Canada Pension Plan benefits should be enhanced, and here is why

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EXECUTIVE SUMMARY

The Canadian three-tier pension system consists of the Old Age Security (OAS), the Canada and Quebec Pension Plans (CPP/QPP) and workplace registered pension plans (RPPs). This three-tier system has improved and ensured the security and stability of old age income in Canada in the past three to four decades. Poverty among Canadian seniors is one the lowest among the Organisation for Economic Co-operation and Development (OECD) countries. The percentage of families headed by someone over the age of 65 with an income below the poverty line has declined from 34 percent in 1980 to about 12 percent in 2010. Unfortunately, the good news ends here.

By definition, under a pension plan the payments continue for the remainder of the natural life of the recipient, and sometimes to widow or other survivor. Considering this definition and referring to the data provided by Statistics Canada, in 2012 only 32 percent of Canadian workers had a workplace – defined benefit – pension plan. An additional 12 percent of workers had employer-sponsored registered retirement saving accounts called defined contribution "pension" plans. However, these plans do not meet the definition of "pension" and are not much different from registered retirement saving plans (RRSPs) where all risks fall on the employees (plan members). A better term for these plans would be defined contribution "saving" plans. In reality, 68 percent – and increasing number – of Canadian employees are left with only a two-tier pension system and a number of confusing and ineffective registered retirement saving vehicles.

A comprehensive study of literature, data produced by researchers and Statistics Canada and experiences of the author with various registered saving vehicles and tools made available by the financial industry have shown that when every individual employee is made responsible for saving and investing for his or her own retirement savings, the main winners are those in the financial sector. Individuals are left on their own to bear the risks of interest rates, inflation, financial management, market and longevity without having any knowledge and skills to quantify and minimize these risks. As a result, in the not too distant future, Canada may have a larger percentage of its retirees falling below the poverty line, resulting in an increase in demand on pension expenditure from the federal and provincial tax revenues. Since, as it is evident from the current trend in the country, the policy makers cannot prevent the decline of workplace pension plans, Canada's best solution seems to be the enhancement of the benefits and an actuarially fair increase in the payroll contribution rates of the CPP.

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INTRODUCTION

The Canadian three-tier pension system consists of the Old Age Security (OAS), the Canada and Quebec pension plans (CPP/QPP) and workplace registered pension plans (RPPs). This three-tier system is considered to be the main reason for Canada's position as one the countries with the lowest poverty rates among the Organisation for Economic Co-operation and Development (OECD) countries. The percentage of families headed by someone over the age of 65 with an income below the poverty line has declined from 34 percent in 1980 to about 12 percent in 2010, Figure 1.

However, the trend seems to be reversing. Data provided by Statistics Canada shows that in 2012 only 32 percent of Canadian workers had a workplace – defined benefit - pension plan. An additional 12 percent of workers had employer-sponsored registered retirement saving accounts called defined contribution (DC) "pension" plans. These DC plans are very similar to the registered retirement saving plans (RRSPs) where all risks fall on the employees (plan members). As a result, 68 percent – and increasing number – of Canadian employees are left with only a two-tier pension system and a number of confusing and ineffective registered retirement saving vehicles.

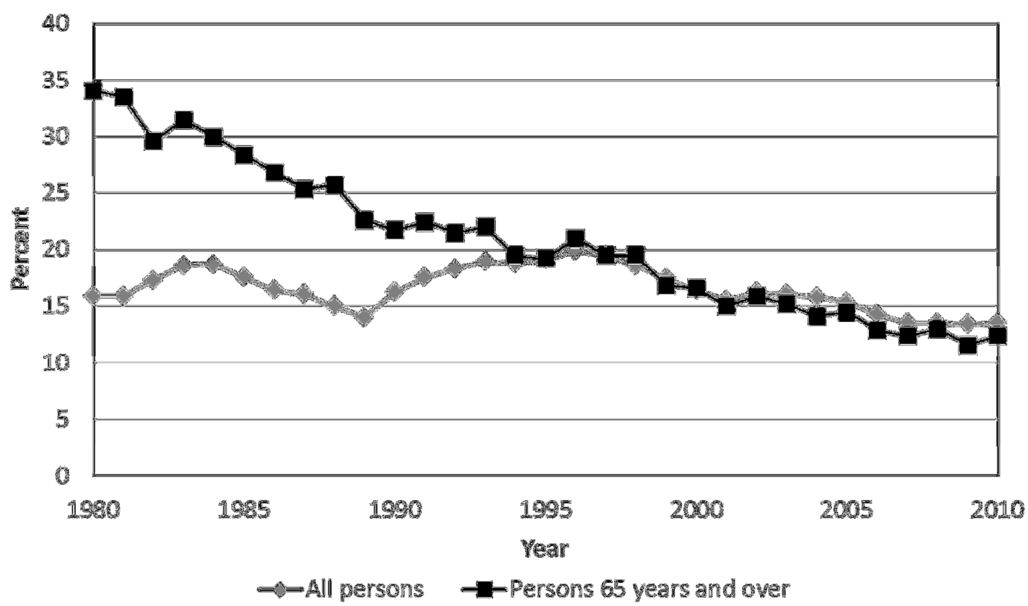

Figure 1: The incidence of low incomes (percent of population below poverty line) in Canada between 1980 and 2010

Concerns about the sufficiency of public pension benefits and the adequacy of contribution for funding pension plans have been a part of public policy debates for decades. Like every debate, there are two sides on this issue: one side is in favour of a higher level of public pension for all old age citizens, and the other side is in favour of promoting private pensions and private savings while minimizing or freezing the level of public pension benefits. A large number of the citizenry, on the other hand, are unaware of the implication of these debates and are completely unprepared for their post-retirement years.

Pension decisions are complex as they involve long horizons and estimates of many uncertain variables far into the future and, even if the necessary information is available, the trade-offs involved are far too complicated.[1]

A majority of Canadians recently polled said that they were relying on the CPP, many of them heavily, to get through retirement.[2] Unfortunately, as surveys and polls show many people do not understand the extent and scope of the CPP and are overly optimistic about its level of coverage. It is generally believed that the pension(s) paid by the government will be sufficient. A large number of people do not know how much money they will need during their retirement years to maintain a respectable standard of living.

On the other hand, while numerous retirement saving vehicles have been introduced by the government, many individuals cannot decide or know how to effectively use them. Many also feel that they cannot afford to use them. Studies show that these vehicles are not effectively used by those who would need retirement savings the most and do not have any other assets to rely on during retirement.[2] [3] [4] Those that do use them end up paying a significant amount of their return in administration fees.

Added to these problems is the recent trend where many private, institutional RPPs are being converted from defined benefit (DB) pension plans to defined contribution (DC) “saving” plans.[5][4] While only about 40 percent of workers in Canada are reported to have employer sponsored DB and DC plans,[6, p. 8] these conversions make the future of pension plans uncertain and risky; especially so when the employees are given the responsibility for making the investment decisions. Individual employees not only lack the skills to manage their financial assets through the complex financial market, they also face the market turbulences, Ponzi schemes and high financial management costs. When all of the privately managed vehicles for retirement saving fail to meet the target for retirement income, the demand for OAS or other forms of old age payments from government revenues increases.

Almost all Canadians living outside Quebec are covered by the CPP. While the benefits paid under the CPP are insufficient, the CPP is believed to be the most secure form of pension in Canada. Unlike OAS and its supplements, the CPP cannot be changed at will by the current and future federal governments just because of their political ideology. Arguably, it is more difficult to change the CPP’s governing legislations than the Canadian Constitution. Amendments to the CPP require agreement by the federal government plus two-thirds of the provinces representing two-thirds of the population. Constitutional changes also require consent from two-thirds of the provinces, but representing only half the population.[7] [8] [9] [10]

An important feature of the CPP is that it is fully transferable; therefore, individuals working several jobs and changing provinces will not lose their pensions or the employer contribution part of their pensions. On the other hand, in addition to about 60 percent of the full-time workers who do not have any pensions, most private pension plans exclude temporary and part-time workers. Knowing the trend towards instability of jobs for both the younger and older generations, it can be seen that many individuals working on short-term bases will spend years working and moving between jobs ending up without any pension savings.

This paper looks into the history of Canadian pensions, their evolution and changes, and their current status. The aim of the paper is to provide an analysis and argue for an increase in the CPP benefit levels and an actuarially fair increase in the contribution levels. The author believes that a broader-based CPP is not only needed for a vast majority (about 60 percent) of the workers that are not covered by any workplace pension plans, but it could also potentially reduce the demand for Guaranteed Income Supplement (GIS) component of OAS, which is funded out of annual tax revenue.

It is this author’s view that it is better to contribute more through pay-roll deductions for a secure pension with an adequate level of benefits now than to rely on an unknown and means-tested old age security through income tax of future workers later. Besides, in the case of pension payment through payroll deductions, those who do not have the know-how of retirement planning and investment will not end up in poverty because of bad investment decisions, Ponzi schemes or exorbitant financial management fees.

The following pages include a background section that describes the various forms and history of pension plans and retirement saving vehicles that are available to Canadian workers. It is followed by a literature review on pension plans, the features of the CPP and OAS, and the expected and desired future for the CPP. An analysis section examines the performance of CPP and private DC "saving" plans and their implication on the future of Canadian retirees. The analysis will also go through some statistical data to evaluate the various pension provisions along with this author's own firsthand experience with employer sponsored RPP, RRSP, mutual fund and stock market trading. The paper ends with a section containing the conclusions and recommendation for the future of CPP based on this study and the author's observations and experiences. Definition of terminologies, applicable statistics, and some example calculations are placed in the appendices.

BACKGROUND

Encyclopedia Britannica defines pension as a series of periodic money payments made to a person who retires from employment because of age, disability or the completion of an agreed span of service. The payments generally continue for the remainder of the natural life of the recipient, and sometimes to widow or other survivor.[11] Public pension programs are said have two goals: first, ''redistribution of income towards low-income pensioners and prevention of destitution in old age;'' and second, ''helping workers maintain their living standards during retirement by replacing income from work at an adequate level.''[1]

Canada's contemporary three-tier retirement income system is considered a large and complex structure that has grown over decades and contains public and private provisions.[12][13] The first tier, which is also the oldest public component of it, consists of the federal OAS program which provides for a minimum floor benefit based on residency in Canada. The OAS is supplemented with the GIS, Spousal Allowance (SPA), Allowance for the Survivor and various income supplements for low income seniors offered by some provincial and territorial governments.[12]

The second tier of the retirement income system, also public, is composed of two parallel social insurance programs - the CPP and the QPP - covering all individuals with employment earnings. They also provide benefits to workers' dependents after workers' death or disability. The third tier of the retirement income system, the private tier, is mainly made up of the RPPs; but it also includes the recently added pooled registered pension plans (PRPPs), individually invested registered retirement savings plans (RRSPs) and tax-free saving accounts (TFSAs).[14] Although, some call the additional non-registered, non-tax-sheltered savings such as bank deposits, brokerage accounts, etc. as the fourth tier, they are not considered as a part of the pension savings (tiers) by most pension specialists.[7] [15]

Each tier is financed using a different approach: the OAS and its supplements are financed through general tax revenues on a pay-as-you-go basis, the CPP/QPP are "partially" funded based on contributions on employment earnings, and RPPs, PRPPs, RRSPs, and TFSAs are intended to be "fully" funded through employer and/or employee contributions. The variety in both the sources and methods of financing is argued to have enabled the Canadian retirement income system to be less vulnerable, and thus more resilient, to changes in economic and demographic conditions compared to systems that are less varied in their provision of retirement income.[14]

The following section provides a historical review of pensions in Canada, the types of pensions available and the expectations of the public, the workers and the retirees from the public pensions.

The Birth of Public Pensions in Canada

The economic condition of elderly Canadians has been a recurring policy issue in Canada since the late nineteenth century.[16] Over the first 40 years of the twentieth century, for the most part, older Canadians were expected to have saved and accumulated for their later years, to have continued working, and to have relied on family for support and; where these failed, they turned to the relief provided by municipalities.[16]

Little progress was reported to have been made on public pension development in Canada until the 1920s.[16] It is reported that a special committee of the House of Commons established by the prime minister to investigate a pension plan for Canada submitted its recommendations in 1924. While the government had accepted that the needs of a sizeable poor elderly population justified a public transfer scheme, debate reportedly remained over whether Canada should move towards a non-contributory or contributory (social insurance) pension scheme, and if it was to be non-contributory, whether the pension should be means-tested or universally provided.[16]

It has been reported that the federal government preferred means-tested non-contributory pensions administered by provinces and supported by federal government cost sharing as a strategy for limiting the program's costs.[16] Contributory plans were considered as too costly to set up and administer at that time. It is reported that similar cost considerations guided the choice of 70 as the minimum age of eligibility rather than 65.[16]

In 1927, the federal government passed the Old Age Pension (OAP) Act, which was reportedly the first measure and initiative of the government of Canada towards the welfare of the elderly and created a national pension scheme.[16] Provincial participation was voluntary, with the federal government reimbursing provinces 50 percent of the OAP benefits paid. [10] [13] [16] The OAP Act of 1927 is argued to have modified the past expectation that saving for retirement was a matter of personal responsibility and recognized that some persons could not save for retirement, and, in consequence, should be provided with pensions in old age.[17]

As pensions were considered a provincial constitutional responsibility at that time, OAP was administered by the provinces.[13] The maximum pension was $20 per month or $240 per year. It was available to British subjects aged 70 or over who had lived for 20 years in Canada and the past 5 years in a given province.[13]. It was restricted to seniors whose income, including the pension benefits, was less than $365 per year – nicknamed "dollar a day" program.[13] [16] [18] This meant that a pensioner could earn or receive other income to a maximum of $125 annually beyond OAP, after which the pension benefit was reduced on a dollar-for-dollar basis.

Although, this old age pension provided the elderly poor with some relief, it was considered a grossly inadequate welfare program for seniors.[19] The program gradually included more people, such as blind persons in 1937 and disabled persons in 1955, but eligibility remained limited and seniors had to pass a means-test. To qualify for assistance, parents had to prove that their children could not support them.[10] [16] [18] [19]

It is reported that by the 1940s the rising cost of living and fixed pension benefits stressed pensioners. Pressure began to mount on the federal government to increase pension benefits.[16] In 1951, following an amendment to the British North America Act to permit the federal government to operate a pension plan, the federal government enacted two new pension programs, the Old Age Assistance Act (OAA) and the Old Age Security Act (OAS). Both programs were made effective in January 1952. The OAA essentially made the means-tested OAP pension benefits available to Canadians aged 65–69. The federal government covered 50 percent of the OAA pension expenditures and provinces agreed to implement and administer the program as of April 1952. The OAA initially paid a maximum benefit of $40 per month.[10][13][16][20] By successive amendments, this amount was raised to $46 in July 1957, $55 in November 1957, $65 in February 1962, and $75 in October 1963.[10] However, after the introduction of CPP, the OAA was completely phased out by the end of 1969. The OAS which still exists is discussed below.

Tier 1: Old Age Security (OAS)

The OAS was a national system of universal flat-rate old-age pension, administrated entirely by the federal government funded out of general tax revenue that extended the maximum annual pension benefit of $480 under OAP to all Canadians aged 70 and over who had lived in Canada for over 20 years without a means-test.

The universal OAS pension, together with the later-introduced income-tested GIS and Spousal Allowance (SPA) programs, was designed to meet the anti-poverty objective.[18] The payment amount for the OAS pension, which is now payable at the age of 65, is determined by how long one has lived in Canada after the age of 18. It is considered taxable income and is subject to a “recovery tax” if an individual’s net annual income is higher than the net world income threshold set for the year.[21] The maximum OAS benefit in 2014 for a retiree who has lived in Canada for 40 years after the age of 18 is about $550 per month. For every year of residency of less than 40, the amount is reduced by 1/40th. In the 2012-2013 fiscal year, Canada paid about $31.6 billion in OAS benefits.

GIS, a tax-free, income-tested supplement, was created by the federal government in 1966, through an amendment to the Old Age Security Act.[13] It was created because the CPP/QPP would not pay full retirement benefits for 10 years after their enactment and also to assist those low-income seniors that had already retired. GIS is available to pensioners who receive the OAS pension, but who have little or no other income. This supplement is applied for every year at tax-filing time. [17] [18] [20]

There are separate GIS benefits for singles and individuals living as couples. The calculation of income for the purpose of the means test excludes OAS benefits. Unlike the claw back of OAS benefits, however, the test for GIS is applied to family rather than to individual income. The “recovery tax” of benefits is 50 cents for each dollar of family income other than OAS. For couples in which one partner is under the age of 60, the recovery tax is 25 cents for each dollar of family income. [20]

Although the GIS was initially introduced as a transitional program to be phased out when the CPP/QPP began paying full benefits in 1976, it was found that a sizable portion of the CPP/QPP beneficiaries qualified for less than a maximum pension. This, coupled with the fact that only a minority of workers had an employer sponsored pension, meant that the GIS remained a critical element in reducing the incidence of poverty among the elderly. Thus the program was maintained, increased in value and indexed quarterly to the cost of living.[13] [18] The maximum annual GIS benefit for a single pensioner in 2014 is $8,974.

The Spouse's Allowance (SPA), now called the "Allowance," is another component of the Old Age Security program that was introduced in 1975. It is a benefit paid to spouses or common-law partners of pensioners who receive the GIS.[18][20] In order to receive the Allowance, recipients must be 60 to 64 years old, have lived in Canada for a minimum of 10 years, and have a combined family income of below $40,080 (in 2014). The maximum monthly payment is $495.89 (in 2014). The income test is again applied at the family level but is more stringent than that for the GIS. The recovery tax on SPA benefits is 75 cents for each dollar of income until an amount equivalent to the OAS benefit has been retrieved. At this point the recovery tax is reduced to 50 cents for each dollar of additional income.

The Widowed Spouse's Allowance, now called the "Allowance for the Survivor," is another form of SPA that was introduced in 1985. It is a benefit paid to widowed spouses or common-law partners who are 60 to 64 years old, have lived in Canada for a minimum of 10 years, and have an income below a specified maximum amount.[18]

The GIS, Allowance and Allowance for Survivor benefits are financed out of general tax revenues, are fully indexed to increases in the Consumer Price Index and exempt from income taxes at the federal or provincial level.[20] In the 2012-2013 fiscal year, Canada paid about $9.6 billion in GIS and Allowances benefits. In the 2012 federal budget, the federal government introduced plans to gradually raise the retirement age for the OAS and GIS from 65 to 67. The change is scheduled to roll out between 2023 and 2029. Anyone born in 1958 or later receives these benefits starting at age 67.[13]

Tier 2: Canada Pension Plan (CPP)

As reported, in spite of the introduction of OAS, retirement still meant a drastically reduced standard of living for many people.[18] There was reportedly a growing public and political support for a universal, employment-based pension plan that would be portable from job to job. The provinces reportedly had agreed to another Constitutional amendment to extend federal government powers beyond legislation that applied only to old age. As a result, the contributory CPP and QPP were established in 1966, considered a "major landmark" development in Canada.[10][18] The effect of the CPP and QPP was a system of contributory wage related retirement pensions on top of the existing system of universal flat-rate old-age pensions. The new plans are to protect workers and their families from loss of income due to retirement. Death, survivor and disability benefits are also provided. Recipients receive benefits based on the amount they have contributed.[18] The collection of contributions under the CPP and QPP programs commenced in January 1966, and retirement benefits became payable in January 1967 at the rate of 2.5 percent of the annual income.[10] The full amount of the retirement pension was set to be equal to 25 percent of earnings at the end of an initial transitional period of 10 years.

The CPP covers virtually all members of the labour force in Canada, including both employees and self-employed persons between the ages of 18 and 70 with employment earnings, other than those covered by the QPP. The main exceptions are persons with annual earnings lower than the Year's Basic Exemption (YBE, $3,500 since 1996), members of certain religious groups, and other persons who qualify under excepted employment. The persons to whom a CPP disability pension is payable are not required to contribute.[14] The CPP benefits are financed through payroll contributions and depend on work histories of the recipients.[20] A contribution by the Government from general revenue is expressly prohibited by law.[10] The CPP is supposed to remain free from external interference and political control. The CPP fund assets belong only to plan members and cannot be used for any purpose other than paying the CPP benefits and costs of administering the plan and the fund. They are strictly segregated from government accounts.[7]

Employees and employers each contribute toward the CPP fund 4.95 percent (since 2003) of the employees' wage in excess of the YBE up to the Year's Maximum Pensionable Earnings (YMPE), which is $52,500 in 2014. The YMPE approximates, and is indexed to, the growth in average earnings in the labour market.

The principal benefit provided under the CPP is a "retirement pension" payable in old age. The disability and survivor benefits paid under the CPP are referred to as supplementary benefits. No supplementary benefits are payable to a spouse or children of a living pensioner. The CPP retirement pension is calculated as 25 percent of a worker's average annual lifetime earnings or YMPE, whichever is lower. The maximum pension in 2013 was $12,150 ($12,460 in 2014) per year, though the average benefit received by pensioners in 2013 was about $6,273 or 52 percent of the maximum.[10][22][23] Appendix B shows a sample calculation for CPP benefit entitlement. Benefits have been fully indexed to the Consumer Price Index (CPI) since 1972 and are fully taxable under federal and provincial income tax laws. [13] [20] [22]

The CPP used to be funded on a "pay-as-you-go" basis, in which contributions were set at a level that would pay for current pension payouts and provide a contingency fund of 2 years of benefits. The surplus was lent to the provinces, invested in non-marketable securities of provincial governments. At the time of the CPP's inception, demographic and economic conditions were reportedly characterized by a younger population (higher fertility rates and lower life expectancies), rapid growth in wages and labour force participation, and low rates of return on investments.[14] These conditions reportedly made the pay-as-you-go financing scheme more attractive. Growth in total earnings of the workforce and thus contributions were sufficient to cover growing expenditures without requiring large increases in the contribution rate.[14] In this case, those who retired had to rely on the contribution of a larger number of plan members to pay for their retirement benefits. The money that was contributed by a retiree in his or her working years and its accumulated interests would be insufficient to pay for all of his or her post-retirement benefits. For example, a worker's full contribution to the CPP between 1966 and 1994 would only cover pension payments for up to five years, not 20 years, after age 65.[24]

The CPP/QPP underwent an important reform in 1997. The benefit structure was maintained but contribution rate were increased substantially. The federal government, in agreement with a majority of the provinces, increased revenues by increasing contribution rates by 65 percent over six years (from 6.0 percent in 1997 to 9.9 percent in 2003). To increase pension revenues further, the federal government, reportedly inspired by the high rates of return generated by Québec's Caisse de dépôt et placement (for QPP) in the 1990s, created a similar independent investment board (Canada Pension Plan Investment Board, CPPIB) to manage excess contributions.[24]

By accelerating the increase in the contribution rate, the 1997 reforms moved the CPP to a "partially funded" basis, accumulating a larger fund (equal to about 5 years of benefits) that is invested more broadly in a diversified portfolio of securities to achieve a better rate of return.[22] The contributions are paid into a special "pension plan account," from which, in turn, all benefits as well as costs of administration will be paid. [10] Balances accumulated in the pension plan account that are in excess of the amounts needed to meet current expenditures are invested by the CPPIB in various Canadian and international portfolios.[7]

The latest change in the CPP that took effect on 1 January 2012 is that persons in receipt of a CPP retirement pension who are aged less than 65 and who continue to work will be required to contribute to the Plan and will earn post-retirement benefits. Beneficiaries aged 65 or older who continue to work will not be required to contribute but may choose to do so to earn post-retirement benefits. Contributions are not permitted upon attaining age 70.[14]

The most recent actuarial review, conducted as at December 31, 2012, concluded that the CPP can maintain its currently legislated contribution rate – 9.9 percent of covered earnings, shared equally between employees and employers. The review took into account the fact that the ratio of pensioners to employed workers will rise as baby boomers retire and was still considered healthy. The CPP Fund's annual investment return is expected to average 4 percentage points above the rate of price inflation over the long term.[7] Sensitivity tests that measured the impact of market shocks were reported to have shown that the minimum contribution rate could vary between 9.4 percent and 10.1 percent depending on the magnitude of the investment shock and the degree of risk present in a portfolio.[14]

With the legislated contribution rate of 9.9 percent, the CPPIB expects that the contributions are more than sufficient to cover the expenditures over the period 2013 to 2022. According to the Chief Actuarial Officer and the CPPIB report, the number of contributors is expected to grow from 13.5 million in 2013 to 14.5 million by 2020. The future increase in the number of contributors is considered to be limited due to the projected lower growth in the working-age population and labour force. The number of retirement beneficiaries is expected to increase from 4.6 million in 2013 to 10.2 million in 2050.[7][14] Under the legislated contribution rate of 9.9 percent, contributions are expected to increase from $42 billion in 2013 to $56 billion in 2020. In the 2012-2013 fiscal year, CPP paid about $35.6 billion in retirement benefits.

Overall, the CPPIB, referring to the Chief Actuary of Canada estimate, concluded that a 4 percent real rate of return is required to sustain the CPP at its current contribution rate. The Fund's 10-year return exceeded that target. The 10-year average annualized real rate of return was reported to be 5.5 percent.[7][14]

Tier 3: Registered Pension Plans (RPPs), Registered Retirement Savings Plans (RRSPs) and Tax-Free Saving Account (TFSA)

Workplace pension in Canada pre-dates the tier 1 and tier 2 pension plans discussed above. Federal civil servant pensions were reportedly introduced in 1870. The Grand Trunk Railway is reported to have founded the first industrial pension plan for workers in 1874, and the Canadian banks are reported to have begun introducing employee pensions in the 1880s.

However, these early pensions are said to have had very little resemblance to modern-day pension plans and benefits. [25, p. 8]

RPPs

A contemporary workplace pension plan, the main component of tier 3, called a registered pension plan (RPPs) is a program under which an employer or a union provides pensions to retired employees covered by the plan. Both the employee and employer contributions to RPPs are tax deductible. Contributions and investment earnings are taxed after the benefits commence to be paid. There are basically two types of plans that are generally considered as RPPs. They are DB pension plans and DC "pension" plans. Under the DB pension plans, the beneficiaries receive a retirement income that is predetermined based on a formula that takes into account the years of service and earnings. DB pension plans are mostly managed by the employers who are also responsible for keeping the plans solvent. In some cases a number of employers create an investment board or a trust that is given the responsibility for managing the fund, paying the benefits and investing the surplus contributions. Canada's top ten funds based on their size of asset are listed in Appendix C.

Under DC "pension" plans, the beneficiaries receive a retirement income that is not predetermined. The payments depend on the amount of savings and the return on any investments that are made using these savings. DC plans should be called "saving" plans rather "pension" plans. Under the DC plans the employers make contributions based on a formula that may or may not require a matching contribution by the employees. The result is a contribution that is a fixed percentage of an employee's salary and is deposited into an account under the employee's name. DC plans are getting popular because more and more employers want to get away from the liability that comes with the DB pension plans. Under DC plans the employees pay a fee to the institution that manages the plan. The employees are also given the responsibility for making investment decisions, taking the risks associated with the investments, market and longevity. At retirement, based on the funds accumulated in the DC plan account, the retired employee has to make an estimate as to how long he or she will live and make a spending plan such that will be sufficient and available for the rest of his or her life.

RRSPs

An RRSP is a supplementary retirement savings plan that is established by a person and registered by the government, to which the individual contributes. RRSP contributions are tax deductible and can be used to reduce the amount of tax owed. Any income earned in the RRSP is usually exempt from tax as long as the funds remain in the plan. Tax is generally paid when one receives payments from the plan. RRSPs were reportedly introduced in 1957 to provide an effective tax sheltered retirement saving vehicle for individual taxpayers who for various reasons did not participate in workplace pension plans. With changing patterns of employment, RRSPs were supposed to also become a tool for individuals to supplement their pension plan benefits, to take them through periods when they were not members of pension plans and, if they chose, to consolidate their benefits from different plans.[26]

TFSAs

The TFSA, another supplementary saving vehicle, was established in 2008 to allow Canadians, age 18 and over, to set money aside throughout their lifetime and have a tax-free income from this saving. Each calendar year, Canadians can contribute up to the TFSA dollar limit for the year, plus any unused TFSA contribution room from the previous year, and the amount withdrawn the year before. The annual TFSA dollar limit for 2014 is $5,500. All income earned and withdrawals from a TFSA are generally tax-free. Plus, having a TFSA does not impact federal benefits and credits. TFSAs started operating in 2009, yet in February 2012, it is reported that only 64 percent of Canadians were aware of TFSAs and only 69 percent were aware of RRSPs. What's more, 40 percent of Canadians were reported to not know the difference.[6, p. 105] It is reported that only about 20 percent of Canadians had started a TFSA. This figure does not include people who have opened one and then withdrawn their funds or closed it. [6, p. 106]

TFSAs are argued to be a good idea for low-income earners, since, unlike RRSPs, when one retires and withdraws money from a TFSA, that money does not affect the person's eligibility for government benefits and tax credits.[6, p. 106] This could be partly because some tax has already been paid on the money saved in a TFSA account.

LITERATURE REVIEW

Schirle used the confidential micro-data files of the Survey of Consumer Finances (SCF) 1977–79 and 1994–96) and the Survey of Labour and Income Dynamics (SLID 1994–96 and 2006–08) to conduct a decomposition analysis of changes in senior poverty rates over the two periods.[27] It was found that the incident of poverty for the 1977–79 to 1994–96 period clearly align with substantial changes in the generosity of GIS and the CPP/QPP.

Brown argues that the Canadian public pensions target benefits to alleviate poverty and not so much the income replacement concerns.[28] Canadians receive very similar total dollar benefits from the government-sponsored system. As a person's income increases through new dollars of the CPP, the GIS are clawed-back and later OAS amounts are clawed-back.[28]

MacDonald et al. who studied the future pension security of Canadians reported that RPP coverage of the labour force had fallen in Canada and the take-up of RRSPs had not been sufficient to compensate for the fall of RPPs.[3] The trend was projected to continue modestly into the future. The current trend toward less employer pension plan coverage and more individual responsibility for retirement income, based on economic modeling and analysis, was found to hinder the financial security of future Canadian seniors.[3]

MacDonald et al. reported other studies that had investigated the past and future trend of replacement rates for retiring Canadians.[3] They reported that, on average, the capacity of income from RPPs, RRSPs, GIS, CPP/QPP, and OAS to replace pre-retirement consumption rose between 1966 and 1990, and remained relatively stable until 2005. It was reported that in recent years the replacement rates had begun to decline, and this negative trend was projected to continue into the future.

Drummond and Roberts in their book titled "Pension Confidential" state that Canada's system of public pensions is at risk right now.[6, p. 8] However, they believe that the public pension system can be saved and is worth saving. They also warn that relying on financial advisors and one's own investments are not the best means of preparing for retirement. They state that our public pension system needs to be reformed if we hope to depend on it in the future.[6, p. 8] They state:

> *"The CPP benefits are too low […] a doubling of CPP benefits in the future could be paid for today with a 60 percent increase in contributions. This increase would be shared equally between employers and workers. But there has always been opposition to this, primarily from the financial interests that want us to rely on banks and insurance companies for our retirement savings, and small business groups that don't want to pay higher contributions."* [6, p. 211]

FitzGerlad states that the CPP was almost bankrupted by amendments improving and backdating benefits, and then was rescued in the 1990s with new financing arrangements. The problems were resolved because there was a process in place for the federal and provincial governments to discuss and come to agreement. [26] FitzGerald argues that it is time for pension stakeholders to come together again to develop a national policy for pensions that will stem the decline and restore the former health of workplace pension plans.[26]

Baret writes that the discussion over pension changes has split along political lines, with the current conservative government in Ottawa concerned that any move to tax-sheltered retirement arrangements would drain economic growth in the country, while more liberal political parties see the CPP expansion proposal as broadening DB access for everyone.[30] To promote private pension plans, the federal government in 2012 introduced a new vehicle for pension planning, called registered pooled pension plan. It is argued, by the government, that this will reduce pension administration costs for employees, employers and self-employed workers. This vehicle has to be accepted by the provinces in order to be available in their jurisdiction.

Ambachtsheer writes that pension coverage and adequacy are too low and pension uncertainties are too high.[31] He writes that some pension experts believe the solution is in resurrection of the traditional defined-benefit (DB) plan while others say broad defined-contribution (DC) plan coverage is the cure. Ambachtsheer argues that improving global workplace pension coverage, adequacy, and certainty requires that we move from an "either-or" to an "and-and" mindset, and consider both DB and DC pension plans important for the cure. [31]

Ambachtsheer states that part of the problem associated with DB plans is mainly due to the governing regulations. When financial surpluses appeared on DB plan balance sheets, it is reported that there were fights about who "owns" them. In corporate contexts, the surpluses of the 1990s led to contribution holidays decided unilaterally by employers. There reportedly were also surplus ownership disputes between plan members and corporations, with regulators and even the courts having to step in to arbitrate. When surpluses turned to deficits in times of financial distress, plan members reportedly fought with corporate bond and shareholders about how the financial pain should be allocated. [31]

He states that it is certainly true that DC arrangements eliminate most of the DB plan ambiguity about risk-bearing and asset ownership.[31] However, he states that research findings indicated that the typical DC plan has three serious flaws of its own and lists:

> *"First, behavioural finance research confirms that most people are hesitant, inconsistent, and even irrational planners and decision-makers regarding their own financial future. Second, informational asymmetry and misaligned interests vis-a-vis the global for-profit financial services industry drive a material wedge between workers and the retirement money they do accumulate. The result is that many workers pay too much for retirement-related financial services in relation to their true economic value. These excessive fees paid over a working lifetime are another important factor why so many workers with DC plans are under-achieving their pension goals. Third, these arrangements leave plan members bearing the full burden of longevity risk. Surely we should not expose the many millions of retirees around the world to the material risk of outliving their money."*

According to Brown, among Organization of Economic Cooperation and Development (OECD) countries, Canadians pay large administrative charges, of two percent of assets per year or even more, for personal pensions such as for RRSPs.[28] Brown argues that a levy of one 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 two percent of assets, the charge ratio is reported to be 37.3 percent.[28]

It is reported that more than 70 percent of Canadians do not take advantage of the RRSP option, mainly because they can't afford to do so. And, many of those who do contribute don't put enough in to fill the gap between what government or employer pensions provide and the income they hope to replace.[6, p. 53] It is argued, on the other hand, that RRSPs do not make sense for low-income workers despite the "constant drumbeat" that everyone needs to put savings into RRSPs.[6, p. 101] It is because, as argued, when they draw money from their RRSP in retirement, they may find that they are now in a higher tax bracket, resulting in funds being clawed back from their GIS benefits. Income from RRSPs reduces GIS benefits at a rate of 50 percent. Combining this claw back with the income tax, the effective tax rate can be 70 percent. RRSPs are unlikely to accumulate enough over a lifetime to counteract such a big loss. For this reason, RRSP is not considered to be for lower-income earners. Despite this disadvantage, it is reported that there are about 300,000 RRSP contributors with incomes under $20,000, and about 60,000 tax filers making contributions to RRSPs with employment incomes under $10,000.[6, p. 102]

RRSPs are argued to be a very good vehicle for high-income earners, and are enjoyed disproportionately by a small segment of the population. Only the wealthiest and highest paid are reported to max out their RRSP contributions. It is argued that those people already covered by pension plans are more likely to contribute to an RRSP than those who lack pension plans at work. [6, p. 102]

McDonald and Donahue argue that with the increase in defined-contribution plans, the responsibility for investment is now passed on to the individual and to his or her financial analyst or banker while studies had shown that many Canadians lack some or all of the skills, knowledge and confidence necessary to be financially literate.[32] They also write that the financial industry may not be ready to provide the kind of financial literacy and information that people need, as opposed to the kind that sells products at high prices. McDonald and Donahue refer to a 2009 survey that found that an “astonishingly” low, 45.6 percent, of those aged 25 to 64 had a good idea of the savings required to maintain their standard of living in retirement.[32] They also report that a random survey, taken after the economic downturn, of pre-retiree and retired Canadians aged 45 and older found that 42 percent of pre-retirees were not prepared for retirement, while 64 percent of pre-retirees were reported saying that the economic downturn had not affected their retirement plans very much or at all; although they had concerns. About 41 percent of pre-retirees were report to not believe that they would be able to maintain the same standard of living in retirement; 62 percent were reported to have been concerned about being able to pay for adequate health care, and 62 percent were reported to have been concerned about depleting their savings.[32]

Robson writes that both sides of debate on defined pension plans agree that the individual or group RRSPs are far from ideal and that most people’s decisions about how much to save and how to invest are based on discount rates that are not reliable or well understood.[4] As a result many people would save too little. Individual accounts of DC “saving” plans had extremely high cost, and employer-sponsors of these plans are argued to have little incentive to bargain with providers to get those costs down.[4]

Andrews and Brown reported that many countries with pay-as-you-go DB social security retirement programs were changing to a DC basis.[5] The change was considered often to have been motivated by financial pressures to make the system affordable in the face of demographic pressures requiring an increase in contribution rates, a reduction in benefits, or both.

Leech and McNish in their book on pension failures write that the approach for replacing DB plans with DC plans is misguided.[25, p. 152] They argue that the traditional DB pension model needs to be more flexible to adjust to unpredictable modern challenges, but that should not mean that the DB plans be tossed “on the scrap heap.” Referring to a report from Quebec, they stated that no other supplemental pension plans or personal savings vehicles could provide members with the same level of financial security. They argue that shifting Canada’s DB pensions to DC plans is no solution to the retirement savings crisis. Such a shift is considered to be replacing a mandatory and efficient fund regime with a fragmented, non-compulsory, expensive and risky saving system that would leave retirees with less income. Among the solutions proposed and reported by Leech and McNish is an argument that middle-income workers without pensions are better served by an enhanced CPP.

In November of 2013 it was reported that Canadians could see an expansion of the CPP under one of the two proposals that were being discussed by federal and provincial officials to enhance Canadians' retirement savings.[30] One proposal approved by the federal government in 2011 offers employers a PRPP, which requires approval from each of Canada's provinces. The other one promoted by the province of Ontario and Prince Edward Island call for expanding the coverage of CPP to improve the retirement security of middle-income Canadians. [30]

However, the proposal to expand the CPP was reportedly quashed after the Canadian federal and provincial finance ministers meeting December 15-16, 2013 failed to reach a deal to increase benefits through higher government contributions and payroll deductions.[33] The proposal was presented by Wes Sheridan, finance minister of Prince Edward Island, and was supported by the province of Ontario. It would have increased the formula for CPP participant benefits to 30 percent of a participant's average wage from the current 25 percent. After the failure of the December 15-16 meeting, Charles Sousa, Ontario's finance minister, reportedly said that Ontario would move ahead with creating a supplemental pension plan as suggested by Ontario Premier Kathleen Wynne earlier in year 2013.[33]

On January 22, 2014 the Ontario government announced that it was working on a new Ontario Pension Plan that it expects to unveil in the spring.[34] The province has appointed former Prime Minister Paul Martin to head a special advisory panel to oversee the creation of the pension plan and decide if it should be mandatory. Proponents of the Ontario plan are reported to consider the supplemental plan needed to help middle-income Canadians save for retirement. A provincial plan, if created, is argued to be a huge "evolution" going forward and theoretically could eventually replace the CPP in Ontario.[35] Charles Sousa, finance minister of Ontario, was reported to have been asking other Canadian provincial and territorial finance officials to work together to create a supplemental retirement plan to the CPP.[36] He was reported to be calling for a retirement solution so that all workers, no matter where they lived, could benefit from it.

For the nation-wide pension, one school of thought reportedly believes that the best route to reform is to bolster the earnings-replacement capacity of the CPP/QPP (from 25 to 50 percent of the average wage).[12] Another school of thought is reported to also advocate an expansion of the pension system, but through private rather than public programs in the form of mandatory private pension or retirement savings plans. The Canadian Life and Health Insurance Association, representing the private insurance industry, is reported to be advocating mandatory employer pension plans for all employees over age of 25, covering earnings between 50 and 150 percent of the average wage. The Ontario Royal Commission on the Status of Pensions was reported to have recommended mandatory RRSPs for all employees between age of 18 and 64, with an opt-out provision for members of employer pension plans providing equal or superior benefits.[12] The school of thought that was reported to have prevailed was the federal government's position and the ideological conviction that the majority of Canadians should be expected to provide for their retirement through individual savings and employer pension, and that public pension programs should play only a necessary but relatively limited role in the retirement income system overall.[12] This ideology, however, goes against what Canadians had learned in the 1920s and 1950s and concluded that some persons could not save for retirement and that there was a great need for a strong public pension plan.

A November survey of 200 employers in Canada by employer consultant Morneau Shepell was reported to have shown that 32 percent thought the CPP expansion was the most cost-effective way to improve the country's retirement income system.[33] That compared with 25 percent who said to either do nothing or encourage workers to save more, 23 percent who supported a contribution of 2 percent of pay to a supplemental DC "saving" plan, and 20 percent who recommended a pooled plan with no employer contribution.

Drummond and Roberts presented a detailed discussion and justification for a strong CPP. They have explained as to why any of the alternatives that are promoted by the financial sector will not work for a majority of the population. They write that during the 2008 financial downturn, companies that offered their employees corporate pensions found that the funds they had put aside and invested to cover those pensions took a big hit.[6, p. 12] However, they argue that since most of the obligations of these companies were in the future, such companies mostly had time to rebuild those assets, as long as the economy rebounded. Yet many companies were reported to have decided that their employees – at least new hires – should forget about defined-benefit pensions. If they were going to offer any company pension at all it would be DC plans only.[6, p. 13]

They argue that Canadian workers should ensure that the success of the retirement income system is not lost by diminishing public pensions.[6, p. 33] "*Our pensions are under threat for sure,*" they declared. Drummond and Roberts presented an argument that the best path forward is to strengthen CPP. They state that only around 40 percent of Canadians have any access to employment pension at all and many of those are flawed in one way or another. The flaws are said to include the low wage replacement ratio, risk of employer bankruptcy and high fees from the money managers. A Morningstar study of 2012 is reported to have found that the Canadian mutual fund industry had the highest fees among twenty-two countries surveyed. [6, p. 98]

According to Drummond and Roberts in March of 2010, Conservative federal Finance Minister Jim Flaherty was pushing for a "modest" increase in the CPP contributions and recommending private sector pooled pension plans.[6, p. 70] It is reported that the Government of Alberta, however, expressed opposition to an increase in the CPP contributions in favour of private-sector solutions, which resulted in postponement of changes to the CPP in favour of pooled pension plans which was announced in November of 2011. The Canadian Federation of Independent Business was reported to have also expressed its opposition to the CPP changes. Although, a poll of small business owners was reported to have found that two-third of respondents approved changes to the CPP, even including an increase in the contribution rate. And, a poll of Alberta residents by the Canadian Union of Public Employees was reported to have found that 66 percent favoured increasing the CPP benefits and only 19 percent were opposed.

Drummond and Roberts write that the private sector plans were applauded by the Investment Industry Association of Canada and the Association of Canadian Pension Management, as well as a number of individual insurance companies.[6, p. 71] They continue and state:

> *"The problem is that these pools as proposed are defined contribution plans and the investment risks are all borne by the employee and not the employer or the money manager. As banks and investment brokers develop ever more complicated instruments, they have little or no interest in your understanding what they're selling. The bankers suffer little or no damage when these instruments fail. It is no exaggeration to say that they profit enormously from the confusion of the clients they supposedly intend to serve. In many cases, you will be lucky if the return on your investment reaches the level of the fee you have paid to have someone manage it."*

Drummond and Roberts argue that public pensions are more secure than personally managed investments that rely on too many unknowns.[6, p. 47] It is stated that employees who value the security of a defined-benefit pension have generally been more willing to consider increasing contributions than to see a reduction of benefits or a wholesale transfer to defined-contribution vehicle. They accept that the DB plans with corporations are not entirely risk-free for employees. These plans are said to carry the risk that the plan would impact the performance of the employer, layoffs might result, or the company would go bankrupt and the corporation might not be around to ensure that retirees receive the pension they are entitled to. It is reported that small businesses start and disappear at a fast rate. Only half Canadian businesses with fewer than 250 workers are reported to survive longer than five years. In the case of bankruptcy, pension liability is said to be at the bottom of the line.

Drummond and Roberts conclude,

> *"If you want to spare your kids the burden of supporting you, your best bet is an improved Canada Pension Plan. Increased contribution rates for employees and employers in the CPP would create the larger pool of savings you need for retirement, invest those savings at lower risk, and guarantee your inflation-proof benefit with the full support of all taxpayers, if necessary. Your pension would also be fully portable from*

one employer to another, since all employers are part of the same plan. … The health of the plan – like all retirement plans – relies on directed investments; it doesn't depend on the success of a few stocks and bonds. It relies instead on the average success of a very wide range of investments, and ultimately the whole economy from which government derives its revenue."[6, p. 144]

ANALYSIS

The old age pension system in Canada has improved drastically over the years. In addition to the poverty prevention measures of public funded pensions, the employer sponsored pensions were considered very generous, especially that most of them were of a DB nature, and played a major role in provision of financial security to seniors in Canada in past few decades.[26] However, lately many sponsors are abandoning their DB pension plans. Some are replacing them with DC "saving" plans, but many are not replacing them at all.[26] [31]

According to the data from the Statistics Canada between 1982 and 2012 the number of full-time workers in Canada increased from 9.2 million to 14.2 million, an increase of 5.0 million workers; while the number of workers with all types of RPPs increased by 1.5 million. Most of the increase in RPP-covered workers was in the public sector, about 1.2 million members. The increase in the number of RPP-covered workers in private sector was about 0.3 million over this 30-year period (Figure 2). It can be seen that the total number of workers with DB pension plans stayed almost the same. There is some increase in the number of workers covered by DC "saving" plans, but a large number of additional full-time workers seem to have no pensions at all. The 1.5 million increase in the number of pension plan members include 114,000 covered by DB pension plans 757,000 covered by DC "saving" plans and the balance by a combination of hybrid, composite and other types of plans.[37] In 1982 about 50.6 percent of full-time workers had a pension plan and in 2012 this ratio dropped to 42.5 percent of full-time workers.

The trend of a drop in DB pension plans has been more rapid and significant in the past few years, especially in the private sector. Between 2008 and 2014 the number of workers covered by a DB pension plans in the private sector dropped by 398,000, only 5,000 of which were replaced with DC "saving" plans. In the public sector, membership in the pension and DC "saving" plans increased by 336,000 and 20,000, respectively. The result of the changes in the private and public sector was a net drop of 62,000 in DB pension plan members and an increase of about 25,000 in DC "saving" plan members.

With the current trend of movement away from DB pensions plans to DC "saving" plans, the financial stability of future retirees and elderly Canadians are at risk of being eroded. An increasing number of the population work for smaller companies with uncertain futures and no pension plans, and the bigger and relatively stable companies are moving away from DB pension plans because of market pressure or risk of bankruptcy.

Federal policy toward old age pensions has reportedly been moving in the direction of limiting the public pension system to the anti-poverty objective; while leaving the income-replacement objective to the private market and to individual responsibility.[13] The CPP pays a maximum of $12,460 (2014 dollars) a year in pension if a person, during his or her working years, had an income of at least $52,500 (2014 dollars) every year in the past 40 years and fully contributed towards the CPP. On average, however, the pensioners received only about $6,270 a year in 2013. On the other hand, the low income cut-off line (poverty line) before taxes for single persons and families of four living in urban areas in 2011 were about $23,298 and $43,299 per year, respectively.[29] After adjusting for inflation, these amounts in 2014 are estimated to be about $25,324 and $47,064, respectively. At the current benefit level of CPP, even after the addition of OAS and GIS, many workers' standard of living and income will fall below the poverty line after they retire.

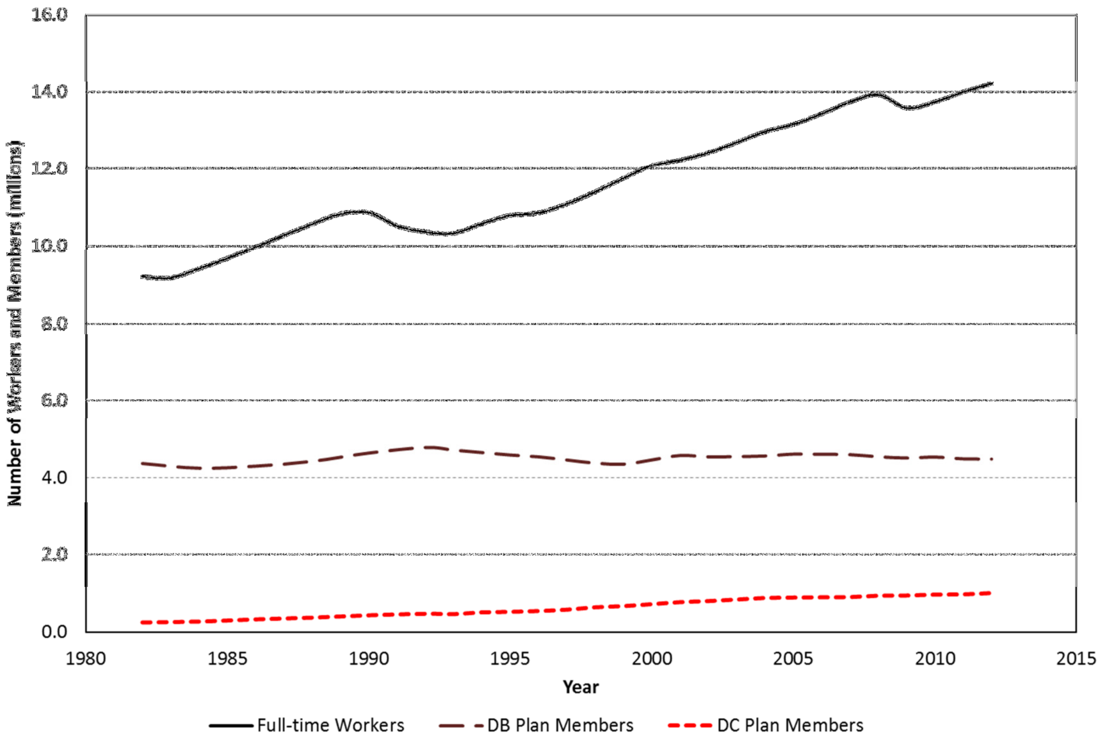

Figure 2: Changes in the number of Canadian full-time workers and in DB pension plans and DC "saving" plan members between 1982 and 2012 (Source: Statistics Canada[29]).

The author believes and research and statistics show that following the pension reform of 1997, the CPP has been brought onto the right track. The data presented by the CPPIB and the analysis carried out by the Chief Actuary of Canada also confirm this. However, the current benefit levels provided by the CPP are not sufficient to ensure that, when all other DB pension plans disappear, the retirees can maintain a reasonable standard of living after retirement. Therefore, there is a strong justification to build on the current capacity of the CPP and make it stronger and enhance it for the future needs of citizens and retirees. The CPP is believed to form the most reliable and important element of Canada's retirement income system. [38]

There is no argument that society is responsible to look after the elderly and also prepare for the future generation of retirees. The old ways of parents relying on their children for support has become incompatible with the industrial and individualistic life style of Canadian society. The available options are that Canadian society collectively supports the seniors now and in the future through contributions to the public pension plans or put the entire responsibility on the individuals to save for themselves during the working years and pay for themselves during the retirement years. The latter alternative sounds fine, but evidence and research show that it has not been effective. As Drummond and Roberts say, making all workers save and invest individually in today's complex financial system is like, "*handing you an operating manual on the care and feeding of big cats before you are thrown to the lions.*"[6] Individuals want to have a secure and respectable retirement; however, if they are forced to save and invest in today's financial system, their investment will be at the mercy of lions.

It is important to note that the general public, as demonstrated by the results from polls and surveys, prefer a strong federal pension over the other forms of public pension. In Ontario, a survey in October of 2013 reportedly showed that when given the choice between expanding the CPP benefits and adding an Ontario-based supplemental plan, 46 percent want the CPP enhanced vs. 23 percent for the provincial plan. [30]

There are calls for improvement and expansion of the public pension system by those who argue that time and history have shown that the over 10,000 private pension plans in existence are inadequate in coverage, portability, retiree benefits, survivors' benefits, and protection against inflation [13] A public sector approach is reported to be advocated by organized labour, seniors, women's groups, welfare groups and some provincial governments. [12] [13] [39] [40] The proposals in favour of a stronger public sector pension plan includes recommendations for increasing the CPP benefits to 30 percent of a participant's average wage from the current 25 percent and increasing the maximum pensionable earnings to $100,000.[41][30][33]

Proposal to improve the CPP has and will be met with opposition from different interest groups and political circles. FitzGerlad reports that when in 1908 the government of Canada proposed a scheme of government annuities for retirees, the insurance industry was not enthusiastic because the government annuities competed with their own sales of deferred annuities.[26] Those who oppose an enhancement in the contribution and benefit of the CPP cite its negative impact on the jobs and economy and its risk and liability on the government because of its DB nature and adjustment for inflation. If we consider them, none of these concerns are enough to keep the CPP frozen at its current level, knowing all well that the level of pension availability for workers is low and is declining further.

Enhancement of the CPP should not affect jobs because people want to and do save for retirement. The problem with the current trend is that the savings get invested in vehicles that cannot even recover the loss of value to inflation. There is a large body of evidence showing that private savings and DC “saving” plans are not going to meet Canadian retirement needs. Below is what this author has experienced with DC “saving” plans and self-managed RRSPs.

<u>Defined Contribution “Saving” Plans and Registered Retirement Savings Plans (RRSPs)</u>

In 2004 this author started working for an engineering consulting firm that had a DC “saving” plan for its employees. The employer’s contribution was 4 percent of the salary. The plan did not require a matching contribution by the employees. The plan was managed by an insurance company and the contributions could be invested in a number of customized mutual funds. During the first 18 months of employment, the author did not make any contributions to the plan because he wanted to receive a higher portion of pay and did not see or think about the need for additional retirement savings. Perhaps at younger age employees do not consider the implications of aging and retirement. Perhaps and retirement seems too distant and the immediate financial needs of a young family too great. This behaviour seems to match research findings. Hicks et al. wrote that research indicated that individuals generally began to plan for retirement when they approach retirement age. Younger workers were reported to be more concerned about changes in contributions than changes in benefits, while the inverse is true for older workers and retirees.[42]

After the author noticed that the plan’s administration fee was eating away a large percentage of the contributed amounts; he gave it some thought, talked with some other people and started directing about 6 percent of his salary to the employer-sponsored RPP. It was hoped that with the additional contributions the account would have a higher return and would minimize the impact of the administration fees. However, not long after the additional RPP contribution had started, the company closed their office and the author was off to another job. The employees had the option of keeping their retirement savings with the insurance company; however, because of the high administration fees, the author decided to move it to an RRSP account in a commercial bank. After about two years (August 2004 to June 2006) with the insurance company, the annualized rate of return on the retirement savings was about 2.10 percent (Appendix D, Table D1). While during the same period, the average annualized rate of return for the CPP fund was about

13.80 percent**.[7] After adjusting for inflation, the RPP's annualized real rate of return was about 0.1 percent whereas CPP's real rate of return over the same period was 11.57 percent!

After transferring the retirement savings from the insurance company to the bank, the author invested the amounts in two mutual funds (a Canadian Equity Fund and a Canadian Index Fund[43]). The investments in the mutual funds were held from December of 2006 to December of 2013. Over this period, the average annualized rate of return was 2.23 percent for the equity fund and 2.32 percent for the index fund (Appendix D, Table D2). Over the same period, the average annualized rate of return of the CPP was 4.78 percent. The real rates of return for each of the mutual funds were 0.52 percent and 0.61 percent, respectively, while CPP's real rate of return over the same seven years was 3.03 percent. From the start of the DC investment into an employee-sponsored RPP in August of 2004 until the mutual funds held in the bank were divested or valued in December of 2013, the average annualized real rate of return was 0.5 percent, while the CPP had a real rate of return of 5.5 percent.[7] This proves the claim that plan management and mutual fund fees eat away a significant portion of the DC plans and RRSPs, and moving one's savings from company A to company B does not change the level of loss.[6, p. 94]

The only time the author could gain a good return on his investment was when he gambled, that is when he did frequent stock trading. With the high frequency trading in 2013, the author received an annualized nominal return of 36.6 percent. However, return from high frequency trading does not guarantee a secure pension for everyone. First, as stated above, it was a return from gambling, and in gambling it is the house that always wins. Then, if this gain is considered from the perspective of society, the society is not much further ahead and has lost more than it has gained. Here is why.

During the short period of time that the author had an annualized return rate of 36.6 percent on his investment through stock trading, the economy did not have such a gain. As a matter of fact, the companies whose stocks had been traded had reported losses during this period. One of the companies even had a write-down close to 20 percent of its total market capital value. If the society of RRSP investors is considered to consist of only two people, Investor A (the author) and Investor B, and since the companies, the stock of which were traded, had no economic gain, ignoring their losses; all of Investor A's 36.6 percent gain was coming directly from Investor B's investment, who lost an amount equal to 36.6 percent of the traded amount to Investor A. It gets more interesting. After paying the fees and trading transaction costs, Investor A's net gain resulted in annualized return rate of about 25.9 percent, which means that 10.7 percent of Investor A's gain went to the stock broker (the house). In the meantime, Investor B probably had to pay trading fees and transactions costs of the same amount as Investor A. In this case, Investors B's loss would add up to 47.3 percent of the traded amount. Since Investor A sold all of his shares and realized the gains, Investor B had a realized loss of 47.3 percent of the traded amount. Through this trading period, the stock broker (financial sector, the house) had earnings that were equivalent to 21.4 percent of the initial value of the investment.

Now, assuming that both the company whose stocks were traded and the stock broker were non-Canadian and had no impact on Canadian overall retirement savings; the society of two investors (Investor A and B) would have lost 21.4 percent of the investment. If Investor B retires tomorrow, he (or she) will not be able to maintain his standard of living. If he or she falls below the poverty line, Investor A has to pay for

** All averages are geometric averages unless stated otherwise. The difference between geometric and arithmetic averages is described using the following example.

If an investment over five years has an annual rate of return of X1, X2, X3, X4 and X5, the arithmetic average rate of return (X_A) for the five year period is:

$$X_A = {(X1 + X2 + X3 + X4 + X5)}/{5}$$

while the geometric average rate of return (X_G) for the same period is:

$$X_G = \sqrt[5]{(1 + X1)(1 + X2)(1 + X3)(1 + X4)(1 + X5)} - 1$$

Investor B's old age security through his taxes. At the end of the gambling period, society is worse off despite the investors' efforts to improve the return on their retirement savings and investments.

What the author experienced was that when individuals are made responsible for managing their retirement savings, not only can they not find the best vehicles to give them a good rate of return but they also lose a significant but unknown amount of their investment value to mutual fund managers (financial sector). The mutual fund managers managing DC "saving" plans whether in an insurance company or in a bank get their fees mostly based on the invested asset and are not negatively affected in any significant way even if the funds do not perform well. It is the individual RRSP account holder that loses, especially when the funds do not have high rates of return. Individual retirement saving investors do not have the time, as the author experienced over 10 years, to look after their investment and readjust it regularly. In extreme cases where an investor wants to increase the return on the investment through gambling, in the absence of overall economic growth in the country, the only winners will be the stock brokers. The larger society will lose their money to a smaller pool of individuals in the financial sector. Subsequently, the government will be forced to support those who have lost and are sliding into poverty using tax revenues.

If there is a strong national pension plan with a long-term investing horizon such as the CPP instead of numerous small pension funds, not only will the gains be based on real economic growth and long-term investment, but also the society as a whole will not lose its savings to stock brokers who could very well be living outside Canada. A strong public pension fund will provide old age security, be peace of mind for both workers and retirees, and minimize risk taking and gambling.

<u>Defined Benefit Pension Plan and Private Companies</u>

Many authors, as discussed in the literature review section, have written and argued for an increase in the benefit level of the CPP and have raised concerns about the ineffectiveness of the employer-sponsored DC "saving" plans and private savings as a pension supplement. It is understandable that many firms do not want to carry the liability of DB pension plans. On the other hand, it can be argued that in today's rapidly changing corporation landscape the employees should not entrust private corporations with their pensions either. Knowing that over 50 percent of corporations with 250 workers or less vanishes within 5 years,[38] expecting them to provide a DB pension plan is a big gamble. This fact is overlooked by employees of companies that spin off from very large private or crown corporations. These employees naturally expect the spin-off companies to provide a DB pension plan similar to the one offered by the previous employer without realizing the risks and insecurity of it.

For a DB pension plan, not only is it needed that the employer be able to keep the pension fund solvent, it is also essential that they will be around for another 20 to 30 years after an employee retires. Historical evidence shows that there are very few companies that can outlive their workers. There are many examples of corporations going bankrupt. For example, it is reported that when the Toronto-based giant agriculture equipment maker Massey Combines Corp. went bankrupt in the late 1980s some of its biggest debts were pension plan deficits.[25, p. 19] This was reported to have been one of the first, although not the last, times that thousands of Canadian workers and retirees were stranded with reduced pensions.[25, p. 19] Even those corporations that do outlive their employees go through bankruptcy protection and restructuring. The only entity that will very likely live long enough to absorb the marked downturns, benefit from the upside and spread the risk is the federal government. Although, we don't have any example of a province or state going bankrupt, there are examples of cities that were on the verge of bankruptcy or went under bankruptcy protection mainly due to their mismanagement of DB pension plans and the associated liabilities.

Private corporations' fear of the DB pension plans is the liability over which they may not have a lot of control but have to cover all the risk. Drummond and Roberts write that ordinarily when private companies cannot – or do not want to – meet their pension obligations; they turn to the government to bail them out.[6, p. 8] While, unfortunately, some governments and politicians are said to have tried to guilt civil servants into abandoning their DB pensions, rather than using such pensions as models for the private sector.[6, p. 8] Leech and McNish write that pension envy and pension bashing are counter-productive, and there is little to gain by wanting one's neighbours punished for one's own misfortunes.[25, pp. 135, 172] What many people fail to notice is that the DB pension benefits do not come cheap to the pensioners. Those who are entitled to them have paid and are paying for them. Appendix C shows the contribution rates for Canada's top ten pension funds. The combined employee and employer contributions, above and beyond CPP, can be as high as 26 percent of an employee's annual salary.

Instead of attacking and destroying "publically-managed" DB pension plans, government and private sectors should both improve them. The employees who work with dedication and integrity are entitled to the pensions that they have earned. The highly productive employees who choose to stay and work for organizations with DB pension plans usually give up the option of working for firms that could pay them higher salaries but do not have secure pension plans. According to Leech and McNish, earlier governments embraced the DB pension plans as an inducement for public sector jobs that could not compete with private sector wages.[25, p. 14] Thus, the DB pension plan that employees of public and some private organizations receive is well earned and is a substitute for a high salary that they had forgone.

<u>Increasing the CPP's Retirement Benefit Payments</u>

How much does it cost to double the benefit payment of the CPP?

Drummond and Roberts wrote that a doubling of the CPP benefits in the future could be paid for today with a 60 percent increase in contributions.[38] This author estimates, however, that after the short-fall of pensions that resulted from the low contribution limits prior to 1997 reforms are balanced; doubling the benefit should require very little increase in the contribution level. This estimate is demonstrated with a simplified numerical example and calculation below.

Although, the CPP contributions start at the age of 18 and the pension benefit start at age 65 (47 years later), because of the allowance for dropping 15 percent of zero and low income years, the author assumes that contributions are made for 40 years by every male worker and his employer. This 40-year assumption is consistent with what major pension plans assumes for calculating the pension benefits that are integrated with CPP. Also, for simplicity and because of variability, mothers who stay home to raise their kids and the workers who become disabled before the age of 65 are excluded from this simplified calculation. The impact of dropping the years of child rearing on the total pension benefits payment is considered to be small. Payments for disabled persons and children of deceased pensioners are accounted for by increasing the CPP benefit payments based on the historical averages. Under the current legislated provisions, the combined employer and employee rate of the CPP contribution is 9.9 percent. The maximum benefits are calculated as 25 percent of the average of five years of YMPE prior to the retirement. Since the benefits are adjusted based on a member's 40 years of contribution, to receive the maximum CPP benefit a worker (especially able-bodied man) and his employer should contribute the maximum monthly amount (9.9 percent of YMPE) every month for at least 40 years.

Contributions, based on the average industrial wage, increase because of economic growth. The benefits are increased at the rate of the consumer price index (CPI), due to inflation. Over the past 20 years the YMPE increased at an average rate of 2.1 percent per year, and the pension benefits were indexed and increased at an average rate of 1.9 percent per year. However, for simplicity it is assumed that the average rate of income growth during the 40 years of working remains the same as the average CPI and both are assumed to be 2 percent. It is also assumed that the average inflation rate during the years of retirement remains at 2 percent per year.

A four percent real rate of return is required to sustain the CPP under the demographic and other assumptions made by the Chief Actuary of Canada. Thus, it can be assumed that this 4 percent real rate of return on pension investments will be maintained for the life of the CPP. Although, the 10-year average annualized real rate of return reported by the CPPBI was 5.5 percent. Since both the contributions and benefits are indexed and adjusted for inflation, the 4 percent real rate of return can be used in the calculation of the future value of contributions and the discounted value of benefits. This will allow using the YMPE and CPP benefits amounts of 2014 for the entire duration of the calculation without additional factoring or discounting. In 2014 the YMPE was $52,500, which at the contribution rate of 9.9 percent resulted in a maximum monthly contribution of $404.25. The monthly benefits are paid at the rate of 25 percent of five-year average of YPME prior to retirement. In 2014 the monthly payment (based on average YMPE of 2010 to 2014) is $1,038.33.

Using the data provided by the Chief Actuary of Canada, at age 65 men on average live another 21 years and women on average live another 23 years. Conservatively, it can be assumed that wives live five (5) years after the husband's death and receive survival benefits. A survival benefit for a spouse who is older than 65 years is 60 percent of the base CPP amount, which in 2014 equals to $632.00 per month. In 2013 the total amounts paid for disability, children of deceased and death benefits were about 18 percent of the total retirement benefit payments. Since all of these payments are made in addition to the payments made to living retirees and there is no direct contribution made by the children or the disabled beneficiaries, the 18 percent ($186.90) is added to the monthly benefit payment of the retirees for 21 years.

For a fully funded pension plan, on the day of retirement, it is required that the accumulated value of the 40 years of monthly contributions compounded monthly be equal to the discounted value of 21 years of monthly retirement benefits and 5 years monthly spousal benefits. Based on the cash flow diagram shown in Figure 3 and the numbers provided above, if a person starts full-contributions at age 25 in 2003, the future value of the contributions and the discounted (present) value of benefits to be paid (starting in 2043) will be as given in the table below.

The table shows that when all contributions are escalated at a real return rate of 4 percent per year for forty years, and when all the benefits paid for 21 years (member) and 5 years (spouse) are discounted at a real return rate of 4 percent, the value of the contributions exceeds the value of benefits by a factor of more than two. This implies that for a worker who has started contributing from 2003 and will retire in 2043, his CPP benefits could be increased from 25 percent to 50 percent of his average annual earnings or YMBE without increasing the contribution limits beyond the legislated 9.9 percent. This increase in benefits could be introduced gradually starting from now. Although this simplified calculation may not take into account all variables that the Chief Actuary of Canada would account for; based on the data available in the CPPIB and Actuarial reports, the estimate is reasonable.

If, for any reason, it is required to increase the contribution rates, the government could change the tax rules and allow CPP contributions beyond the 9.9 percent to be treated as a tax-deduction as it would be if they were invested in a tax-sheltered private pension plan or savings plan. Currently, the contributions made towards RPP and RRSP are tax deductible; however, the contributions made towards the CPP result only in non-refundable tax credit.

Other Reasons for Strengthening the CPP

Portability is considered another very important feature of the CPP.[6, p. 24] Although, money accumulated in private defined-contribution plans is in principal easy to move, moving to or from a defined-benefit plan is not that easy, especially, if the plan is designed to give years of service credit for pension. In the case of the CPP changing jobs or moving from province to province will not affect a worker's pension eligibility or entitlements.

The CPP pension benefit payments are indexed for inflation. That is important and fair. Those who have retired now paid taxes or contributed toward their pension fund in a time when $10 bought 15 loaves of bread, for example. That $10 was used either to pay the pension beneficiaries of that time or used by the provincial governments to fund the infrastructure development. The current generation who uses the existing infrastructure without having to pay the current market construction costs for building them should pay at least the price of 15 loaves of the bread to the man who paid the $10 when he was young and working. The current price of 15 loaves of bread is about $30. When pensions are indexed and adjusted for inflation, current workers are not doing retirees a favour, but rather they are just paying them the fair market value of their investment in the country that is enjoyed by all. Leech and McNish write that it was the retirement savings of Ontario teachers that built the province's roads, bridges and hospitals.[25, p. 15]

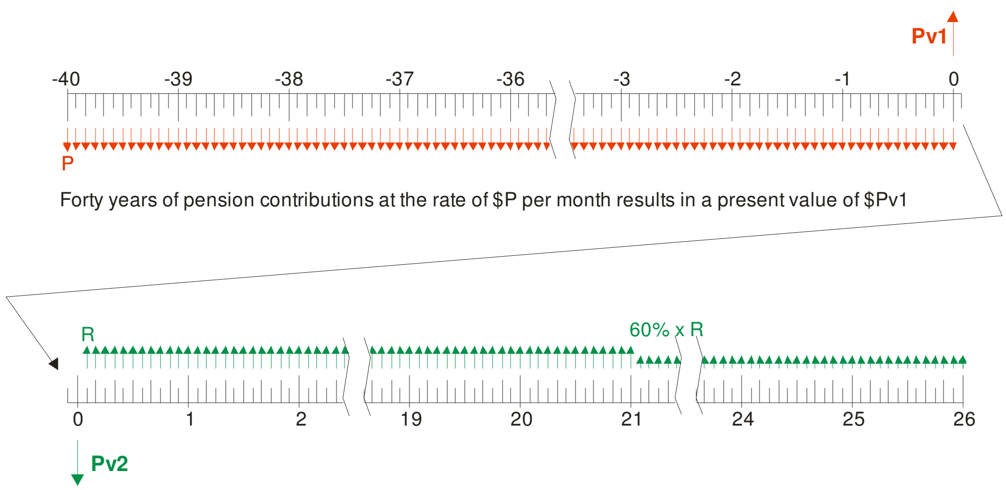

Figure 3: Cash flow diagram: the discounted (present) value of 21 years of retirement benefits, R, and 5 years of survivor benefits, 60 percent of R, equal Pv2, which for a fully-funded pension plan cannot be more that the future value of 40 years of pension contributions, Pv1. The real rate of return (discount rate) is taken as 4 percent.

Payment Type	Monthly PMT	Real Rate of Return	Number of Months	Future / Discount Value (in 2043)	
Employer and employee contributions, 40 years (from 2003)	$ 404.25	4 percent	480		**$469,360**
Benefits paid to members, survivors, and disabled persons					
Retiree pension benefits, 21 years	$ 1,038.33	4 percent	252	$177,985	
Survivor benefit, 5 years beyond 21 years, @60 percent	$ 623.00	4 percent	60	$14,871	
Disability, children of deceased and death benefits, @ 18 percent	$ 186.90	4 percent	252	$32,037	
Total of benefits paid, 26 years					**$224,894**

CONCLUSION AND RECOMMENDATION

The Canadian three-tier pension system consists of the OAS, the CPP/QPP and workplace registered pension plans (RPPs). This three-tier system has improved and ensured the security and stability of old age income in Canada in the past three to four decades. Poverty among Canadian seniors is one the lowest among the Organisation for Economic Co-operation and Development (OECD) countries. Unfortunately, the good news ends here.

As of 2012 only 32 percent of Canadian workers had a workplace – defined benefit - pension plan. An additional 12 percent of workers had employer-sponsored registered DC "saving" plans where all risks fall on the employee. In reality, 68 percent – and increasing number – of Canadian employees are left with only a two-tier pension system and a number of confusing and ineffective registered retirement saving vehicles. Average Canadian workers are left on their own to bear the risks of interest rates, inflation, financial management, market and longevity without having any knowledge and skills to quantify and minimize these risks. These workers will not only fail to make a good estimate for their retirement needs but they will also lose a major part of their savings to fund managers, Ponzi schemes and bad investments. As a result, in the not too distant future, Canada may have a larger percentage of its retirees falling below the poverty line. Canada can and it is strongly recommended that it should prevent this fall by strengthening the CPP. Canada has to strengthening the CPP because:

- All seniors in Canada should be able to maintain a respectable standard of living after they retire.
- Currently, even with the maximum benefits under OAS, GIS and CPP, a large segment of the population with wages at or below the industrial average and without reliable workplace pension plans cannot on their own prevent their fall below the poverty line after retirements.
- Pension plans should be affordable and within reach to all workers without exorbitant management costs that are inevitable when there are the tens of thousands of mini- and micro-pension plans.
- Every worker should be able to contribute towards and benefit from a pension plan no matter where in Canada they work or live.
- After a life-time of hard labour, all retirees should be able to count on their pensions and not stay up every night worrying about them.
- Not every worker knows how to find their way through the increasingly complicated financial system; they should not be punished for their lack of financial and investment knowledge in the most vulnerable years of their lives.
- A strong national pension plan with a long-term investment horizon will not only make gains based on real long-term economic growth, but also society as a whole will be saved from losing its savings to many players in the financial industry. A strong national pension plan like CPP will provide that peace of mind and minimize undue risk taking and gambling.

It is time for Canada's federal and provincial governments and policy makers to turn the tide and make the CPP the strongest tier of the Canadian pension system because 68 percent of future retirees will have to depend on it.

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APPENDIX A
GLOSSARY OF TERMS[3]

Allowance - a supplement to ensure that retired Canadians do not live in poverty. Under this provision, a pensioner's spouse or common–law partner, widow or widower aged 60 to 64 who has resided in Canada for at least 10 years since reaching age 18, and who qualifies under the net income test, is eligible for a monthly allowance.

Beneficiary (or plan beneficiary) – a person who is receiving, or is entitled to receive, a benefit under a pension plan.

Canada Pension Plan (CPP) – a federal pension plan that provides monthly payments to retirees who worked in Canada and made CPP contributions during their employment. To receive CPP payments, a person needs to apply for and qualify for it.

Clawback - a reduction of social security benefits based upon net income.

Consumer Price Index (CPI) - The consumer price index measures monthly and yearly changes in the cost of 300 goods and services commonly bought by Canadians. If the combined cost of this "basket" of items goes up, then there has been inflation. The greater the increase, the higher the inflation rate has become. Pensions paid under most pension plans are indexed to the cost of living, and the consumer price index is one of the factors used to calculate annual cost of living increases for pension benefits.

Contribution - The amount of money the plan member and the employer are required to pay into the pension plan.

Death benefit – a pension benefit or lump sum payment that is received after the death of a plan member by his or her spouse or beneficiary.

Defined benefit (DB) plan – a pension plan that defines the ultimate pension benefit to be provided in accordance with a formula, usually based on years of service, earnings, on a flat rate, etc. A DB plan may be a contributory or non-contributory plan.

Defined contribution (DC) plan (or money purchase plan) – a pension plan that defines the amount of contributions (including required member contributions, if any) to the pension plan. The member's pension benefits are based on contributions from the member and employer, plus investment income on these contributions. At retirement, the amount of pension that can be bought is based on the accumulated contributions and investment return in the member's account. A DC plan may be a contributory or non-contributory plan.

Disability Pension - a pension benefit payable to disabled plan members who meet the eligibility criteria established by the relevant pension plan.

[3] Source: Financial Services Commission of Ontario, http://www.fsco.gov.on.ca/en/pensions/pension-plan-guide/pages/Glossary.html

Guaranteed Income Supplement (GIS) – a federal program that provides additional money to low-income seniors who qualify and apply for it. To be eligible for the GIS benefit, a person must live in Canada, meet certain income requirements and be currently receiving the Old Age Security pension.

Indexation – in relation to pensions, this is the amount that the monthly pension payment may be increased from one year to the next to provide inflation protection. If indexation is provided, it is often based on the increase in the cost of living as calculated by Statistics Canada. This is sometimes referred to as an escalated adjustment.

Joint and survivor pension or annuity – a pension or life annuity that is payable until the death of the retired plan member, and then to the surviving spouse until his or her death. This is the default option when a member with a spouse retires. Payments to the survivor are often reduced to 60 per cent after the member's death.

Member (also known as pension plan member or active member) – refers to an employee who has enrolled in a pension plan and is accruing benefits for current service (employment).

Non-contributory plan – a pension plan in which all required contributions are made by the employer.

Old Age Security (OAS) pension – a federal pension plan that provides monthly payments to most Canadians that are 65 years of age or older. To receive the OAS pension, an individual must qualify and apply for it. To be eligible for the OAS pension, a person must meet the Canadian legal status and residence requirements.

Pension – the monthly, annual or other periodic amounts that start being paid to a member at retirement and that continue for the rest of his or her life. When the member dies, these payments would be made to any other person who may be entitled to receive them.

Plan sponsor – the individual, entity or entities that are responsible for designing the pension plan, setting the benefit structure, and for establishing, amending and/or ending the pension plan. The plan sponsor is often the employer, but other parties may take on this role (e.g., the corporate parent or a union).

Portability- the ability to carry certain pension rights—including contributions and years of service from one plan to another.

Registered pension plan – a plan that is organized and administered to provide pensions for employees, and to which an employer is required to make contributions, that is registered with FSCO in accordance with the Pension Benefits Act. It does not include government programs such as the Canada Pension Plan (CPP), the Quebec Pension Plan (QPP) or the Old Age Security (OAS) Program.

Registered Retirement Savings Plan (RRSP) – a personal retirement savings plan offered by financial institutions and governed by the federal Income Tax Act. In Ontario, money cannot usually be transferred from a registered pension plan to a regular unlocked RRSP, but can be transferred to a Locked-in Retirement Account (LIRA) in some instances.

Registered vehicle – a personal tax deferral plan, such as a Registered Retirement Savings Plan (RRSP) or Registered Retirement Income Fund (RRIF), that is registered under the Income Tax Act (ITA) and that allows both contributions and interest to accumulate without tax, until money is withdrawn at a later date.

Survivor Benefit – a benefit payable to the principal beneficiary or child of an active plan member, inactive plan member or retired plan member.

Tax-Free Savings Account (TFSA) – a personal savings account that allows contributions up to the personal annual limit per person, to be made from after-tax dollars and that allows investment earnings to accumulate tax-free. A TFSA also allows tax-free withdrawals.

Vested benefits (or vesting) – accrued pension benefits that a pension plan member, former member, or retired member is entitled to receive unconditionally under a pension plan, even if they are not payable until a future date.

Year's Basic Exemption (YBE) - A portion of earnings upon which no CPP contributions are required. The YBE is included in salary for the purpose of calculating CPP benefits.

Year's Maximum Pensionable Earnings (YMPE) – a term used in the Canada Pension Plan (CPP) that refers to the earnings on which CPP and Quebec Pension Plan (QPP) contributions and benefits are calculated. The YMPE is re-calculated each year according to a formula based on average wage levels. The YMPE is published annually by the Bank of Canada.

APPENDIX B
SAMPLE CALCULATION FOR CPP ENTITLEMENT

The following table shows how the CPP entitlement of a worker with assumed pensionable earnings, retiring at the age of 65 in the beginning of 2014, after 47 years of employment, and without having taken any time off due to disability or for staying home to raise children under the age of 7 is calculated. This information can be obtained from Service Canada. The CPP uses a Statement of Contributions to keep a record of pensionable earnings and all contributions to the Plan. The statement shows the total CPP contributions for each year and the earnings on which the contributions are based. It also provides an estimate of what the pension or benefit would be if one and/or ones family were eligible to receive it now.

The example assumes that the worker has a record of all his or her earnings for the past 47 years. The following steps are followed to find the monthly retirement benefit amount:

1. List the salaries for all the years of employment since the age of 18, Column (2);
2. List the Year's Maximum Pensionable Earnings (YMPE) for each of those years, Col. (3);
3. Determine the Unadjusted Pensionable Earnings (UPE), which is the minimum of Col (2) and (3);
4. Determine the average of the last five years' YMPEs (A5YMPE), from 2010 to 2014;
5. Determine the Adjusted Pensionable Earnings (APE) for each year, which is Col (4)/ Col (3) x A5YMPE;
6. Determine the Total APE (TAPE) by adding the APE from 1968 to 2014;
7. Determine the Number of Contributory Months (NMC), which is 47 x 12 = 564 months;
8. Determine the Number of Dropout Period Months, which in 2014 is 17 percent x 564 = 96 months = 8 years;
9. Determine the TAPE after Dropout (TAPEaD), which is TAPE minus eight (8) lowest APEs;
10. Determine the NCM after Dropout (NCMaD), which is 564 – 96 = 468 months;
11. Determine the Average Monthly Pensionable Earnings (AMPE) = TAPEaD / NCMaD; and
12. Determine the Monthly Retirement Benefits (MRB), which is 25 percent of AMPE.

In the example below, in 10 out of 47 years the APE is less than the YMPE, eight (8) which are dropped out. The resulting monthly pension entitlement for this worker is about $1,037.28. Although, the maximum retirement benefit for 2014 is $1038.33.

(1) Year	(2) Salary	(3) YMPE	(4) UPE	(5) APE
1968	$2,074	$5,100	$ 2,074	$20,268
1969	$2,850	$5,200	$ 2,850	$27,316
1970	$6,269	$5,300	$ 5,300	$49,840
1971	$8,498	$5,400	$ 5,400	$49,840
1972	$9,077	$5,500	$ 5,500	$49,840
1973	$10,895	$5,600	$ 5,600	$49,840
1974	$11,809	$6,600	$ 6,600	$49,840
1975	$12,850	$7,400	$ 7,400	$49,840
1976	$15,506	$8,300	$ 8,300	$49,840
1977	$16,813	$9,300	$ 9,300	$49,840
1978	$17,123	$10,400	$ 10,400	$49,840
1979	$17,190	$11,700	$ 11,700	$49,840
1980	$17,424	$13,100	$ 13,100	$49,840
1981	$19,452	$14,700	$ 14,700	$49,840
1982	$19,476	$16,500	$ 16,500	$49,840
1983	$21,313	$18,500	$ 18,500	$49,840
1984	$21,660	$20,800	$ 20,800	$49,840
1985	$23,559	$23,400	$ 23,400	$49,840
1986	$23,607	$25,800	$ 23,607	$45,604
1987	$24,619	$25,900	$ 24,619	$47,375
1988	$25,494	$26,500	$ 25,494	$47,948
1989	$25,966	$27,700	$ 25,966	$46,720
1990	$26,915	$28,900	$ 26,915	$46,417
1991	$28,956	$30,500	$ 28,956	$47,317
1992	$29,469	$32,200	$ 29,469	$45,613
1993	$33,814	$33,400	$ 33,400	$49,840
1994	$34,649	$34,400	$ 34,400	$49,840
1995	$34,789	$34,900	$ 34,789	$49,681
1996	$37,570	$35,400	$ 35,400	$49,840
1997	$38,216	$35,800	$ 35,800	$49,840
1998	$43,147	$36,900	$ 36,900	$49,840
1999	$45,624	$37,400	$ 37,400	$49,840
2000	$49,076	$37,600	$ 37,600	$49,840
2001	$49,138	$38,300	$ 38,300	$49,840
2002	$50,622	$39,100	$ 39,100	$49,840
2003	$51,696	$39,900	$ 39,900	$49,840
2004	$52,531	$40,500	$ 40,500	$49,840
2005	$53,346	$41,100	$ 41,100	$49,840
2006	$53,616	$42,100	$ 42,100	$49,840
2007	$55,106	$43,700	$ 43,700	$49,840
2008	$55,142	$44,900	$ 44,900	$49,840
2009	$55,228	$46,300	$ 46,300	$49,840
2010	$55,630	$47,200	$ 47,200	$49,840
2011	$56,406	$48,300	$ 48,300	$49,840
2012	$57,161	$50,100	$ 50,100	$49,840
2013	$57,307	$51,100	$ 51,100	$49,840
2014	$59,159	$52,500	$ 52,500	$49,840

Average of five years of YMPE	$49,840
Total APE (TAPE)	$2,268,339
Number of Contributory Months (NCM)	564 month
Dropout Period (17% of NCM)	96 month
Years below YMPE 10	120 month
TAPE after Dropout	$1,941,709
NCM after Dropout	468 month
Average Monthly Pensionable Earnings (AMPE)	$4,148.95
Retirement Benefit for the Worker (at age 65)	$1,037.24
Maximum Retirement Benefit (2014)	$1,038.33

APPENDIX C
CANADA'S TOP TEN DEFINED BENEFIT PENSION PLANS

Table C1 shows Canada's top ten DB pension plans, their contribution rates in 2014 and their benefit calculations formulae.

Table C1: Canada's top ten DB pension plans, based on asset size.

		Contribution Rate						
		Up to CPP Limit			Above CPP Limit			10-year Annualized
No.	Pension Fund *	Employee	Employer	Total EE + ER	Employee	Employer	Total EE + ER	Rate of Return
1	The Canada Pension Plan	4.95%	4.95%	9.90%	0.00%	0.00%	0.00%	7.4% (2013)
2	The Quebec Pension Plan	5.18%	5.18%	10.35%	0.00%	0.00%	0.00%	6.3% (2013)
3	The Ontario Teachers' Pension Plan	11.50%	11.50%	23.00%	13.10%	13.10%	26.20%	8.9% (2013)
4	The British Columbia Public Service Pension Plan	7.93%	9.43%	17.36%	9.43%	10.93%	20.36%	8.1% (2013)
5	Public Service Pension Plan (Federal PS, RCMP and Armed Forces)	7.50%	10.88%	18.38%	9.80%	14.21%	24.01%	
6	The Ontario Municipal Employees Retirement System (OMERS)	9.00%	9.00%	18.00%	14.60%	14.60%	29.20%	7.6% (2013)
7	The Healthcare of Ontario Pension Plan (HOOPP)	6.90%	8.69%	15.59%	9.20%	11.59%	20.79%	9.7% (2013)
8	The Alberta Investment Management Corp. (AIMCo)	5.85%	5.85%	11.70%	8.36%	8.36%	16.72%	6.7% (2012)
9	The Ontario Pension Plan	6.40%	6.40%	12.80%	9.50%	9.50%	19.00%	6.5% (2012)
10	The OPSEU Pension Trust (OPTrust)	9.40%	9.40%	18.80%	11.00%	11.00%	22.00%	8.6% (2012)

* The benefit rate for CPP and QPP is about 0.625% x 40 years x average of last five years of YMPE; the benefit rate for all other pension plans (integrated with CPP and QPP) is about 2% x years of services x average of five years of highest annual salary.

APPENDIX D
EXPERIENCE WITH MUTUAL FUNDS AND STOCK TRADING

Table D.1: Performance of an actual DC "saving" plan managed by an insurance company and invested in two mutual funds customized for an employer.

Contributions Date and Number		Contributions per $1000 of Total RRSP
20/08/2004	1	$ 7.34
03/09/2004	2	$ 8.16
17/09/2004	3	$ 8.16
01/10/2004	4	$ 8.16
15/10/2004	5	$ 8.16
29/10/2004	6	$ 8.16
12/11/2004	7	$ 8.16
26/11/2004	8	$ 10.60
10/12/2004	9	$ 9.79
24/12/2004	10	$ 9.79
07/01/2005	11	$ 10.87
21/01/2005	12	$ 10.87
04/02/2005	13	$ 10.87
18/02/2005	14	$ 10.87
04/03/2005	15	$ 10.87
18/03/2005	16	$ 10.87
01/04/2005	17	$ 10.87
15/04/2005	18	$ 10.87
29/04/2005	19	$ 10.87
13/05/2005	20	$ 10.87
27/05/2005	21	$ 10.87
10/06/2005	22	$ 10.87
24/06/2005	23	$ 10.87
08/07/2005	24	$ 10.87

Contributions Date and Number		Contributions per $1000 of Total RRSP
22/07/2005	25	$ 10.87
05/08/2005	26	$ 10.87
19/08/2005	27	$ 10.87
02/09/2005	28	$ 10.87
16/09/2005	29	$ 10.87
30/09/2005	30	$ 10.87
14/10/2005	31	$ 10.87
28/10/2005	32	$ 10.87
11/11/2005	33	$ 10.87
25/11/2005	34	$ 10.87
09/12/2005	35	$ 10.87
23/12/2005	36	$ 10.87
06/01/2006	37	$ 11.95
20/01/2006	38	$ 11.95
03/02/2006	39	$ 11.95
17/02/2006	40	$ 11.95
03/03/2006	41	$ 11.95
17/03/2006	42	$ 11.95
31/03/2006	43	$ 33.04
14/04/2006	44	$ 33.04
28/04/2006	45	$ 33.04
12/05/2006	46	$ 33.04
26/05/2006	47	$ 33.04
09/06/2006	48	$ 394.01
Total RRSP Contributions		**$ 1,000.00**
Amount Realized and Transferred out		**$ 1,016.19**
Percent Gain in Value		**1.62%**
Annualized Average Rate of Return		**2.10%**

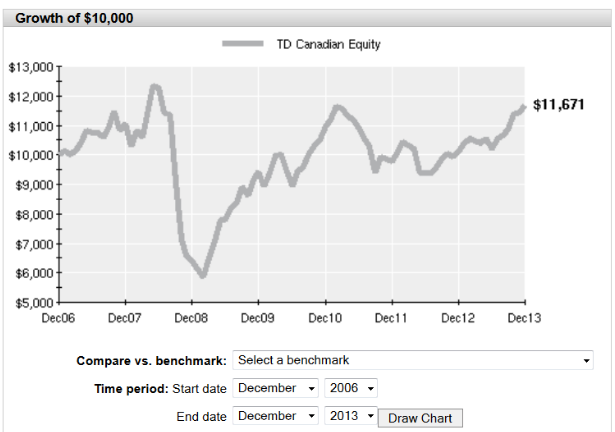
Table D.2: Performance of mutual funds to which RRSP savings from an employer-sponsored plan were transferred and invested for seven years.

Seven Year Performance of a Canadian Equity Mutual Fund

Date	Activity	Contributions per $1000 of Total RRSP
07-Dec-06	Purchased	$ 793.32
13-Aug-07	Purchased	$ 206.68
31-Dec-13	Transferred out	$ 1,165.03
Total RRSP Invested in the Mutual Fund		**$ 1,000.00**
Amount Realized and Transferred out		**$ 1,165.03**
Percent Gain in Value		**16.50%**
Annualized Average Rate of Return		**2.23%**

Seven Year Performance of a Canadian Index Mutual Fund

Date	Activity	Contributions per $1000 of Total RRSP
07-Dec-06	Purchased	$ 793.32
13-Aug-07	Purchased	$ 206.68
13-Dec-13	Market Value	$ 1,171.24
Total RRSP Invested in the Mutual Fund		**$ 1,000.00**
Market Value of the Fund		**$ 1,171.24**
Percent Gain in Value		**17.12%**
Annualized Average Rate of Return		**2.32%**



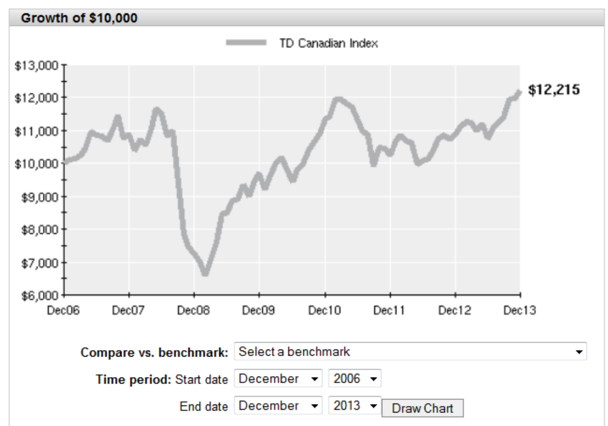


Table D.3: Performance of a high-frequency stock trading over six months

Date	Activity	Value per $1000 of Investment
17-Jul-13	Transfer in	$ 1,000.00
17-Jul-13	Fee	-$ 13.76
02-Aug-13	Shares bought	-$ 471.20
02-Aug-13	Fee	-$ 3.53
07-Aug-13	Shares bought	-$ 479.61
07-Aug-13	Fee	-$ 3.53
20-Aug-13	Shares Sold	$ 509.74
20-Aug-13	Fee	-$ 3.53
26-Aug-13	Shares bought	-$ 531.33
26-Aug-13	Fee	-$ 3.53
29-Aug-13	Shares Sold	$ 554.00
29-Aug-13	Fee	-$ 3.53

Date	Activity	Value per $1000 of Investment
03-Sep-13	Shares bought	-$ 543.24
03-Sep-13	Fee	-$ 3.53
12-Sep-13	Shares Sold	$ 568.31
12-Sep-13	Fee	-$ 3.53
25-Sep-13	Shares bought	-$ 541.68
25-Sep-13	Fee	-$ 3.53
15-Oct-13	Dividend	$ 2.19
13-Dec-13	Shares Sold	$ 493.12
13-Dec-13	Fee	-$ 3.53
23-Jan-14	Shares Sold	$ 616.10
23-Jan-14	Fee	-$ 3.53

Total RRSP Amount used for Trading	**$ 1,000.00**
Amount Realized and Transferred out	**$ 1,127.44**
Percent Gain in Value	**14.33%**
Annualized Average Rate of Return	**25.90%**