

**The Costs of Conducting a National Census: Rationale for Re-Designing Current Census
Methodology in Canada and the United States**

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Abstract

In countries around the world, debates focus on the need for accurate census data, the associated costs, response rates, confidentiality and legislated changes to censuses. With the incorporation of technological advancements, one would expect population figures to be calculated with more ease and with fewer associated costs. To examine the monetary costs of the contemporary census, we offer a case study of Canada and the United States in which costs per housing unit, and costs per person are derived and analyzed over time. Up to now, the expected cost reductions associated with technological incorporation and enumerator elimination are not yet evident. With the legal obligations of governments to conduct a census, it is recommended that the "Census-Enhanced Master Address File" (CEMAF) methodology be considered as a way to generate re-designed census counts. The proposed methodology is technically, administratively, and politically feasible and most importantly, it addresses concerns regarding census cost issues.

Key Words: Census; Census methodology; Housing units; Census-Enhanced Master Address File

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1. Introduction

A discussion about the census is timely. The United States recently conducted its 2010 census and Canada enumerated its population in 2011. In Canada, census participation is mandatory. The public is made aware that if the census form is not completed, then jail time could result. However, it has been noted that “no person has ever been sentenced to jail for failing to complete the (Canadian) census. In the majority of cases referred to the Public Prosecution Service of Canada, the individual completed a census questionnaire” (Canada.com Blogs 2010). Thus, penalties imposed for not completing a Canadian census have been fines. Similarly, in the United States, the law requires that people fill out their U.S. census forms and a \$100 penalty for not answering the census and up to \$500 for giving false information is stipulated (United States Code 2010). As in other countries, not completing a census has legal ramifications in both Canada and the United States.

With Canada’s most recent census conducted in May 2011 (Statistics Canada 2010a), the data are still being collected (as this paper is revised). The 2011 Canadian census is unique because elected politicians of the Canadian government, in June 2010, made a surprising move by eliminating the mandatory long questionnaire for the 2011 Canadian census. Historically, and up until the 2006 census, questionnaires included both long- and short-forms in Canada. In regards to the methodology, Statistics Canada (2009) reported that in the 2006 Canadian census (the last census to contain both long- and short-forms),

“Most households (80%) received the short census questionnaire, which contained eight questions on basic topics such as relationship to Person 1, age, sex, marital status, and mother tongue. One in five households (20%)

received the long questionnaire, which contained the eight questions from the short form plus 53 additional questions on topics such as education, ethnicity, mobility, income and employment.”

The decision to eliminate the Canadian long-form census was based on the fact that “it was intrusive and the threat of jail was overly coercive” (Ditchburn 2010). With the recent governmental decision; however, petitions were organized to overturn the decision. “Keep the Canadian Census Long Form,” was an online petition that collected over 17,900 signatures (Levitsky 2010). The petition statement, written by Marianne Levitsky (2010) stated:

“We call on the Canadian government to reverse its decision to eliminate the mandatory long form Canada census questionnaire. The information collected through this form is critical to understanding the character and diversity of Canada. The long form questionnaire is an essential tool to enable business and social planning, research, and development of programs for the well-being of Canadians.”

The census is the one method of collecting data on every member of a population and the “census feud” (Chase 2010; Galloway 2010; Taber 2010; Snipp and Lott 2009; Fienberg 1989) has more than just a few Canadians taking sides in this debate. Indeed, socioeconomic and demographic data are essential to empirical social science studies (O’Sullivan 2004) and collecting socio-economic information in a census can result in a marginal cost increase with additional questions being asked. Nevertheless, current census methodologies have resulted in shorter mandatory census forms. In Canada, the 2011 mandatory census questions include: basic demographic characteristics such as age, sex, marital and common-law status, household

relationships and mother tongue (and) there is also a question asking for the consent of Canadians to release their personal census information to the National Archives after 92 years (Statistics Canada 2011).

The voluntary 2011 National Household Survey (NHS), which was formerly the Canadian long-form census, includes questions that focus on: demography, activity limitations, citizenship and immigration, language/language of work, ethnic origin/population group, Aboriginal group/Registered or Treaty Indian status/member of a First Nation/Indian band, religion, mobility, place of birth of parents, education, labour market activities, place of work, work activity, child care and support payments, income, housing, and a 92 year consent question (Statistics Canada 2011). It is important to note that the NHS is a voluntary survey and approximately 4.5 million households are asked to respond (Statistics Canada 2011).

The United States transitioned “the decennial long form to the American Community Survey (ACS), leaving the entire decennial survey with only 10 short-form questions designed for easier response” (U.S. Department of Commerce 2011, p. 1). Implementing the ACS to collect annual data was “viewed by many as the single most important change in the way detailed decennial census information is collected since 1940, when the Census Bureau introduced statistical sampling as a way to collect ‘long-form’ data from a sample of households” (U.S. Census Bureau 2009, p. iii). As the ACS collects demographic, social, economic, and housing data every year, the reliance on (long-form) decennial census data has been eliminated in the United States.

With both Canada and the United States using shorter mandatory census forms, many questions come to mind. Here are a few examples: What is the need for census data relative to

the costs of conducting a census? What is the need for census data relative to privacy? How can confidentiality be maintained? What about declining response rates? Although there are many heated census related issues, this paper focuses on the monetary expense associated with conducting a census in Canada and the United States and related census methodologies. To address the cost issues of the census, this paper looks at past and current enumeration, and the decreased reliance on the enumerator. In order to assess current expenses associated with the census, the associated costs are analyzed for Canada and the United States in their respective last four official censuses. The effects of the Internet methodology used in conducting a census are considered and how the digital divide will affect future censuses is also addressed. Finally, limitations of the data used in the paper are noted.

2. Background: Enumeration from the First Censuses to Now

Although Canada's first census took place in New France in 1666 (with only 3,215 inhabitants officially counted), the first national census of Canada was conducted some two hundred and five years later, in 1871 (Statistics Canada 2006a) totaling 3,689,000 respondents (Statistics Canada 2010b). The reported year of Canada's first census has been noted to vary in publications, according to enactments and appropriation of land (Kalbach and McVey 1971). The first census of the United States was conducted in 1790 and totaled 3,231,533 individuals, excluding counts related to slaves (Bureau of the Census 1916). The traditional means of conducting a census was a complex and massive undertaking (United Nations 2006). Historical accounts of census enumerators, including the famous Dr. William Mayo (who was named deputy by the sheriff in the Minnesota hinterland to take census counts) (Clapesattle 1941), noted that the accuracy of the census lists were troubling. The days, weeks, and even month's

enumerators faced when dealing with challenging geographical terrain and conditions were often described as being difficult. Over the years, the census has been conducted with the same constitutional mandate; times have changed, and census coverage is still of great concern (Martin and Dillman 2008).

During the twentieth century, it is estimated that over 190 countries in the world conducted a population census and the majority used a traditional approach for enumeration (United Nations 2006). Since countries do not conduct a census every year, most governments use estimates. Recent population numbers approximate that there are 34,108,752 Canadians (Statistics Canada 2006b) and 310,472,998 Americans (U.S. Census Bureau 2010) residing as current residents in 2010. These population estimates are deemed to be accurate, timely population figures in their own right, which take into account net census undercoverage. Yet, it is an obligation for the (federal) government to conduct a census or decennial enumeration of the population for the purpose of apportioning the Congress is part of the constitution (National Research Council 1995). The census is important for providing a framework for the electoral system, for allocating central government funds to local administrations, and for public planning.

As a census is the primary source of data about the size and characteristics of the population, it provides a demographic profile of a country and is also the basis for developing area sampling frames for use in surveys. In a speech by James Garfield (Ridpath 1881, p. 219) in 1867:

“The chief instrument of American statistics is the census, which should accomplish a two-fold object. It should serve the country by making a full

and accurate exhibit of the elements of national life and strength, and it should serve the science of statistics by so exhibiting general results that they may be compared with similar data obtained by other nations.”

Still today, censuses are one of the largest and most costly statistical activities that governments and/or their national statistics office undertake, and costs are immense. Thousands of temporary workers are hired every census year to assist in population enumeration (Lu 2009). As a result of monetary costs, countries have been forced to delay or even cancel a census due to funding constraints (United Nations 2006).

3. Eliminating the “Middleman” Enumerator

Countries around the world use various techniques for collecting population based statistics. Approaches to census design include: the classic approach (which is currently used by: Canada, and Colombia, for example), the register-based approach (e.g., Norway), combination of classic and register-based approaches (e.g., Spain), register-based censuses with sample surveys (e.g. Israel, and the Netherlands), the rolling census approach (e.g. France), and traditional enumeration with yearly updates of characteristics (e.g. United States and Peru) (United Nations 2010). Of the techniques to collect population data by census enumeration (i.e. the classic approach, the combination of classic and register-based approaches, and the traditional enumeration with yearly updates of characteristics), two types of methods have been used: a direct interview (also known as the canvasser method), or self-enumeration (or the householder method) (Shryock, Siegel et al. 1976). In comparing these two methods, a substantial portion of costs associated with taking a census is due to field operations (Statistics Canada 2003) and the direct interview method is more costly. While being interviewed at the

Royal Statistical Society's Annual conference, Robert Groves (head of the U.S. Census Bureau) noted: "the major cost is not printing the forms, or distributing them; it is in physically chasing up the households who do not fill in or send them back" (Champkin 2010, p. 174-175). So, rather than "chasing" individuals, statistical agencies in Australia, Canada, New Zealand, the United Kingdom, and the United States have embarked on using the Internet as a means to count their respective populations (U.S. Department of Commerce 2011). "Experiments in self-enumeration led to its successful use in the 1960 (U.S.) census, when householders in urban areas were asked to complete and mail back questionnaires containing the sample items" (U.S. Census Bureau 2000, p. 3). With technological advancements, the use of electronic means to conduct census counts would reduce the costs associated with employing enumerators (as fewer enumerators would be hired). As Rosemary Bender, the Director General, Social and Demographic Statistics Branch of Statistics Canada noted in a 2009 report: "using a number of pilot tests and phasing changes over the 2001, 2006 and 2011 Census cycles, the Agency (Statistics Canada) moves from a decentralized, manually intensive collection and data entry operation to a more centralized and automated approach. This in particular addresses key concerns regarding confidentiality and security of personal census data" (Bender 2009). So, with reductions in enumerator costs, it is assumed that as Internet participation rises, cost reductions should materialize (Statistics Canada 2003). Similarly, the United States, Commerce Secretary, Gary Locke has commented in 2010 that "the next decennial headcount (in 2020) will have to be done differently" and that "obviously, we need to look at the use of technology and the use of the Internet to make it easier for people to respond and to avoid mailing back the questionnaire (Reilly 2010). Citing various challenges (Cecil 1993), the U.S. Census Bureau

cancelled all plans to use the Internet for data collection in the 2010 population census (Castro 2008). The U.S. Census Bureau had already developed computer screenshots for the 2005 National Census Test Internet application (U.S. Census Bureau 2005) and the U.S. Census Bureau will most likely continue to incorporate technological advancements in future census (Bounpane 1986).

In terms of cost-effectiveness, the aim for any country is to plan and carry out a census as inexpensively as possible, in a manner consistent with the content and quality requirements (United Nations 2006). The United States Department of Commerce (2010, p. 2) explicitly states that the "Census must make fundamental changes to the design, implementation, and management of the decennial census to obtain a quality count for a reasonable cost." The research focus of this paper is to address the costs of the census and it is hypothesized that costs associated with utilization of technological advancements and reducing the number of enumerators will affect the overall costs.

4. Methodology

As Canada and the United States incorporate technological advancements in to census methodologies, the associated costs are analyzed for the two countries last four official censuses. To determine the cost of the census per person, the entire budgetary costs of the census for Canada and the United States, and the number of housing units, are used to calculate the census cost per person. To convert the census costs from housing units in to census costs per person, the entire population counts are used in the calculations.

In order to properly compare the census costs of one year to another, dollars must be adjusted (to be consistent with a particular year). Economists often use more than one

indicator to determine the relative value of money from one year to another (Williamson 2010) depending on the context. In this research, the purchasing power parities (PPPs), which reflect the rates of currency conversion, are used to equalize the purchasing power of different countries by eliminating differences in price levels between countries (OECD Statistics 2009). The costs per dwelling are also adjusted using the Consumer Price Index (OECD Statistics 2009) to be in constant dollars as represented in January, 2010.

Data used to evaluate census costs are obtained from Canada's national statistical agency, Statistics Canada (2010d), and the "congressional watchdog," the United States Government Accountability Office (United States General Accounting Office 2001). Data from the two national statistical agencies will allow appropriate comparisons.

5. Results

Data from only the last four official censuses are obtained for analysis of this paper, as Canada conducts quinquennial (i.e. 5-year) censuses, the data are for years: 2006, 2001, 1996, and 1991. As the United States conducts decennial censuses the data representing the years 2000, 1990, 1980, and 1970 are obtained. Since the years of the Canadian and the United States censuses do not match, the data are presented separately.

For Canada, the census data are for the 1991 census through 2006 census and spans fifteen years. Table 1 indicates that the census cost per housing unit has increased by about 6 dollars and although the costs associated with the 1996 census decreased from the 1991 census, a larger increase occurred between the 2001 census and the 2006 census (an increase of about 5 dollars per housing unit, or roughly two-and-a-half dollars per person). The increase in the 2006 cost per unit was due in part "to a one time investment made to implement the

Internet solution and a number of other changes” (Statistics Canada 2010d). Even with investments to census Internet applications, the costs did not increase by a gross amount. With population increase and more housing units, the overall census costs are reflected in the increases in associated costs per person and costs per housing unit. Naturally, with a larger population, more individuals need to be accounted for, and associated costs of conducting the Canadian census are reflected in the data of Table 1. Costs per person are rising faster than costs per households because households are getting smaller. It is really the costs per household that are important in carrying out a traditional census, so if the population is spread out over more households this will contribute to increased costs.

Insert Table 1 here.

Table 2, shows that from 1970 when the U.S. census cost per person was approximately five dollars, the increase to roughly 23 dollars in the year 2000 (forty years later) seems large. However, from the 1970 census to the 1980 census costs only increased by five dollars per person. Similarly, between the 1980 and 1990 censuses there was an increase of about five dollars. It is between the years 1990 and 2000, that the largest costs per person for the census occurred (a ten dollar increase) resulting in the census cost per person to be approximately 23 dollars. Although the cost per person may increase slightly over time, analyzing the costs per housing unit is informative, especially as single dwellings households increase in number and more household need to be accounted. In forty years (from 1970 to 2000) the United States population has increased by more than 78 million people and the number of housing units has increased by 47 million. So, not only does the increase in population increase total census costs,

but as more independent housing units exist (which may be a house, a apartment, a mobile home, etc.), the related costs to conduct a census by household also increases.

Insert Table 2 here.

As Figure 1 shows, the overall associated census costs have increased over time for both Canada and the United States; however, the data indicate a greater stability in census costs for Canada as compared to the significantly increasing census costs the United States has experienced. One could say that the census cost increases reflect the incorporation of technology; however, as Table 1 and 2 have demonstrated the increase in population size is also a factor in the increases of overall costs. In 2000, the United States census costs per person superseded any previous U.S. census costs and any Canadian census costs to date. Statistics Canada officials expect that “the 2011 Cost per Unit to go back down to a comparable level to previous censuses because of the efficiencies realized with the Internet approach” (Statistics Canada 2010d). The trajectory of census costs (using historical census cost data) suggests that costs will continue to increase until the Internet adoption is completely accepted and utilized methodology in conducting the census, or other census methodology is used when censuses are conducted.

Insert Figure 1 here.

The results demonstrate that as census methodology changes, with less reliance on an enumerator and incorporation of the Internet, costs are still associated with technological advancements in conducting a national census online. Historically, neither Canada nor the United States have experienced a reduction in census costs.

6. Discussion: Completing the Census Online- Future Internet Use

According to the International Telecommunications Union (2010) of the United Nations, approximately 77.7% of Canadian and 77.3% of the United States populations are online (Internet World Stats 2010). From the "Canadian Internet Use Survey," conducted by Statistics Canada (2010b), the percentage of Internet use (by individuals aged 16 years old and over who responded to have used the Internet for personal non-business purposes in the past 12 months from any location) was approximated to be 80.3% of the 2009 Canadian population being online. The 2009 data collected by Canadian Internet Use Survey suggests that there is no difference between the sexes in terms of Internet use (as there are 81.0% male Internet users aged 18 years and over, and 79.7% female Internet users aged 18 years and over) (Statistics Canada 2010b). There are fewer reported Internet users as age increases (with only 40.7% of those 65 years of age and over using the Internet) (Statistics Canada 2010b). Similar age and sex differences in Internet use are found in data for the United States (Jones and Fox 2009). Research has demonstrated that "the Internet is still out of range for a lot of persons, especially low-income households, big families and many elderly persons. Access to the Internet and the ability to use it (not only for surfing but for complex transactions) are limitation factors for the successful promotion of online surveys, not only in developing but also in developed countries" (Haug 2001, p. 8). However, as the numbers of respondents are increasingly able to respond to census questionnaires online, the Internet will affect a country's census methodology.

7. The Digital Divide

In the October, 1999, "Speech from the Throne," the Government of Canada declared that it would become "known around the world as the government most connected to its citizens,

with Canadians able to access all government information and services on-line at the time and place of their choosing" (Government of Canada Privy Council Office 1999). The Government of Canada saw the Government On-Line Initiative (GOL) as: (1) connecting to Canadians (2) improving efficiencies and generating savings (3) assuring security and privacy and (4) developing a legacy: serving Canadians better (Public Works and Government Services Canada, 2010). Introducing the Internet in the 2006 Canadian census would fulfill the commitment to make government services available to the public online. To add the Internet response channel to the 2006 Canadian census would also require additional investment. One of the more important benefits of Internet response is the improvement in quality one gets, as well as enhanced privacy; however, costs are accrued. In fact, "countries invest in technology and/or alternative methodologies in order to reduce costs, improve the quality and the timeliness of the dissemination of their census results" (United Nations Statistics Division 2010, p. 4). Maintenance and upgrading of the Internet census methodology require a significant amount of money and it does take initiative and commitment by governments to adopt the Internet approach.

Just as Canada has invested in online channels, the United States has recognized the importance of including the Internet as part of census methodology. Director Robert Groves maintains that by "2020 (the census) will be multi-media. We shall be looking at using data already submitted- through tax returns and other official forms- but there are issues of intrusion here: will people regard that as more intrusive than the traditional census form, or less? That is something we have to explore" (Champkin 2010, p. 175). As both the Canadian and United States governments have begun to use the Internet with multi-methods census

methodology, incorporating a combination of methodologies seem to be the direction for current census undertakings. However, issues with the census that were once handled in one way now need to be managed in other creative ways. Change is eminent, but how governments count their populations and incorporating technological advancements is critical to the overall associated census costs.

8. Census-Enhanced Master Address File:

The Census-Enhanced Master Address File (CEMAF) is a census methodology which is not based direct interviews or self-enumeration, but rather on a combination of four elements: (1) administrative records; (2) the continuously updated Master Address File; (3) survey data; and (4) modeling techniques. The CEMAF methodology is built on the Master Area File (MAF) (Wang 1999) and Enhanced Master Area File (EMAF) (Swanson and McKibben 2010) methodologies. Where a Master Area File focuses on the estimates of housing an Enhanced Master Area File also include estimates related to housing units, demographic and socio-economic characteristics for sub-areas and geographic areas as a whole.

“EMAF (i)s an integrated file that contains not only existing MAF variables (e.g., geocode, address, and structure type), but also information on the occupancy status of housing units and the people within these units and non-household living arrangements (group quarters)... generated using a combination of decennial census and ACS (American Community Survey) and administrative records data largely in conjunction with a combination of record matching, imputation and microsimulation methods” (Swanson and McKibben 2010, p. 809).

The term CEMAF is derived from “EMAF” (Enhanced Master Address File), a proposal by Swanson and McKibben (2010) for a re-designed population estimation system. CEMAF is aimed at curtailing both increasing non-response rates and increasing costs while maintaining reasonable levels of accuracy, functionality, and usability. As a hybrid approach, the CEMAF method for conducting the census would use administrative records like federal income tax returns as one of its sources for information. Similarly, CEMAF as a hybrid approach is also,

“an integrated file that contains not only existing MAF variables (e.g., geocode, address, and structure type), but also information on the occupancy status of housing units and the people within these units and non-household living arrangements (group quarters). Demographic and socio-economic characteristics would be generated using a combination of administrative records and survey data largely in conjunction with a combination of record matching, imputation and microsimulation methods” (Swanson and Walashek 2010, p. 34).

The technical aspects of CEMAF use existing data and methods may seem complex, but in fact it is technically, administratively, and politically quite feasible. One of the keys to CEMAF identified by Swanson and Walashek (2010) is record matching, which in the United States depends on the virtually universal Social Security Number. Canada's equivalent identification is not as universal, but the Canada Revenue Agency does create an identification number for dependants, especially if they qualify for tax credits and benefits in order to track them over the years. In fact, the Canada Revenue Agency uses three identification numbers: the social insurance number (SIN), the temporary tax number (TTN) assigned to wage earners who do not

have (or have not applied for) a SIN, and a number assigned to dependants of tax-filers (DIN) who do not have a SIN qualifying for government benefits or tax credits. With the use of identification numbers (such as SIN\TTN\DIN), the CEMAF idea for Canada is not out of the question.

Using this method would reduce costs in the long run and provide more detailed data than what the current census collects. A benefit of CEMAF is that it could largely negate and eliminate the need for many of the traditional demographic methods of population estimation and even reduce the number of sample surveys due to the diverse type of data collected.

9. Limitations

Certain limitations face the data used in this paper. Due to the inconsistent years of the Canadian and United States census, comparability between the two countries census costs is limited. Similarly, the accuracy of the costs of the censuses are entrusted to Statistics Canada and the General Accounting Office of the United States reporting and disclosure. In a symposium on the Global Review of (the) 2000 Round of Population and Housing Censuses, Richard Leete (2001) noted that:

“Rising costs of censuses, coupled with a lack of detailed data about census costs, led the United Nations in its recommendations for population and housing censuses, to emphasize the need for countries to keep account of the cost of each census activity. Summary cost indicators, such as total census cost per capita, are subject to limitations which make it difficult to say that one census is more or less expensive than another. They do not take account of variations in the quality, quantity and timeliness of census results.”

Similarly, in a United Nations (2007, p. 6) workshop regarding Census Management and Planning, it was noted that:

“the cost of census-taking could vary widely not just between countries but also within-countries – for example, people living in tribal conditions in remote areas could drive up the cost by a factor of almost 20 in comparison to urban areas, in some cases. Therefore, it was suggested that the notion of a universal per unit costs was not particularly useful, and could in fact be misleading.”

With secondary data analysis, the assumption that the data are accurate is entrusted. Even with some concern about the data, the information invokes discussion about the monetary costs of a national census and how the incorporation of technology has affected census methodology and future possibilities.

10. Conclusions

With technological advancements of conducting a census on the Internet, not only will the once familiar census enumerator knocking on dwelling doors be part of the methodological past in many countries, but also census forms delivered by mail. The costs associated by the incorporation of Internet methodology can only be assessed years after Internet implementation. We can compare the days when household visitations in the untamed wilderness and mailed forms in the urban jungle to today's methods and recommend that historical comparisons of costs per housing unit and costs per person be addressed in the future. Every census is unique due to the moment when it is conducted and the historical time it is important in counting the population. In comparing the costs Canada has incurred in conducting a census to the United States, the data indeed suggest that the larger the

population, the larger the total incurred census costs, as would be expected. However, while technology may effectively control costs in the long run, it is important to note that there is no replacement for a census and incorporating technological advancements to census methodology inherently affects the overall census costs during time of development and implementation.

Once a household opens its door to answer a census survey or opens a letter containing the census form (or the technological door via the Internet), the number of questions should not make a significant difference to overall census costs. The role of the census in collecting socio-economic information, and what the marginal cost increase over the basic census enumeration, needs to be analyzed in the future. This current research demonstrates that addressing the costs of a census is indicative of the importance governments place on census accounting. When a country conducts a census, attention may focus on various aspects. Recent census issues in Canada (the elimination of the census long-form in the 2011 census) and the United States (2010 census), has provided a spotlight on contemporary census issues. Attention on a census allows individuals to not only participate in enumeration, but the debates surrounding the mandate, the associated costs, and the methodology.

Table 1: Census Costs for Canada

Year	Census Costs (in dollars)	Housing Units	Cost per housing unit (in dollars)	Population (persons)	Cost per person (in dollars)
1991	432,688,952	10,018,267	43.19	27,296,859	15.85
1996	459,094,722	10,820,050	42.43	28,846,760	15.91
2001	511,892,903	11,562,975	44.27	30,007,095	17.06
2006	611,330,163	12,435,520	49.16	31,612,895	19.34

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<http://www40.statcan.gc.ca/l01/cst01/famil66-eng.htm>

Note: The costs are per dwelling, all data are adjusted to be in constant dollars as of January 2010, using the Consumer Price Index to make the adjustments. Private household refers to a person or a group of persons (other than foreign residents) who occupy a private dwelling and do not have a usual place of residence elsewhere in Canada.

Table 2: Census Costs for the United States

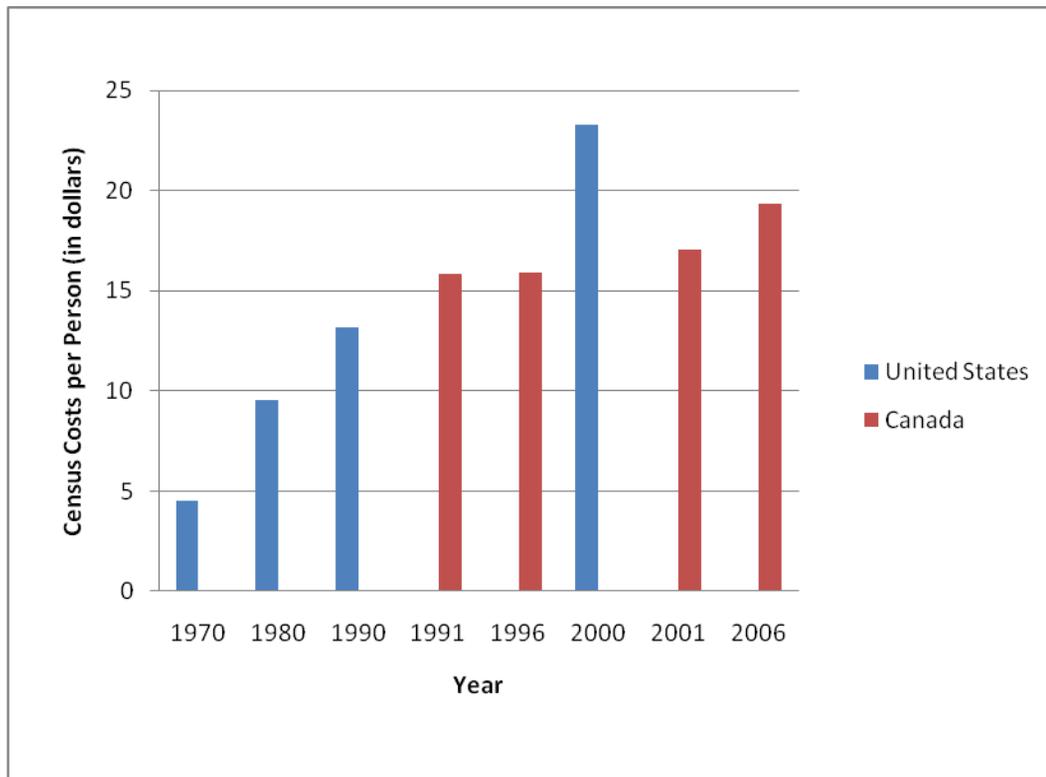
Year	Census Costs (in dollars)	Housing Units	Cost per housing unit (in dollars)	Population (persons)	Cost per person (in dollars)
1970	920,000,000	70,700,000	13.01	203,302,031	4.53
1980	2,159,000,000	90,100,000	23.96	226,545,805	9.53
1990	3,275,000,000	104,000,000	31.49	248,709,873	13.17
2000	6,553,000,000	117,300,000	55.87	281,421,906	23.29

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Note: A housing unit may be a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or, if vacant, is intended for occupancy) as separate living quarters.

Figure 1: Canada and United States Census Costs per Person (in dollars)



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