

# POPULATION AGEING: ECONOMIC AND SOCIAL DIMENSIONS

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SEPTEMBER 2009

*A paper prepared for the  
Business Council of British Columbia Outlook 2020 project*

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Table of Contents

<b>Abstract</b> .....	<b>i</b>
<b>Introduction</b> .....	<b>1</b>
<b>Statistical Profile of the Ageing Population</b> .....	<b>1</b>
Representation of the Elderly Population .....	2
Age Dependency Ratios .....	3
Median Age .....	4
Growth by Age and Gender .....	4
Factors Impacting Population Ageing .....	6
<b>Economic Dimension – Shortage of Labour Supply</b> .....	<b>9</b>
Ageing Labour Force .....	9
Labour Shortages and Skill Shortages .....	10
Strategies and Initiatives Towards an Ageing Work Force .....	12
<b>Social Dimension – Rising Cost of Health Care</b> .....	<b>18</b>
Health Care Expenditure and Ageing Population .....	18
Strategies and Initiatives Towards Rising Health Care Costs .....	20
<b>Summary and Conclusions</b> .....	<b>25</b>
<b>References</b> .....	<b>27</b>
<b>Appendix I Figures and Tables</b> .....	<b>29</b>

## Abstract

In this report, we present statistical data and information related to the ageing population in British Columbia. We also examine some of the economic and social implications of the population ageing process.

The data clearly show population ageing is already occurring in the province and its pace is expected to accelerate in the coming years as baby boomers reach the age of 65. There are implications for the labour force growth in the future and potential economic growth. An older population will also probably require additional resources to meet rising health care costs and growing pension requirements. Careful planning will be the key.

## Introduction

The Business Council of British Columbia has undertaken a major project under the banner of *Outlook BC 2020*. Its objective is to help shape a positive agenda for the province's economic future. The series of topic papers are organized around five themes – the Changing External Environment; the Commercial and Industrial Foundations of Prosperity; Human Capital, Innovation and Infrastructure; a Sustainable Society; and, Regional Dimensions.

In this paper, Roslyn Kunin and Associates (RKA) investigate some of the economic and social aspects of an ageing population in British Columbia. Specifically, we examine the extent of population ageing in the coming years and touch upon related issues such as how the demographic shift will affect the labour force, how it will impact health care provision in the province, as well as a number of other potential public policy implications.

The paper is organized as follows. The section that follows presents a statistical profile of the BC population and discusses the factors driving population ageing. The next section examines the implications of an ageing population on labour force growth, health care costs, and the pension system. The final section addresses some of the measures that can be undertaken to help meet the challenges of an ageing society.

## Statistical Profile of the Ageing Population

Overall, BC's population grew by 1.6 per cent in 2007 and 1.7 per cent in 2008, faster than increases of about one per cent for Canada. Within the general population however, the number of individuals under the age of 15 declined by 0.4 per cent. At the same time, the working age population grew by 1.6 per cent while the number of people aged 65 and over grew by 2.7 per cent, by far the fastest growing cohort. A summary of these growth rates by key age cohorts is shown in Figure 1.

Population ageing refers to both a growing number and an increasing proportion of

elderly people. Population ageing occurs when a society's age structure is such that future populations will have higher proportions of people in elderly age groups than they currently do. From a demographic perspective, population ageing can be conceptualized and measured in a number of different ways. The make-up of the province's elderly population, age dependency ratios, the median age, and population age distribution all help provide a sense of our current and future demographic portrait.

### **Representation of the Elderly Population**

Population ageing is often measured by changes in the percentage of the population that is considered old. Since one of the basic concerns in the study of population ageing is the anticipated stress on the retirement system, the traditional age of retirement is the proxy most often used to represent the cut-off for the working age population (Certified General Accountants Association of Canada, 2005). With this as a marker, a population is said to be ageing when the percentage of people aged 65 and over is increasing.

In Figure 2, we show the estimated number of persons aged 65 and over in British Columbia from 1971 up to 2007 and the projected number of people in this age group through to 2036. Between 1971 and 2007, this cohort grew by an average annual rate of 3.1 per cent. This is a rapid increase considering the overall population in British Columbia grew at an average annual rate of 1.9 per cent over the same period. In fact, the 65 plus age group experienced the highest growth rate among all age cohorts. In contrast, the number of people aged 15 and under grew at an average annual rate of just 0.3 per cent and the population between the ages of 15 and 24 increased 1.1 per cent on average each year. With the baby boomers moving into the older age cohorts, the number of elderly people in the province is expected to reach almost 1.5 million persons by 2036.

Figure 3 shows the proportion of the 65 plus age group within the overall population. In 1971, the elderly accounted for just 9.3 per cent of the population. By 2007, this share reached 14 per cent and according to BC Stats, the percentage of persons over the age of 65 will reach 24.7 per cent by 2036. In other words, within two and a half decades one in four persons in the province will be a senior.

By contrast, the proportion of people under the age of 15 declined from 27.6 per cent in 1971 to 15.7 per cent in 2007. The share of the population between the ages of 15 and 24 fell from 18.1 per cent in 1971 to 13.6 per cent in 2007. By 2036 these shares are expected to further decline to 12.9 per cent and 10.1 per cent respectively. In short, this means in the span of just over 35 years the province has gone from having four times as many young people as old to having more older people than those under 25.

### **Age Dependency Ratios**

Another measure of ageing is the elderly dependency ratio, which is defined as the number of individuals in the retirement years (age 65 and over) relative to the number of working-aged people (18 – 64).<sup>1</sup> The ratios are typically expressed as the number of dependents per 100 persons in the core working age. The age dependency ratios illustrated in Figure 4 underscore the ageing process in British Columbia and the growing imbalance between the number of working-age people and elderly dependents. Child dependency ratios are also depicted. In contrast to the elderly, as the other measures suggest the child dependency ratio is declining because people are having fewer children. In fact, the child dependency ratio has declined throughout the 1971 to 2007 period. In spite of these trends, the child dependency ratio still exceeds the elderly dependency ratio. However, BC Stats' population projections show the number of children and the number of elderly will be equal by 2016 and thereafter the elderly will make up a greater percentage of the total population than children.

The total dependency ratio is defined as the sum of the child dependency ratio and the elderly dependency ratio. Although it is not shown in the graph, total dependency ratios are falling because of the declining child dependency ratios. The downtrend is expected to bottom around 2010 and increase after that due largely to rising elderly dependency ratios in the future.

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<sup>1</sup> It should be noted that some individuals do retire earlier than age 65. On the other hand, there are also many individuals who continue to work after the 'normal' retirement age of 65.

Also note that in other literature, child dependency ratio is sometimes expressed as the population aged 0-14 as a percentage of the population aged 15-64, and elderly dependency ratio is the ratio of population

## **Median Age**

Another widely used indicator of population ageing is the median age, the age at which exactly half the population is older and the other half is younger. Canada's median age has been increasing steadily since 1966, which is generally seen as the end of the baby boom. At that point the median age in the country was 25.4 years. Following the same trajectory as Canada, the median age in British Columbia has been ascending steadily over the past four decades. And not surprisingly it is projected to continue rising in the foreseeable future, climbing from its current level of 40 to 42.8 years by 2020 and then on to 46.4 years by 2036 (See Figure 5). The rising median age reflects the continuously declining fertility rates and gains in life expectancy that have characterized the past few decades.

Among the provinces and territories, British Columbia had the sixth highest median age in the country in 2006, according to the 2006 Census. British Columbia's median age was lower than Quebec's and the four Atlantic provinces', but it was still higher than the national average of 39.5 (See Figure 6).

## **Growth by Age and Gender**

Population ageing is a dynamic process that involves changes in the age distribution of the entire population. The population ageing that is unfolding in the province (as well as Canada) is occurring because the older population is growing more quickly than the total population and also because of the decline in growth of the younger population relative to the middle-aged population. Figure 7 shows the growth rates over time for age cohorts under the age of 15, 15 to 24, the core working age population 25-64, and the elderly population 65 and over. Particularly striking is the youngest cohort, which has been contracting since the mid 1990s. As this group advances in years, the 15-24 cohort will also shrink in absolute terms.

Between the two census years 2001 and 2006, growth was strongest in the 45 and older age groups, with the older working-age population (aged 45-64) increasing 19.4 per cent

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aged 65 and over to the population aged 15-64.

and seniors (aged 65 and over) increasing 12.5 per cent. In 2006, the 45-64 age group represented 28.4 per cent of the total population while the 65 and over group was 14.6 per cent. The oldest senior population (aged 80 and over) went from 3.4 per cent of the total population in 2001 to 4.0 per cent in 2006. In the past five years, the younger working-age population (aged 15-44) actually declined by 1.4 per cent (from 43.2% of the overall population in 2001 to 40.5% in 2006). In absolute number, population in this age cohort declined from 1.69 million to 1.66 million over the 5-year period. The population under the age of 15 decreased by 3.7 per cent, from 706,070 to 679,600, or from 18.1% of the overall population in 2001 to 16.5% of the overall population.

Figures 8 to 10 show the changes over time in the composition of British Columbia's population by five year age groups for males and females starting in 1971 with projections out to 2031. The baby boom period, the 20 years following World War II (1946-1965), was marked by a strong increase in fertility. The large proportion of the population under 15 at that time reflects this trend. The subsequent decline in fertility and increase in longevity served to change the shape of the traditional population pyramid. By 2001, the shape of population structure had shifted to more closely resemble a cylinder due to a more even distribution in each age group. The baby boom generation is still evident as a bulge in the middle-aged cohorts. As a group they make up 32 per cent of the overall population.

The baby boom generation will begin to reach age 65 by 2011. In order to better understand the changing age structure of the older population, the 65 and over age group can be further divided into subcategories: the young-old (age 65 to 74), the middle-old (age 75 to 84), and the old-old (age 85 and plus) (see Figure 11). As per capita service delivery costs may differ among the senior age groups, this more refined breakdown of the older population may be useful.

Increased longevity is having a significant impact on the population with concomitant impacts on elderly and health care costs. The cohort growing the most rapidly is the old-old. Between 1991 and 2007, the 85 and over age group more than doubled in size to 78,400. Projections for 2008 to 2020 show a further 62.2 per cent increase in this population, reaching an estimated 127,200. By 2036, this age group is expected to represent about 15.5 per cent of the senior population (see Figure 12).

Another aspect of the analysis on the ageing population is gender composition. To the extent types of services and delivery modes vary according to gender, then knowing the projected sex ratio at various ages is useful for planning purposes. The sex ratio is expressed as the number of males per 100 females.

Historically, the male-female ratio within the senior population was higher than 100 due to maternal mortality. However, since the 1950's, female life expectancy at age 65 has remained much higher than male life expectancy at age 65, and consequently, the female senior population has been growing faster than its male counterpart. As the lines in Figure 13 show, female seniors over the age of 85 have the lowest sex ratios, indicating that the female population in this age group outnumbers their male counterparts by a wider margin than in the populations aged 65 to 74 and 75 to 84.

### **Factors Impacting Population Ageing**

Three factors contribute to the ageing of population in a jurisdiction: fertility rates, life expectancies, and immigration.

Fertility rates are measured in two ways. Age specific fertility rates (ASFR) refer to the average number of births per 1,000 women for a specific age group and can be thought of as the "propensity to give birth." The total fertility rate (TFR) is a summary measure of the age specific fertility rates. It is calculated by summing the ASFRs, with each ASFR receiving equal weighting. The result is an approximate measure of the total number of children 1,000 women will bear in their lifetimes. The total fertility rate in Canada reached a high of 3,880 children for every 1,000 women (or 3.9 children per women as used in some literature) between 1955 and 1960 (United Nations Secretariat, 2006). In subsequent decades, birth rates have steadily declined. The United Nations classified countries with a total fertility below 2,100 children per 1,000 women during the 1995-2000 period as having low fertility rates. The 2.1 children per woman rate is considered the replacement rate required to maintain a population. In British Columbia, total fertility rates have been below 2,100 per 1,000 women since 1971 (see Figure 14). Total fertility rates are expected to continue falling, although the pace of decline will slow.

Along with falling birth rates, longer life expectancy is another important factor contributing to the ageing of the population. Intuitively, life expectancy at birth is the average number of years an individual can expect to live. Figure 15 shows that life expectancy for both men and women in British Columbia has increased steadily since 1950. Life expectancy for females has been higher than for males, although the gap between the two is narrowing.

Gains in average life expectancy are due in large part to the reduction in the number of deaths at infancy. However, there have also been significant gains in average life expectancy at age 65 thanks to technological advancements in medicine and better and access to health care. Today, a female senior at age 65 can expect to live to 86.6 years of age, while a male senior at that age can expect to live to age 83.7 years. In comparison, a female senior at age 65 and a male counterpart in 1950 could expect to live up to 80.7 and 78.7 years respectively (see Figure 16).<sup>2</sup>

Migration is the third factor that could add to the senior population in BC. Although BC does attract a sizable number of retirees from other parts of Canada, the main driver of growth in the 65 and over age group is the ageing of the resident baby-boom generation rather than migration of seniors. People who migrate to British Columbia, whether from other countries or other provinces within Canada, tend to contribute to the youthfulness of the population and have little impact on population ageing.<sup>3</sup>

Regional variation is another dimension of provincial demographics. One of the most notable differences within the province is the fact that a disproportionate number of migrants settle in the lower mainland region. In fact, in recent years the Mainland/Southwest region has received approximately 45 per cent of inter-provincial migrants and fully 91 per cent of all immigrants coming to British Columbia.<sup>4</sup> While some small changes may emerge in the future, we expect that generally these patterns

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<sup>2</sup> Note, however, that further gains in life expectancy may be limited in the foreseeable future without major breakthrough in science.

<sup>3</sup> See, for example, BC Stats' Infoline Report: BC's Interprovincial Migrants: A Changing Age Structure. <http://www.bcstats.gov.bc.ca/releases/info2008/in0829.pdf>

<sup>4</sup> See BC Stats, "Migration Assumptions Underlying the Regional Projections". <http://www.bcstats.gov.bc.ca/data/pop/pop/Project/p33notes.PDF>

will continue.

Intra-provincial migration data from the 2006 Census examining net in-flows to the four metro centres in the province between 2001 and 2006 indicate that the age structure of intra-provincial migrants is similar to that of other migrants.<sup>5</sup> The most active age group is 15-24 year olds who may be moving away from home for the first time in search of education or employment. The next most mobile group is the 25-44 year olds who often move to start or relocate families, sometimes with children. Beyond age 45, the propensity to migrate is generally low and decreases with age. The data show positive intra provincial in-migration between all areas outside these four centres and these four centres for all population groups age 30 to age 69. After age 70 net in-migration drops to essentially zero, which appears to indicate that as the population ages people tend to stay to move less and or move to less urban settings.

## **Discussion**

In summary, history and projections all point to a rapidly ageing population in the province. The number of “older” people in the province is expected to accelerate in the near future as the baby-boomers move towards retirement age.

For the most part, the demographic outlook is reasonably certain because the existing population structure is known and will comprise most of the population 20 years from now. Projections, however, can not be completely accurate because immigration and migration do have a significant impact on BC’s population. It is not possible to fully anticipate changes in immigration policies and levels or changes in interprovincial migration patterns which are heavily influenced by relative economic conditions.

It should also be emphasized that compared with other economic and social changes, population changes occur at a much slower pace. Even if the ageing of the population accelerates, there is plenty of time for government to adopt pro-active policies and measures to help address challenges related to an ageing population.

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<sup>5</sup> BC Stats Infoline Report, 08-43, “Intra-Provincial Migration: Examining the Movement Between Census Metropolitan Areas”. <http://www.bcstats.gov.bc.ca/releases/info2008/in0843.pdf>

## Economic Dimension

The changing age structure of the population has implications for many aspects of an economy ranging from slower labour force growth and skill shortages, to diminished revenue growth for government and escalating health and related elderly care costs. The scope of the paper prohibits a detailed discussion of these and other socio-economic impacts, but some of the more immediate implications are covered below to provide a broad framework of some of the challenges that lie ahead.

### Ageing Labour Force

With an increasing number of people moving out of the labour force and fewer younger people moving into the labour force, the workforce force will grow more slowly. Younger workers (aged 15-24) now make up a smaller share of the labour force than in the past. This shift is due mostly to the declining share of the working age population accounted for by this age group, but the fact that younger people now spend more time in post secondary education and training before transitioning into the labour market is also a factor. Ageing, coupled with lower participation rates of younger people, has pushed the share of older workers in the labour market higher. The percentage of British Columbia's labour force aged 55-64 has increased from 10 per cent back in 1976 to 13 per cent in 2006.

Labour force participation rates for both men and women are highest between the ages of 25 and 49. After age 55, labour force participation rates begin to drop sharply as people retire from the work force. Figure 18 shows national participation rates for the different age cohorts and highlights the steep falloff in the older cohorts. BC's participation rates are similar, although are typically a few percentage points lower than the national ones. With an eye to the ageing population, the good news is 13 per cent of men and 6 per cent of women over the age of 65 remain active participants in the labour force. Furthermore, when labour market conditions were tight during the 2006-2008 economic boom, participation rates in the older cohorts moved up, suggesting that the older population may be relatively responsive to changing labour market conditions.

Shifting behavioral change in the older cohorts is also evident in the retirement age. The average retirement age for both men and women gradually declined over the past couple of decades, with the downtrend being most pronounced for public sector employees who have access to defined benefit pension plans. Private sector employees occupy the middle ground in terms of retirement age while self-employed individuals have the highest average retirement age among the three types of workers with many of them working well past the “traditional” retirement age of 65 (see Figure 19).<sup>6</sup> Figure 19 also indicates, however, that since 1998 the average retirement age turned upwards slightly with a more noticeable up tick during the economic boom period (2004-2007).

### **Labour Shortages and Skill Shortages**

As the workforce ages, employers will have to grapple with the increasing number of retiring workers. The baby-boomers will reach retirement age beginning in 2011 and swell in number after that. The number of people over the age of 60 in the workforce will rise steadily and peak around 2025 (at just over 10 per cent). In addition to this broad human resource challenge, illness and disability are likely to become larger issues as a greater share of the workforce moves into the older age cohorts.

In a companion Outlook 2020 piece, the Business Council of British Columbia estimates that labour force growth in the province will slow significantly in the coming years. The paper which includes four different scenarios estimates that annual growth in BC’s labour force will slow to between 1.0 per cent and 1.4 per cent, depending on immigration levels and potential changes in participation rates. The lower growth scenario assumes that immigration and migration will climb slightly in the coming years and that participation will remain stable at recent rates. The stronger growth scenario assumes immigration will be stronger (10,000 more immigrants each year) and that participation rates increase modestly in response to the tightening labour market. It finds, however, that even with more optimistic assumptions, growth in the labour force will slip below one per cent by 2020. (Business Council of British Columbia, 2009) By comparison, the labour force grew by an average rate of 1.9 per cent over the past five

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<sup>6</sup> Provincial data have not been released due to small to be considered reliable for analysis. However, BC Stats has indicated that BC’s data follow the national trend.

years.

Slower labour force growth has widespread economic implications. The most significant is the accompanying reduction in the economy's potential growth. Between 1987 and 2006 economic growth in BC averaged 3.1 per cent annually (this long-term average is a good estimate of BC's potential economic growth over that period). Over the same era the labour force grew by an average of 2.1 per cent each year. As a general approximation, the 1 percentage point difference can be attributed to productivity growth. From these figures, it is evident that the majority of BC's economic growth has been driven by an expansion in the workforce. When this element slows, unless productivity growth picks, the pace of potential economic growth will shift down in the province. In a paper prepared for the BC Progress Board, productivity expert Andrew Shape notes: "Declining labour force growth means that in both Canada and British Columbia the importance of hours worked as a source of growth will fall in the future... In the future if BC wants to increase GDP it will have to increase productivity" (Sharpe, 2009). "Historical figures suggest as a rough estimate, if productivity growth remains stable and labour force growth slows as expected, the economy's potential growth rate drop will fall to around 2 per cent within 10 years". This could create significant financing difficulties for government considering taxation revenues are directly related to economic growth.

Another challenge is skill shortages. Although the projections prepared by the Business Council suggest widespread labour shortages are not likely to materialize, there is growing concern about localized skill shortages both in terms of geography as well as particular industries or occupations. The education and health care sector, for example, are at risk of losing a large share of their work force due to younger retirement ages and the demographic structure of these professions. Other sectors where shortages of skilled workers have emerged and could intensify include medical technologists and technicians, some parts of high technology, and supervisory personnel.<sup>7</sup>

It should also be noted the literature indicates that skill shortages are affected by a number of factors and that an ageing population is only one of them. For example, recent research by the Canadian Policy Research Networks examines a number of case studies demonstrating that age structure alone does not determine skill shortages.

Three other key factors found to affect skill shortage are: i) the length of time required to train for an occupation, ii) the geographic mobility of workers, and iii) working conditions that make it difficult to attract or retain workers (McMullin and Cooke, 2004). Although the ageing of the labour force has certainly heightened concerns about labour shortages, it is important to recognize that some hiring difficulties may also be related to wages, the nature of the work itself, and education and training policies rather than to demographics and an actual shortage of the supply of available workers.

A final point that also feeds into the productivity and economic growth issue is that an ageing population and workforce are generally associated with a decline in innovation, mobility, and adaptability. Ageing could negatively affect growth through these channels as innovation is widely seen as a fundamental driver of the economic growth.

### **Strategies and Initiatives to Address an Ageing Work Force**

The literature identifies several strategies to help maintain a sustainable labour force. In this section, we concentrate on policies to address the ageing work force.

#### **Helping Older Workers Stay in the Labour Force Longer**

In light of the ageing population, policies to help keep older people working may be an effective way to help offset the anticipated slowing in workforce growth. In fact, the projections prepared by the Business Council show that a modest increase in participation rates, across all age cohorts including for older workers, raises the average growth rate of the labour force by 0.4 percentage points when ageing starts to have its greatest impact (2015 and after) on the labour force. Supporting this finding, the OECD argues extending workforce participation should be a priority for all countries with ageing populations (OECD 2005).<sup>8</sup> Similarly, work by the Policy Research Initiative sees continuing to reverse the trend away from early retirement as one of the most effective ways to combat potential skill shortages.<sup>9</sup>

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<sup>7</sup> See, for example, [www.workbc.ca](http://www.workbc.ca).

<sup>8</sup> Also see Organisation for Economic Co-operation and Development (1998). "Work Force Aging: Consequences and Policy Responses." Cited in Certified General Accountants Association of Canada, 2005.

<sup>9</sup> Policy Research Initiative (2004). "Population Aging and Life-Course Flexibility: The Pivotal Role of Increased Choice in the Retirement Decision." Discussion Paper. March 2004. Cited in Certified General

The following initiatives are some of the key themes that emerge in the literature on policies and changes to help keep older people working:

- **Remove Barriers to Employing Older Workers – Perceptions and Attitudes**

Age discrimination in Canada is illegal. However, some human resources managers and organization have *de facto* limits on age when recruiting. Depending on the occupation, this age may be quite young, especially considering people are living long and more productive lives. Only a very small fraction of employers specifically target older workers to fill outstanding positions. Considering the proportion of older people is going to swell in the coming decades, it is important to begin to address age discrimination in the workforce now.

- **Ease Mandatory Retirement Age**

In Canada, Manitoba and Quebec have prohibited contractual mandatory retirement. The federal civil servants have also banned the same requirement, except for a number of occupations. British Columbia effectively followed suit when legislative changes extending the protection of workers rights beyond age 65 came into effect at the beginning of 2008. So in this regard, the critical legislative changes have been implemented. But mandatory retirement is still common in many collective agreements. In a unionized environment, policy may be less effective as change will have to come through collective bargaining.

Working beyond 65 may be more appealing to some groups such as people who qualify for larger pensions benefits based on years of service, anyone wishing to increase lifetime earnings or savings or those who simply wish to remain active or productive. Indeed, analysis of input from a series of focus groups conducted for the federal government's Policy Research Initiative found most people would consider working past "retirement age" if it is in a job they enjoy. Flexible hours and good health were also important considerations.

The project also looked at how much longer people would have to work to offset the potentially negative economic effects of population aging. It cites a study by Fougère et al (HRSD, 2004) which found that GDP per capita could fall by over 14% if the median

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Accountants Association of Canada, 2005.

age of retirement remained at its 2001 level. Conversely, real GDP per capita could increase by 3.5% if the effective age of retirement was increased by only one year. If the average retirement age was increased from its 2001 level to 65 years of age, real GDP per capita could be 12% higher. It also found that extending work life by three years would more than offset labour supply shortages due to population aging over the next two decades.

- **Improving Skills and Training among Older Workers**

Mandatory retirement age is no longer a barrier for older workers in British Columbia. However, improving the employability of older workers and having the resources required to do so are ongoing issues.

A good starting point is better co-ordination of programs among the provinces and territories to improve basic skills and literacy of workers. Here a national program delivered at a regional level that is accessible to all adult workers, including older ones, may be an effective approach. Second, more training for older workers is necessary. As part of the federal Workplace Skills Strategy, employers need to be encouraged to devote more resources to training low-skilled workers, especially in cases where older workers constitute a large share of the workforce. Both the provincial and federal governments could also consider co-financing firm-specific training for older workers.

- **Workplace Flexibility**

Helping older workers remain in the workforce longer will require changes in attitude, programs and practices. Most of these revolve around providing greater choice, flexibility, control and options that take into account individual circumstances and the complexities of older workers' lives. For many older workers, quality of life and achieving balance between work, family life and social responsibility are paramount considerations.

Some common examples of flexible work arrangements include job-sharing, flex-time, reduced hours, special assignments, temporary work, consulting work and telecommuting. Implementation of much discussed phased-in retirement will require reforms and adjustments to pension and tax regimes. For example, the Income Tax Act currently does not permit employees to simultaneously contribute to and receive benefits

from an employer-sponsored pension plan. This will need to change if phased-in retirement is to become a meaningful or alternative reality.

- **Life Course Flexibility**

Current policies and practices regarding work are based on the traditional life course that follows a particular chronologic order and timing of transitions from education to working life to retirement and inevitably to death. In our modern (and often less predictable) world this model is becoming outdated. The Policy Research Initiative's project on Population Aging and Life Course Flexibility is studying the potential benefits that might flow from greater flexibility in how individuals organize and allocate their time within their educational, work, care-giving and leisure timelines. The project is examining potential trade-offs from offering extended time off for education or skills upgrading, additional vacation time, or child care or elder care during a person's prime working years in the context of a longer life period.<sup>10</sup>

### **Promoting and Supporting a Younger Work Force**

Increasing numbers of younger people (aged 15 to 24) are spending more time in formal post-secondary education before commencing work. As a result, people are entering the workforce later than in the past. One way to counter this trend would be to introduce changes to the school system such as a longer school year that would allow potential workers to graduate with the same education at an earlier age. More apprenticeship and on-the-job training by employers could also be structured to accommodate an earlier exit from the formal education system, especially in areas relating to the trades. Of course, such changes should be thoroughly studied and carefully implemented so they do not negatively impact the quality of education since a highly skilled and educated workforce is critical to success in the future. The intention is to produce a more responsive system to enable people to make a quicker transition into the labour market.

The younger generation of workers today is generally more educated and has higher expectations of their employers. To them, opportunities for training and personal development rank high as desirable job attributes. Employers can accommodate young employees by mentoring them and providing a challenging work environment oriented to

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<sup>10</sup> See Policy Research Initiative (2004) in previous footnote.

personal learning and development.

### **Fiscal Implications**

As previously discussed, all things equal slower growth in the provincial labour force will dampen economic growth. And a decrease in economic growth translates into smaller gains in government revenue at a time when the ageing population is going to increase pressure to spend more on health care and other social service programs. As the population ages, these trends promise to create a number of fiscal challenges.

### **Taxation**

If greater spending demands and slower revenue growth translate into (growing) structural deficits, the provincial government may have to choose between raising taxes to close the gap or running deficits for an indefinite period of time. Although this is a simplification, it does underscore some of the tough policy choices that may lie ahead. Raising taxes is challenging and can negatively affect economic performance as it is important to remain competitive with other North American jurisdictions. Deficits too work to erode fiscal stability and investor confidence.

With a growing share of the population moving into retirement, or working fewer hours, growth in personal income taxes will probably weaken. When labour force growth (and hence employment growth) falls below 1 per cent, the growth in personal income tax revenues accruing to government will diminish. One strategy to address such a decline would be to shift the tax base more towards consumption tax to maintain government revenue.

In this regard, the recent HST announcement is good public policy. Although one of the main reasons the provincial government decided to harmonize the provincial sales tax with the GST was to eliminate taxation on business inputs and make BC more competitive place to invest, the move is also very prudent in the face of the anticipated decline in job growth. The HST represents a moderate shift towards consumption taxes (because the tax base is expanded to include services) which helps diversify the overall tax base. In the future, having a broader consumption tax base should help reduce the reliance on income taxes.

### **Resource Rents**

British Columbia is in the enviable position of being endowed with an abundance of natural resources. To the extent that population ageing results in diminished revenue growth from personal income taxes, resource development in the natural gas and mining sectors is likely to become an even more important source of revenue for the provincial government in the coming decades. A greater orientation to resource revenue may occur naturally over time as revenues from other sources slow, but if additional resource rents are going to be necessary to meet budget requirements, governments may want to plan for this. Working now to streamline the environmental approval process so that new mines can be opened in a timelier manner will better position the province to grow the resource industry in the future. Although anecdotal reports indicate the federal review process is much slower and more problematic, it is revealing that in spite of the recent global mineral and resource boom, BC did not have a single new metal mine open in the province.

### **Productivity**

While improving productivity is always an important objective, it may be the single most important objective with an ageing population. Tax incentives could be implemented to stimulate additional investment in productivity improving machinery and equipment. Again, the government's intention to harmonize the PST with GST is a very important step towards supporting more capital investment in the province. The move significantly reduces the marginal effective tax rate [METR] on business investment, which is a comprehensive measure of all taxes that impact the return on capital investments. After the HST is implemented, BC's METR will be well below the OECD average and among the lowest in Canada. Arguably, this is the single most important tax measure the government could implement to strengthen business, promote investment and improve productivity.

## Social Dimension

In this section, we discuss some of the implications of ageing on social and other government services.

### Health Care Expenditure and Ageing Population

It is widely recognized that health care costs for individuals in the older age cohorts is much higher than for the younger population. Apart from the first year of life, per capita expenditures on health care are relatively low through to age 44. Costs begin to move higher for 45-64 year olds, but really shoot up after age 65. In 2002, per capita health expenditure in BC for infants was \$5,931. The average expenditure on a senior between the ages 65 and 74 was about \$4,700, rising to \$8,600 for an individual in the 75-84 age cohort, and further to \$16,090 for a person over the age of 85 (see Figure 21).

Figure 20 shows total health expenditure has risen substantially in British Columbia over the years. On a per capita basis, total health expenditure went from \$1,215 in 1981 to an estimated \$4,713 in 2007. There was a period during the 1990's when total health expenditure rose minimally, mainly due to fiscal restraint in public health spending. In recent years however, total health expenditure has increased at a much faster pace. Much of the recent increase reflects the rebuilding of a system that did not keep pace with the demands generated by rapid population growth during the 1990s.

In addition to general population growth, an ageing population affects the health care system and costs through a number of channels. These include:

- Increasing the future demand for health care resources — more than 50 per cent of a person's lifetime health care expenditures occur after the age of 65;
- Influencing the level and mix of services needed (e.g., home care, geriatric programs, long term care and chronic care);
- Impacting on the supply side of health care — slower labour force and employment growth may translate into weaker growth in government revenue collected to pay for health care; and,

- An aging labour force and the rising number of retirements put further pressure on the supply of health care workers.

Projecting future government health care expenditure growth is recognized to be more difficult than projecting pension expenditures as the demand for and supply of health care does not have an equivalent framework by which to reasonably estimate future benefits or liabilities (Certified General Accountants Association of Canada, 2005).

While the expanding health care requirements of an ageing population invariably drives up health spending, other factors including technological advances and new procedures, a proliferation of specialists, public expectations, new pharmaceuticals and treatments also contribute to higher costs.

In spite of these challenges, the Canadian Institute for Health Information provides future estimates of health spending in a study entitled “Provincial and Territorial Government Health Expenditure by Age Group, Sex and Major Category: Recent and Future Growth Rates.” The document includes long-term projections of total provincial/territorial government expenditure on health care for the period 2006 to 2026. The analysis anticipates total provincial/territorial government health expenditures will increase from \$72.8 billion in 2002 to \$106.4 billion (measured in 2026 in constant 2002 dollars) due to the impact of population growth and population ageing.

This represents an average annual increase of less than 2 per cent. Annual expenditure growth rates were projected to be 1.8 per cent between 2002 and 2006 and to decline between 2006 and 2022 to an annual 1.5 per cent pace before rising again to approximately 1.7 per cent in 2026. The decline reflects the fact that population growth is expected to slow gradually after 2006 while the ageing effect of the baby boomers is not yet fully in force.

Demographic effects include the combined effect of population growth and population ageing and the authors provide projections for each of these effects. On a per capita basis total provincial/territorial government expenditures are projected to increase from \$2,321 in 2002 to \$2,940 in 2026 (in 2002 dollars) as a result of ageing. The average growth rate in per capita expenditures attributable to ageing is about 1.0 per cent. More specifically, per person expenditures rise by 1.1 per cent between 2002 and 2006 and

then ease to 0.9 per cent per year between 2006 and 2018 and then rise again to 1.2 per cent in 2026. Overall, the projections suggest that the ageing of the population alone will account for about 45 per cent of the overall growth in future health care expenditures.

Figures 23 and 24 present the summary projections for different expenditures from the study. Between 2002 and 2026, average annual growth in spending due to ageing is projected to be highest for other institutions (2.1%), followed by prescribed drugs (1.6%), hospitals (1.1%), physicians (0.6%) and finally other professional services (0.3%). Ageing is going to put additional pressure on public finances and health care funding in the coming years, but analysis suggests even greater pressure will come from other aspects such as the development of new treatments and technological advances.

### **Strategies and Initiatives Towards Rising Health Care Costs**

Spending in health care and long term care is a first order public policy issue for countries around the world and has long been a top priority for Canada. It represents the largest and fastest growing segment of government spending. However, total health expenditure as a percentage of provincial GDP has remained relatively stable over the past three decades, as shown in Figure 20. It has gone up gradually from 10 per cent in the early 1990's to an estimated 11 per cent in 2007. If this share climbs to 12 per cent, such an increase can still be considered reasonable. There may even be scope for an even greater share recognizing that the amount spent on health is a consumption decision. It may be that collectively society wishes to spend more on health care as wealth increases. Still, the spending pressure will be relentless and governments and health care providers will have to pursue strategies to contain costs.

### **Restructuring the Financing of Health Care Delivery**

The need for longer-term reform and restructuring of health care financing and delivery has been repeatedly raised but substantive change remains elusive. Some argue that additional health care costs associated with an ageing population will be manageable in an economy that is growing and in which government revenues rise proportionately. But the pay-as-you-go approach to health care budgeting becomes more problematic if

population ageing translates into slower growth in the workforce and in turn slower economic growth. In this context, it may be prudent to implement changes now before funding and budget shortfalls become an even greater issue.

While there are a great number of policy options that could be used to help contain escalating health care costs, the following items summarize the categories and high level public finance choices that may lie ahead:

- Cutting back on health services (e.g., de-listing of some covered services);
- Raising taxes or introducing user fees to cover pay-as-you go expenditures;
- Diverting resources from other uses; and
- Pre-funding future health care expenditures from current taxation.

### **Human Resources Planning**

Health reforms must also address health professional shortages, an ageing health care work force and growing expenditures related to the recruitment and retention of health human resources. Effective human resource planning is essential to the future of the health system. Federal, provincial and territorial governments need to make policy commitments to develop a workforce plan for physicians, nurses and other health professionals to deal with recruitment, licensing and credentialing standards, training, use of international health care graduates and the geographic distribution of health human resources. The existing approach to physician recruitment and retention should be re-examined and broadened to include a more proactive component that deals with credential recognition shortfalls for foreign trained doctors coming to Canada, sponsorship of foreign doctors and preparation of new entrants to the profession.

Strategies directed at improving productivity and reducing costs would include the use of technology, skills upgrading, enhancing scope of practice (e.g., use of nurse practitioners to take on some physician functions), alternative payment forms and use of evidence-based practices. Greater efforts are needed to increase the number of health professionals specializing in geriatric care, such as geriatricians, geriatric psychiatrists, family physicians with training in health care of the elderly and geriatric nurse practitioners. This planning must be more closely tied to, and evaluated against, the vision for the health care system of the future.

### **Demand for Education and Training**

As we pointed out in earlier sections, population ageing is not only due to the fact that the absolute number of senior citizens and their population share are increasing, but also to the declining share of youth population in the province. In absolute number, the youth population in the province has declined since the late 1990's. The number of school aged children is not expected to start increasing again until around 2015, and those aged 18 to 24, the population flowing into post-secondary education, is expected to start shrinking as soon as 2009 and continue falling until around 2024 (see Figure 25).

These population projections have implications for planners. K-12 enrollment will continue to decline, which means it may be necessary to close some schools depending on neighborhood demographics. There are also impacts on post secondary education. It is possible that there will be fewer resident individuals enrolling in post secondary education and training. If that is the case, it might be a good policy to further extend foreign student and work visas programs so that the province can take full advantage of this source of potential labour supply.

### **Fertility Rate**

There is no single solution for an ageing population. Instead, it will be necessary to implement a host of policy measures. One partial solution may be to implement policies to reverse the flat or falling fertility rate. Of course, this will not help to address labour shortages in the near and medium term. However, having more babies does increase labour supply in the longer term and helps to moderate the rise in the elderly dependency ratio. Incentives such as baby bonuses, facilitating adoption rules and processes, and enhancing maternity and paternity leave and benefits, have had some levels of success in lifting fertility rates in a number of jurisdictions.

In Canada, Quebec is one province that has experimented with incentive based policy to increase birth rates. Studies at the University of Toronto and the University of Quebec in Montreal examining the impact of the Quebec Baby Bonuses suggest that these

programs were effective in increasing fertility rates.<sup>11</sup>

## **Retirement Income**

In this final section we provide some data on retirement income most seniors rely on and briefly discuss some of the related implications of ageing.

Seniors generally have four main sources of income: government transfers, private pensions, investment income, and employment income. In 1999, for two-thirds of senior households, government transfers made up the largest portion of income. Private pensions were the principal source for another 20 per cent of households, and employment income for another 6 per cent. While almost half (49%) had some type of non-pension financial investments, investment income was the main income source for only 6 per cent of the household units with seniors.

Implicit in the above figures is the fact that retirement income for most Canadian seniors comes from multiple sources. In terms of public pensions, almost all seniors received OAS benefits in 2005, and 88 per cent of seniors had Canada or Quebec Pension Plan benefits (CPP/QPP). In 2005, 3.5 million Canadian seniors living in Canada received CPP/QPP pensions, and some 3.86 million seniors had OAS pensions. A majority of Canadian seniors also received income from investments (56%) and private pensions, including RRSPs (61%) in 2005. However, a greater proportion of seniors received income from private pensions (58%) than from RRSPs (10%). Seventeen per cent of seniors had earnings from employment (see Figure 27).

Over the last 25 years, the proportion of seniors with private pensions, RRSPs, and/or CPP/QPP benefits has grown noticeably. The share with private pensions and RRSPs doubled between 1980 and 2005 from 29 per cent to 61 per cent. The proportion earning CPP/QPP benefits increased from 50 per cent to 88 per cent during the same period.

Between 1980 and 2005, average income from OAS remained steady at about \$7,000

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<sup>11</sup> See [http://www.realwomenca.com/newsletter/2001\\_Jan\\_Feb/article\\_3.html](http://www.realwomenca.com/newsletter/2001_Jan_Feb/article_3.html)

per year (in 2005 constant dollars). Average income from CPP/QPP increased from \$3,800 to \$6,000. Average income from private pensions and RRSPs increased the most, from \$9,600 to \$14,800. However, average income from investments decreased from \$8,600 to \$5,200, and employment earnings decreased from \$21,700 to \$11,100. This is shown in Figure 28, with the averages of the source of income in question.

On average, public pensions (OAS and CPP/QPP combined) represented 44 per cent of seniors' total income in 2005. About a third of seniors' income came from private pensions and withdrawals from their RRSPs. The remaining 23 per cent was split between investment income (11%) and other income sources (12%), including earnings and other government transfers.

These figures underscore the heavy reliance by Canada's seniors on government transfer payments as a main source of their retirement income. It should be noted that CPP is not funded out of the federal government's general revenue and the Chief Actuary of Canada has certified the CPP Investment Board's ability to meet obligations well into the future.

On private pensions, there are usually three types of retirement plans – defined benefit plans, defined contribution plans, and hybrids of the two. Defined benefit plans guarantee a set amount of retirement benefits to the plan participants until death, depending upon the plan contributor's years of pensionable service and earnings. In this case, the funding responsibility is borne by the employer who enters into the contract.

Defined contribution plans are plans within which employees and their respective employers/sponsors contribute a set dollar amount or predefined level of funding (usually a percentage of earnings) to the plan. In contrast to defined benefit plans, the plan sponsor does not bear on-going responsibility to guarantee a defined retirement income level and is consequently not subject to funding deficits.

In recent years, two trends in private pension plans have emerged. One is that the proportion of paid workers covered by a registered pension plan (either a defined benefit plan, or a defined contribution plan, or a hybrid plan) is declining. In 1991 45.3 per cent of paid workers were covered by a defined benefit/contribution plan (Statistics Canada,

2005). By 2006, this percentage dropped to 38.1 per cent of the paid workers.

The second trend for those covered by a plan there has been a gradual shift from defined benefit plans to defined contribution plans as employers are transferring more of the risks associated with retirement to individuals. It should be noted, however, that defined benefit plans still account for the majority of private pension plans. In 2006, four out of every five private pension plans were defined benefit plans (see Figure 29).

Employers are increasingly concerned about the costs of being actively involved in the retirement planning of their employees. In addition to the high costs and future risk of many pensions, moving away from retirement planning allows management to concentrate on operational business issues while leaving pension issues to employees who are arguably in a better position to manage their retirement planning in keeping with respective personal agendas. It is reasonable to expect that Canadian employers will continue to move towards defined contribution plans. On the other hand, defined contribution plans create other challenges, such as transferring significant risks to individual employees who may be ill prepared to assume those risks or to make effective financial decisions. As we have experienced recently, the value of investments can also be greatly eroded during economic downturns and financial crisis.

## Summary and Conclusions

Based on the statistical information in this report it is clear that the population in British Columbia will continue to steadily age in the coming decade. The challenge for the province and policy makers is the fact that the baby boomers are going to be moving into retirement age and beyond. This impacts a wide array of economic and social factors in the province.

In conclusion, we note the following:

- population ageing is occurring, and its pace is expected to accelerate during the period of analysis;
- labour force growth is expected to slow down as a result of the ageing process, with implications for general economic growth in the province;
- health care costs, especially as a share of public expenditure, are expected to

- climb, with implications on affordability and sustainability of public finance;
- no single policy or measure will be able solve the challenges of an ageing population, but a coordinated effort where governments as well as the private sector work together to develop consistent and effective policies can help mitigate the negative impact.



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## Appendix I Figures and Tables

Figure 1

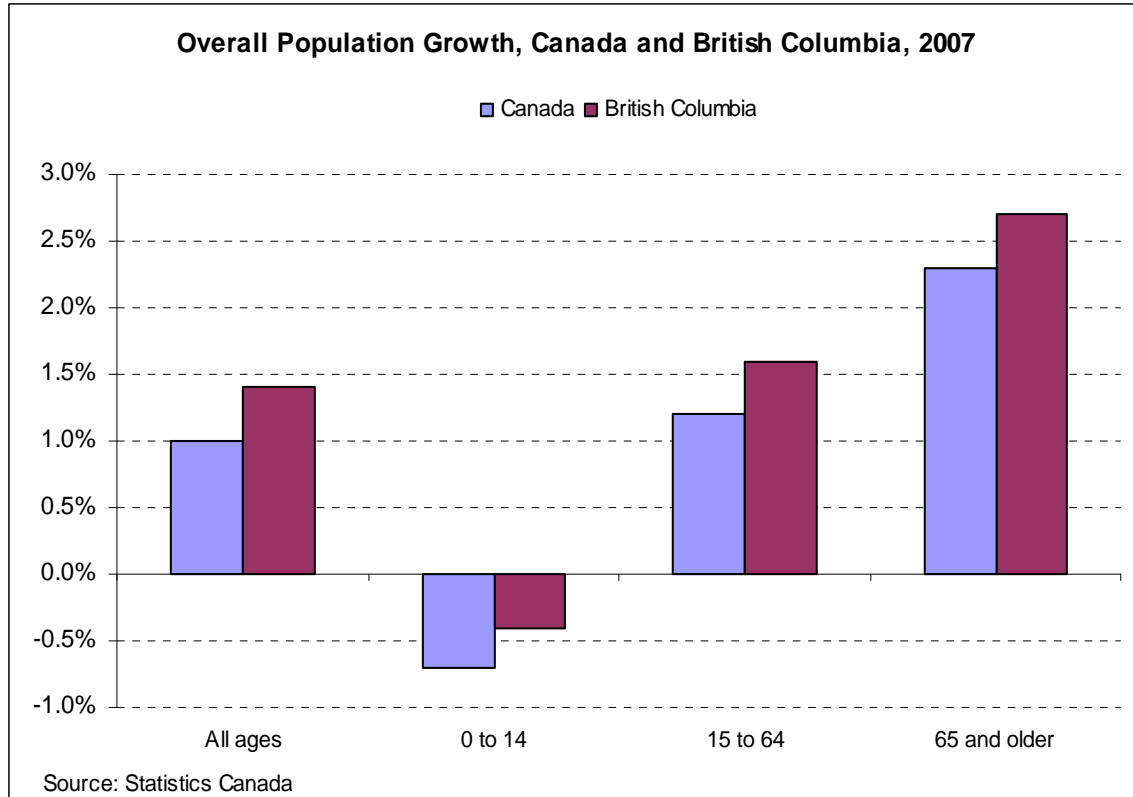


Figure 2

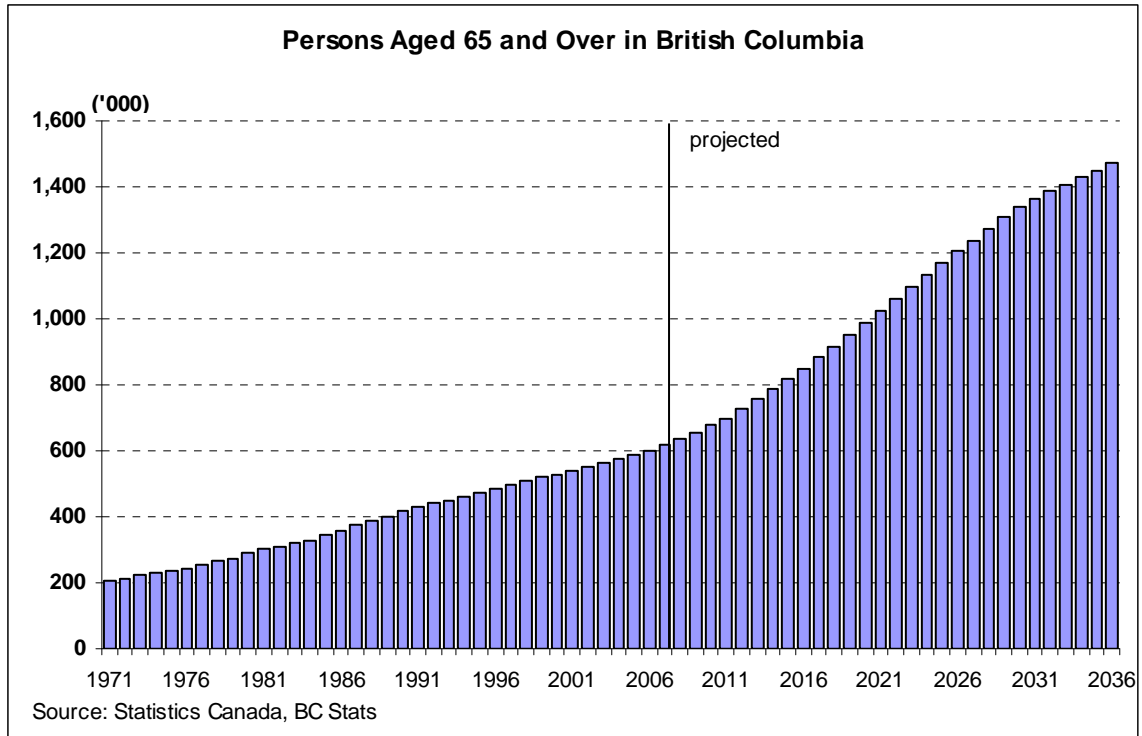


Figure 3

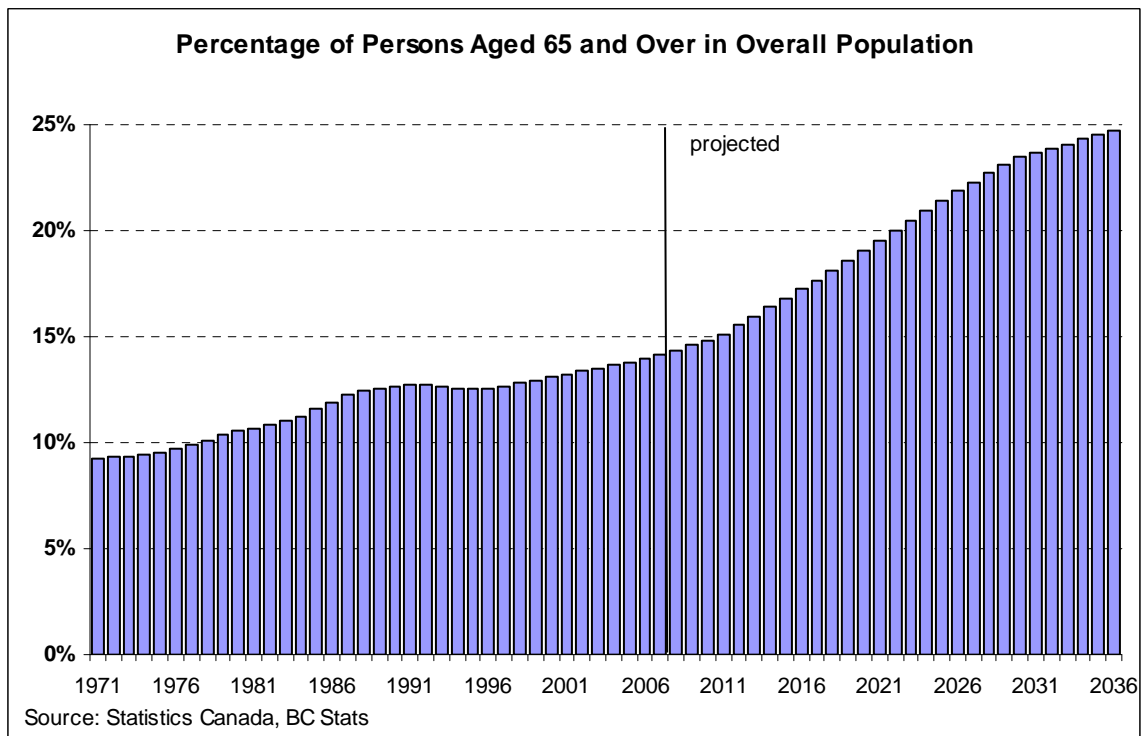


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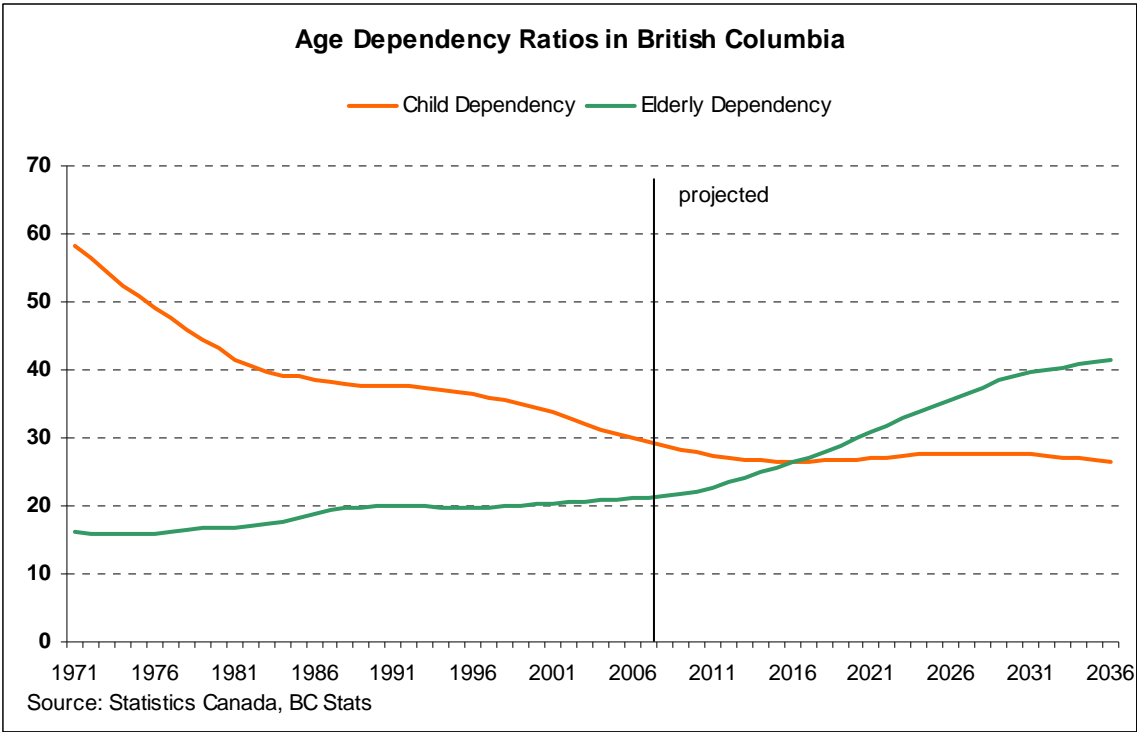


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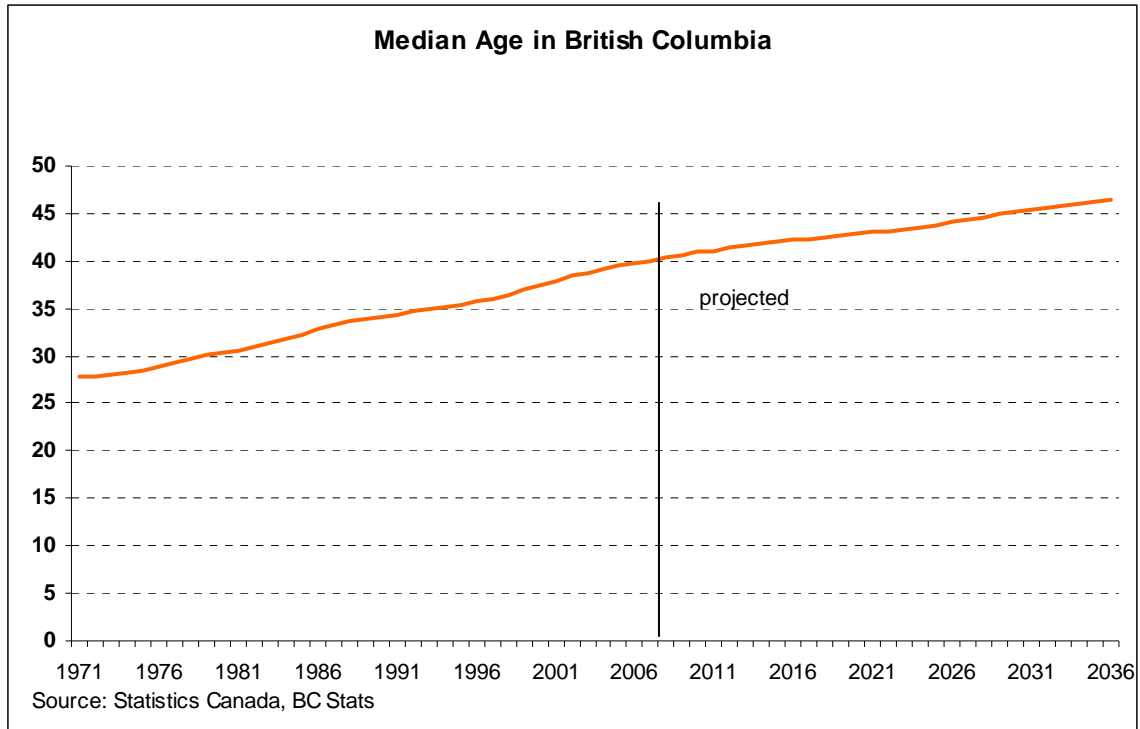


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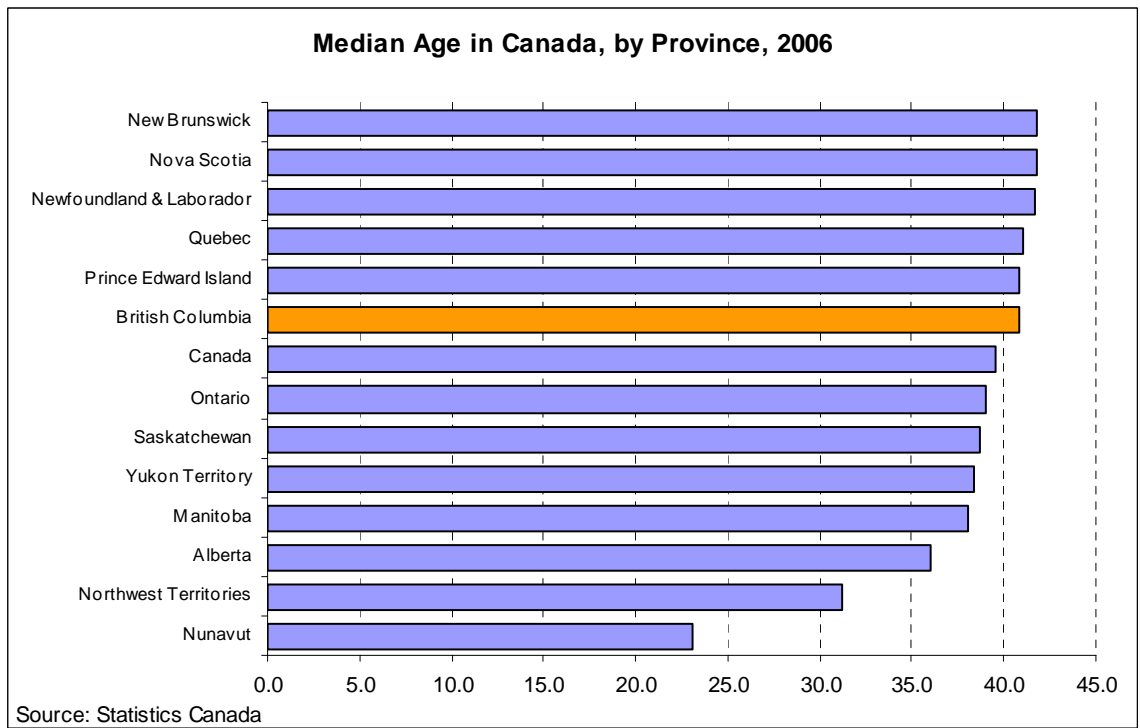


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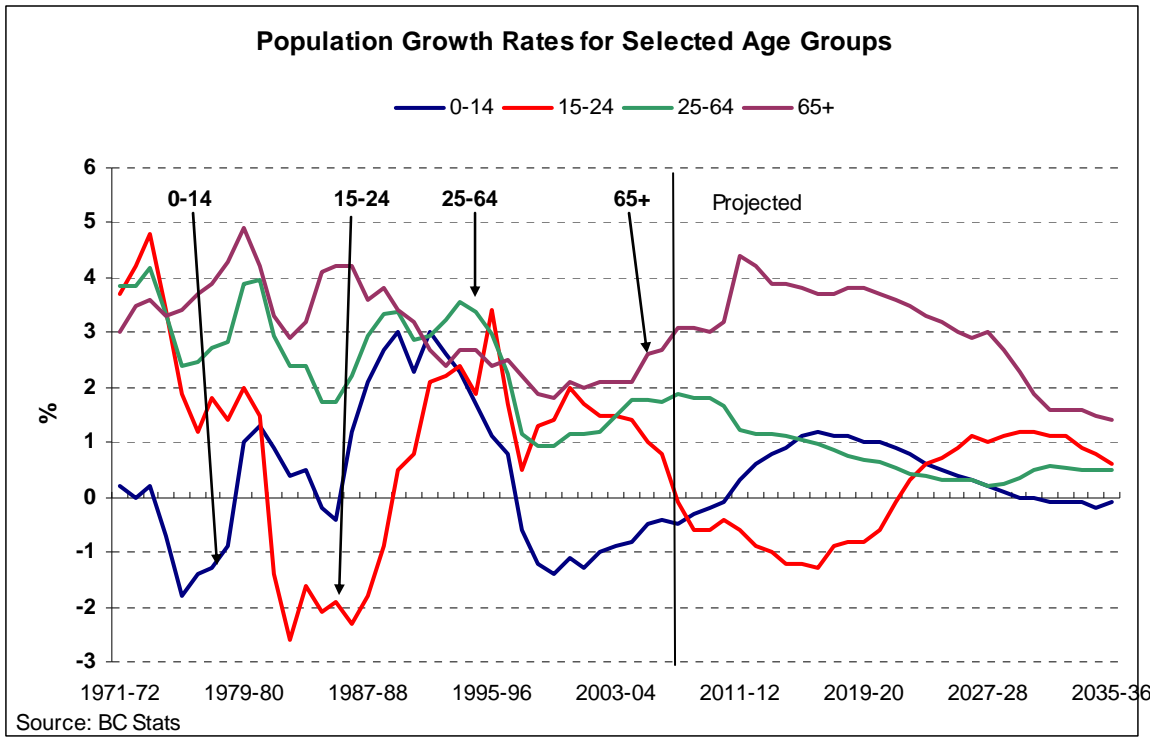


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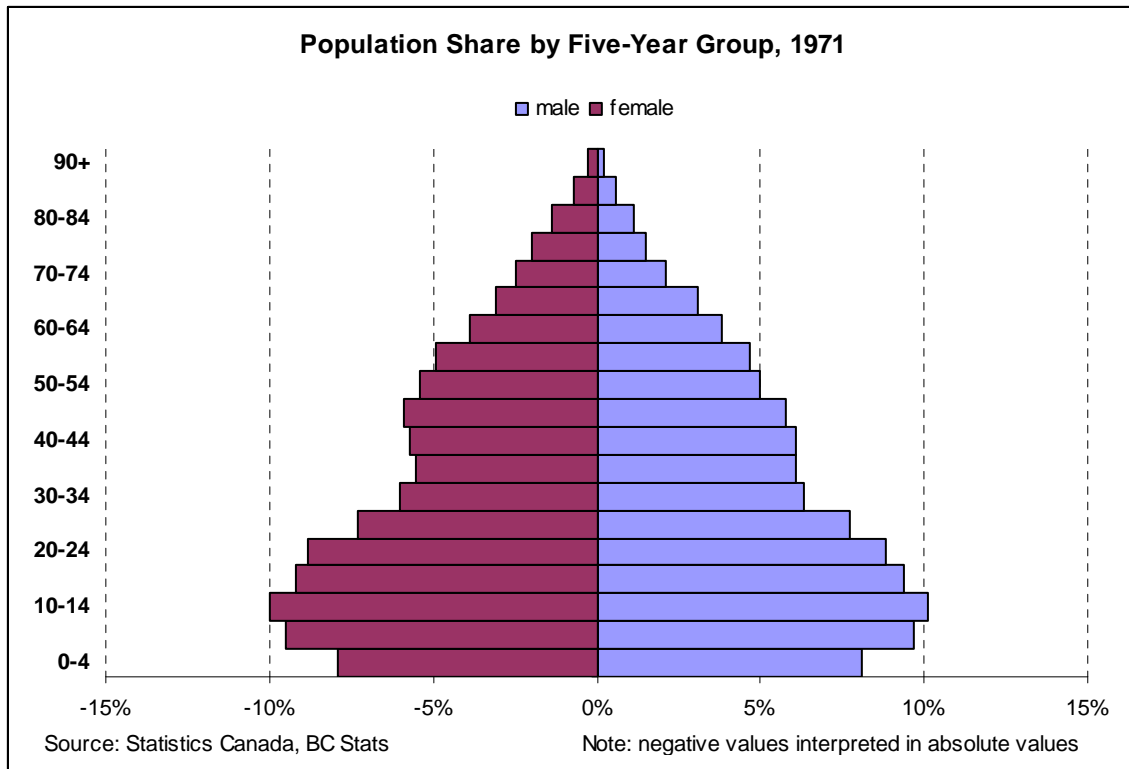


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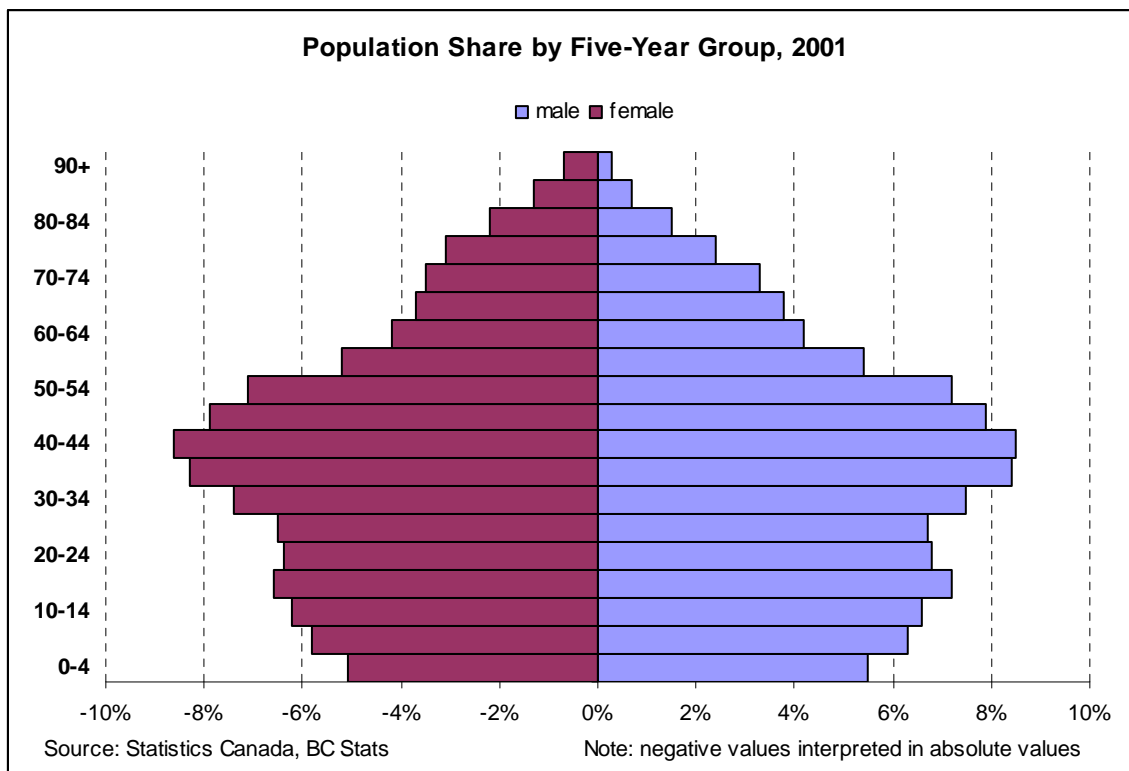


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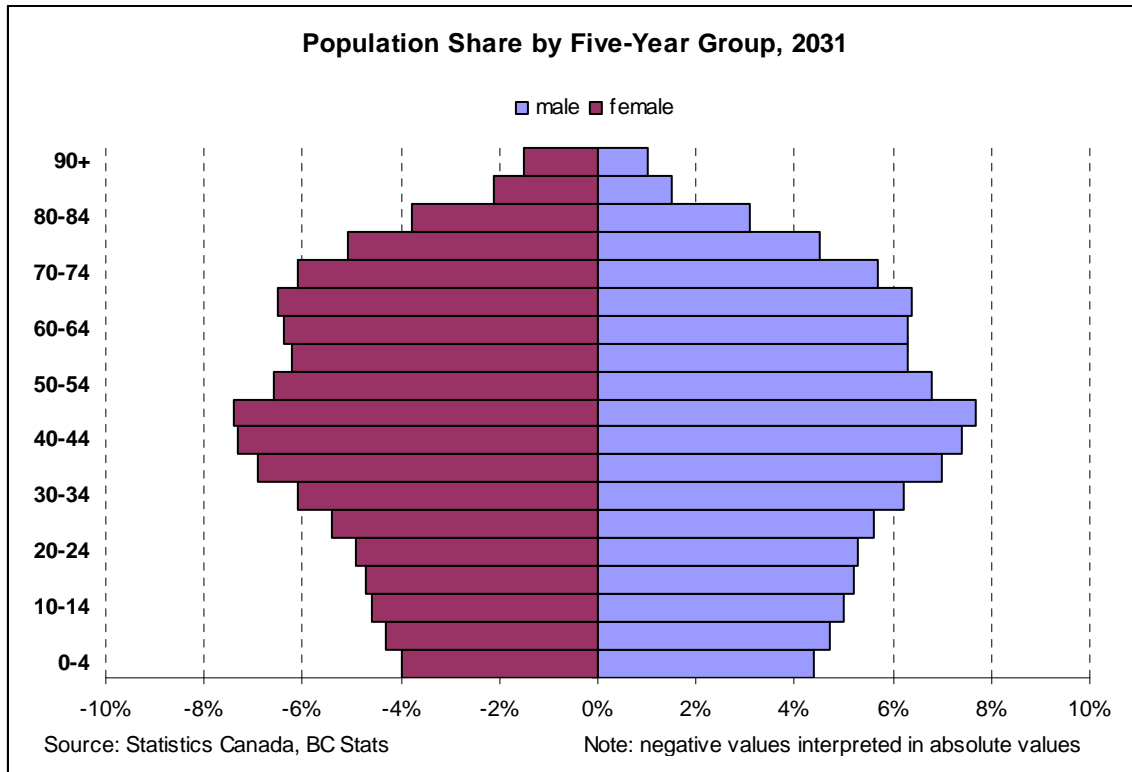


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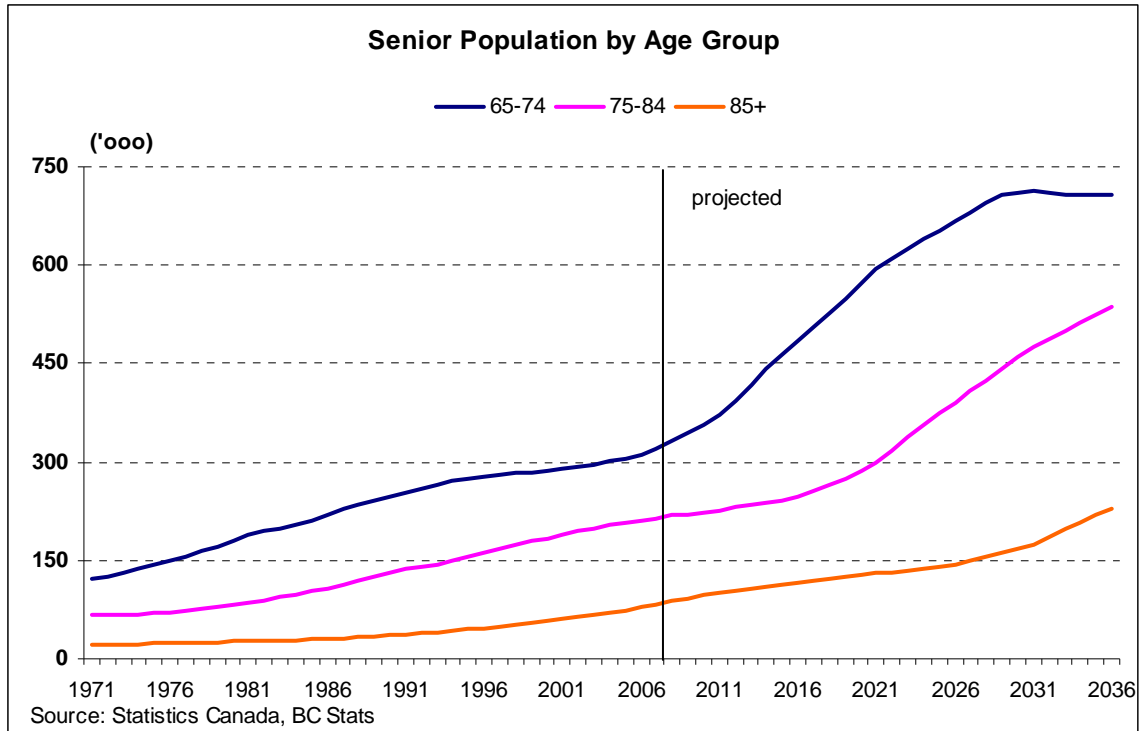


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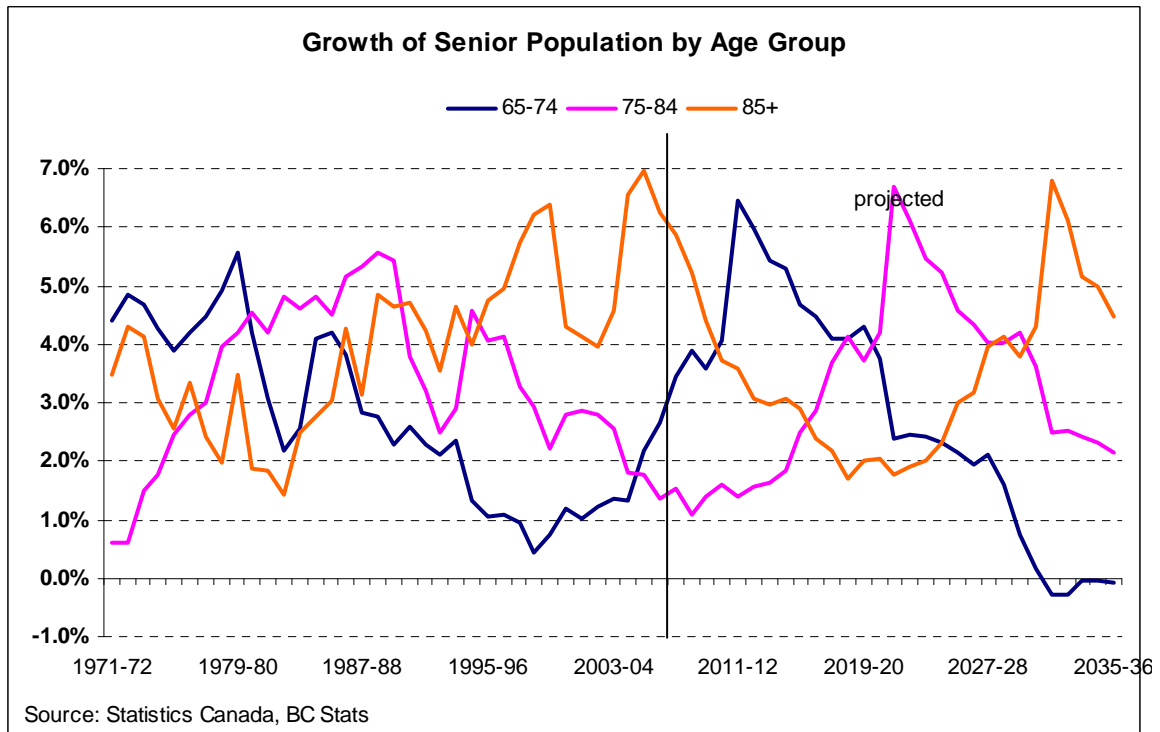


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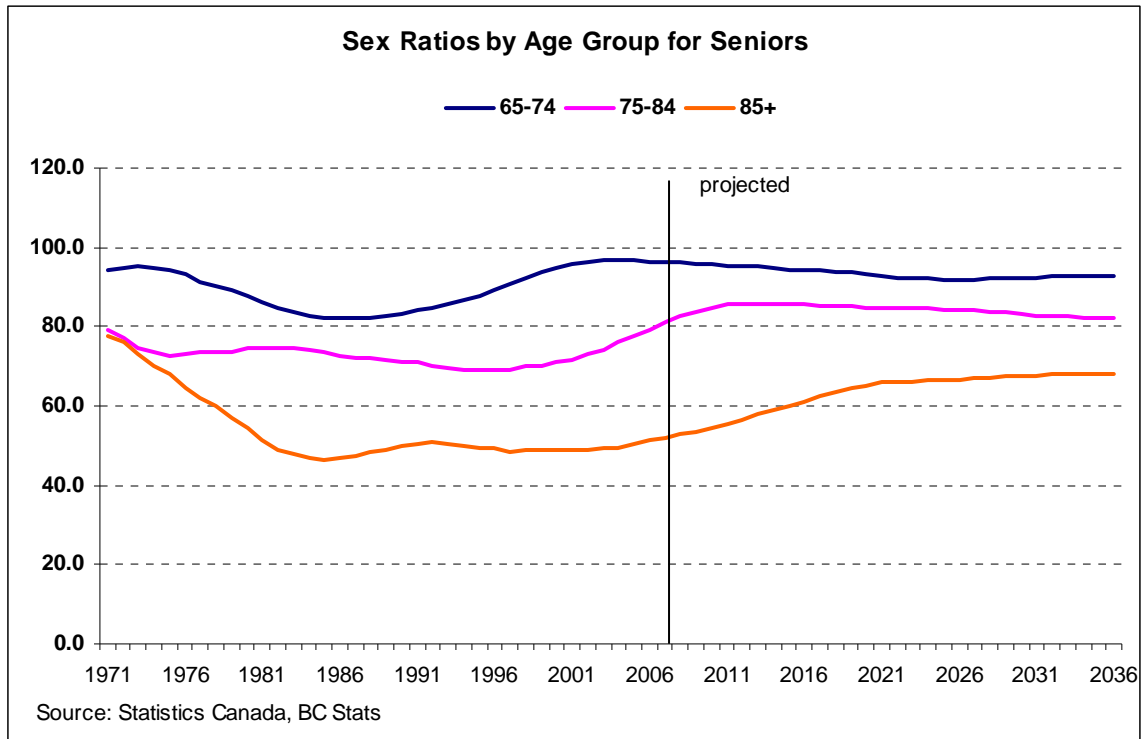


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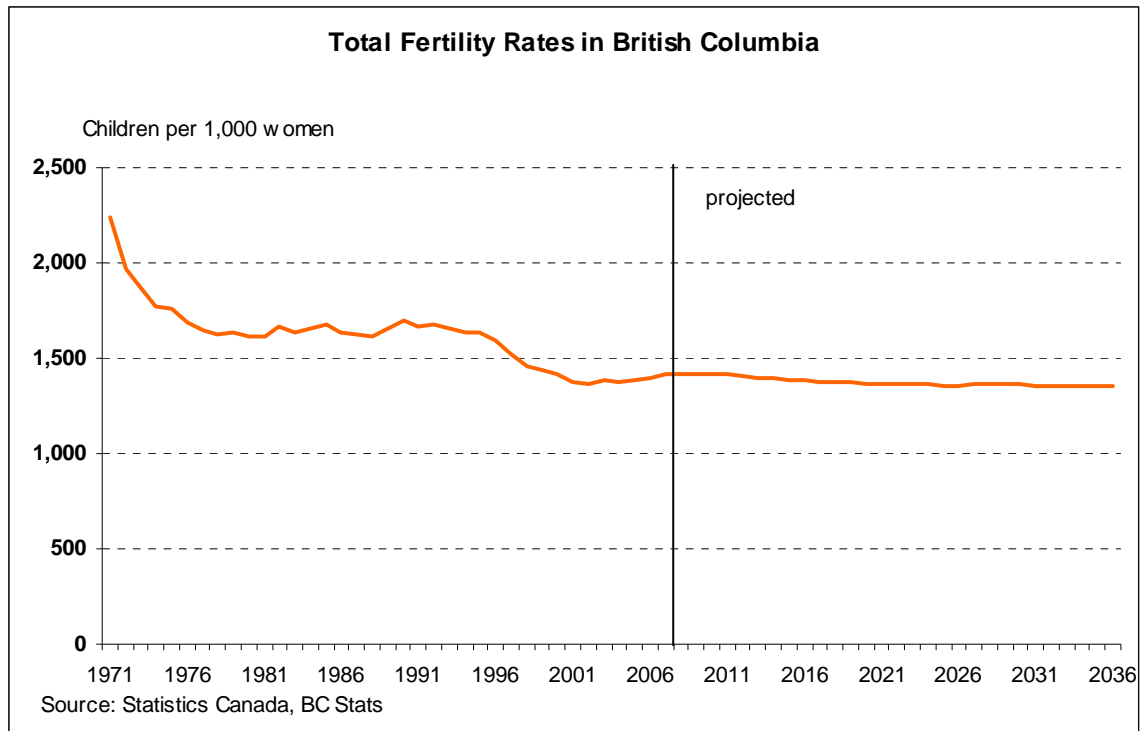


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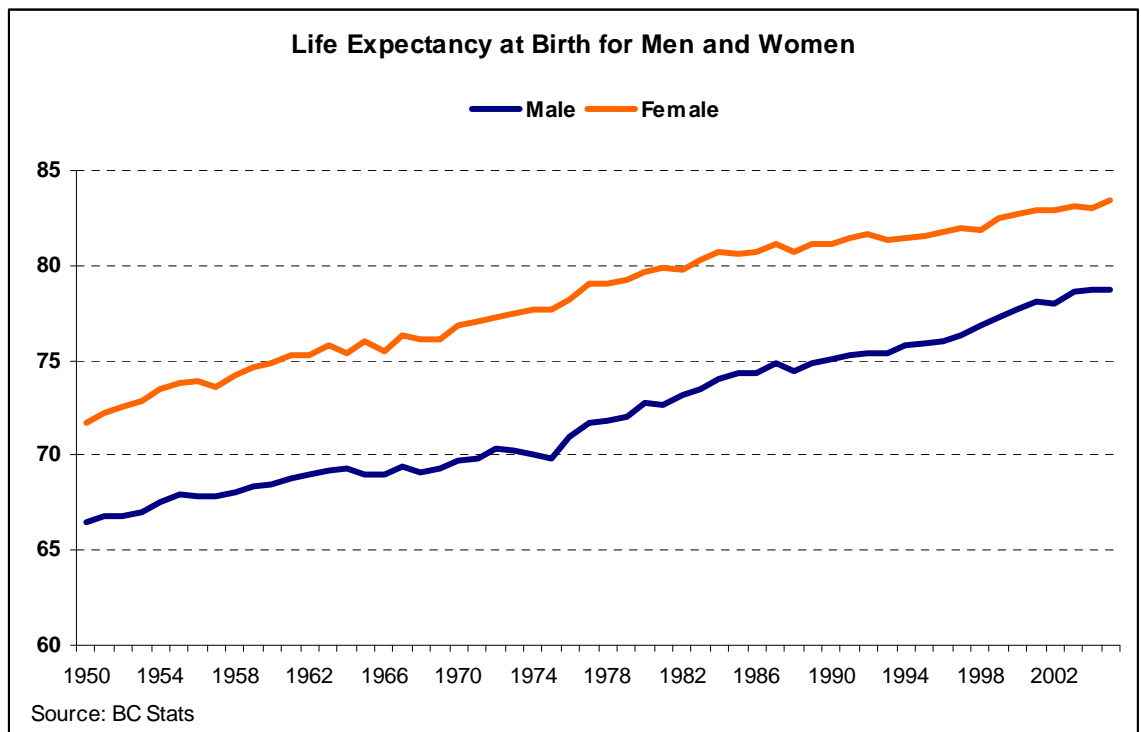


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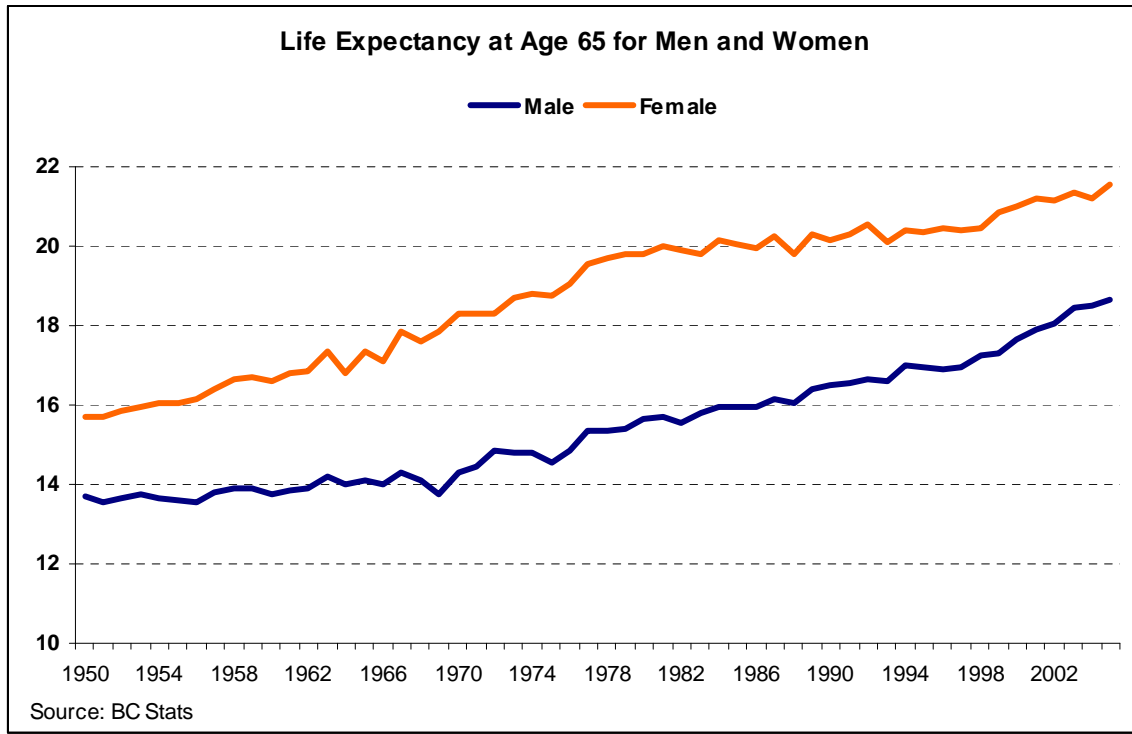


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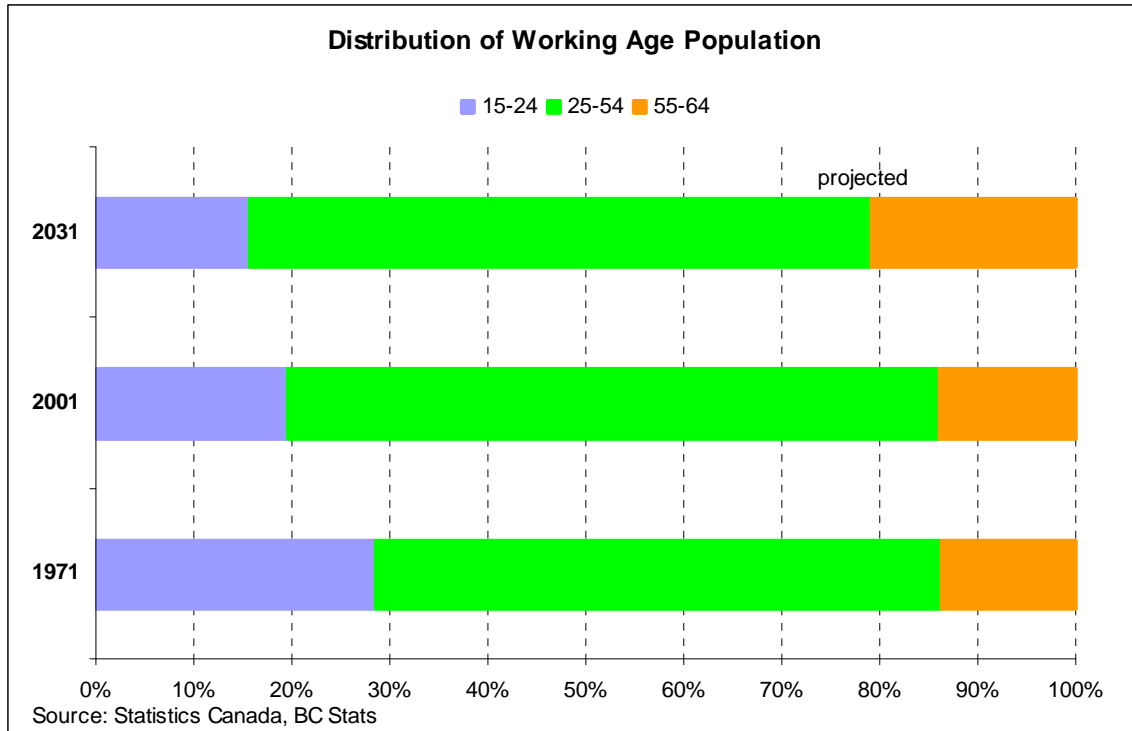


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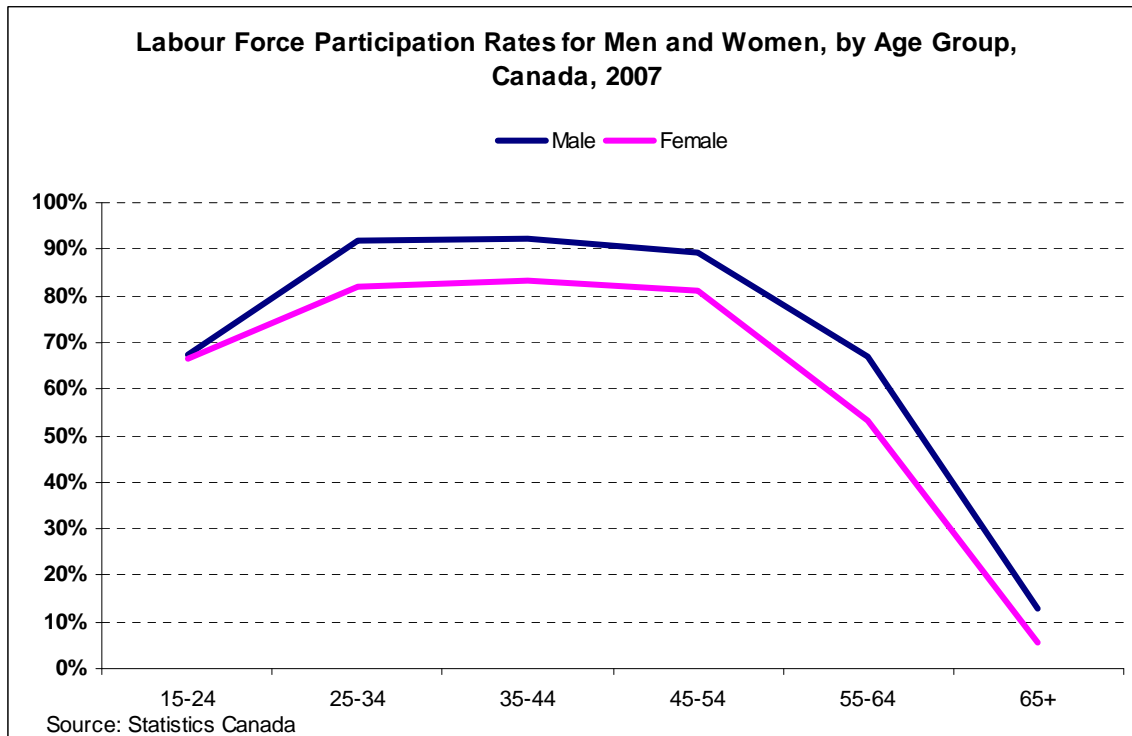


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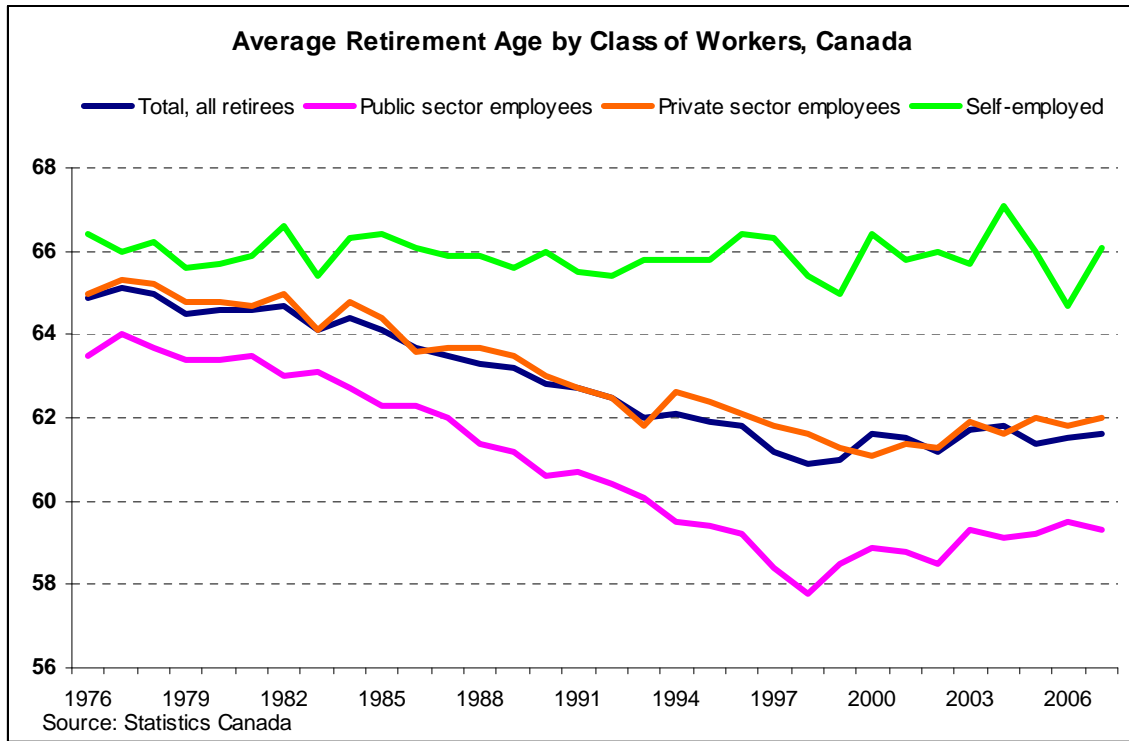


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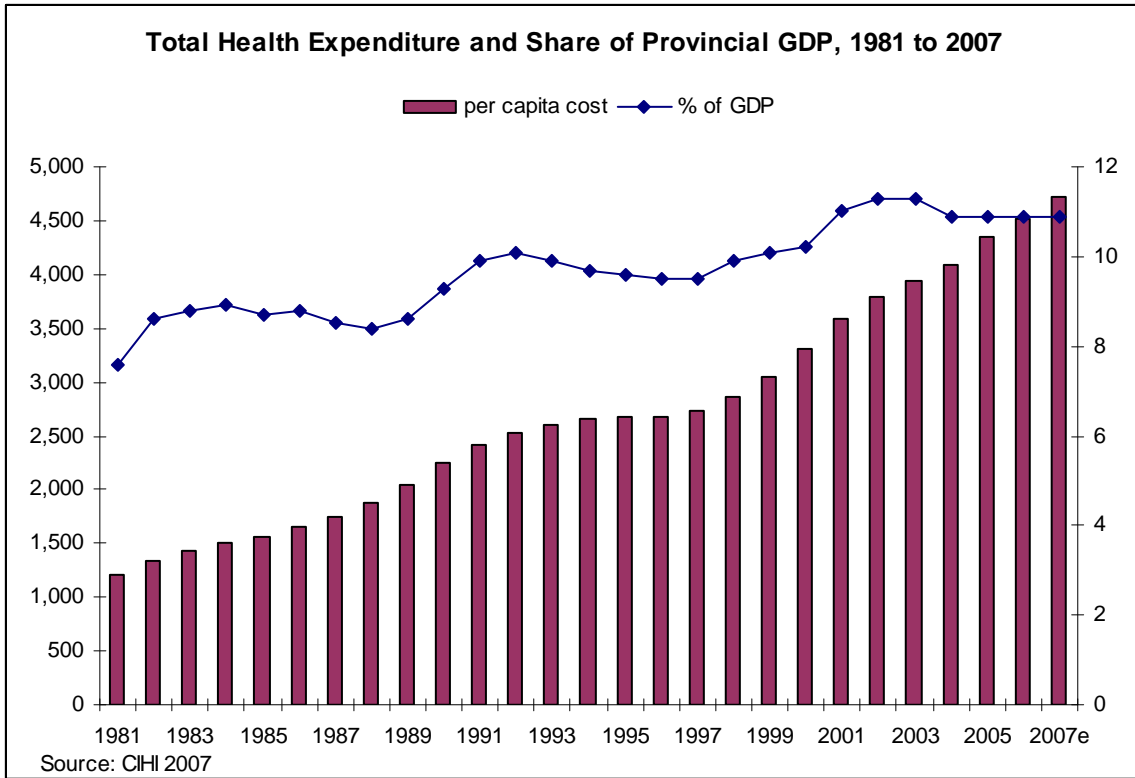


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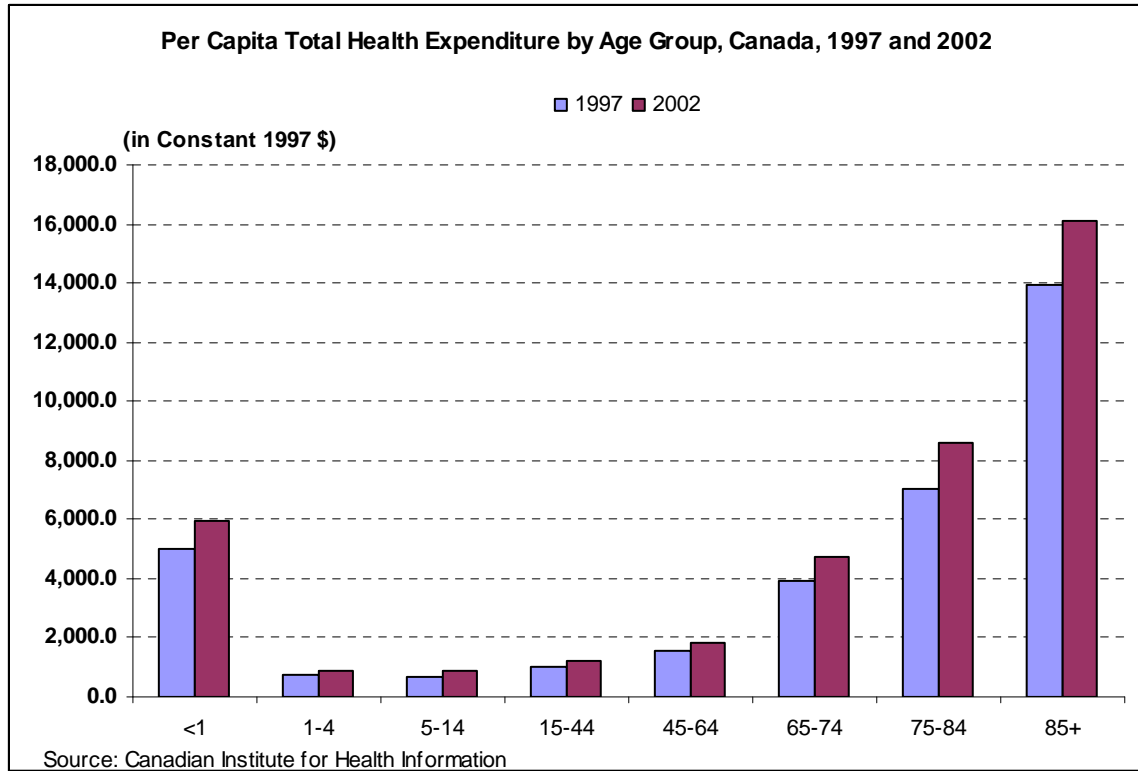


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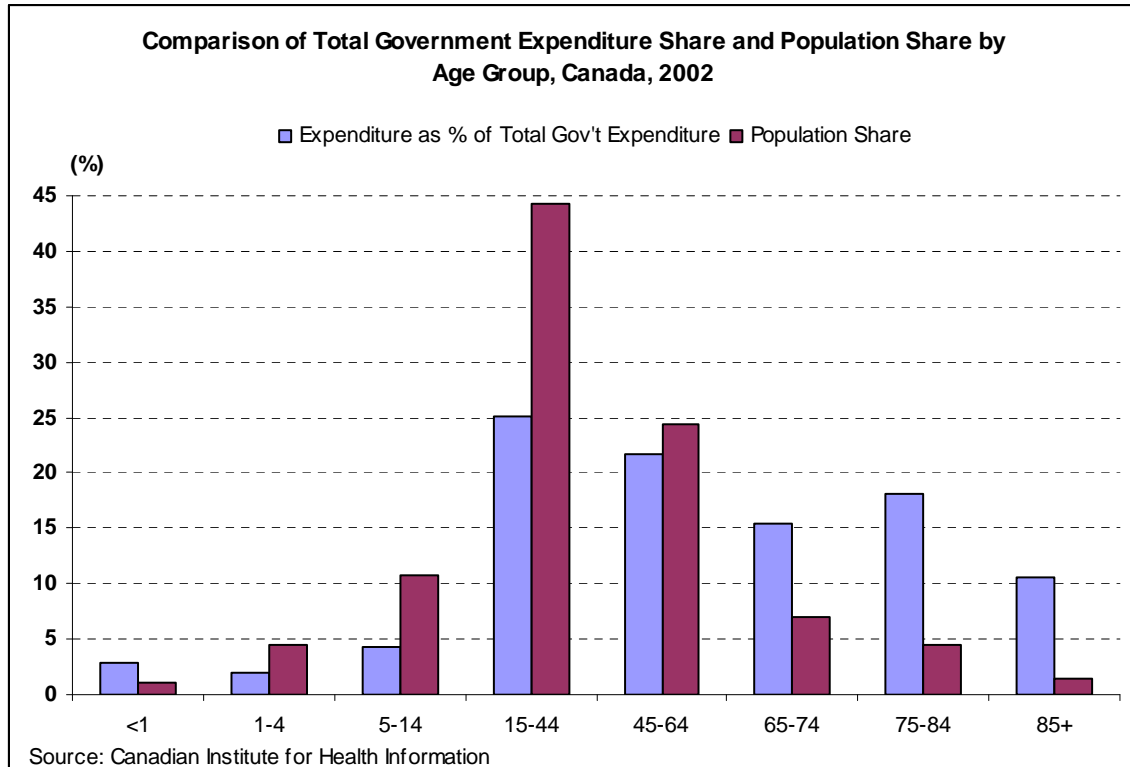


Figure 23 Estimated Provincial/Territorial Government Expenditures on Hospitals, Other Institutions, Physicians, Other Professionals and Drugs, Demographic Effects, 2006 to 2026, Canada, in Constant 2002 Dollars

	2002	2006	2010	2014	2018	2022	2026
Expenditure Due to Demographic Effects in Constant 2002 \$ million							
Hospitals	31,027	33,326	35,673	38,123	40,664	43,589	46,822
Other Institutions	7,699	9,050	10,142	11,071	12,023	13,081	14,493
Physicians	14,510	15,292	16,112	16,905	17,668	18,472	19,281
Other Professionals	776	812	846	878	909	940	972
Prescribed Drugs	5,806	6,240	6,711	7,316	7,989	8,836	9,766
All Categories	72,828	78,075	83,218	88,395	93,706	99,692	106,390
Average Annual Increase due to Demographic Effects, 4 Year Intervals							
Hospitals	---	1.85%	1.76%	1.72%	1.67%	1.80%	1.85%
Other Institutions	---	4.39%	3.02%	2.29%	2.15%	2.20%	2.70%
Physicians	---	1.35%	1.34%	1.23%	1.13%	1.14%	1.10%
Other Professionals	---	1.17%	1.04%	0.93%	0.88%	0.85%	0.86%
Prescribed Drugs	---	1.87%	1.89%	2.25%	2.30%	2.65%	2.63%
All Categories	---	1.80%	1.65%	1.56%	1.50%	1.60%	1.68%

Source: Canadian Institute for Health Information

**Figure 24 Estimated Provincial/Territorial Government Expenditures on Hospitals, Other Institutions, Physicians, Other Professionals and Drugs, Pure Ageing Effect, 2006 to 2026, Canada, in Constant 2002 Dollars**

	2002	2006	2010	2014	2018	2022	2026
	Expenditure Per Capita due to Aging Effect ('\$)						
Hospitals	989	1,034	1,076	1,121	1,168	1,226	1,294
Other Institutions	245	281	306	326	345	368	400.47
Physicians	463	474	486	497	507	519	533
Other Professionals	25.48	25.96	26.28	26.54	26.81	27.13	27.55
Prescribed Drugs	189	198	207	220	234	253	275.03
All Categories	2,321	2,423	2,511	2,599	2,691	2,804	2939.71
	Average Annual Increase due to Ageing Effects, 4 Year Intervals						
Hospitals	---	1.14%	1.02%	1.04%	1.04%	1.24%	1.38%
Other Institutions	---	3.61%	2.25%	1.60%	1.52%	1.63%	2.22%
Physicians	---	0.65%	0.62%	0.56%	0.52%	0.59%	0.64%
Other Professionals	---	0.46%	0.31%	0.25%	0.26%	0.30%	0.39%
Prescribed Drugs	---	1.15%	1.13%	1.54%	1.65%	2.06%	2.13%
All Categories	---	1.09%	0.91%	0.88%	0.88%	1.04%	1.21%

Source: Canadian Institute for Health Information

Figure 25

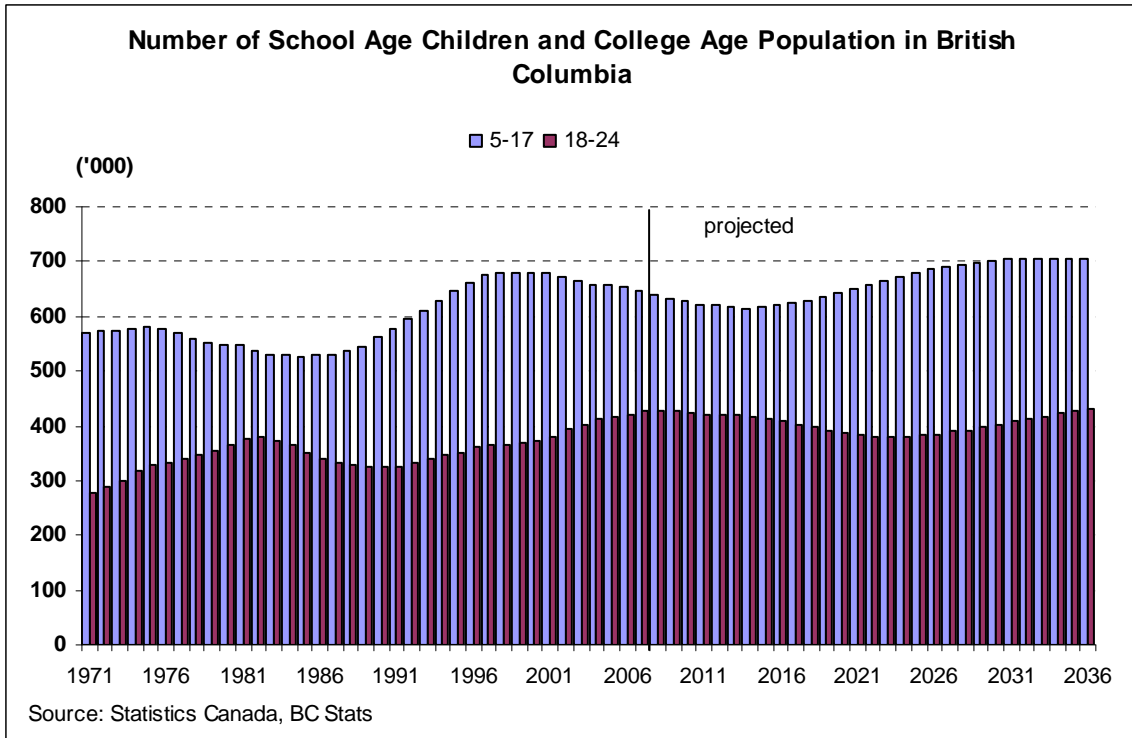


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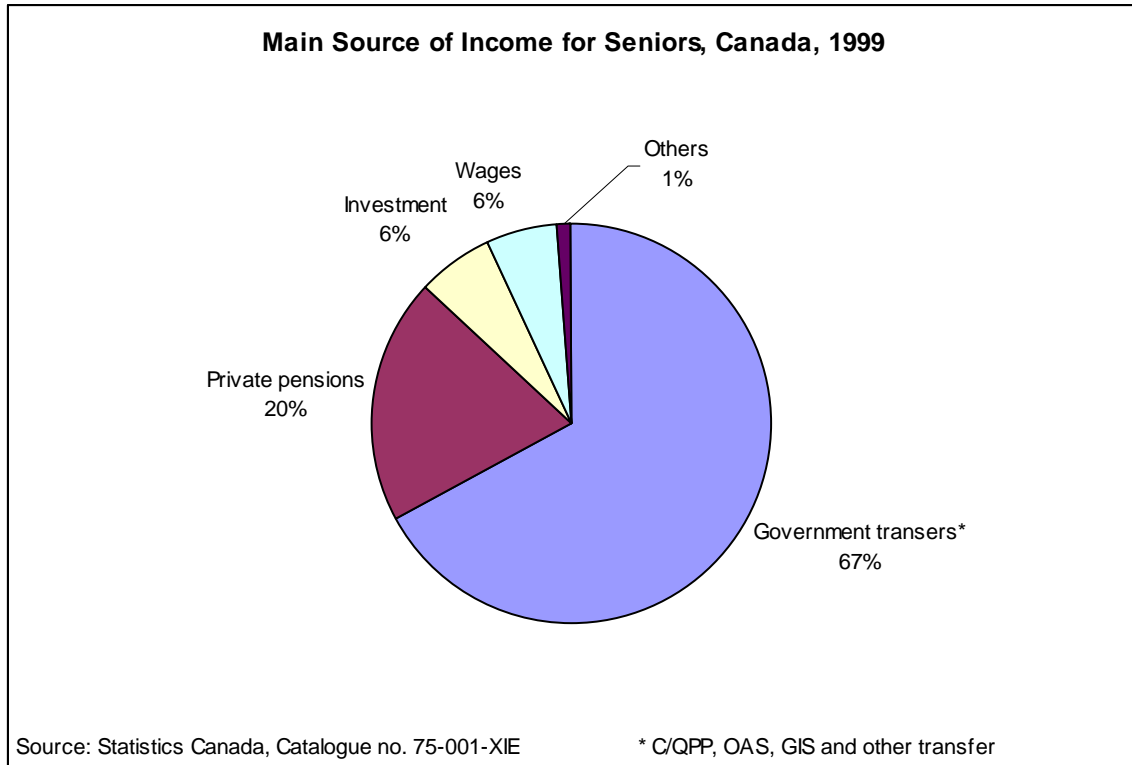


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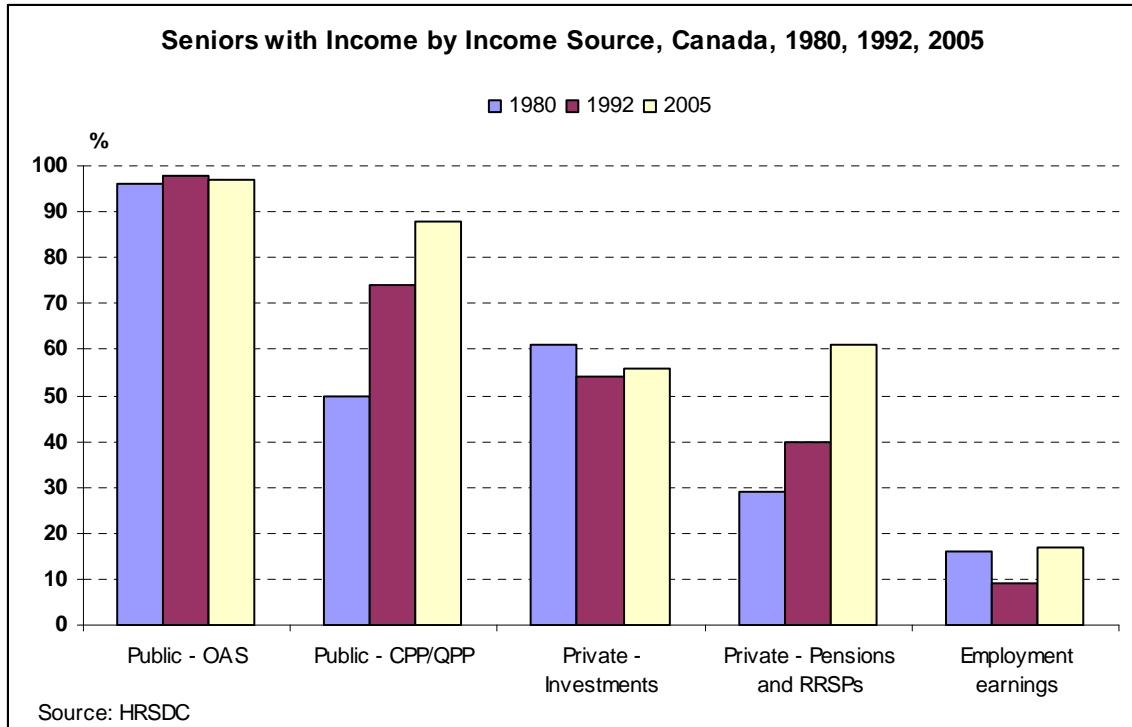


Figure 28

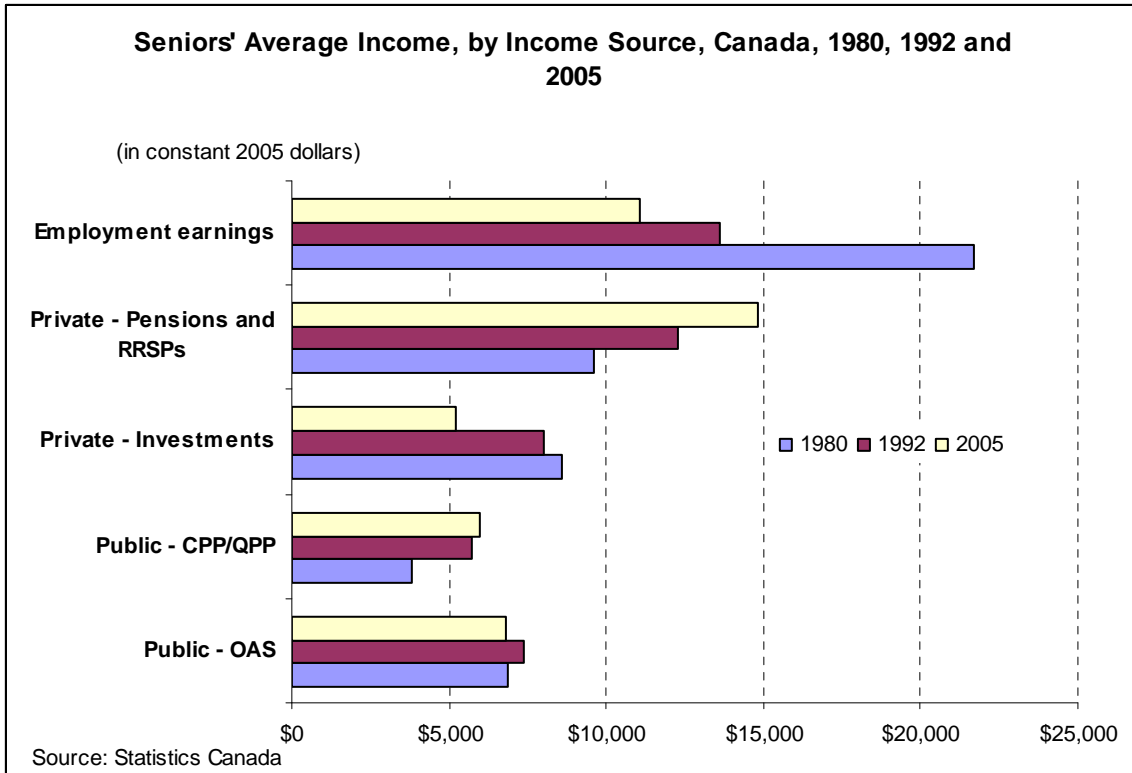


Figure 29

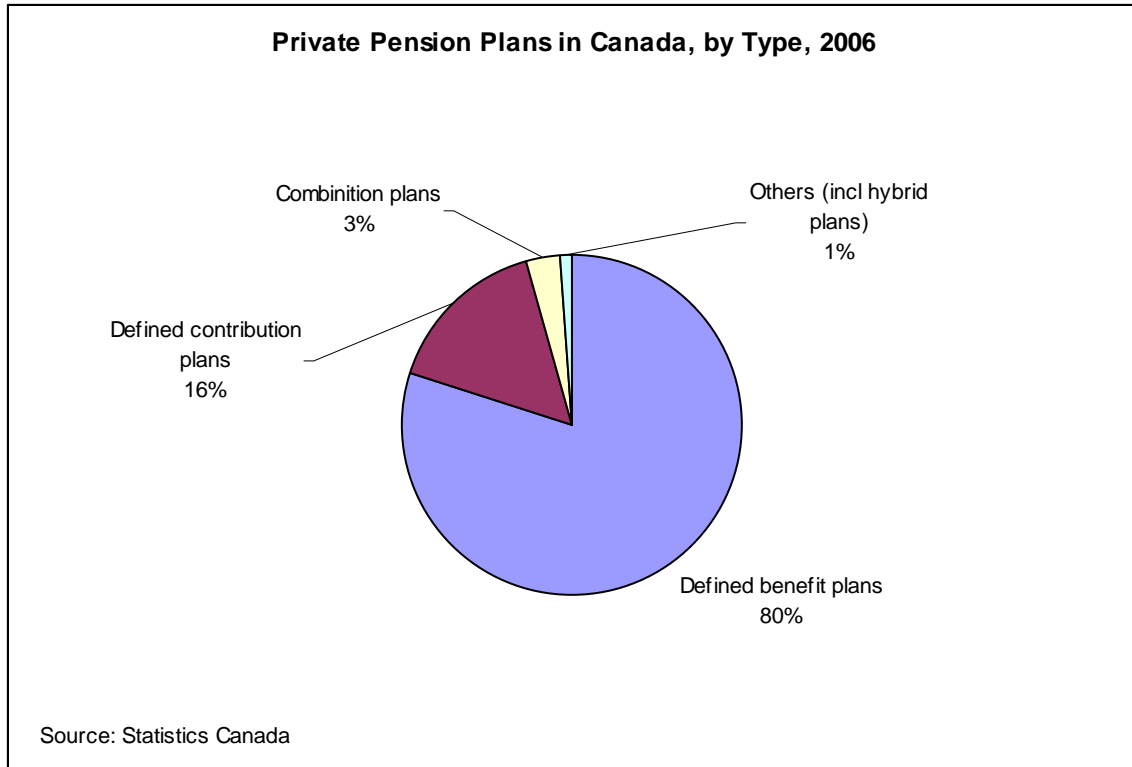


Figure 30

Figure 31