitions used reflect the legislative and regulatory framework for immigration.

Administrative records generally provide good data on “permanent” migration, however, there is an issue about the timing of migration since administrative data generally record the data of a person receiving official immigration status rather than the date of arrival in the country. A second and more serious limitation of administrative data is the ability to accurately reflect “temporary” migration. Here problems are often related to the fact that administrative data reflect document transactions (e.g. visa approval). Since an individual may have several transactions in a year and/or may require a periodic renewal of a visa to remain in the country, it is generally very difficult to interpret administrative data on temporary migration flows. In Canada, Citizenship and Immigration Canada (CIC) has developed data that are “person-based” and provide useful information on both the stock and flow of temporary migrants. In the United States, the Office of Immigration Statistics (OIS) (part of the U.S. Department of Homeland Security) has been working with their Canadian counterparts in CIC to develop a person-based system (to replace the current transaction-based system). Finally, although limited in demographic, social, or economic detail about foreign populations, administrative data can be useful as benchmarks for total counts of foreign populations estimated from censuses and surveys.

An alternative to the use of administrative data is census or survey data. This approach is the focus of the current paper.

Canada

The Census of Population, conducted every 5 years in Canada, is a major source of data on immigration, providing detailed information on the demographic, social and economic characteristics of both the foreign-born and Canadian-born populations. Census data are available at lower levels of geography, which allows for research on the settlement patterns and mobility of immigrants and minority groups. Information from the immigration questions is often used in combination with other census data to review immigrant and employment policies and programs, as well as to plan education, health and other services for immigrants and ethnic groups. Furthermore, the census provides a rich time series of data on immigrants, permitting researchers to track socio-economic well-being for cohorts of arrivals over time.

In the Canadian census, data on international migration can be obtained from two sources (1) questions on immigration to Canada and (2) questions on place of residence one year and five years ago.

Immigration Questions

In Canada, census information on immigrants represents a long historical series. A question on place of birth has been asked since the 1871 Census, while questions on citizenship and year of immigration have been asked since the 1901 Census. The 2001 Census included each of the immigration core questions (place of birth, citizenship, landed immigrant status and year of landing), as well as a question on birthplace of parents, last asked in the 1971 Census.

In addition to collecting data on permanent residents of Canada, in 1991 the Census began to count so called “non-permanent” residents that include persons in Canada on temporary visas (e.g. students, workers, refugee claimants).

It is important to note that the Census immigration data provides stock data on the number of immigrants at the time of the Census. When classified by year of landing one gets some idea of the immigration flows although these are really “net” flows after accounting for the effects of subsequent emigration and mortality. A second issue with the census data is that in the Canadian Census the immigration question collects information on “year of landing” (i.e. the year permanent residency was granted) instead of a question on “year of arrival in Canada”. In recent years, nearly 20% of landed immigrants resided in Canada as non-permanent residents for several years before obtaining their permanent residence status. For landed immigrants from the United States the percentage is much higher at about 60%. The integration of these persons begins at the time of arrival in Canada, not at the time they receive their landed immigrant status. A “year of arrival” question, therefore, is argued to better capture their integration process than does the current question on the year they obtained landed immigrant status. Another limitation of the census is that it does not identify immigrants by category of admission (e.g. refugees,

family, economic), an important factor in understanding the socio-economic situation of immigrants.

Table 1 shows data from the 2001 Census on the number of landed immigrants born in the United States by year of landing. Also shown are the corresponding flow data on landed immigrants from Citizenship and Immigration Canada and the difference between these and Census data. Note that the Census data are stock data as of Census day, May 14, 2001 (data for 2001 are not included since the Census data are for only part of the year). In view of mortality and subsequent emigration, the Census stock data are expected to be lower than the CIC flow data. Note that for the late 1990s the Census counts are actually higher than the corresponding CIC counts. A possible explanation for this is the Census included as permanent immigrants a number of persons who were in Canada as temporary migrants. For earlier years one sees the more expected pattern of lower census counts. Note that the Census data are likely also affected by some degree of misreporting of year of landing, particularly for persons previously in Canada as temporary migrants.

As indicated earlier the Canadian census also counts non-permanent residents in Canada at the time of the Census. In the 2001 census there were 20,500 non-permanent residents born in the United States.

Mobility Data

In addition to the immigration questions, the census also provides information on migration to Canada derived from mobility questions about place of residence one year and five years ago. Here, discussion is restricted to the question on place of residence one year ago.

Table 2 shows the data from the 1991, 1996 and 2001 censuses for migration (country of residence one year ago) from the United States by country of birth. Note that these data are also estimates of emigration from the United States to Canada.

In the 2001 Census there were 41,580 persons who resided in the United States one year earlier, that is in May 2000. Of these 10,630 were born in the United States, 18,835 were born in Canada and 12,115 were born elsewhere. The data for those born in Canada reflect return migration, although there may also be some return migration in other categories as well, particularly for those born outside of Canada and the United States. In contrast to the data on immigration, these mobility data include both permanent and temporary migration. Note the substantial volume of non-United States born migrants that come to Canada via the United States. Some of these may be return migration while others are new immigrants to Canada entering via the United States.

In comparison to the nearly 42,000 persons who came to Canada from the United States in 2000-01, data for the earlier 1996 and 1991 Censuses show total migration of about 30,000 from the United States in the year before the Census, i.e. 1995-96 and 1990-91 respectively. Note that the migration levels were higher in 2000-01 regardless of place of birth.

As indicated above, data derived from the mobility question reflect the impact of both temporary and permanent migration. However by using the information on immigration status one can estimate the migration flows for each of permanent migrants (landed immigrants), temporary migrants and returning Canadians. These data are shown in Table 3.

The data show that there were 13,495 immigrants to Canada from the United States during the year preceding the census, i.e. 2000-01. Note that the majority of these immigrants were born outside the United States. On the other hand the majority of non-permanent residents arriving during this period were born in the United States, although nearly 2300 were born outside the United States.

Discussion

The preceding section has described the various sources of data on immigration to Canada. The analysis shows how census data on both immigration and mobility can be used to measure migration flows from the United States to Canada. A real strength of this approach is that there is a wealth of census data available on the characteristics of the migrants.

Although the preceding section outlined two different approaches to measuring immigration flows, the use of the mobility data provides a much more complete picture of migration. However, the limitation of using census data is that, for Canada, data are only available every five years. In the case of the United States the new American Community Survey can provide similar data on an annual basis.

When combined with the census population characteristics, data on mobility provide an in-depth picture of migration from the United States to Canada. In addition such data are potentially useful in producing population estimates. The detailed indicators of type of migration (permanent, temporary, return) allow for a more complete accounting of migration flows. Such data are of potential value to both origin and destination countries: as immigration to the source country and emigration from the country of origin. Although a major limitation is that the data are only available every five years, it may be possible to use indicators of migration from administrative records together with the data for census years to model migration flows on an annual basis.

United States

Information about the foreign born¹ in the United States is available from a variety of sources including: decennial censuses, current surveys, and demographic estimates based on administrative sources.

¹ The Census Bureau defines the foreign-born population as anyone who is not U.S. citizens at birth. In contrast to the foreign born, the native population, as defined by the Census Bureau, refers to anyone who

In the United States, federal statistics on international migration are produced primarily by the U.S. Census Bureau and the Office of Immigration Statistics (in the U.S. Department of Homeland Security).

The Census Bureau collects stock data on the foreign born currently residing in the United States through its decennial censuses and numerous surveys. The OIS collects flow data on immigrants and temporary migrants (both new arrivals and people adjusting their migrant status from within the U.S.) through several administrative recording systems.

U.S. Decennial Census of Population and Housing

The U.S. resident population has been enumerated through a census since 1790 with decennial census enumeration in the years ending zero of each decade (e.g., 2010). The 1850 decennial census was the first census in which data were collected on the nativity (place of birth) of the population.²

The decennial census is the most comprehensive data source in the United States on the foreign population in terms of their characteristics (demographic, social, economic, geographic, and housing information) at all levels of geography—nation, state, and local levels. Although likely to change with the full implementation of the American Community Survey in 2005, to date, the decennial census provides the sole means by which to study small groups of the foreign population at the national and detailed subnational levels (i.e., state, county, and subcounty). (The ACS will be covered in greater detail later in this section.)

Data on place of birth, U.S. citizenship, residence five years ago, language, race/ethnicity/ancestry are collected for the entire U.S. resident population.³ Additionally, year of entry into the United States is collected for anyone who was born outside the United States (whether or not they were “foreign born” by the Census Bureau definition; see footnote #1 for an explanation).

While questions on place of birth, U.S. citizenship, and year of U.S. entry have been asked in the decennial census since the 19th Century, ancestry was only introduced in the 1980 Census replacing the question on parental nativity.

For Census 2000, to assist individuals who were more proficient in languages other than English, language guides were provided in 49 other languages. The Census 2000

as either born in the United States or a U.S. Island Area, such as Puerto Rico, or who was born abroad of a U.S. citizen parent.

² For more information on the history of the U.S. census, see Bohme, 1989 and Gauthier, 2002. For more information on historical census statistics of the foreign-born population of the United States, see Gibson & Lennon, 1999.

³ These items are sample items. In other words, these questions are asked of approximately one-sixth of the U.S. resident population, on the census "long form." (See U.S. Census Bureau, 1998 for additional information.)

questionnaires themselves were translated into five languages (Spanish, Chinese, Vietnamese, Korean, and Tagalog).

American Community Survey (ACS)

Starting in 2005, the Census Bureau collects data from the American Community Survey (ACS) in every county of the United States and in Puerto Rico. The survey now covers 250,000 households per month equaling an annual sample of three million, eventually including populations in group quarters.⁴

The ACS is intended to replace the census long form, providing timely demographic, housing, social, and economic data every year for all states, as well as for all cities, counties, metropolitan areas, and population groups of 65,000 people or more. Multi-year averages will be produced for geographic areas or population groups of fewer than 65,000.

The annual release of data, available at detailed sub-national levels of geography, provides a wealth of information never before available in an ongoing and timely manner from either decennial censuses or smaller sample surveys.

Comparing the ACS with the Decennial Census

Although several important differences between the decennial census and the ACS exist, for our purposes here, mentioning those directly impacting estimates of the foreign population, and international migration in general, seem most appropriate.

Although currently undergoing review and testing of revised and new questions for the ACS (implementation in 2008), the place of birth, U.S. citizenship, and year of U.S. entry items on the ACS questionnaire do not differ from the decennial census questions on these subjects. However, instead of asking for residence five years prior to Census Day (April 1) in the decennial census, the ACS asks for residence one year prior to the enumeration date, which varies depending upon when the respondent is interviewed for the survey. This has important implications for the development of estimates of international migration and in the comparability of those estimates between survey and census-based methods.

Another notable difference between the ACS and the decennial census involves the definition of residence. The ACS concept of residence (“current residence”) differs from the decennial census concept of “usual residence” (place where a person lives and sleeps most of the time or the place they consider their usual residence). “Current residence” requires that a person only have one residence at any point in time; however, their residence does not have to be in the same place throughout the year for the ACS. A two-

⁴ The U.S. Census Bureau classifies all people not living in households as living in group quarters. *Institutional* group quarters are formally authorized, supervised care or custody (e.g., nursing homes); *noninstitutional* group quarters are other forms of group quarter living arrangements (e.g., college dormitories).

month same residence rule was established for the ACS. Given the seasonal movement of some migrant groups, such conceptual differences as “current” or “usual” residence may affect whether or not a person is counted in a particular location at a particular time.

The ACS paper version of the questionnaire is currently available in English and, recently, Spanish; Computer Assisted Telephone Interviews (CATI) and Computer Assisted Personal Interviews (CAPI) are conducted both in English and Spanish, where needed.

Developing Estimates of International Migration

For many years, the U.S. Census Bureau relied on administrative records from the former Immigration and Naturalization Service (INS) in its annual estimation of international migration. The concern for comparability when using administrative (flow) data to measure a stock population and a well-documented issue of administrative backlogs in the current system coupled with the newly available and nationally-representative sample from the ACS, lead the Census Bureau to investigate the utility of ACS data for improving the estimates of international migration, and year-to-year change in the foreign population, in particular.

The Census Bureau has begun to assess the use of the ACS in its annual production of population estimates, the component on international migration in particular.

Three measures of year-to-year change in the foreign population can be obtained from the ACS:

- 1.) Change in the total foreign population from one survey year to the next;
- 2.) The reported year of U.S. entry one year prior to the current survey year; and
- 3.) The number of people who reported residing abroad one year prior to the current survey year.

Currently, the Immigration Statistics Staff of the Census Bureau is evaluating these various survey-based estimation methods with the hope of incorporating its recommendations in the next year’s national estimates program. It should be mentioned here that, later this decade, such estimates are expected to be developed and produced by migrant status at the national and state levels.

Closing Statements

This paper reinforces the importance of working collaboratively and sharing information across borders. Stated differently, to better understand and estimate migration across international borders we need to make use of multiple data sources across international borders.

A simple advance in this area has been in the ongoing technical exchanges between Statistics Canada and the U.S. Census Bureau. Both agencies have provided one another

with comparable aggregated data on migration between the two countries including estimates of temporary movements as well as “profiles” which contain extensive demographic, social, economic, and housing information of each countries’ populations residing across the border. Similar profiles were created in collaboration with the Instituto Nacional de Estadística, Geografía e Informática (INEGI) of Mexico.

A relevant and timely inquiry on the implications of using a single data source to measure migration in the North American region has been made by Rebeca Wong (2005). By comparing estimates of the Mexican population in censuses and surveys in Mexico and in the United States, she provides an important contribution to our understanding (and to our estimates) of migration between the United States and Mexico.

**Table 1 : United States Born Landed Immigrants in Canada
by Year of Landing, 2001 Census**

Year	Census Count (1)	Immigrants Landed ¹ (2)	Difference (2)-(1)
2000	6,445	5,147	-1,298
1999	5,140	4,913	-227
1998	4,010	4,171	161
1997	5,890	4,403	-1,487
1996	4,970	5,059	89
1995	4,340	4,330	-10
1994	4,115	5,155	1,040
1993	4,465	6,478	2,013
1992	4,340	5,978	1,638
1991	4,430	5,321	891
1990	4,350	5,134	784

¹ Citizenship and Immigration Canada

**Table 2 : Population in Canada Who Lived in the United States
1 year earlier by Place of Birth**

Census Year	Place of Birth		
	United States	Canada	Other
2001	10,630	18,835	12,115
1996	8,150	14,520	8,000
1991	8,860	12,000	8,210

Table 3 : Population in Canada Who Lived in the United States One Year Earlier by Place of Birth and Immigration status

Place of Birth	Census Year		
	2001	1996	1991
Immigrants			
United States	3,805	3,260	3,675
Other	9,690	6,050	5,670
Total	13,495	9,310	9,345
Non-Permanent Residents			
United States	6,115	4,300	4,425
Other	2,290	1,880	2,470
Total	8,405	6,180	6,905
Canadian by birth			
	19,680	15,180	12,820
Total	41,580	30,670	29,070

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