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PENSION POLICY

How Spending Declines with Age, and the Implications for Workplace Pension Plans

by

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- The spending habits of retirees in Canada and other developed countries demonstrate a strong tendency for personal consumption to decline in real terms with advancing age. This decline in real spending, which typically starts at about age 70 and accelerates at later ages, cannot be attributed to insufficient financial resources.
- The finding suggests that full automatic indexation within workplace pension plans, notably most public-sector defined-benefit plans, is not only unnecessary but an inefficient use of scarce financial resources for employees and taxpayers.
- Reduced pension contributions would free up money to be spent today when families struggle to raise children and pay down mortgages on houses, thereby raising plan members' collective economic welfare over their lifetimes.

The notion that an individual's retirement income should keep pace with price inflation is pervasive. This implicit belief underpins the common practice of "automatic indexation" within the first two pillars of our retirement income system – the Old Age Security (OAS) and Guaranteed Income Supplement (GIS) representing pillar 1, and the Canada Pension Plan / Quebec Pension Plan (CPP/QPP), pillar 2. It also applies to public-sector defined-benefit (DB) pension plans, which are found in pillar 3.

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Nevertheless, major studies of the spending habits of retirees in Canada and other developed countries demonstrate a strong tendency for personal consumption to decline in real terms with advancing age.¹ This decline in real spending, which typically starts at about age 70 and accelerates at later ages, cannot be attributed to insufficient financial resources because older retirees save a high percentage of their income and, in fact, save more than people who are still working. The finding suggests that full automatic indexation within workplace pension plans is not only unnecessary but an inefficient use of scarce financial resources. Very few private-sector plans provide full automatic indexing, so this finding is primarily of relevance in public-sector pension plans. If partial indexation were adopted instead – for instance, by ignoring the first 1.5 percent of the change in the consumer price index (CPI) each year when administering increases in pensions – contributions to public-sector plans could be significantly reduced without retirees sacrificing consumption later in life.

The average resulting reduction in required total employer/employee contributions to public-sector plans is of the order of \$2,000 a year per active member. There are over 3 million active members in Canada's public-sector DB pension plans, most of which provide full inflation protection or strive to do so to the extent that funding is available.

Pillar 1 and 2 pensions should not be subject to any reduction in benefits or contributions because these plans are generally designed to cover basic necessities, such as food and shelter. In the absence of evidence to the contrary, it is reasonable to assume that spending on such necessities does not decline very much, if at all.

Current Practice

Canada's formal retirement income system is founded on three pillars. The first, which consists of the OAS and the companion program, the GIS, is funded out of general tax revenues and provides a monthly lifetime pension to all Canadians who meet its age, residency, and income tests. Pillar 1 pensions are automatically indexed to the CPI every quarter.

The second pillar consists of the CPP and the QPP. The pensions in these earnings-based programs are automatically indexed to the CPI every year.

These first and second pillars are intended to assure a basic level of income in retirement. Pillars 1 and 2 are generally sufficient to protect lower to mid-income workers from experiencing a significant drop in their average standards of living once they retire.

Pillar 3 contains various tax-assisted retirement vehicles, including DB pension plans. The primary purpose of pillar 3 plans is to allow retiring workers to match and even exceed their pre-retirement standard of living. Only a small fraction (about 10 percent) of private-sector workers are covered by DB plans and, in the vast majority of cases, pensions in these plans are not increased after retirement or are increased on an ad hoc basis to reflect only a portion of the change in CPI since retirement.

In the public sector, most employees are covered by DB plans. Most of the large public-sector plans automatically increase pensions annually to reflect 100 percent of the change in CPI, subject to certain constraints:

1 For clarity, "consumption" in this E-Brief refers to the amounts that an individual actually spends in a given year. This definition contrasts with a broader one that might include durable goods that were purchased in an earlier period, such as a home or an automobile, and are still being "consumed" in the sense they are being enjoyed or used after retirement.

- In some public-sector plans, the annual increases are subject to a cap, such as 6 percent or 8 percent, which in the present low-inflation environment is virtually equivalent to full indexation, especially because excess inflation is “banked.”
- Some plans, such as the Ontario Teachers’ Pension Plan, strive for 100 percent inflation protection but no longer provide it automatically. These plans grant increases to the extent that certain funding thresholds are met.

It appears that even when a public-sector DB pension plan provides less than 100 percent inflation protection, it is generally doing so because of financial constraints, not because of any professed belief that less than 100 percent protection is more appropriate.

For illustrative purposes, it is useful to single out the federal Public Service Pension Plan (PSPP) because detailed financial information on this plan is publicly accessible. The PSPP has approximately 500,000 active and inactive members. It is a little more generous than most public-sector plans in that it provides full automatic indexation with no cap, though, as noted above, the cap that exists in many other large public-sector plans has only a minimal impact on costs. Based on a formal actuarial valuation, the cost of benefits being earned for service in 2016 (the “current service cost”) under the PSPP is 20.35 percent of covered pay. The corresponding cost in other public-sector plans is a similar percentage of pay, with variations depending mainly on the choice of actuarial assumptions.

The average pay level of active members in the PSPP is about \$75,000, which translates into an average annual current service cost per active member of \$15,000 (rounded). In addition, higher-income members earn supplementary pension benefits in a non-registered plan. For the sake of simplicity, we will ignore these supplementary benefits except to note that they are also fully indexed to inflation. The total service cost per member therefore exceeds \$15,000.

Evidence that Spending Declines with Age

Any reference in this E-Brief to declines in spending with age refers to real spending, adjusted for inflation. While most lifetime consumption models assume that spending remains steady in real terms throughout retirement, the rationale for this assumption is questionable. Spending habits change dramatically with age, and it would be sheer coincidence for the basket of goods consumed at age 80 to cost the same as the very different basket at 60. Consider, for example, US census data compiled by H.S. Dent, a US-based economic forecasting firm. Table 1 lists items on which spending declines by at least 50 percent between ages 60 and 80, and Table 2 identifies areas where spending increases by 50 percent.

Tables 1 and 2 are illustrative rather than comprehensive in nature. Spending among the elderly declines significantly in other areas as well, such as with the purchase of new automobiles and other durable goods. The basket of goods at age 80 costs significantly less in various developed countries, including Canada.²

One of the earliest analyses to show that spending declines with age was a 1992 German study (Borsch-Supan 1992). Based on a study of more than 40,000 German households, the authors found that the households

2 Actual private/public consumption may not decline as much as private household out-of-pocket spending declines. A greater share of elderly household consumption is picked up through public insurance plans, which still must be paid for by someone else.

under study drew down their accumulated savings in the years immediately following retirement more or less as consumption theories would predict. Contrary to all theoretical expectations, however, household assets began rising again after age 70, signalling a drop in spending and an increase in saving. The average savings rate among seniors 80 and over was 10 percent of net income, a level that exceeded the savings rate of Germans who were still in the workforce. Various hypotheses to explain this phenomenon were tested by the authors, including:

- inadequate income available for spending;
- a bequest motive; and
- a desire to keep money in reserve in anticipation of increased healthcare spending later in life.

Their testing revealed that, although each of these reasons affected spending to some extent, their overall impact was minimal. Ultimately, only two explanations were totally consistent with the findings: that older people were prone to physical limitations that made them less capable of spending money; and that they were simply less inclined to spend for personal reasons, such as the death of a loved one.

A study out of the United Kingdom (Brancati et al. 2014) used two large datasets to test the same question: the Living Costs and Food Survey, and the English Longitudinal Study of Ageing. The principal findings included the following points:

- As people get older, they spend progressively less on consumption, regardless of their income level. A household headed by an 80-year-old spends 43 percent less than a household headed by a 50-year-old.
- Individuals aged 80 and over are saving £5,870 a year on average, which is significant relative to average employment income of a little over £25,000.
- The age group 70–74 appears to be a tipping point, as time spent alone increases markedly and spending falls.
- Much of the fall in spending at older ages was traced to reduced spending on nonessential items such as eating out, recreation, and holidays.

Table 1: Item on Which Spending Drops At Least 50 Percent between Ages 60 and 80

China and other dinnerware
Admission to movies, theatre, opera, and concerts
Airline fares
Alcoholic beverages at restaurants, bars, etc.
Cigarettes
Mattresses
Camping equipment
Men's coats, jackets, and furs
Men's underwear
Women's dresses

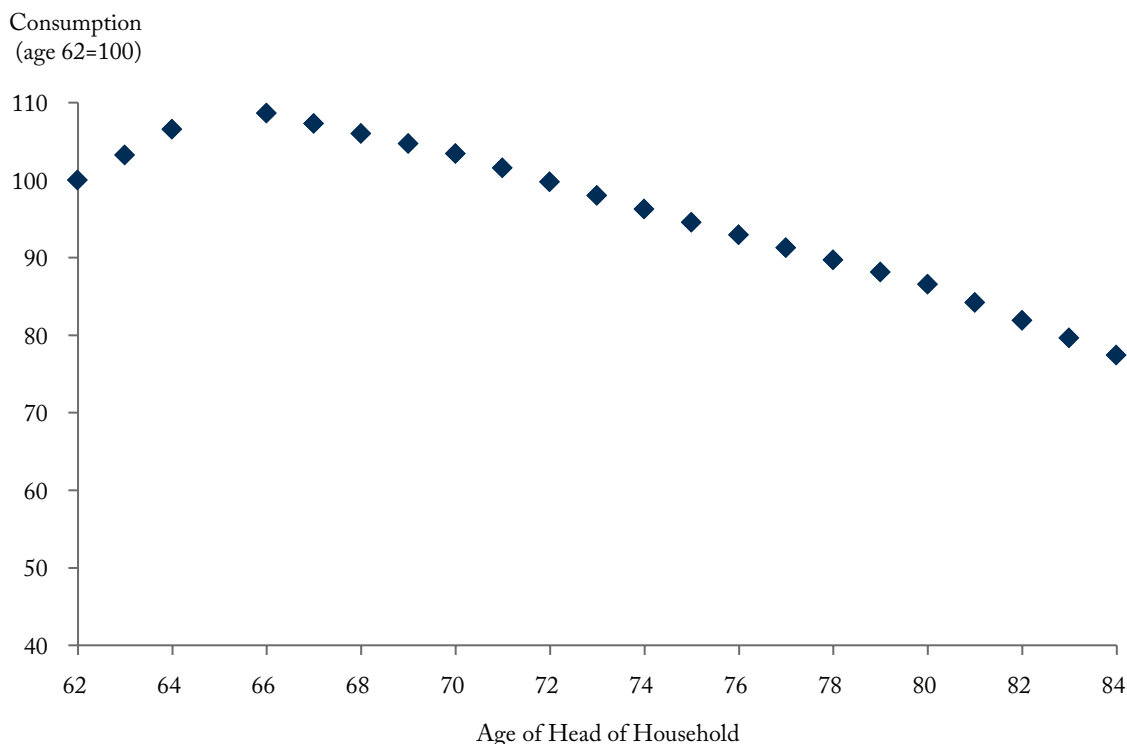
Source: H.S. Dent Foundation.

Table 2: Items on Which Spending Increases More than 50 Percent between Ages 60 and 80

Hearing aids
Prescription drugs and medicines
Gardening and lawn-care services
Management fees for security
Nursing or convalescent homes
Funeral, burial, or cremation services

Source: H.S. Dent Foundation.

Figure 1: Consumption Change for US Married Couples with A College Degree



Note: Consumption is expressed in real terms, adjusted for price inflation.

Source: Hurd and Rohwedder (2011).

- In spite of the reduced spending, the vast majority of retirees say they are able to do the things they want to do.

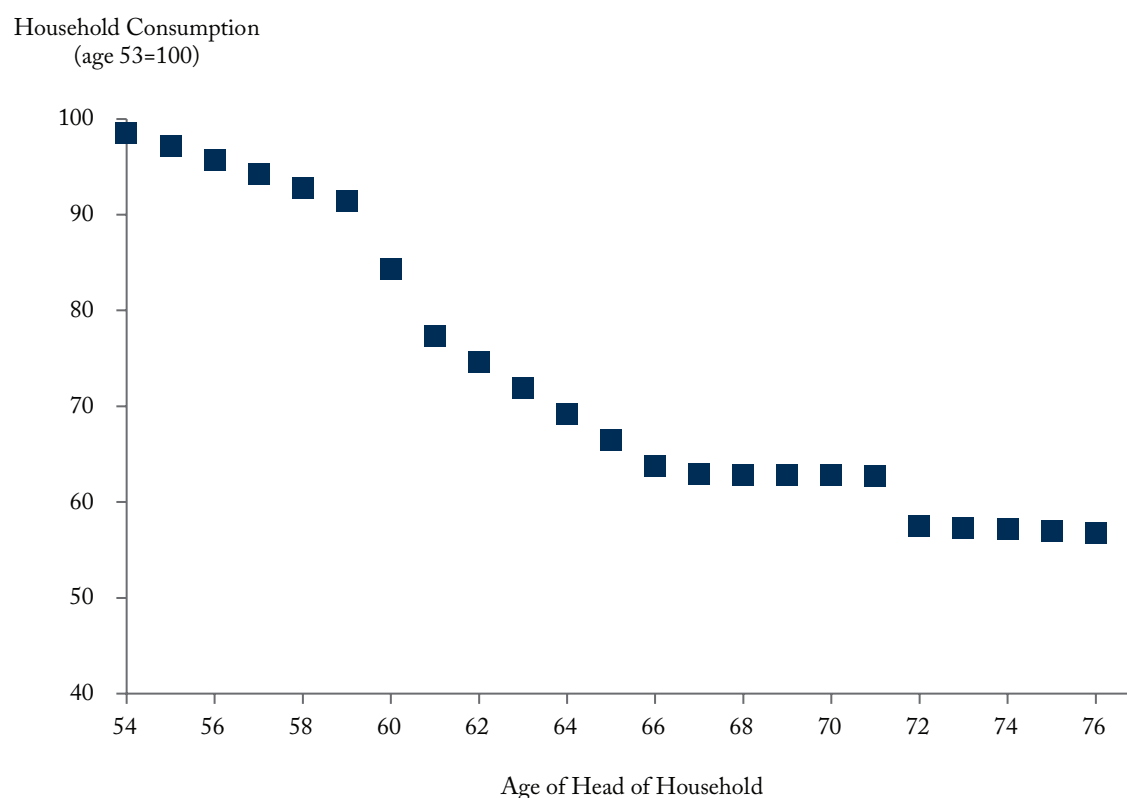
The UK findings are highly consistent with those set out in the Borsch-Supan study.

Other studies reinforce these results. In the United States, Hurd and Rohwedder (2011) analyzed extensive data from various sources, including the Health and Retirement Study (HRS) and the Consumption and Activities Mail Survey (CAMS). The CAMS is a longitudinal survey which, when combined with data from the HRS, provides a large and statistically significant dataset.

Hurd and Rohwedder also found that consumption declines with age, with the rate of decline varying by marital status and level of education. Consider one of the largest subgroups, married couples, where the age gap between partners is less than five years. If the couple is college educated, the rate of decline in consumption is lower than for less well-educated cohorts but still significant. As Figure 1 shows, married retired couples with a college degree tend to increase spending between ages 62 and 64, but decrease spending steadily in real terms after age 64. By 84, spending in real terms is 23 percent less than it was at age 62.

We find essentially the same results in Canada. Using data from the Survey of Household Spending compiled by Statistics Canada, McKinsey & Company determined the consumption patterns for Canadians at various income

Figure 2: Consumption Pattern of Canadian Households



Note: Consumption is expressed in real terms, adjusted for price inflation.

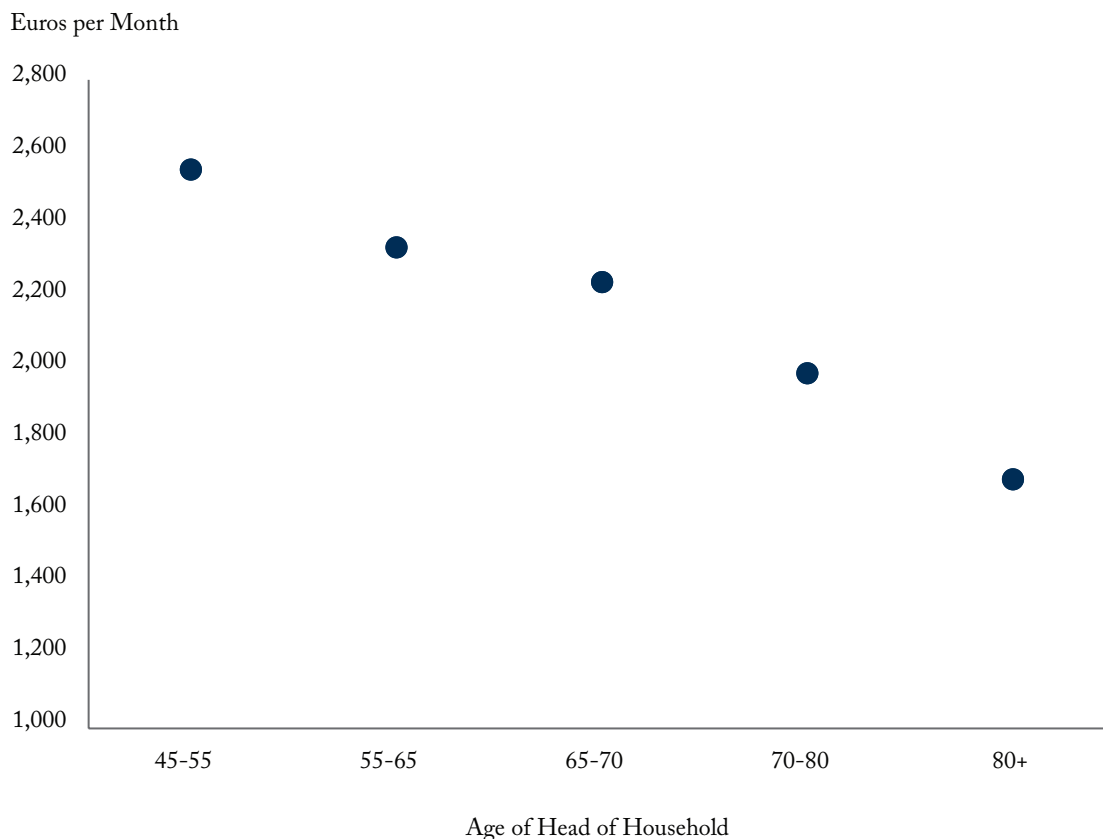
Source: Statistics Canada Family Expenditure Surveys, 1982–1992, and Survey of Household Spending, 1997 to 2008, with special thanks to McKinsey & Company.

levels. In Figure 2, I have taken a subset of McKinsey's results – specifically, average consumption data for households in the third and fourth income quintile.

Compared to a household where the head is age 54, the average Canadian household headed by a 77-year-old spends 40 percent less. None of this drop in spending is attributable to the elimination of mortgage payments because they are not considered consumption and were excluded from McKinsey's analysis. Although the fall in consumption in Canada appears to be more dramatic than in the United States and to occur sooner, much of the difference can be reconciled by taking into account the differences in starting age, subgroup, and methodology. In particular, the McKinsey analysis represents household spending and is not corrected for the reduction in family size that typically occurs near retirement.³

3 Adjusting for family consumption would likely show a more gradual and less-pronounced consumption decline with age (Lafrance and LaRochelle-Côté 2011). However, the exclusion of mortgage interest payments in the McKinsey data underestimates the decline in household cash outlays.

Figure 3: German Household Spending (2014)



Note: Spending is expressed in real terms, adjusted for price inflation.

Source: Author's calculations based on data from Statistisches Bundesamt, with special thanks to Britta Stöver.

It is interesting to note another Canadian study on this subject that dates from the 1970s and has been all but forgotten. Calvert (1977) found that “as age advances, clothing and footwear expenditures fall steadily to less than one half . . . furniture costs fall to one third . . . automobile-related costs to one sixth, while travel costs as a whole drop to less than one quarter.” Calvert goes on to say, “Even though the incomes recorded in this sample become significantly less as age advances, the ability to make gifts, add to assets and purchase discretionary and luxury items, seems to be surprisingly well sustained. One does not see reflected here a picture of increasing hardship as age advances.”

Finally, we consider Germany again, this time in a study using government-provided data. The Household Budget Survey of the Statistical Office in Germany compiles highly detailed data every month on expenditures by household. The data for 2012 is summarized in Figure 3, broken down by age of the head of the household. It shows that consumption peaks when the head of the household is between age 45 and 55, and is about 34 percent less by age 80.

Extensive studies conducted in four developed countries in different decades, then, all indicate strongly that spending declines in real terms with advancing age, and not because of a lack of financial resources. In addition, both Brancati et al. (2014) and Borsch-Supan (1992) show that older retirees tend to save more on average than people who are still working – a conclusion also reached by Hamilton (2001) using 1997 Statistics Canada data in regard to the savings habits of 85-year-olds.

In Table 3, I have approximated the annual rate of decline by combining the data from all four countries.

These age-related rates of decline are approximations only. There are variations – by country, income level, and education level.

Table 3: The Rate of Decline in Consumption

Age Range	Annual Rate of Decline
65–69	1.25 percent
70–79	1.75 percent
80+	2.75 percent
Source: Author's calculations.	

Policy Considerations

Ideally, pension benefits should enable pensioners to maintain their work–life standards of living in retirement. If it becomes more costly to maintain living standards as retirees age, then the benefits should increase accordingly. Broadly speaking, this goal lies behind the practice of increasing pension benefits in certain plans at regular intervals to reflect increases in price inflation. The evidence of actual spending patterns based on the data from the four countries mentioned above, however, shows that full indexing of pillar 3 DB pensions is unnecessary and leads to excessive saving at older ages when saving serves little or no purpose in the majority of cases.⁴

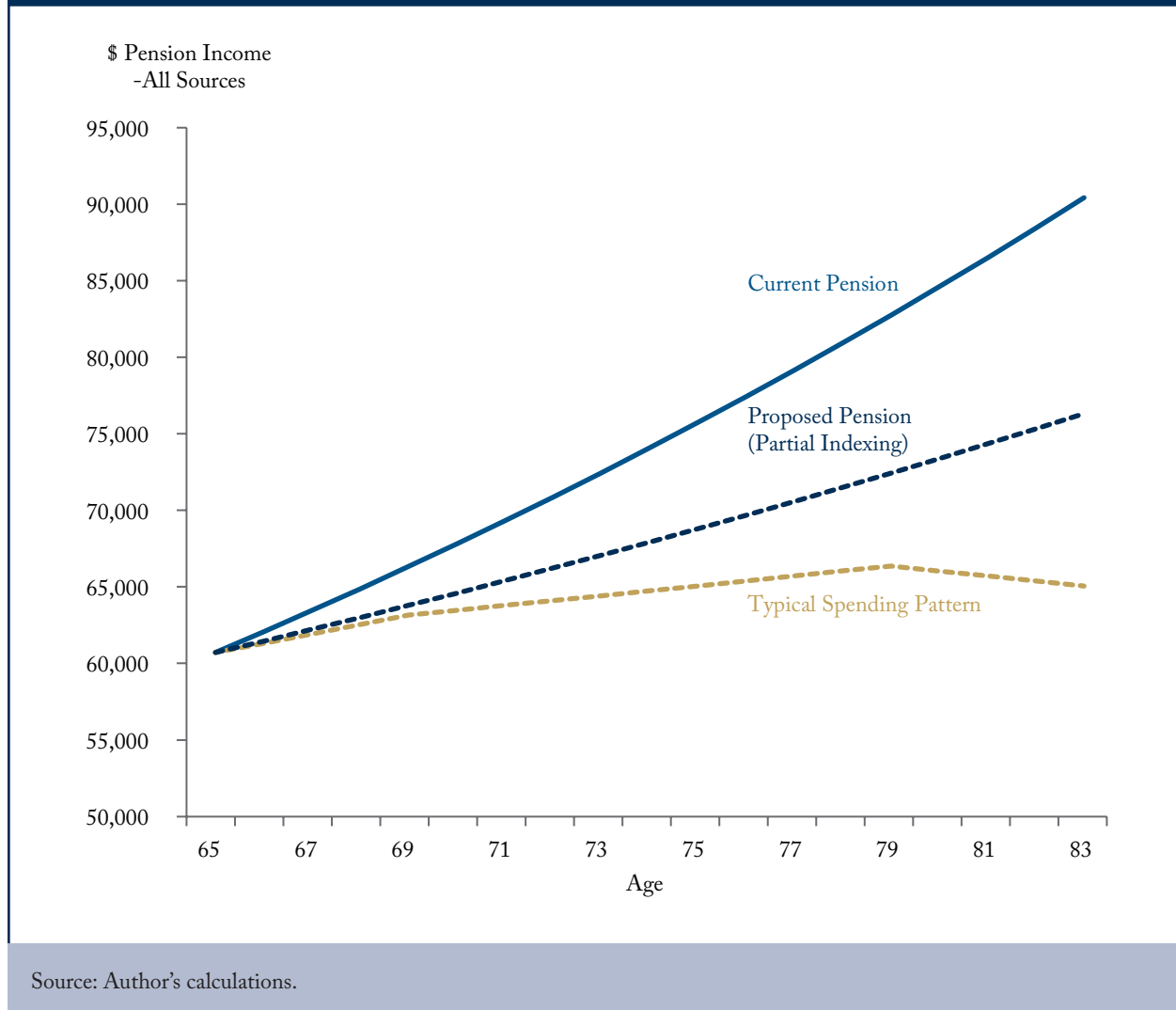
In essence, excess pension contributions reduce today's standards of living in exchange for future income that may ultimately never be spent by the individual. The excess could be consumed as it is earned and put to better use when families are struggling to raise children and pay down mortgages, thereby raising overall lifetime economic welfare. Given the rates of decline in spending set out in Table 3, public-sector pension plans could better serve their members by adopting partial indexing as a matter of policy. This policy could be implemented in various ways, such as ignoring the first 1.5 percent of each year's rise in CPI.⁵ The resulting reduction in current service cost could lead to a reduction in contributions of about 15 percent. In the federal PSPP, for example, the total current service cost of \$15,000 would fall by about \$2,000. When this saving is combined with pillar 1 and 2 pensions, the impact for a typical employee of the federal PSPP with 35 years of service who retires in 2016 is shown in Figure 4.

The average employee's share of the reduction in contributions would be approximately \$1,000, if we assume 50–50 cost sharing. Assuming that the employer share of the cost saving (the other \$1,000) is considered to be an element of employee compensation, a similar amount could be added to the employee's cash compensation

4 Inevitably, some households exposed to catastrophic costs for long-term care needs will not have the home equity or other assets to finance those costs. The author estimates approximately 2 percent of the population will be in this position. DB pension plans, however, are a poor instrument to deal with catastrophic costs. Other policy instruments, such as public long-term care insurance, should be explored.

5 Strictly speaking, the declines in financial requirements documented in this paper would support a downward adjustment in the targeted real value of pension annuities, with the resulting lower real values being fully indexed to inflation. As a practical matter, however, we know that pension plan participants are more willing to accept changes in inflation indexation than changes in “base” benefits, and with the Bank of Canada successfully targeting 2 percent increases in the CPI, a given change in the real value of annuities will be easier to achieve through the method outlined here.

Figure 4: PSPP – Comparing Pension Income Versus Spending (Typical Member)



or to other benefits. It would be up to the employers who contribute to these public-sector plans to argue whether any portion of that saving should instead accrue to taxpayers.

The average savings in some public-sector plans may be less than \$2,000 a year, depending on their indexing provision, but it should still be significant in virtually all large public-sector plans. Given that more than 3.1 million active members are contributing to public-sector pension plans, the total annual savings could add up to billions of dollars. At the individual level, these savings would allow public-sector employees to increase current consumption or to reduce debt.

It may be tempting to argue that full indexation of pensions is justified because of the eventual need to fund long-term care costs. To do so would be to suggest that excessive indexing somehow matches the eventual cost of long-term care, which is not the case. The majority of retirees will never incur long-term care costs, and the out-of-pocket cost for those who do will vary widely from virtually nothing to a very large sum. Although long-

term care funding is an important policy issue, it is totally separate from the issue of post-retirement indexing of pensions.

Conclusion

Retirees in Canada and other developed countries demonstrate a strong tendency to reduce their out-of-pocket spending in real terms starting at around age 70 and accelerating at later ages. This decline can hardly be attributed to insufficient financial resources because older retirees save more on average than people who are still working. Given this phenomenon, cost-of-living indexation of workplace pension benefits could be reduced without sacrificing consumption later in life. Reduced pension contributions would free up money to be spent today when families struggle to raise children and pay down mortgages on houses, thereby raising plan members' collective economic welfare over their lifetimes.

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