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Economic Security in an Aging Canadian Population

Robert L. Brown

SEDAP Research Paper No. 285

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Economic Security in an Aging Canadian Population

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Abstract

This paper has been written to bring up to date materials in a monograph that was a part of the Butterworths series of monographs in social gerontology, in particular, the 1991 monograph entitled: Economic Security in an Aging Population (Brown, 1991).

The paper reports on research that indicates that today's retirees are doing very well in terms of their replacement ratios and that Canadian poverty rates among the elderly are low relative to OECD (Organization for Economic Co-operation and Development) countries.

Government-sponsored plans have been strengthened either through explicit expansion (e.g., the Guaranteed Income Supplement (GIS)) or through the reform of the Canada/Quebec Pension Plans (C/QPP). Also important is the maturation of Employer-sponsored pension plans. However, for the latter, coverage rates are down.

This has created concern that future generations of Canadian retirees may not be able to experience the standard of living that is the reality for today's elderly.

The paper concludes that the aging of the population is not the cause of the increased cost of health care and social security today. Even by 2031, when the entire baby boom will be aged 65+, the impact of population aging on costs will be manageable. The paper also discusses the affordability of these systems if the normal age at retirement were to rise.

Résumé

Ce document a été écrit dans le but de mettre à jour le contenu d'une monographie faisant partie de la série de monographies Butterworths en gérontologie sociale, plus particulièrement, la monographie de 1991, intitulé La sécurité économique d'une population vieillissante (Brown, 1991).

Ce document rend compte des recherches qui montrent que les retraités d'aujourd'hui sont très bien lotis en termes de taux de remplacement et que le taux de pauvreté des personnes âgées au Canada est faible par rapport aux autres membres de l'OCDE (Organisation de coopération et de développement économiques).

Les plans de retraites publiques financés par le gouvernement ont été renforcés grâce à l'expansion soit explicite (par exemple, le Supplément de revenu garanti (SRG)) ou par le biais de la réforme des régimes de pensions du Canada / Québec (RPC / RRQ). De même, la maturation des régimes de retraites parrainées par les employeurs constitue aussi un élément important qu'il faut souligner. Malheureusement, le taux de couverture de ces derniers est en baisse.

Cette situation a créé une inquiétude que les générations futures de retraités canadiens ne seront pas en mesure de faire l'expérience du niveau de vie des personnes âgées d'aujourd'hui.

Notre étude conclut que le vieillissement de la population n'est pas la cause de l'augmentation du coût des soins de santé et de la sécurité sociale aujourd'hui. Même en 2031, lorsque l'ensemble des baby-boomers seront âgés de 65 ans et plus, l'impact du vieillissement de la population sur les coûts restera contrôlable. Le document aborde également l'accessibilité de ce système si l'âge normal de la retraite est revu à la hausse'.

JEL Classification: J18

Key Words: Baby boom, old age security, Canada/Quebec pension plans, registered pension plans, registered retirement savings plans, health care cost

1. Introduction

In 1991, Butterworths, as part of their Perspectives on Individual and Population Aging series, published a volume entitled: Economic Security in an Aging Population. I was the sole author. Obviously, much has changed since 1991 including significant reform of the Canada/Quebec Pension Plans.

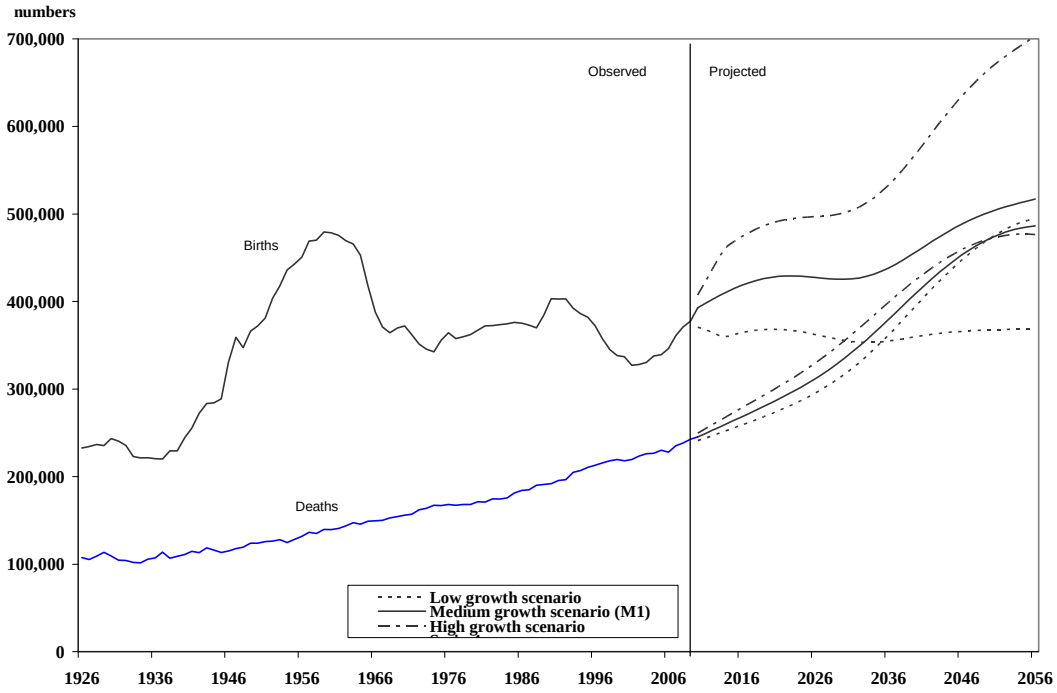
This paper updates the issues discussed in Economic Security in an Aging Population and provides more current data support. This is done using sections that correspond to the chapters in the original publication.

In particular, the paper investigates the cause of rising costs for health care and social security. For health care, it is shown that population aging is not the prime factor driving costs up (see Section 7). For social security, because many of our social security benefits are indexed to cost-of-living rather than wage growth, the rising costs will be manageable in a growing economy. Finally, it is shown that a modest increase in the normal age of retirement, along with growth in labour force productivity, would go a long way in stabilizing the demand for, versus the supply of, goods and services.

2. Demographic Background

Canada's shifting demographics are one of the important forces affecting (and effecting) the cost of our social support programs over the next half century. This analysis is based on the following two graphs:

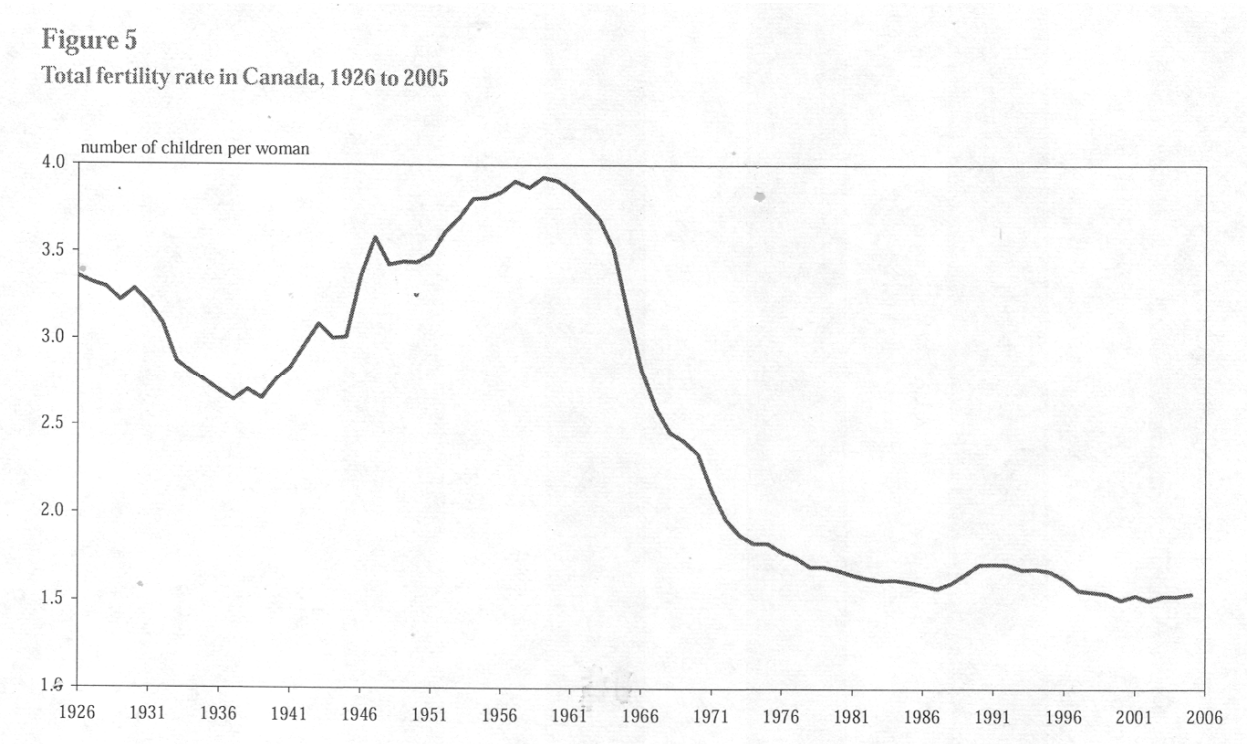
Figure 1: Number of births and deaths in Canada, 1926 to 2056



Source: Statistics Canada (2010)

Source: Statistics Canada (2008a), page 7.

Figure 2: Total fertility rate in Canada, 1926 to 2005



Source: Statistics Canada (2008a), page 8

It is popular to think of the baby boom as being a 1946 event. However, as seen in Figure 1, the baby boom did not peak until 1959 (with live births of 479,000) and really did not end until around 1966.

The fact that the baby boom is younger than popularly presented is both good news and bad news. The good news is that there is still some time to adjust our systems (if necessary) to accommodate the baby boomers as they age. The bad news is that if we think we have a crisis today, how will we manage the realities of the 2030s?

There are actually two reasons for the current "population aging". The first is the demographic tidal wave of the baby boom/bust. The second is ever improving life expectancies as illustrated in Figure 3.

Figure 3: Survivor Curves Canada

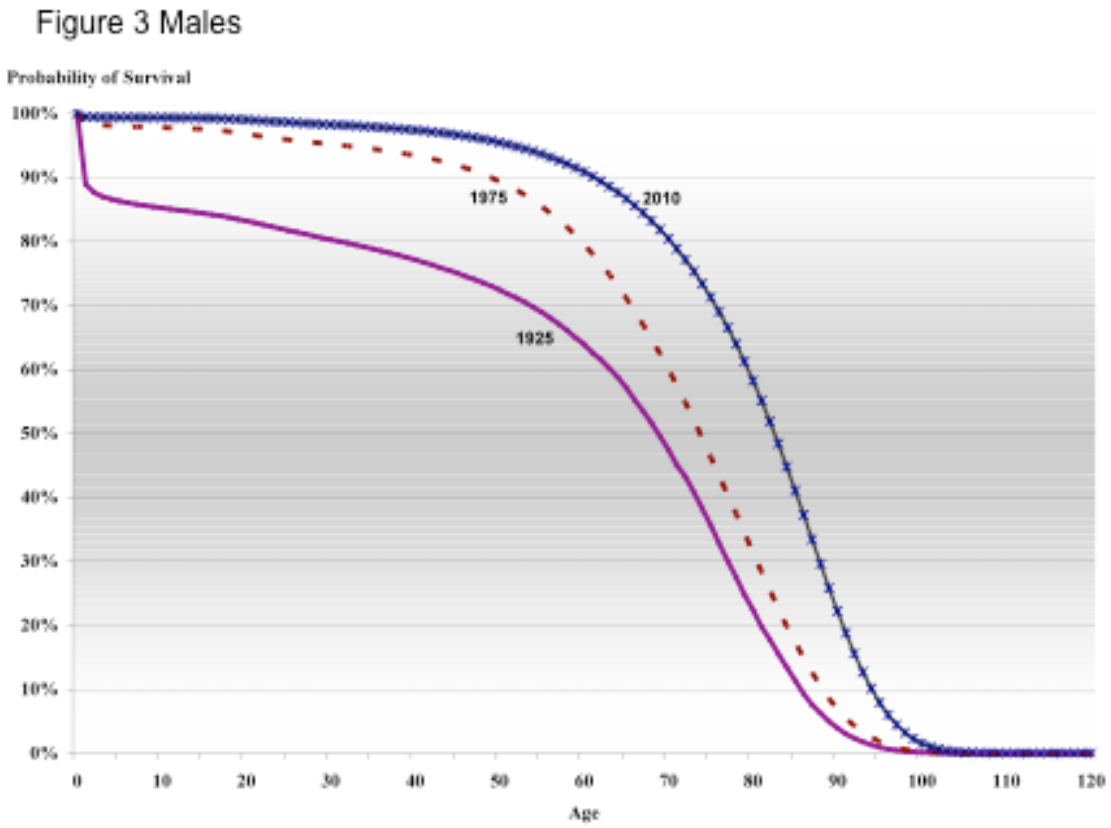
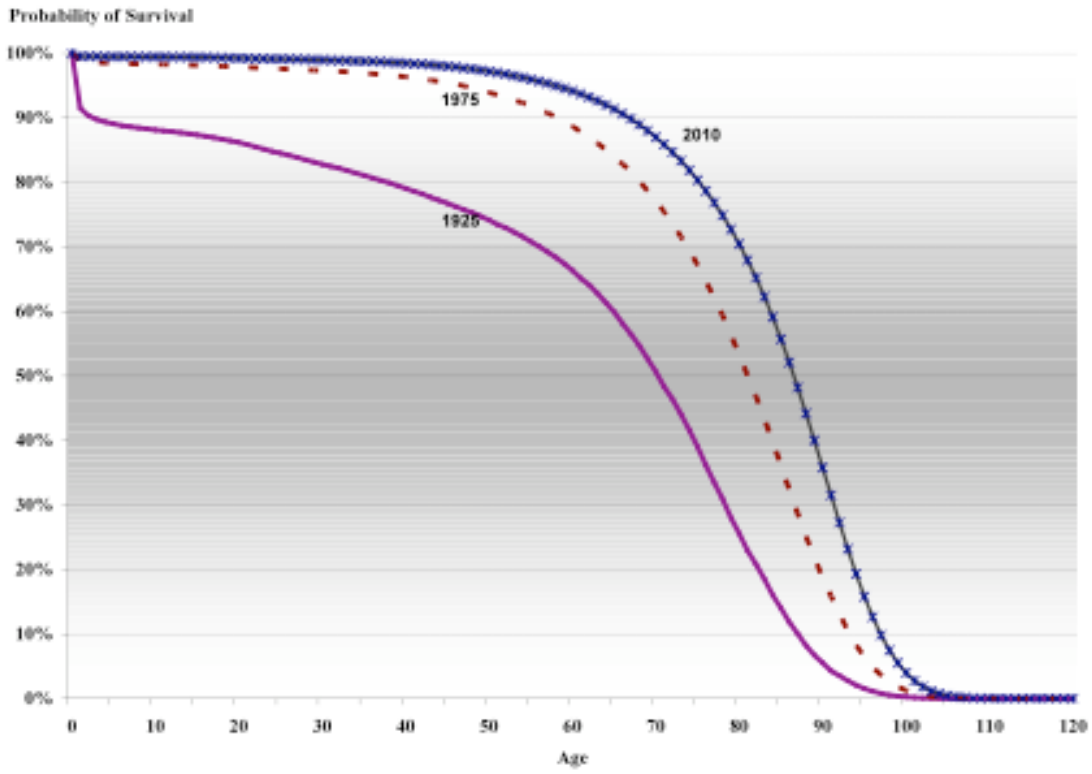


Figure 3 Females



Source: CPP Office of the Chief Actuary, Office of the Superintendent of Financial Institutions

We can see the same improvement in survivorship by looking at the following life expectancy data.

Table 1

Life Expectancy in Canada

Year	At Birth		At Age 65		At Age 75	
	Male	Female	Male	Female	Male	Female
1921	58.8	60.6	13.0	13.6	7.6	8.0
1941	63.0	66.3	12.8	14.1	7.5	8.2
1961	68.4	74.2	13.5	16.1	8.2	9.5
1981	71.9	79.0	14.6	18.9	9.0	11.9
2001	76.9	82.0	17.0	20.5	10.3	12.9
2006	78.3	82.9	18.1	21.3	11.2	13.5

Statistics Canada: Life Tables, Canada and the Provinces, several

These two forces, in combination, result in the population aging illustrated in Table 2 and Figures 4-6. In particular, if we compare the projected Canadian population in 2036 to the population as it existed at the time of the 1996 census, Table 2 shows that the proportion of the population aged 65+ will double and the proportion of the population 85+ will triple. This is a combination of growth in those age groups and actual declines in the younger age groups (the baby bust).

Even as the baby boom dies off, in the next half century, the proportion in the elderly age groups given for 2036 below will continue. This is because of the impact of the anticipated continued improvement in life expectancy. Thus, it isn't so much that the baby boom caused population aging. Rather the baby boom advanced the timing of the impact of population aging.

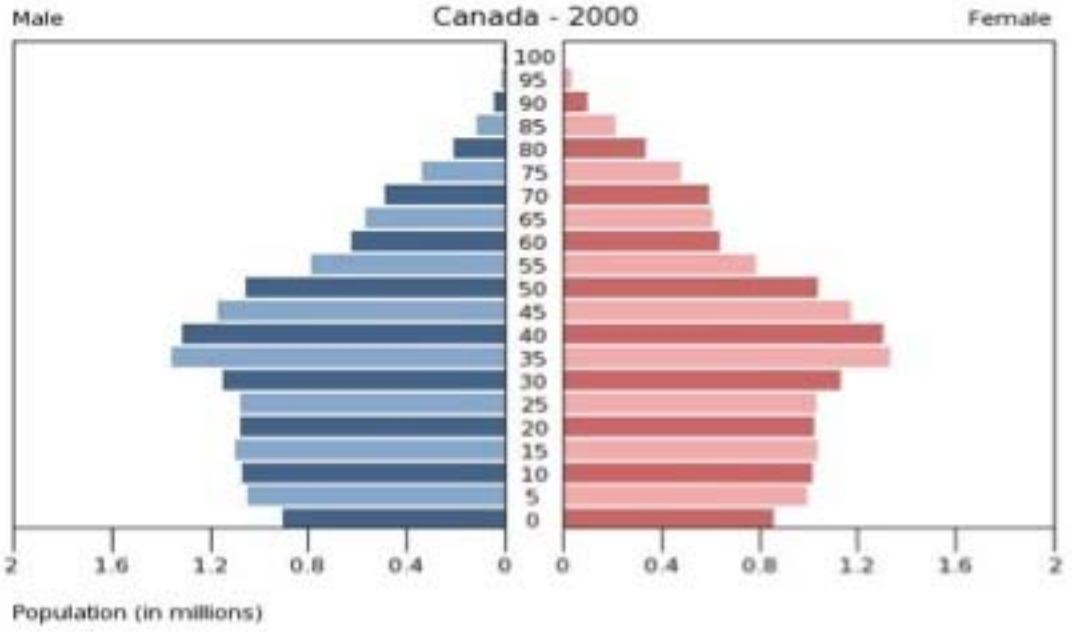
Table 2: Distribution of Canadian Population by Age-Group, 1956 to 2036

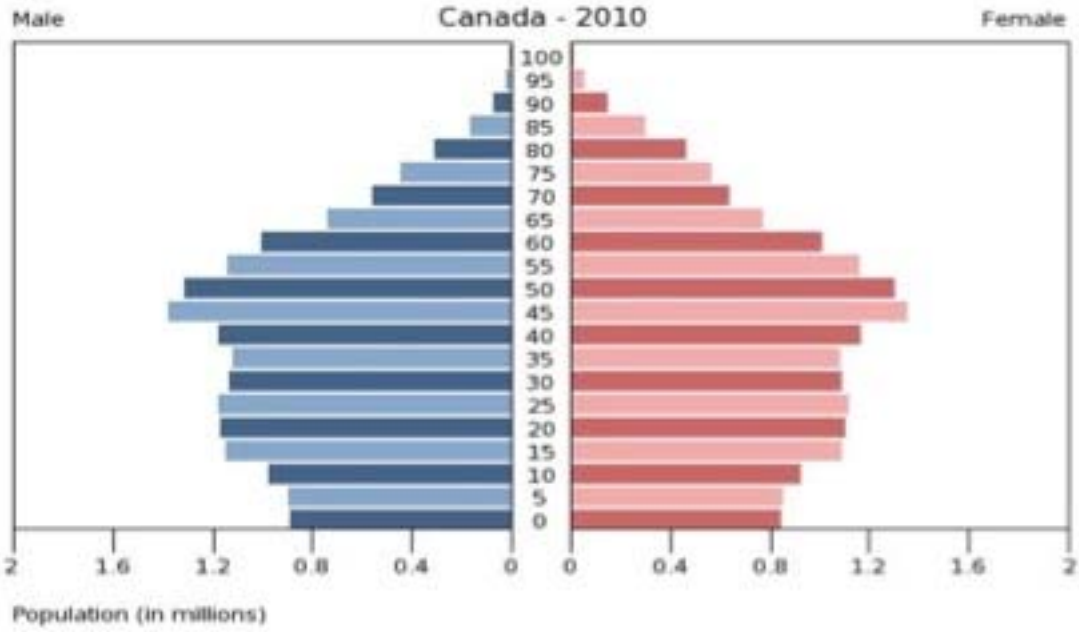
Age	**1956**	**1976**	**1996**	**2016**	**2036**
Under 20	39.4	35.6	26.7	21.1	20.2
20-64	52.9	55.8	61.1	62.4	55.0
65+	7.7	8.6	12.2	16.4	24.8
75+	2.5	3.2	5.1	7.0	12.8
85+	0.4	0.7	1.2	2.1	3.8

Source: Statistics Canada Population Projections

This shift can also be seen in the following population pyramids.

Figure 4


Male
Canada - 2000
Female
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
2
1.6
1.2
0.8
0.4
0
0
0.4
0.8
1.2
1.6
2
Population (in millions)


Male
Canada - 2010
Female
100
95
90
85
80
75
70
65
60
55
50
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35
30
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5
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1.2
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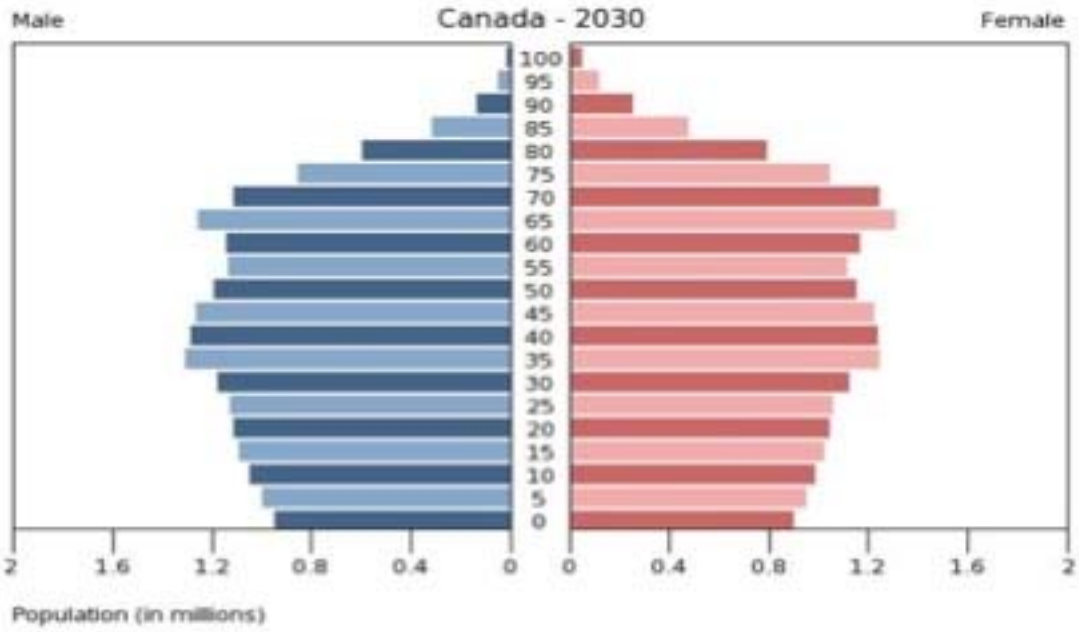
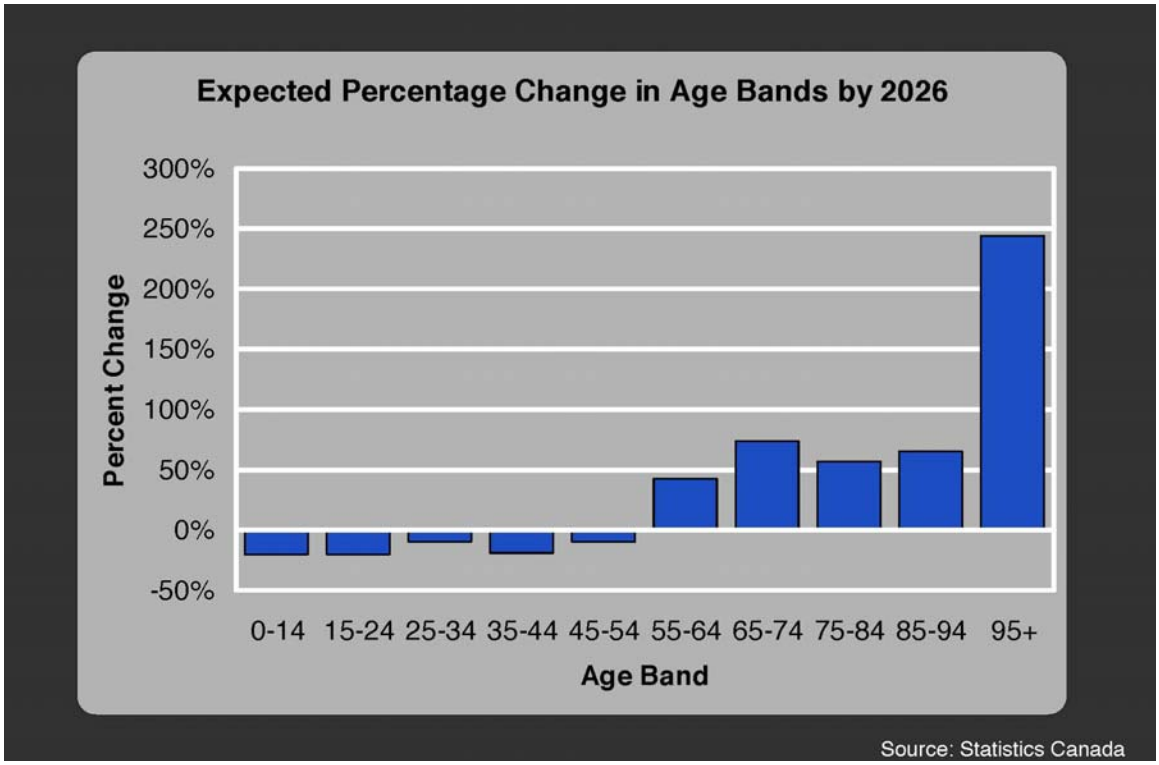
2
Population (in millions)



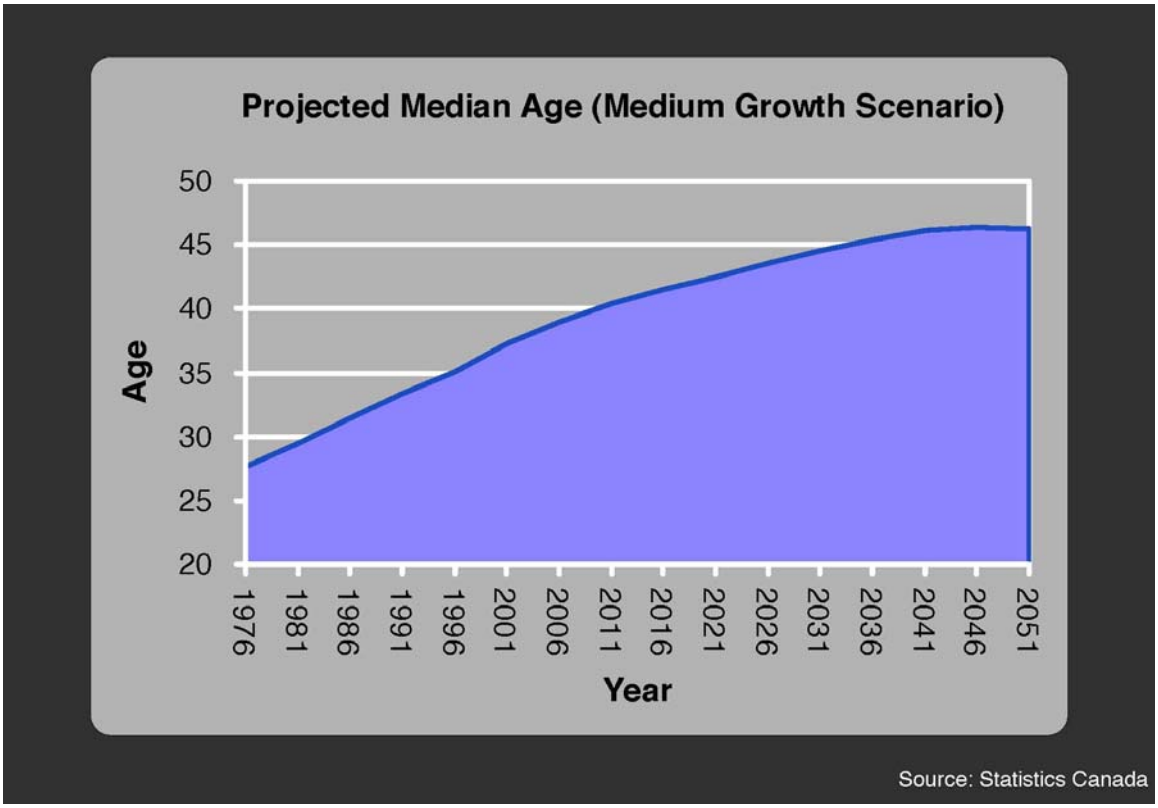
Dramatic changes are expected in the labour force. For the first time in our history, more workers will be leaving the labour force through retirement than will be entering. This will create some very important forces. First, there will be pressure to keep workers in the labour force longer (e.g., by changing retirement incentives) and second, to fill the labour force shortages through immigration. There are also some early indications that the fertility rate in Canada may rise which would mitigate some of these pressures (but not for another 20 years).

Figure 5



As stated, population aging will continue even after the disappearance of the baby boom because of ever improving life expectancy (see Figure 6).

Figure 6



Below we present the increase in the Aged Dependency Ratio (ADR) (defined as the number aged 65+ per unit of labour force) as we move from a base year of 2005 to 2050. From these data, we can see that on an international comparison, Canada faces a dramatic demographic shift.

Table 3: Aged Dependency Ratios, And Growth Therein, 2050 versus 2005

Country	ADR 2005 (%)	ADR 2050 (%)	Increase (%)
Japan	30	76	153.3
Canada	19	45	136.8
Italy	30	64	113.3
France	25	47	88.0
US	19	34	78.9
UK	24	38	58.3
Sweden	26	40	53.8

Source: U.N. data, http://data.un.org/Data.aspx?d=PopDiv&f=variableID%3A44

Of the countries listed, Canada has the second most-dramatic aging increase (after only Japan) with a much more rapid shift than in the United States. This is because of the more dramatic

shift in our fertility rates. Today, The U.S. has a fertility rate of 2.1 (which means that their population will replace itself without in-migration) while ours is 1.6 (which is well below the replacement rate). Similarly, Canada experiences much more of an age shift than more mature societies in Europe (e.g., Sweden). In fact, it is probably true that if Sweden can afford its support systems today, then it faces a very small increase in financing over the next half century.

Sections 7 and 8 discuss the impact these rapidly shifting demographics may have on Canadian economic security programs, including social security and health care.

3. Income Patterns of the Elderly

Canada's retirement income support system is referred to as a three-legged stool.

The first leg of the stool is government-sponsored social security systems that include Old Age Security (OAS), the Guaranteed Income Supplement (GIS) and the Canada/Quebec Pension Plans (C/QPP). OAS and GIS are funded through general tax revenues while the C/QPP are funded by mandatory contributions. These systems will be defined in detail in Section 4.

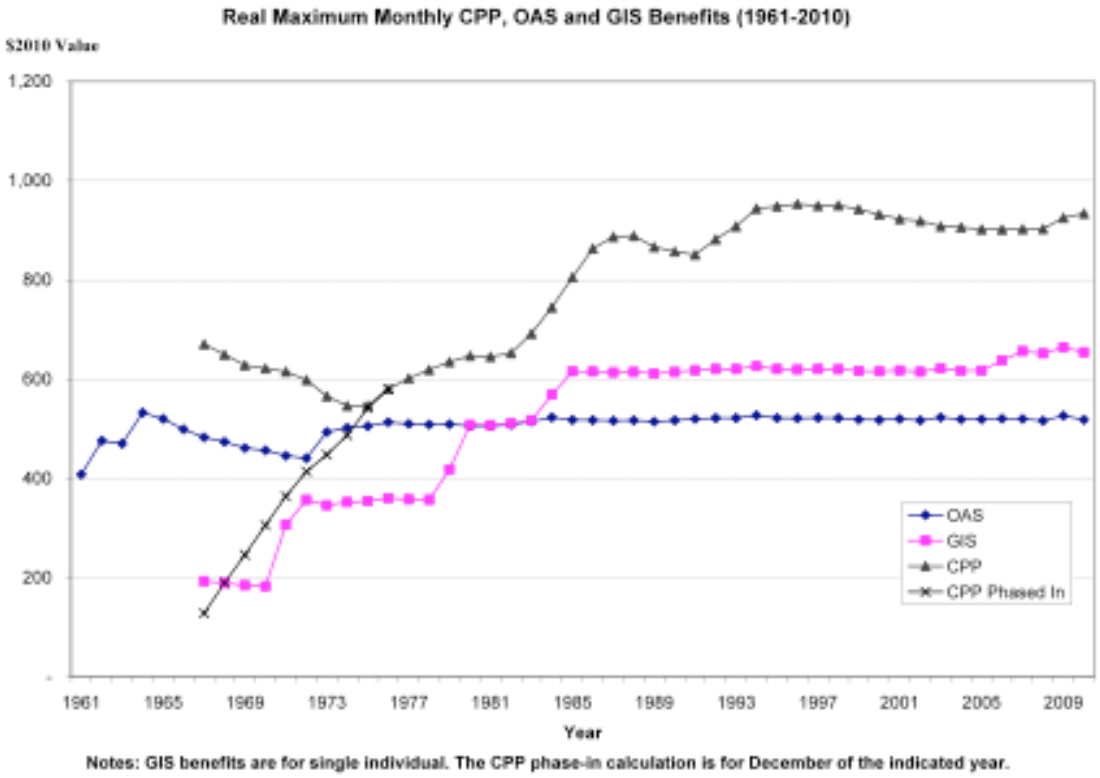
The second tier of the provision of retirement income security is employer-sponsored pension plans. As will be seen in Section 5, these plans can be either Defined Benefit (DB) or Defined Contribution (DC) plans. DB plan coverage has been declining and now sits at 38.5 percent of the employed labour force. However, coverage is only 25 percent for workers in the private sector. Employer sponsored pension plans are discussed in detail in Section 5.

Finally, we have tax-incented individual savings plans which include Registered Retirement Savings Plans (RRSPs) and Tax Free Savings Accounts (TFSAs) introduced in 2008. These are very important sources of retirement income especially for those without an employer-sponsored pension plan as will be seen later in this section. RRSPs and TFSAs will be discussed in detail in Section 6.

We are fortunate that the current debate on pension reform has created a number of excellent reports providing information about income and expenditure patterns of the elderly. These include the report of the Ontario Expert Commission on Pensions (OECP, 2008) plus the follow-up supplement by Bob Baldwin (2009), the Jack Mintz (2009) report to the Ministers of Finance (based on six research papers) and a report comparing Canada's economic security systems to those of other OECD (Organization for Economic Co-operation and Development) nations by Whitehouse (2009). In general, these reports state that the present Canadian system in total (i.e., social security plus private pension plans plus RRSP/TFSAs) is, in fact, doing a good job in providing Canadians with retirement income security.

It is worth noting that Canadians now receive larger benefits from our social security systems than historically. This is because of the maturation of the C/QPPs and also increases in the GIS (see Figure 7).

Figure 7



Office of the Chief Actuary, Canada Pension Plan, 2010

We will now review the data provided as to the income security in Canada in these reports.

a. Poverty Rates

Mintz (2009) reports that Canada has one of the lower poverty rates among elders within the OECD countries. Whitehouse (2009) confirms this by stating that in the mid-2000s, 13.3 percent of those 65+ were income poor on average in OECD countries. The old-age poverty rate was just 4.4 percent in Canada, the fifth lowest among the thirty OECD countries. He further states that the explanation is that the income-tested schemes, such as GIS, pay a higher benefit to poorer pensioners and lower or zero benefits to richer retirees. Means-tested benefits (GIS) are received by around a third of older Canadians.

Whitehouse (*ibid*) also points out that Canada has strongly progressive mandatory retirement-income systems. For low earners, the replacement ratio exceeds the OECD average, but then the gap between Canada and the OECD average grows larger as earnings increase. Thus, there exists a "pension gap": a measure of the voluntary pension savings needed to finance retirement.

The phrase "replacement ratio" as used here indicates the ratio of income immediately post-retirement versus income just prior to retirement. There are a multitude of ways to calculate a replacement ratio including the ratio of gross income before and after retirement, net income (consumable income) before and after retirement, income adjusted for family size and so on. For a more in-depth discussion see MacDonald and Moore (2011). Our ratios are gross to gross income.

b. Pension Coverage Rates

Baldwin (2009) points out that while pension coverage rates are trending downward, more Canadian workers than ever have pension coverage. This anomaly is explained by the rapid increase in size of the Canadian labour force. The latter is explained largely by the continued rise in female labour force participation rates (in the period from the mid-1990s to 2007, the percentage of women receiving C/QPP benefits has increased from 70 to 84 percent while the percentage with 3rd pillar (Employment pensions, called Registered Pension Plans (RPPs) + RRSPs) income has increased from 34 to 55 percent). So more Canadians than ever have pensions (in fact, 5,900,000), but because the labour force is growing faster than the number of workers with pensions, the pension coverage rate is down. It is also true that private sector DB coverage is down. These data do not include Group RRSPs, which is a growing vehicle for employers to provide employees with pension benefits.

Further, Baldwin points out that with the increased female labour force participation rates, "no coverage" families are not increasing in numbers. One should also take into consideration pension splitting on divorce and survivor benefits in retirement in determining pension coverage rates.

Finally, Baldwin states that just because a worker does not have 3rd pillar coverage at a particular time does not mean that s/he will acquire no pension benefits over the working lifetime. Workers move from job to job. Some jobs have pensions and some do not. So, it is quite likely that the coverage rate at a given moment provides an imperfect indication of how many Canadians retire with some pension benefits.

Whitehouse (2009) notes that in Canada, coverage of private pensions increases strongly with earnings. Just 10 percent of people in the lowest two deciles of the earnings distribution have private pensions, compared with over 85 percent of people in the highest two deciles.

c. Replacement Ratios

As to replacement ratios, Baldwin quotes a longitudinal study by LaRochelle-Cote, Myles and Picot (Statistics Canada, 2008b) that indicates a median replacement rate that holds level by age at about 80 percent (see details of this study below). This study does note that within different income quintiles there are significant differences in replacement ratios, however. Data from the

Mintz Report (2009) suggest that one fifth of Canadians may not have sufficient RPP and RRSP assets to replace at least 90 percent of their pre-retirement consumption.

Those data can be placed into an International context. Older people, 65+, had, on average over all OECD countries, 82.4 percent of active population incomes in the mid-2000s. Canada's figure of 90.8 percent is well above the OECD average, with only France and Germany having higher relative incomes (Whitehouse, 2009).

The replacement ratio from the mandatory schemes in Canada (GIS, OAS and CPP/QPP, all of which are publicly provided) is 45 percent, rather less than the OECD average of 59 percent, but higher than seven of the 12 countries studied (*ibid*).

Finally, both Mintz (2009) and Whitehouse (2009) note that Canadians are, by and large, doing relatively well in ensuring that they have adequate savings for their retirement. The OECD suggests the Canadian retirement income system performs exceedingly well by international standards, with the three pillars enabling Canadians to provide enough retirement income to sustain an adequate standard of living in retirement without unduly affecting incentives for people to work and save. Whitehouse (*ibid*) notes that Canada's mixed system of provision of retirement income is to be congratulated. Each of the elements of the system has its own strengths and weaknesses and a flexible balance among them not only diversifies risk but also offers a better balance of burden- bearing between generations.

Some very recent evidence has shown (perhaps surprisingly) that Canadians with RPPs have somewhat less retirement income than those without RPPs because those without a RPP tend to have other assets to support their retirement and are more likely to work after age 65.

Despite our good standing, Canada currently only spends about 4.5 percent of national income on pensioners. This is significantly below the average for the 30 OECD countries of 7.4 percent.

d. Cost of administration

Whitehouse (2009) states that Canada's public pension system appears to be administered at low cost. Relative to national income, Canada spends just one quarter of the average among OECD countries. Only New Zealand's public pension system is cheaper to run.

The main issue in Canada is the scale of administrative charges for personal pensions (RRSPs). Information provided suggests that many RRSPs have charges of 2 percent of assets per year, or even more. These higher-cost options tend to be actively managed, individual RRSPs. Nevertheless, there are lower cost options. For example, investing through indexed rather than actively-managed funds involves typically only around half the costs and exchange-traded funds are cheaper still. Also, many people have group RRSPs where, due to economies of scale, costs also tend to be lower.

A levy of 1 percent of assets implies that 21.5 percent of the total retirement accumulation (or, equivalently, 21.5 percent of contributions) is paid in fees. With a levy of 2 percent of

assets, the charge ratio is 37.3 percent. Moving from a levy of 2 percent of assets per year to 0.5 percent would increase net benefits by more than 40 percent.

Mintz' research suggests that active management does not provide returns on a persistent basis any better than passive management for both pension plans and mutual funds. Once taking into account active management costs, passive managed assets would provide superior returns. Individual investors do not seem to be advised sufficiently to invest in indexed and exchange-traded funds to improve fund performance.

e. Sources of Income

Baldwin (2009) indicates that the retirement income that Canadians receive today (including OAS and C/QPP) is up significantly from previous years. This is partially because of the maturation of the C/QPP and improvement in OAS/GIS benefits (see Figure 7) but RPPs are also a part of this improvement. In the period from 1976 to 2007, for couples, real incomes increased by 55 percent. For singles, the real increase was 79 percent. For couples at the 5th percentile their income was up 99 percent. For those at the 95th percentile, it was up 28 percent. For singles, the comparable numbers were 140 percent and 79 percent.

The sources of income have changed remarkably over the years.

Table 4
Percentage of Income from Various Sources for those 65+

Source	1971		1985		1996		2001	
	Male	Female	Male	Female	Male	Female	Male	Female
Private Pensions And RRSPs	16.5	8.6	20.5	9.0	32.9	18.6	36.3	23.4
C/QPP	2.2	1.1	15.5	10.1	20.9	18.3	21.2	20.3
OAS/GIS	29.3	60.5	26.1	45.2	20.7	36.7	19.3	34.3
Investment	20.5	19.7	21.2	28.0	12.1	17.4	10.7	14.0
Other*	31.6	10.1	16.8	7.8	13.4	9.0	12.5	8.0

Source: Statistics Canada 1988 and Edward Tamagno, 2006.

* "Other" includes work earnings.

The increased importance of the C/QPP should not be surprising given it is now fully mature and given the increased labour force participation rates for females as seen in Table 5.

Table 5

C/QPP Contributors by Sex
(As a percentage of those aged 20-64)

Year	Females	Males
1971	48.0	95.8
1981	64.0	94.3
1991	66.7	82.6
2001	70.8	82.5
2007	73.8	82.6

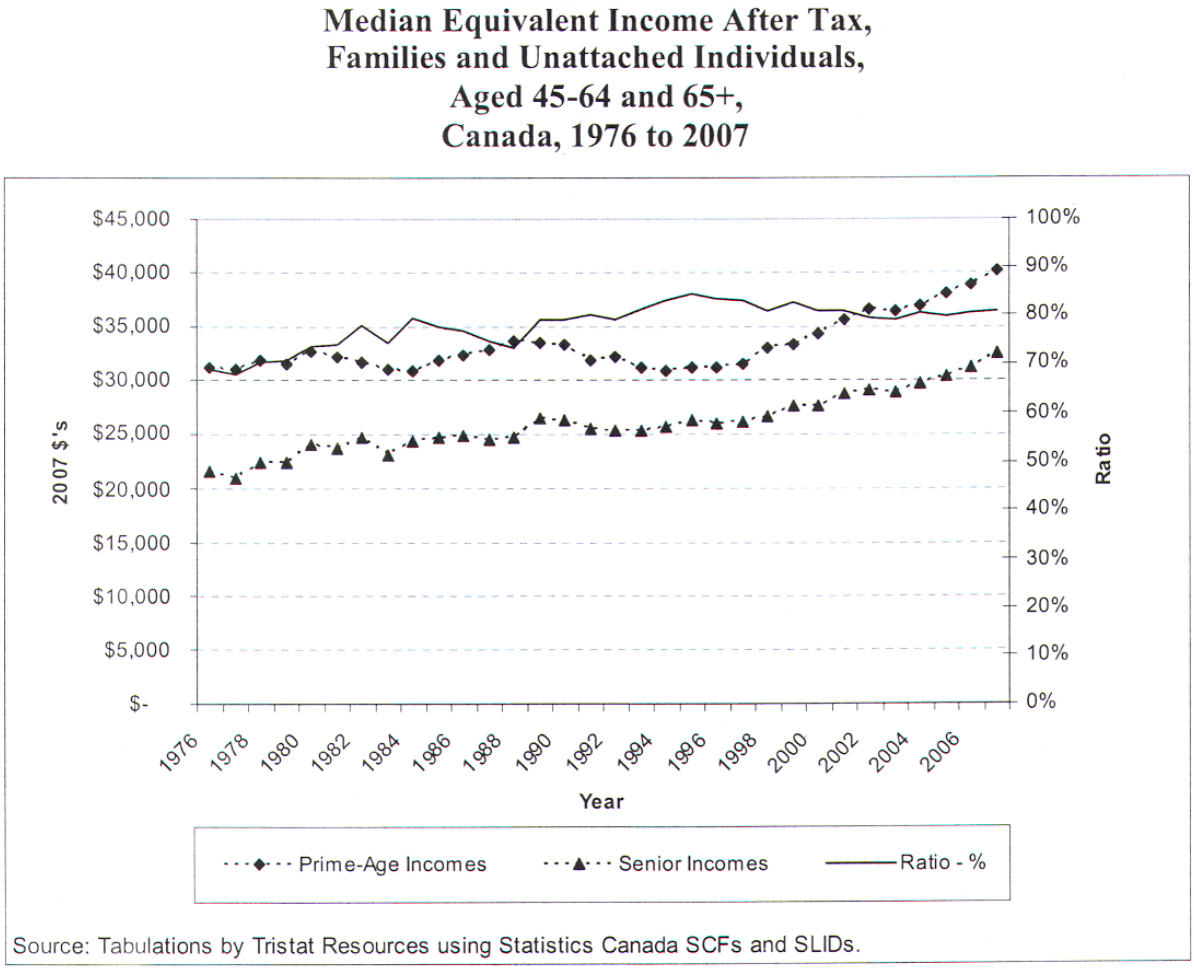
Source: Office of the Chief Actuary, Canada Pension Plan (personal memo)

One can also see the improved provision of retirement income from RPPs and RRSPs.

Horner (2009) states that in 2006, among 19.8 million tax filers under age 65, those belonging to an RPP and/or an RRSP totaled 8.7 million, or 43 percent. However, if one considers only those tax filers who clearly do need private savings to maintain their living standards in retirement—the 8 million C/QPP contributors with incomes over $30,000—one finds that 6.9 million, or 86.6 percent were RPP/RRSP savers.

LaRochelle-Cote, Myles and Picot (Statistics Canada 2008b) report that workers with average income, post-retirement income stabilizes at approximately 80 percent of their income level at age 55 (see Figure 8). Low-income individuals (those in the bottom income quintile) experience little change in income largely because of the income maintenance effects of the public pension system. Individuals in the top quintile experience substantially larger income declines in retirement so that income inequality within a cohort declines with retirement. More recent groups of retirees are experiencing higher income levels than earlier cohorts, largely because of higher private pensions. Whether this trend will continue is questionable since pension coverage has been falling among younger workers. Replacement rates have changed little among cohorts, however.

Figure 8



Baldwin (2009)

4. Government Sponsored Income Security

It is well documented that the primary drivers in the cost of an aging population supported by public financing are social security and health care (see for example, Fellegi (1988) or Denton, Feaver and Spencer (2005)). Research has shown that the cost of these programs will grow with the size of Canada's aging population (Denton, Feaver and Spencer (2005)). Unfortunately, the proportion of working-age adults will concurrently shrink, and there will be fewer shoulders to support the growing expense as seen in Figure 5.

We will analyze two publicly sponsored (and, except for the C/QPP also publicly financed) systems in the order: social security (in this section) and then health care (in Section 7).

Social Security: OAS/GIS and the C/QPPs

Figure 7 showed that government-sponsored retirement income security benefits have improved over time, especially the targeted GIS benefit. For singles in 2011, the maximum average OAS benefit was $6291, the maximum GIS was $7940 and the total maximum GIS and OAS benefit was $14,231. In 2011, however, the maximum OAS and GIS benefit would not raise elderly Canadians above their basic needs as defined by the Low Income Cut-Off (LICO) or the Low Income Measure (LIM). Similarly, OAS and GIS alone would also not meet the needs of either the "Typical" or "No Assets" single (the deficiency ranging up to $6,744 for a typical single living in Toronto). The maximum C/QPP retirement benefit in 2011 was $11,520 per annum. All of these pension benefits are indexed to the Consumer Price Index (CPI).

Under OAS, all persons in Canada aged 65 or over, who are citizens or legal residents, qualify for either a full or partial OAS pension. In general, those with 40 years of residence after age 18 are eligible for a full pension. Those with fewer than 40 years may receive a partial pension on a prorated basis (t/40) provided they have at least ten years residence. OAS benefits are paid out of general tax revenues and are taxable income.

Prior to 1989, OAS was universal for those 65 years of age and over, subject only to residence requirements with no income or asset tests. However, in 1989, the government introduced measures to "clawback" the OAS benefit from recipients with net income over $62,310 (2011) a year at a rate of 15 cents for every dollar that net income exceeds $62,310. Seniors with net incomes of $109,000 or more get no OAS.

GIS was introduced in 1966 at the time of the inception of the C/QPP as a temporary measure to cover the ten year transition period to full C/QPP benefits and provides income-tested benefits for the elderly poor. GIS is still with us (in an expanded version) and remains an essential element of the government income security system.

For a single pensioner, the maximum GIS is reduced by $1 for each $2 of income (other than OAS) but with some exemptions, such as the first $3500 of income from employment and any income from TFSAs. The GIS stops being paid when income reaches $38,110 for an individual There is no asset test for the GIS.

GIS payments are financed by general tax revenues; no contributions are required. GIS benefits are nontaxable, although those eligible for GIS would not pay much tax anyway. Currently one-third of Canadians receive at least a partial GIS.

GIS benefit levels have been increased several times since its inception (see Figure 7), and it is now a significant part of the retirement income security system in Canada. However, as income from the C/QPP and private pensions has grown, the proportion of seniors receiving GIS has fallen. OAS/GIS currently provides $33 billion in benefits per year to 4.5 million Canadians (Department of Finance, 2010).

The second tier of government-sponsored retirement income benefits is the mandatory Canada/Quebec Pension Plans (C/QPP). These plans are virtually identical. There exists full

mobility of 'pension credits' between the two plans. The C/QPP are contributory DB plans introduced in 1966. Full benefits were first paid in 1976. While their main benefit is retirement income (70 percent of cash flow) the plan also pays benefits for Disability and Death, plus Children's, Orphans' and Survivors' Benefits. For full information on all benefits see http://www.sdc.gc.ca/en/isp/pub/factsheets/rates.shtml.

Contributions to the C/QPP total 9.9 percent of earnings between the Year's Basic Exemption (YBE which equals $3500 constant)) and the Year's Maximum Pensionable Earnings (YMPE = $48,300 in 2011) meant to approximate the average wage (and indexed to the average wage). Contributions are shared equally between employers and employees (4.95 percent each). The self-employed pay the full 9.9 percent. Starting in 2012, if a 'retired' Canadian who is receiving the CPP returns to work that person (and his/her employer) will restart payment of CPP contributions and earn additional benefits (this has been the case for the QPP since 1998).

The retirement benefit equals 25 percent of the worker's Career Average Earnings indexed to the average wage. To get a full benefit, a worker would need to have 40 years of contributions. There are special 'drop-out' years allowed for years of disability and child rearing that qualify so long as the years of earnings are ultimately not less than ten. Benefits are taxable income. There is no income or asset test for the receipt of C/QPP benefits. The full benefit is payable at age 65. However, the plans allow flexible retirement between ages 60 and 70. For both early and late retirement, there is a permanent adjustment in benefits equal to 0.5 percent per month (at the time of writing). That is, someone retiring at age 60 would get 70 percent of a full benefit, while someone retiring at age 70 would get 130 percent. Amendments to increase these adjustments have been announced.

Recent actuarial valuations of the CPP (OSFI, 2010) show that the plan is viable for a 75-year time horizon. Because of less favorable demographics (lower fertility, immigration and wage growth) the QPP may require future adjustments.

In total, these systems are highly progressive. This means that above-average wage earners need to supplement their government benefits with private savings (RPPs or RRSPs).

The public pension combination of OAS/GIS/CPP by itself achieves high earnings replacement rates for low-income Canadians. For example, a couple, both aged sixty-five, with maximum government pension benefits, receives an inflation-indexed annuity of $34,218. (Ambachtsheer, 2009).

The C/QPP experienced significant reforms in 1997. The major reason for this was the economic and political climate. In the early 1990s, Canadian governments (both federal and provincial) were running deficits. The federal deficit peaked at $40 billion in 1993 with 35 percent of federal revenue being spent on interest on the debt (Brown, 1999, p12). The government was also concerned about the expected rise in social security costs that population aging would create as presented in Table 6.

Table 6

Projected Net (After Taxes) Costs of OAS/GIS ($B)

1996	2001	2011	2030
20.8	24.7	34.4	77.3

Government of Canada, 1996b, p34

The final reasons for the timing of the reforms were actuarial in nature. The C/QPPs were created in 1966. For the early cohorts of workers, contributions to the plans totaled 3.6 percent of contributory wages. This contribution rate remained unchanged until the mid 1980s. Even with this low rate, the C/QPPs were able to build up reserve funds equal to two-year's expenditures. However, by the mid-1980s the reserve funds were being depleted and were destined for exhaustion by 2016. Further, C/QPP actuarial reports indicated that contribution rates would have to rise to 14.2 percent if no changes were made (OSFI 15th CPP Actuarial Report, 1994). At first, the government reacted solely with gradual ad hoc increases in the contribution rate. By 1997, the combined contribution rate was 6 percent (3 percent from the worker and 3 percent from the employer).

In March 1996, the government announced the most fundamental amendments to social security in Canada since 1966.

First, it proposed that OAS and GIS be replaced by a new Seniors Benefit. The government said that this action was necessary to make OAS/GIS sustainable. The new benefit would be nontaxable income and be fully indexed to inflation. The clawback of the Seniors Benefit would have been based on the combined income of spouses (as is the case for GIS; however the OAS clawback is currently based on individual income).

Analysts of the proposed system criticized the high total marginal tax rates that resulted. If the marginal clawback and marginal income taxes were added together then some seniors would lose 78 percent of every dollar of their private income. It was argued that these rates would create a significant disincentive to save for retirement.

The other flaw in the Seniors Benefit was that the clawback was based on family income and not individual income (as under OAS). Thus, older women who never participated in the paid labor force would no longer have any retirement income in their own right and would lose that aspect of economic autonomy in their spousal relationship. This was a deciding factor in the death of the Seniors Benefit proposal and a flaw that the government appeared to have underestimated.

Returning to the reforms of the C/QPP, in 1997, the Minister of Finance announced that the government had an agreement with the provinces to amend the CPP. This was not easy since any changes to the CPP needs the support of 2/3 of the provinces with 2/3 of the total Canadian population (including Quebec). This makes radical reform difficult.

In introducing the reforms to the Canadian public, the government stressed arguments of "affordability" and "sustainability".

> *"The changes will ensure that the CPP is affordable to future generations and can be sustained in the face of an aging population, increasing longevity, and the retirement of the baby boom generation"* (Canada 1997, p6)

The 1997 reforms to the C/QPP should be categorized as tweaks to the existing system as opposed to major reforms. However, several amendments were announced that decreased the benefits to be paid in the future (by about 9.3 percent in total), increased the level of funding and increased the rate of return on any reserve funds. One example was a change in the value of the CPP death benefit. Prior to amendment, this benefit was equal to six months of retirement benefits, to a maximum of 10 percent of the YMPE. In 1997, the YMPE was $35,800 so the maximum death benefit then was $3580. The 1997 reforms set a new maximum death benefit of $2500 that does not adjust to inflation.

A further feature of the 1997 reforms was the introduction of an automatic balancing mechanism. The CPP is supposed to be sustainable with a 9.9 percent contribution rate. If the CPP actuary shows that the present benefits cannot be sustained at 9.9 percent and no political solution is found, then two things happen. First, the contribution rate moves half of the distance to the necessary long-term contribution rate as determined by the CPP actuary. At the same time, benefits are de-indexed to bring them slowly down in value until the new (slightly higher) contribution rate is in balance with the new (slightly lower) benefits. Thus, sustainability is guaranteed and is achieved by adjustments to both benefits and contributions.

Further, the C/QPP contributions were increased rapidly to 9.9 percent in 2003, with a resultant rapid increase in the reserve funds. Until 1997, the CPP reserve funds were lent to the provincial governments. The new reserve funds are invested by an independent 'Canada Pension Plan Investment Board' (CPPIB). The CPPIB is subject to broadly the same investment rules as pension funds in the private sector. Based on the latest (25st) CPP Actuarial Report (OSFI, 2010), CPP contributions are expected to exceed benefits until 2020, providing a 10-year period before any portion of the investment income is needed to help pay CPP benefits.

The reforms of 1997 have meant that the CPP now rests on a healthy foundation. So healthy, in fact, that one of the strongest proposals for pension reform in Canada, at this time, is to expand the C/QPP. This could be done in one of two ways. First, one could increase the 25 percent benefit rate now in place. This proposal is somewhat controversial since poorer Canadians would have to pay increased contributions to the C/QPP, but their increased benefits would be offset by a decrease in their GIS benefits leading to a regressive system. The other expansion that has been put forth is to raise the YMPE from its current level of $48,300 so that more of a worker's earnings would be covered by the C/QPP resulting in larger benefits (without poorer workers paying more). No resolution of this debate has been achieved as yet.

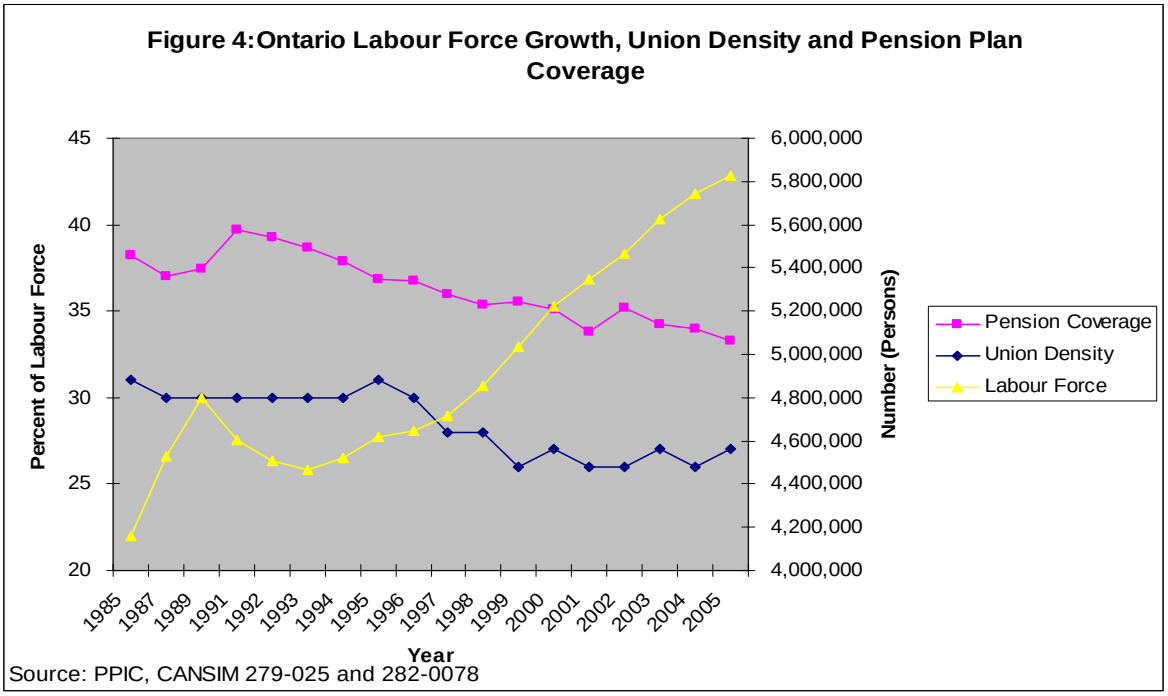
In summary, the Canadian social security system provides Canadians with a high level of income security while still leaving ample room for individual savings and investments (see Brown and Prus, 2004).

5. Employer-Sponsored Registered Pension Plans (RPPs)

As noted in the Baldwin (2009) report, the private pension coverage rate (through RPPs) has been steadily falling. What might have caused this to occur?

The OECP, (2008) did extensive research on this question and concluded that, at least for Ontario, there were three reasons for the decline in the coverage rate. First, union density is declining (see Figure 9).

Figure 9



Source, Ontario Expert Commission on Pensions, 2008, p44.

This is important. Whereas 76 percent of unionized workers are members of occupational pension plans, only 28 percent of non-union workers have this coverage. The OECP stated that declining union density alone seems to account for 40 percent of the decline in pension coverage for men and young women (*ibid,* p45)

Another reason is the decline in larger workplaces as smaller employers become more important. In workplaces with more than 1,000 employees, pension coverage runs at about 60 percent, whereas for workers in small enterprises (with fewer than 20 employees) the coverage rate is 10 percent (*ibid,* p39).

The final reason is the decline of the manufacturing sector, especially the auto sector. Large manufacturers have historically been associated with both high rates of unionization and pension coverage.

There is a significant difference in pension coverage between the public and private sectors. About 78 percent of public sector workers had pension coverage in 2005, while the comparable rate for the private sector was 25 percent (*ibid).*

Another important statistic is that pension coverage rates for men and women are now virtually identical *(ibid,* p40).

Population aging also puts increased pressure on pension plans in at least two ways. First, as the ratio of retirees to workers increases, the volatility of the cost of the plan increases (payment of benefits is more dependent on investment returns versus worker contributions). Second, as retirement life expectancy improves, the cost of pension benefits rises proportionately.

As noted previously by Whitehouse, relative to many OECD countries, Canada's public retirement income programs are quite modest. As a result, occupational pension plans and other forms of private savings play a more important role in providing retirement income security and in achieving a suitable replacement ratio. No jurisdiction that uses a voluntary private pension system has ever had coverage rates in excess of 50 percent (*ibid*, p30). In Canada, only 38.5 percent of the paid labour force is now covered by an employer-sponsored pension plan.

As noted previously, average retirement incomes and replacement ratios have improved since the early 1970s. However, the experience of different groups of retirees varies widely. For example, longitudinal studies show that Ontario retirees in the most affluent quintile rely on occupational plans and private savings for 41 percent of their income and on public plans for only 16 percent. By contrast, retirees in the poorest quintile receive 57 percent of their income from the public system and only 21 percent from RPPs and RRSPs. Only about 25 percent of families in the poorest quintile had a RPP, and only 2 percent of families in this group had two, whereas 40 percent of top-quintile earners had two RPPs (*ibid*, p31). These inequalities are increasing.

The next generation may not reach the high replacement ratios achieved by today's retirees. Horner (2009) says that trends such as increasing life expectancy, declining investment returns and a continuing decline in private pension coverage threaten the retirement income security of modest and middle-income earners.

A recent paper from Statistics Canada (Ostrovsky and Schellenberg, 2009a) indicates that retirees who do not have a RPP in their fifties were, on average, achieving the same income replacement levels in retirement as those with a RPP by accumulating individual savings and RRSPs.

6. Individual Savings and RRSPs

In a paper for the C. D. Howe Institute, Dodge, Laurin and Busby (2010) calculate that a worker aged thirty who earns an inflation-adjusted $60,000 per year over thirty-five years will have to save about fourteen percent of pay to achieve a seventy percent earnings replacement ratio (including the public OAS/CPP pensions). The required savings rate drops to eleven percent for a sixty percent earnings replacement ratio, and further to nine percent if the worker retires at age sixty-seven rather than sixty-five. There is a growing understanding that seventy percent is unnecessarily high for many people, and that sixty, or even fifty percent may be more appropriate in many cases (Chevreau, 2007). Studies suggest that Canadians (either individually or through employer plans) are currently saving far less than they need to save to provide for pensions approaching 70 percent—or even 60 percent—of pre-retirement earnings (Canadian Institute of Actuaries, 2007).

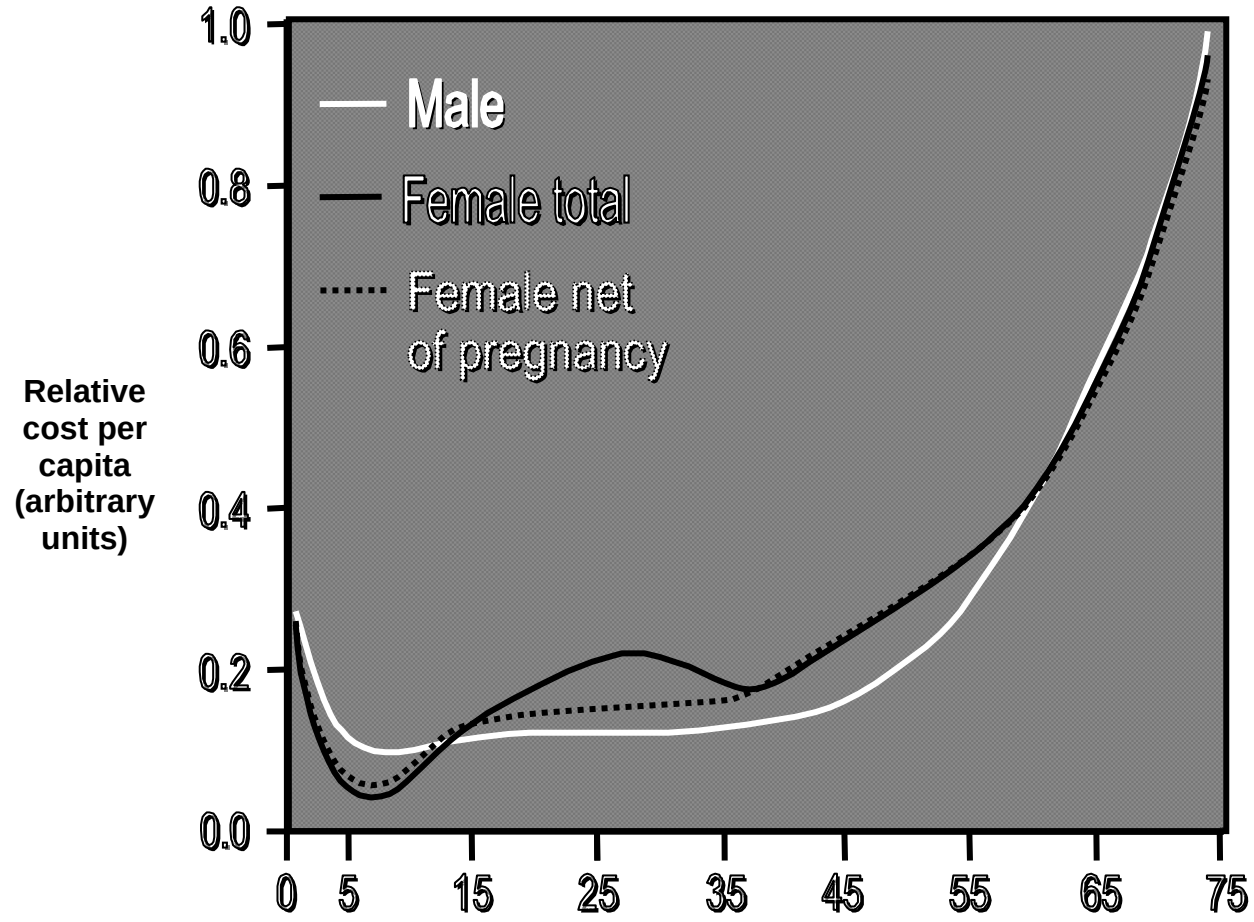
In 2006, approximately 9 million Canadians saved in an RPP and/or RRSP, and 3.6 million Canadians received income from a RPP and/or RRIF (Department of Finance, Canada, 2010). At the end of December 2009, Canadians had assets of $1.9 trillion in RPPs and RRSPs (Dodge et al., 2010)).

The new TFSA was introduced by the government in 2008. Under the TFSA, contributions can be made (up to $5000 a year) out of after tax income. Investment income then accrues tax free. When funds are taken from the TFSA, no new taxes arise. There is also no impact on the ability of an individual to qualify for the OAS/GIS because of income from a TFSA. It has been reported that Canadians opened up 4.7 million TFSAs by the end of December 2009. The value of the TFSA assets amounted to about $15.8 billion (*ibid*).

7. Economic Security Aspects of Health Care

The second force driving up publicly financed costs as the population ages is Canadian health care. Canada now spends more than 10 percent of (Gross Domestic Product (GDP) on health care. Health care represents 42 percent of the Ontario budget. The expectation of rising health care costs in an aging population is a logical occurrence given that older Canadians cost our health care system more than younger Canadians (see Figure 10) and, therefore, if the population ages and the percentage of older Canadians grows, then it follows that our health care costs will rise.

Figure 10: Relative per capita costs of health care for males and females by age



Source: Marshall, 1987.

However, a variety of other opinions exist in the literature as to why health care costs are increasing and expected to continue to increase. For example, Brown and Suresh (2004) point out that it is more correct to say that health care costs are a function of the year of death rather than age. It is the high expenditures on health care just prior to death that drives health care spending, not the pure age of the population (old patients who continue to survive do not cost us all that much). Evidence of this is provided in Table 7.

Table 7
Cost Ratio: Died*/Survived Costs of Medical and Social Care by Age

Age Band	Cost Ratio: Died*/Survived
65	16.7
75-76	8.4
85-87	3.8
90-93	2.5

♂ Last six months of life

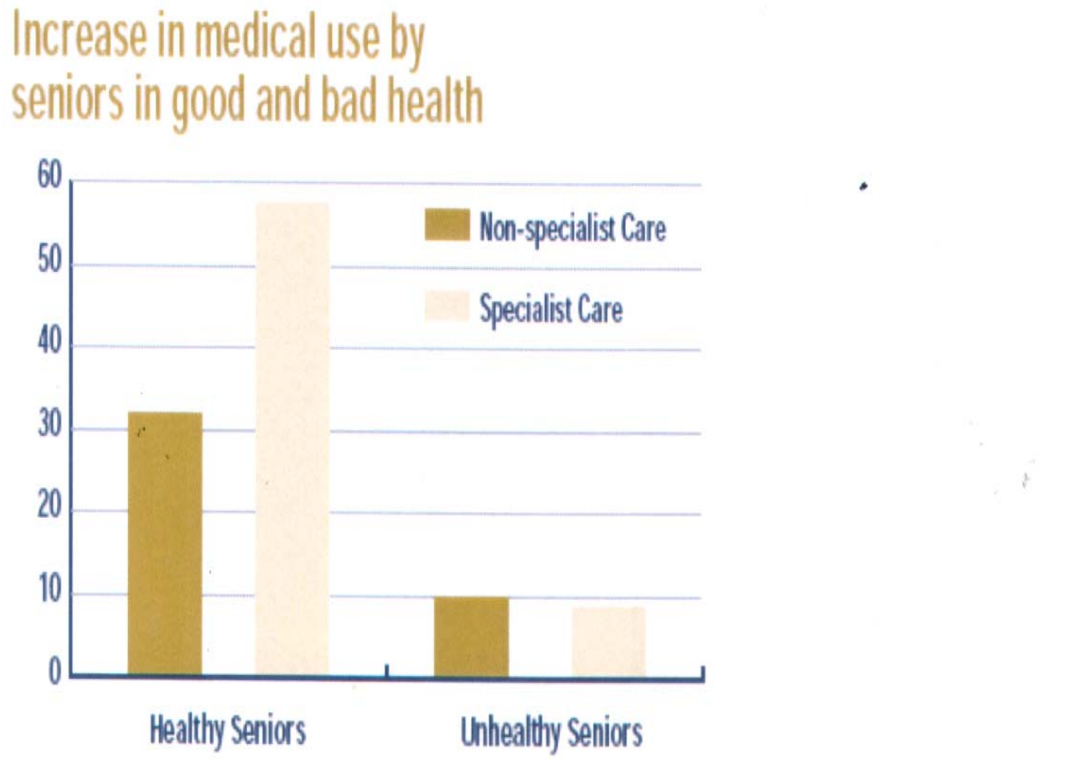
Source: McGrail et al. (2000)

This is important. Health care is funded on a pay-as-you-go basis. Thus, as life expectancy improves, increased health care costs (if they are a function of time-at-death) are delayed. But costs delayed actually decrease the funding needed in any year to support the system.

Regardless of the arguments in the literature, hardly a week goes by without another article in the media about the pending health care cost crisis (see for example, The Globe and Mail, 2010). Normally, these commentaries are couched in a context of population aging. In fact, we know that population aging *per se* accounts for very little of the increase in health care costs in the recent past and it will not be the key driving force over the next three decades (Evans et al, 2001). This myth that population aging is the key factor in rising health care costs is used by those who seek more funding for their part of the system. It is a convenient factor since the system has no control over it ("it is not our fault"). McIntyre et al. (2003) projected real growth in health care costs of 2.6 percent per annum made up of 0.9 percent for increased per capita consumption/service levels, 0.9 percent for general population growth, and 0.8 percent attributable to population aging.

Figure 11 shows that what is driving increased health care costs is increased servicing (heavier, more intense treatment), for all age groups, but especially for the elderly, rather than population aging. And this is happening without any evidence of increased needs. These results strongly suggest that changes in utilization patterns are motivated by changing clinical standards of investigation and intervention. The problems and the outcomes themselves appear to be unchanged over the period of observation (*ibid*). Such changes are common in most industrialized countries.

Figure 11:



Data from Black C et al. 1995. "Rising use of physician services by the elderly: The contribution of morbidity." Canadian Journal on Aging; 14(2): 225-244.

The estimates of the impact of aging on per capita total health costs in Canada (in real terms, net of inflation), for the whole population, generally place it at about 1 per cent per capita per year (Barer et al, 1998). Barer et al. are famous for asking if the impending health care "crisis" is an avalanche or a glacier. It has been noted that even a sustained trend of low economic growth would enable us to support an expansion of health care services adequate to satisfy the needs associated purely with the aging of the population (see also Marzouk (1991) and Sepehri and Chernomas (2004)).

Finally, in international comparisons, Canada does relatively well.

Table 8

Resources and Health Indicators, 2006

Country	Health Expenditure (Percentage of GDP)	Life Expectancy at birth	Infant Mortality per 100 live births
Canada	10.0	80.7	5.0
France	11.0	80.7	3.8
Japan	8.1	82.4	2.6
UK	8.5	79.5	5.0
US	15.8	78.1	6.7

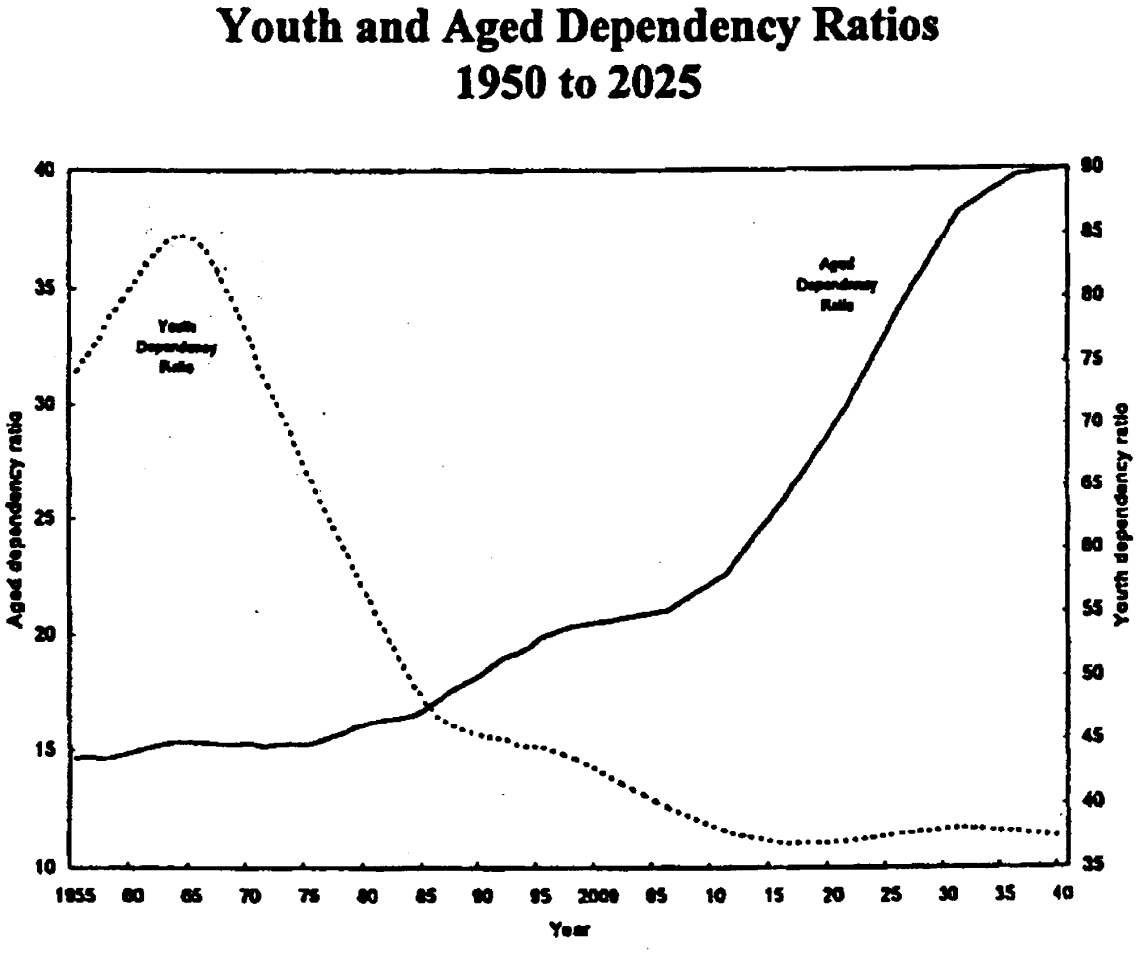
Source: www.oecd.org/document/16/0,3443,en_2649_34631_2085200_1_1_1_1,00.html

To close, more research needs to be done to identify procedures that truly improve health outcomes for the elderly. Just spending more dollars on health care does not necessarily result in improved health.

8. Future Funding of Social Security

Prior to 2011, a quick review of Figure 12 may have led one to assume that our shifting demographics would cause no problems in total since increasing aged dependency ratios appear to be balanced by decreasing youth dependency ratios.

Figure 12



Source: Author's calculation using statistics from Brown and Bilodeau, 1999

Unfortunately, transfers of wealth to educate and provide health care to the young are not equal to the transfer of wealth required for health care and retirement income security for the elderly. Analysis (e.g., Foot 1982) has shown that government expenditures on the elderly are about 2.5 times those for the young (per capita) (see also CANSIM Tables 051-0001 (1971 to 2008) and 052-0004 (2009 to 2056)). Therefore, any analysis that attempts to derive a formula for future wealth transfers must include the lower demands by the youth sector and also the differing transfer factors for the young versus the elderly.

Such an analysis, using Canadian data, is found in Brown and Bilodeau (1997). The authors developed a statistic called the Wealth-Transfer Index (WTI) defined as:

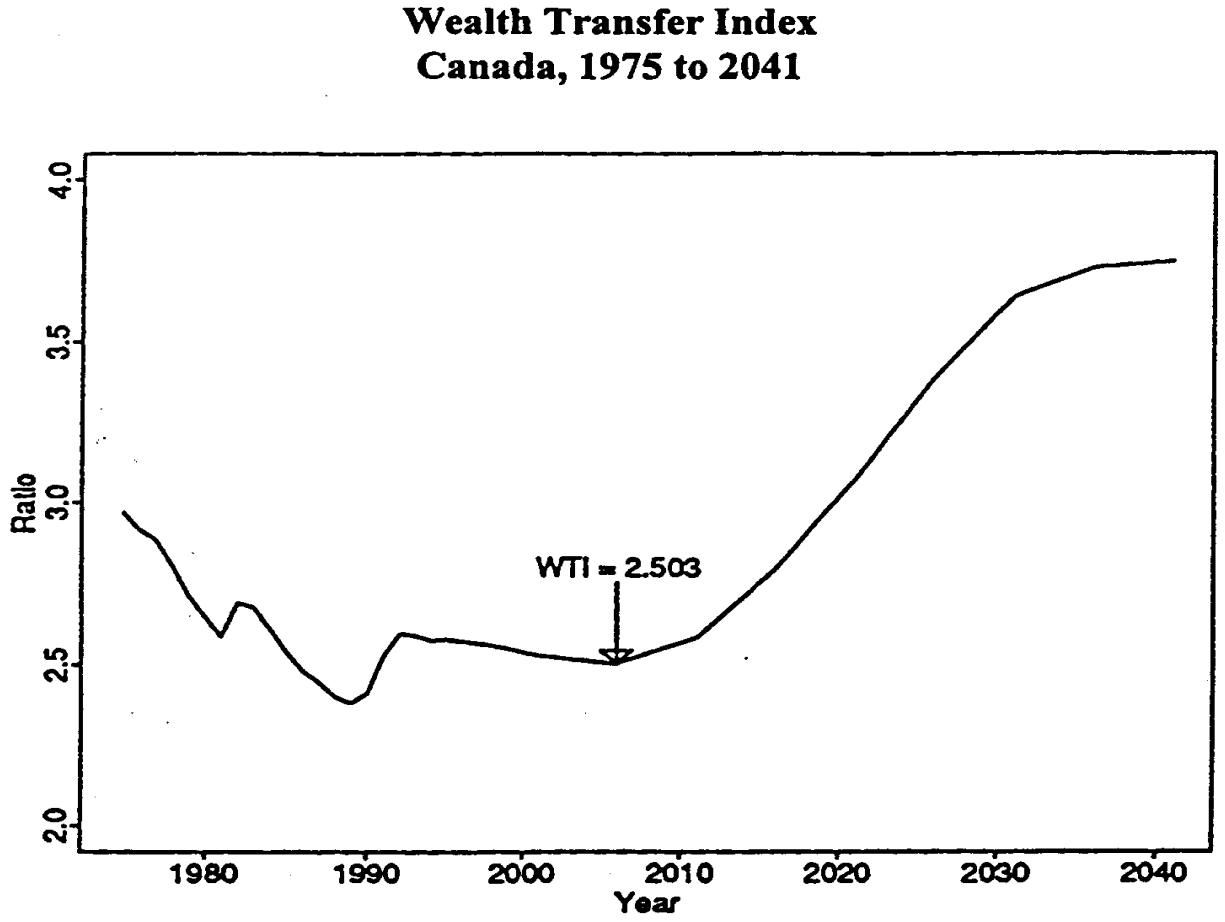
WTI = [(1.866 x Y) + (1 x U) + (4.636 x A)] / LF

Y = Youth, 0-19
U = those Unemployed

A = Aged, 65 and over
LF = the projected employed Labour Force

The weights of 1.866, 1 and 4.636 were derived by McDonald and Carty (1980, pp. 16-17). No more recent analysis is available. Note that 4.636/1.866 = 2.48 (close to 2.50) which lends more credibility to the analysis. These weights do not have any meaning by themselves—they are only weights relative to a weight of '1' for unemployed adults. These weights are based on payments for health care, education, unemployment transfers and retirement income security made by any level of government. While this does not represent the totality of dependencies, it does capture the key macro-indicators. The WTI statistic is a single indicator of the supply of (denominator) and demand for (numerator) wealth. As shown in Figure 13, the WTI actually trended downward from 1991 to 2006. After 2006, it increases rapidly as the population ages and, in particular, as the baby boom retires and the labour force turns to the baby bust generation for wealth creation (mostly after 201**1).**

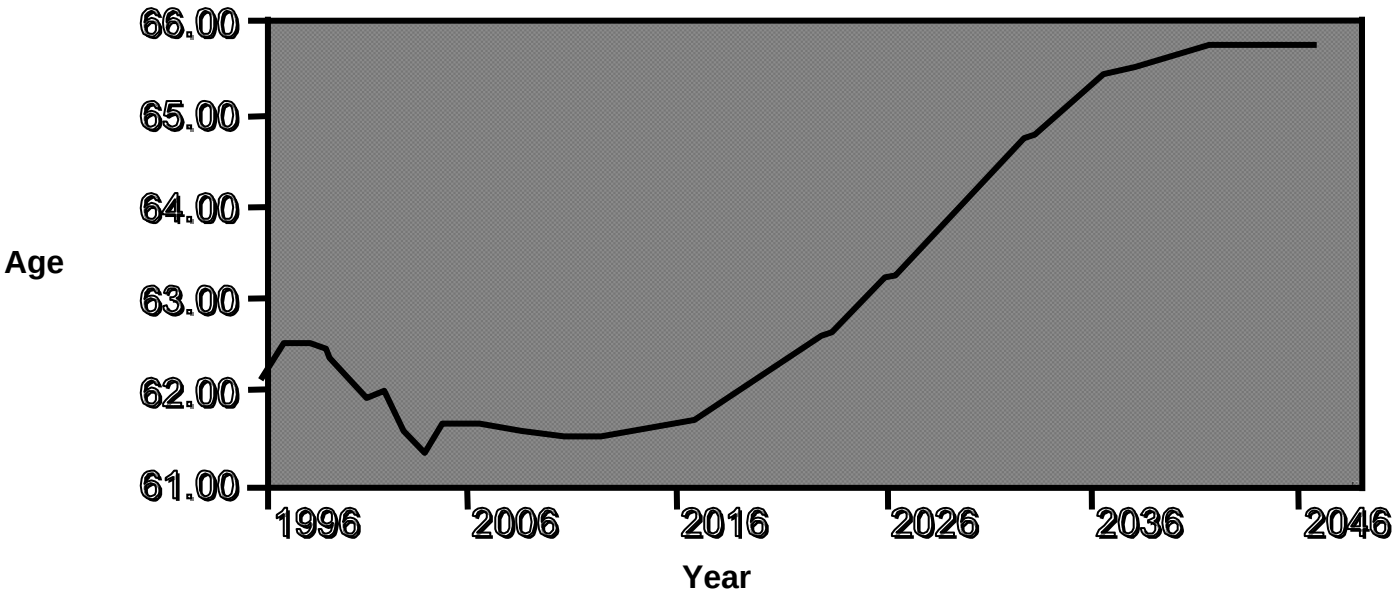
Figure 13: Wealth Transfer Index, 1975 to 2041



Source: Brown and Bilodeau, 1999.

Brown, Damm and Sharara (2000) show that we can keep the WTI constant at its 2006 level by raising the age at which people retire. This would move Canadians out of the 'dependent' numerator and into the 'productive' denominator. Even with no productivity improvements the needed shift is small as can be seen in Figure 14. With productivity improvement, the shift is smaller still (*ibid).*

Figure 14: Median Retirement Age in Canada with no Productivity Improvements (1996 to 2047)

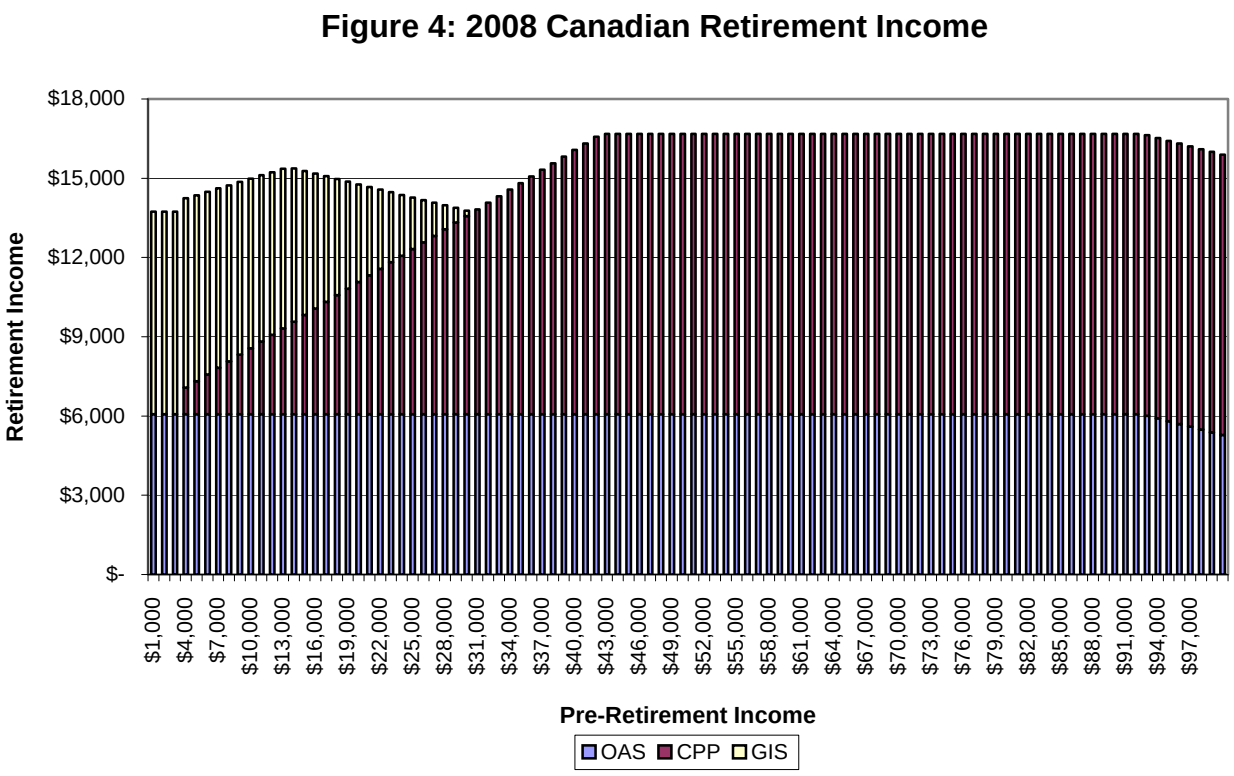


Source: Brown, Damm and Sharara, 2000.

According to Felligi (1988) and Denton, Feaver and Spencer (2005), social security appears to be our primary source of rising expenses as the population ages. Canada does not have, however, an overly generous social security system relative to most European countries.

Figures 15, and 16 illustrate the focusing of benefits. In Figure 15, we can see that all Canadians receive very similar dollar benefits in total from the government-sponsored system. As you move through the wage sectors, one finds that new dollars of CPP are offset first by the GIS clawback and later by the OAS clawback.

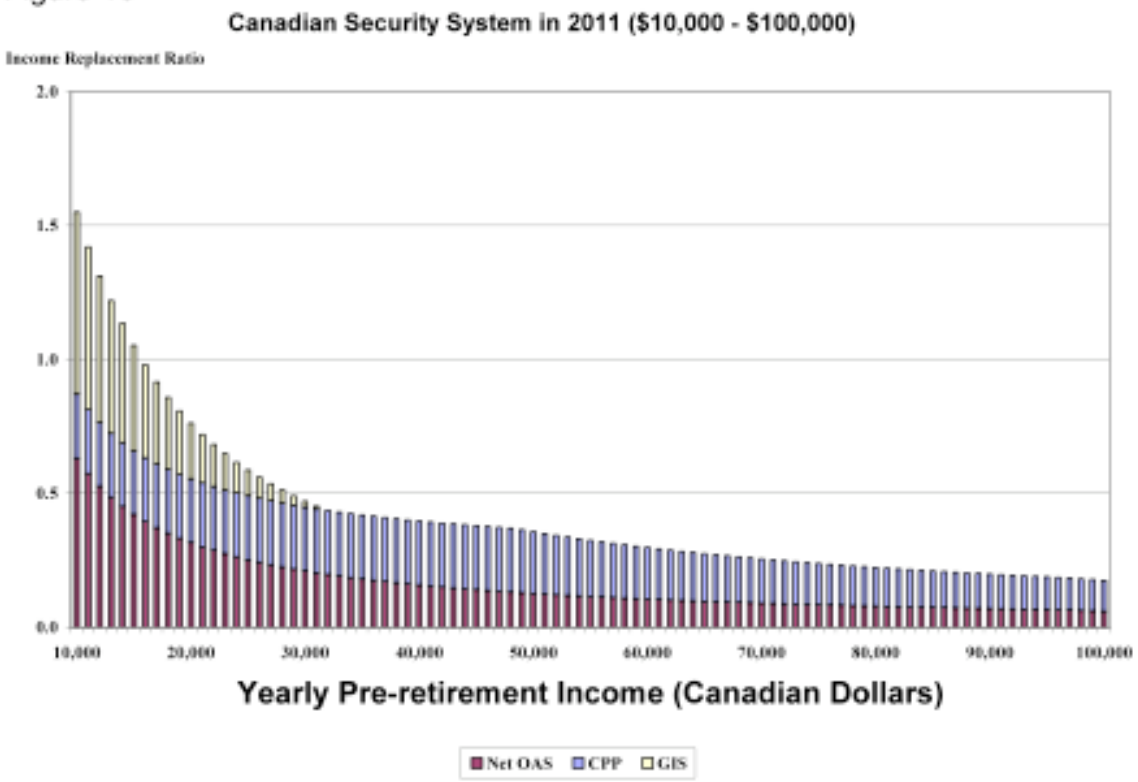
Figure 15



Source: Chisholm and Brown, 2008

As stated, Canadian retirement income support is highly targeted on the poor. This is reinforced in Figure 16.

Figure 16



Author's calculation

While social security costs will rise over the next half century, they seem to be within affordable levels. OAS and GIS are indexed to prices (CPI) while taxes rise with earnings. In a normal economy, wages rise faster than prices so that the tax rate needed to fund OAS/GIS does not rise as quickly as the rate of growth of benefits. According to the 8th Actuarial Report of the Old Age Security Program (OSFI, 2008), while OAS (including GIS) expenditures will rise from $33B in 2007 to $110B in 2030, the ratio of expenditures to the GDP increases from 2.2 percent in 2007 to a high of 3.1 percent in 2030. The ratio then reduces to 2.7 percent by 2050.

As already outlined, the C/QPP were significantly reformed in 1997. As a result of these amendments, there now exists a $109B fund within the CPP. While the fund lost $13.8B in 2008, it has still returned 5.1 percent per annum since its inception in 1999.

Further, every CPP actuarial report, since its reform, has indicated that the 9.9 percent contribution rate will sustain the projected benefits for at least 75-years (OSFI, 2010). (Unfortunately, as previously stated, the same is not true for the QPP.)

9. Conclusion

Many things have changed since the publication in 1991 of the monograph: Economic Security in an Aging Canadian Population. Some events have been distinct and abrupt such as the major amendments made to the C/QPP in 1997. Others have been more gradual and not as distinctive. These include the general aging of the population and continuing increases in health care costs. Finally, the literature on the impacts of population aging has grown exponentially.

This paper has reviewed many of the public policy issues associated with population aging in Canada. As a generalization (and consistent with the 1991 monograph), the literature tells us that population aging, by itself, will not create overwhelming burdens on the Canadian taxpayer even as the baby boom generation moves out of the labour force and into retirement. As one example, Section 7 showed that population aging is not the major driving force today behind rising health care costs.

However, it is true that the costs of social security and health care will both rise as the population ages. It is only because the Canadian financial security safety net is relatively meager that costs will remain sustainable. This is true because OAS (including GIS) is indexed to CPI rather than wages so should decline in importance over time as a percentage of GDP (see Section 4). Further, the 1997 amendments to the C/QPP have placed them on a much firmer foundation and public faith in these two plans has broadened significantly as result.

Finally, it has also been shown that even a modest increase in the normal retirement age along with modest increases in workplace productivity would go a long way in stabilizing the sustainability of our support systems. A later retirement age seems to be a current focus in terms of potential new reforms in the effort to provide Economic Security in an Aging Canadian Population.

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