

# TWO POLICY CHALLENGES DRIVEN BY POPULATION AGING

Christopher Ragan



Two policy agendas will be driven by population aging over the next few decades. First, there will be a much greater need for enhanced productivity growth if we are to maintain our past growth in living standards. Second, governments will need to adjust their fiscal choices in order to accommodate the rising demands for age-related spending. McGill University's Christopher Ragan presents some basic demographic projections for Canada and then explains how they lead to these two agendas. He argues that Canadians and their governments need to start thinking very soon about these important policy challenges.

Au cours des prochaines décennies, deux grands dossiers seront fortement touchés par le vieillissement de la population. Celui de la productivité d'abord, qui devra être accrue pour maintenir la croissance de notre niveau de vie. Celui de la fiscalité ensuite, qui devra être gérée de manière à tenir compte de l'augmentation des dépenses liées à l'âge. Christopher Ragan présente quelques grandes prévisions démographiques et montre comment elles touchent ces deux dossiers. Il ajoute que les Canadiens et leurs gouvernements ont déjà trop tardé à réfléchir aux défis stratégiques qu'ils sous-tendent.

**L**ike several other developed countries, Canada will face two significant economic policy challenges in the coming decades. Both will be driven by a single force: the gradual but inexorable aging of the baby boomers, a group so much larger than any earlier or later generation that its aging dominates the trend in the age structure of the Canadian population.

One projected effect from population aging is a decline in the labour-force participation rate and thus a decline in the growth rate of material living standards. In particular, average per capita incomes are projected to rise over the next 30 years at an annual rate roughly one-half the rate at which they increased over the past 40 years. This decline in the growth rate underlines the need for Canadians to think carefully about how we can stimulate future productivity growth.

A second projected effect relates to the fiscal position of Canadian governments. On the one hand, growth in governments' tax base will slow due to the decline in labour-force participation. At the same time, population aging will create greater demands for health care expenditures and old-age income support programs. Governments will be forced to make difficult fiscal decisions, involving restraints on expenditure growth, higher rates of taxation or greater government borrowing.

During any given year, a country's total population will increase if the number of births plus net immigration exceeds the number of deaths. Any isolated change in the birth rate, the net immigration rate or the death rate tells us not only how the population will grow but also, depending on which rate is changing and by how much, how the average age of the population will change.

In particular, changes in the birth rate have a clear effect on the population's average age. An isolated increase in a country's birth rate will not only increase the population growth rate but, since people are always born at age zero, it must also decrease the average age of the population. Conversely, and more importantly for Canada's future, a decrease in the birth rate reduces the population growth rate and increases the average age of the population.

Here we focus on the changing age structure of the Canadian population and the roles played by declining fertility and rising life expectancy. Changes in net immigration have had only a slight effect on the age structure of Canada's population, and so they are ignored here.

**A**s figure 1 shows, Canada's population growth rate has been declining significantly for the past 60 years. In the two decades immediately following the Second World War, Canada experienced a significant "baby boom," when the

average fertility rate in Canada was 3.6 children per woman. In subsequent decades, however, the birth rate in Canada declined significantly. This decline in fertility was mostly due to the large increase in the participation of women in the Canadian labour force, but significant cultural and religious changes in Canadian society were also contributing factors. By 2008, Canada's fertility rate had dropped to about 1.6 children per woman.

Figure 1 also shows that Canada's population growth rate is projected to decline gradually over the next few decades, driven mostly by further gradual declines in the fertility rate. But even if Canada's fertility rate were to rise modestly over the near future, there would still be a need to deal with the implications of the aging of the very large baby-boom generation. No realistic increase in the future fertility rate can offset the effects of the aging baby boomers.

Over the same postwar period, there has been a gradual increase in Canadians' life expectancy. In 1950, the average newborn Canadian child was expected to live for 71 years, while today that number is 81 years. This rising life expectancy has been due partly to an increase in healthier lifestyles and partly to improvements in medical and pharmaceutical technology. The rising life expectancy of Canadians plays a key role in driving the costs of the health care system, as per capita health care costs rise very significantly with age.

With these two key demographic forces at play, it is inevitable that the average age of the Canadian population has been rising. A falling fertility rate implies that fewer *young* people are entering the population, and this effect alone tends to increase the average Canadian's age. Rising life expectancy implies that Canadians are growing older before they die, and this effect also tends to increase the average Canadian's age. As these two forces continue, they will drive Canada's population aging over the next several decades.

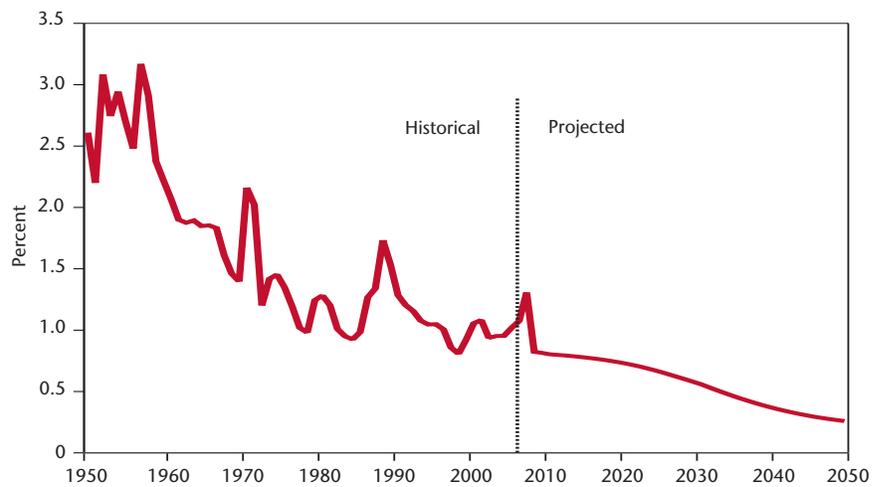
Figure 2 shows how the proportion of the total Canadian population accounted for by seniors (65 years and over) is projected to increase over the next three decades. This share is currently at 14 percent and will rise steadily with the aging of the baby-boom generation. By 2050, when most baby boomers will have died (as even the youngest baby boomers will then be 85 to 90 years old), the proportion of seniors is projected to stabilize at roughly 26 percent.

The economy's position in the business cycle is of central importance to annual changes in Canadians' average living standards. But to know why

Canadians' average income is so far above the level experienced by their grandparents or great-grandparents 75 or 100 years ago, the business cycle is irrelevant. Instead, the leading role is played by long-term productivity growth: the ongoing improvement in our ability to produce output from labour and other productive inputs.

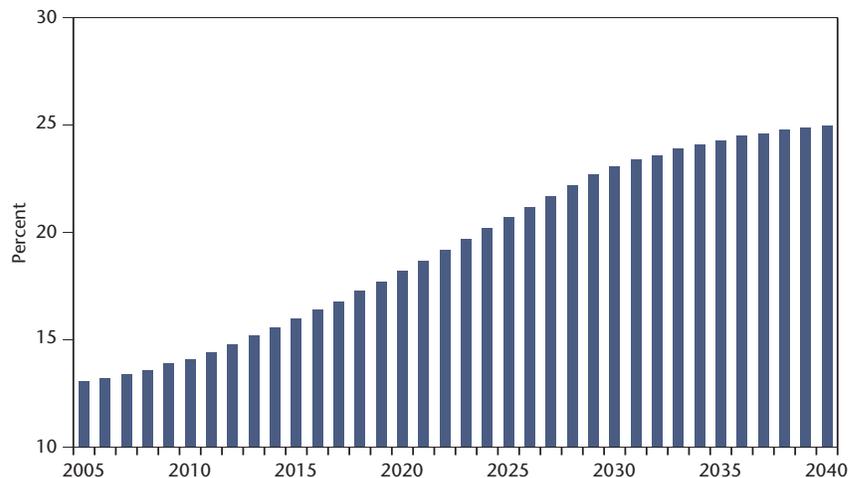
The most commonly used measure of Canadians' average material living standards is real per capita GDP — that is, the amount of output (or income) available for the average Canadian. This is measured as real GDP divided by the Canadian population (POP). Real

FIGURE 1. CANADA'S DECLINING POPULATION GROWTH RATE, 1950-2050



Source: Author's calculations based on data from Statistics Canada and the Office of the Chief Actuary.

FIGURE 2. SENIORS AS A PERCENTAGE OF CANADA'S POPULATION, 2005-40



Source: Author's calculations based on data from Statistics Canada and Office of the Chief Actuary (23<sup>rd</sup> Actuarial Report on the Canada Pension Plan).

per capita GDP is exactly equal to the product of three components. The first is the ratio of output to employment (GDP/E), a simple measure of labour productivity. The second is the ratio of employment to the size of the labour force (E/LF). The final component is

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the fraction of the total population that is in the labour force (LF/POP) — the labour-force participation rate. This overall relationship shows that changes in the three separate components determine the overall change in per capita output. For example, if labour productivity rises while the other two components are constant, per capita GDP must increase. Similarly, if the labour-force participation ratio declines while the other two components are constant, per capita GDP must fall.

In what follows, we focus on the first and third components because they are most relevant to the discussion of long-term population aging. The E/LF ratio (which is simply equal to 1 minus the unemployment rate) is quite volatile during business cycle fluctuations, but it shows no clear trend over long periods of time.

Not surprisingly, labour-force participation rates among Canadians 55 and over are well below those for Canadians between the ages of 25 and 54, as figure 3 shows for 2008 data. With the ongoing aging of Canada's baby-boom generation, a growing proportion of the population will fall into the older age categories, thus reducing the economy's overall labour-force participation rate. Figure 4 shows the overall labour-force participation rate from 1976 and projected until 2040, declining from over 67 percent of the population today to below 60 percent 30 years from now.

Using the labour-force behaviour from any typical year (such as in fig-

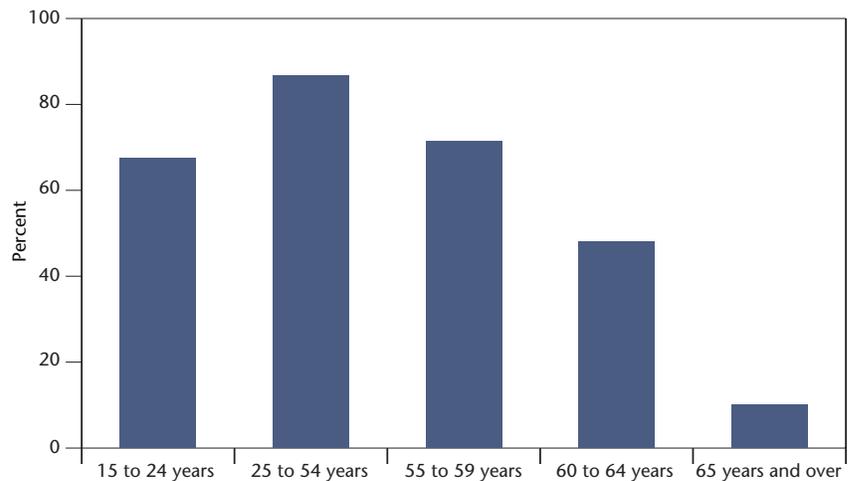
ure 3) as the basis for a projection many years into the future (as done in figure 4) is a common technique but one with potential problems because of the possibility of changes in individuals' behaviour. In particular, business cycle fluctuations or changes in

the accumulated value of pension assets can be expected to lead to changes in labour-force participation

rates. For example, after the financial crisis and associated stock market declines in 2008-09, many Canadians may have delayed their planned retirement dates until after their accumulated assets regain previous values. As significant as such changes might

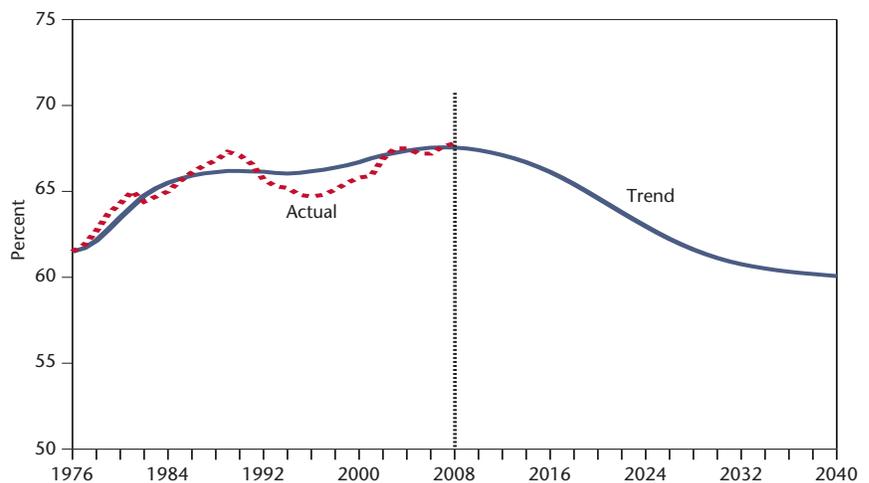
be in the short term, however, they will only delay the inevitable retirement of aging Canadians. As figure 4 shows, the projected decline in the aggregate labour-force participation rate will still occur, though perhaps a few years later than shown in the figure.

FIGURE 3. LABOUR-FORCE PARTICIPATION RATE BY AGE, 2008



Source: Author's calculations based on data from Statistics Canada.

FIGURE 4. CANADA'S LABOUR-FORCE PARTICIPATION RATE, PAST AND FUTURE



Source: Author's calculations based on data from Statistics Canada.

Consider again the three component parts of real per capita GDP. From any one year to the next, there is usually an increase in labour productivity (GDP/E) of about 1 to 2 percent. Taken by itself, this productivity growth tends to increase our average income. The second component, the fraction of the labour force actually employed (E/LF), fluctuates considerably over the busi-

ness cycle but is remarkably stable over longer periods of time, and thus plays almost no role in determining our long-run living standards. The labour-force participation rate (LF/POP) also fluctuates over the business cycle, but in addition it has important long-run trends driven by demographic forces, as is evident in figure 4.

**Between 1971 and 2008, average real per capita income grew by 98 percent. Over the same period, labour productivity increased by 48 percent and the labour-force participation rate increased by 34 percent. In contrast, the E/LF component was almost exactly unchanged between 1971 and 2008. The rising labour-force participation caused by the maturing of the baby-boom generation has played a major role in raising Canadian living standards.**

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It is then natural to ask, “What have been the dominant causes of growth in real per capita incomes over the past few decades?” The answer is that productivity growth and a rising labour-force participation rate have explained *all* of average income growth in Canada. Between 1971 and 2008, average real per capita income grew by 98 percent. Over the same period, labour productivity increased by 48 percent and the labour-force participation rate increased by 34 percent. In contrast, the E/LF component was almost exactly unchanged between 1971 and 2008. The rising labour-force participation caused by the maturing of the baby-boom generation has played a major role in raising Canadian living standards.

**W**hat does the future hold as the life cycle of the baby-boom generation drives Canada’s population aging? Other things being equal,

the future decline in the labour-force participation rate shown in figure 4 will lead to a reduction in the growth rate of Canadian average incomes. Over the past 40 years, the coming of age of the baby-boom generation has tended to increase Canadian average incomes because it increased the fraction of the overall population that worked and thus generated income.

But the continuing aging and eventual retirement of this same generation will have the opposite effect in the future. The declining proportion of the population at work will offset the effects on living standards of ongoing productivity growth.

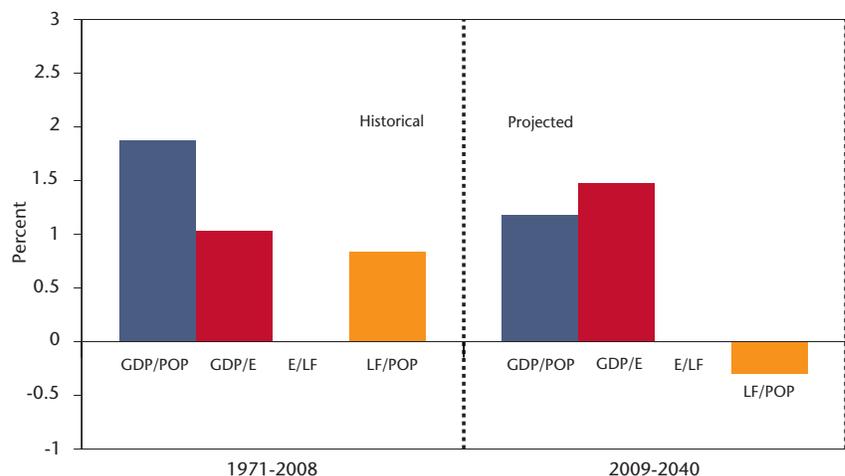
Figure 5 shows how markedly the sources of real per capita GDP growth (GDP/POP) will change from the past to the future. Between 1971 and 2008, real per capita GDP increased by about 1.9 percent annually, and this growth came only slightly more from productivity growth (GDP/E) than

from the rising labour-force participation rate (LF/POP). (As already stated, the changes in E/LF accounted for no part of this growth.) For the next 30 years, however, the absolute decline in the labour-force participation rate will be a significant drag on growth; with productivity growth projected to be roughly similar to that observed in the recent past, the result is that real per capita GDP will grow by only 1.0 percent annually, only half its pace from the previous 40 years.

For the next few decades, Canadians and their governments will need to think carefully about how the rate of productivity growth can be increased. Growth in their future living standards will depend much more on productivity growth than it has in the past.

But it is worth recognizing the role of government in creating a beneficial environment in which firms and workers can take actions to have reasonably predictable results. There will always be uncertainties in a modern market economy, and today’s firms and workers recognize that. But government policy should avoid adding to these uncertainties. In this vein, explicit commitments to the rule of law, contract enforcement, the right of private

FIGURE 5. SOURCES OF CANADIAN PER CAPITA GDP GROWTH, PAST AND FUTURE



Source: Author’s calculations based on data from Statistics Canada.

property, low and stable inflation, and predictable and straightforward tax and regulatory regimes can help to produce an environment conducive to productivity-enhancing investments by firms and workers.

As Bank of Canada Governor Mark Carney recently observed, Canadian governments have performed well in this regard since the mid-1990s,

**Yet Canada's productivity performance has still been lackluster in the past decade and has lagged that in several other developed economies. At some point, governments can only do so much and the responsibility falls on the private sector to take the lead in improving productivity growth. After all, it is the workers and firm owners who will ultimately gain from these actions.**

including the maintenance of low and stable inflation, significant reductions in government indebtedness, reductions in personal and corporate income tax rates, the elimination of many tariffs on intermediate inputs, and much else. Yet Canada's productivity performance has still been lackluster in the past decade and has lagged that of several other developed economies. At some point, governments can only do so much and the responsibility falls on the private sector to take the lead in improving productivity growth. After all, it is the workers and firm owners who will ultimately gain from these actions.

Aside from producing a beneficial economic environment, government policies can be designed in a more targeted way and can be aimed directly at promoting the accumulation of human and physical capital, supporting the development of new technologies and encouraging greater competition in the marketplace, either through more streamlined regulation or more openness to international trade. Whichever specific policies are pursued to improve productivity growth, it is important to keep in mind that all policies involve opportunity costs, and most involve direct fiscal costs to governments. As a result, a careful analysis of costs and benefits is required before advocating any specif-

ic policy. Mention of the fiscal cost brings us to the second policy challenge driven by population aging: the fiscal adjustments that Canadian governments will require as a consequence.

Quite apart from the issue of productivity, the aging of the Canadian population will force Canadian governments to face a significant two-part

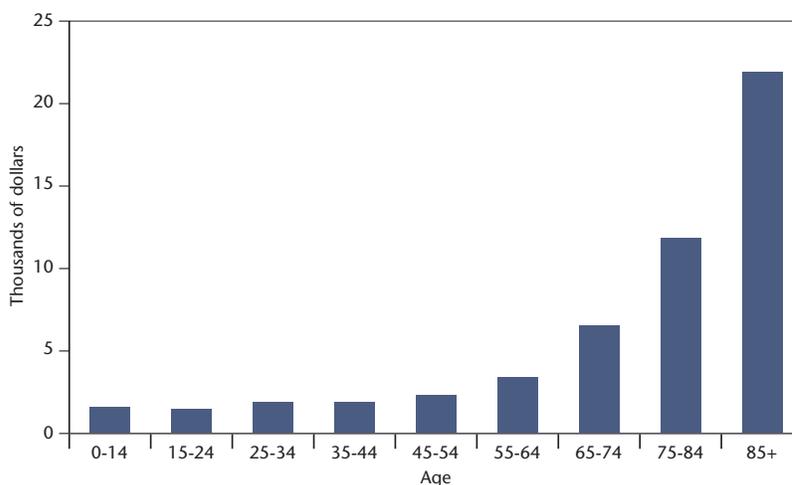
fiscal challenge. First, the aging of the population will lead to a slowing of governments' tax base. Second, key Canadian government spending programs will become more costly as the population ages: in particular, programs providing health care and income support for the elderly. Confronting this fiscal challenge will likely create political tensions between provincial and federal governments and will force governments at all levels to make some difficult fiscal decisions.

Canadian governments levy all kinds of taxes, including personal and corporate income taxes, the federal goods and services tax (GST), provin-

cial sales taxes, municipal property taxes and various excise taxes such as those that apply to the sale of gasoline, cigarettes and liquor. Since the revenues raised by the most important Canadian taxes tend to fluctuate with income and spending, we can view national income (GDP) as a good approximation of the governments' overall tax base.

We have already seen that an important effect of Canada's population aging will be a significant decline in the labour-force participation rate over the next 30 years, with the important consequence that real per capita GDP will grow more slowly than it did over the past four decades. The implications for government tax revenue are clear: in the absence of changes to the governments' various tax rates, the slowing of the growth in per capita income will lead to a slowing of Canadian governments' per capita tax revenues. From figure 5, one can project that the annual growth rate of per capita income for the next 30 years will be lower by about one percentage point than it was over the past few decades; the implication is that, for unchanged tax rates, the annual growth rate of governments' per capita tax revenues will also fall by about one percentage point.

FIGURE 6. PER CAPITA PUBLIC HEALTH CARE SPENDING BY AGE CATEGORY, 2007



Source: Author's calculations based on data from the Canadian Institute for Health Information

Average health care spending per person rises significantly with age. In general, older people suffer more from illnesses than do the young. They also require more hospitalization and recover more slowly from accidents of various kinds than do younger people. Using data from 2007, figure 6 shows how per capita health care spending varies by age cat-

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egory, with the amount of public spending for people aged 75 and over several times larger than the spending for those under the age of 55.

The aging of the baby-boom generation implies that, for the next 30 years or so, there will be a steadily increasing fraction of the Canadian population over the age of 65 (look back to figure 2). Government spending on health care will also increase over this period, since a greater share of the population will be in the higher-cost age categories shown in figure 6. The projected increase in overall public spending on health care between 2020 and 2040, measured in percentage points of GDP, is shown in figure 7. Over this period, public spending on health care is projected to increase by roughly three percentage points of GDP.

Notice, however, that population aging is not the only force driving the increase in expenditures in figure 7. Two other factors, taken together, are estimated to account for slightly over half of the overall increase. First, as real per capita incomes continue to increase, it is estimated that the demand for health care will also rise, perhaps even more than in proportion to the increase in income. The second additional factor driving greater expenditure on health care comes from the continuing development of new medical technologies. In some cases, new medical technologies allow doctors to do existing proce-

dures in lower-cost ways. But in many cases, new technologies and drug treatments allow doctors to do things that they could not do before at any cost. In other words, an important source of rising health care expenditures is that technological advances give us new ways to spend money on health care that were simply not available in the past.

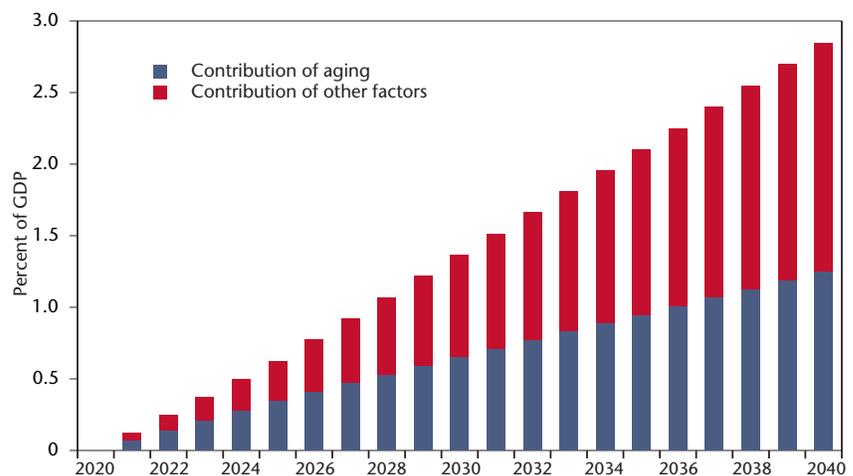
The aging of the Canadian population will also lead to increased demands for public spending on old age benefits. Programs such as Old Age Security (OAS) and guaranteed income supplement (GIS) provide direct income assistance to the elderly, especially those with incomes below a specified threshold. As baby boomers continue to age and more of them enter their golden years, there will inevitably be greater demands on these existing programs. Between 2020 and 2040, spending on such programs is projected to increase by approximately half of one percentage point of GDP.

Overall, the effect of population aging is expected to significantly increase demands on public expendi-

ture. (It will also lead to decreases in the growth of spending on programs designed for the young, but this reduction is predicted to be far smaller than the combined increases for health care and elderly benefits, and so it is ignored here.) Rising spending on health care and elderly benefits is expected to add roughly 3.5 percentage points of GDP to annual government spending between 2020 and 2040. Such an increase in today's economy would be equivalent to approximately \$56 billion, over 10 percent of federal plus provincial government spending.

The increased demands for health care spending will surely create significant fiscal pressures between the federal and provincial governments, for the simple reason that the lion's share of the increased spending will come directly from the provincial budgets. At the same time, however, no law or institutional arrangement will generate an automatic transfer of taxing power toward the provinces. Thus, as population aging drives the increase in age-related spending, provinces will demand greater financial transfers from the federal government. Based on past experience, these heightened demands will create significant political tensions, the resolution of which will depend on the

FIGURE 7. PROJECTED INCREASE IN PUBLIC HEALTH CARE SPENDING, 2020-40



Source: Author's calculations based on data from the OECD, Table A2.3 of ECO/WKP(2006)5.

personalities and the political landscape in place at the time.

Provincial governments will increase their demands from Ottawa because it is easier and more popular than the alternative methods of financing the rising health care expenditures: reducing other spending programs or increasing taxes. If the federal government can be convinced to increase transfer payments, the provinces can avoid making these difficult and unpopular fiscal decisions.

As population aging adds to the demands for greater age-related spending, however, *someone* will need to make some difficult fiscal choices — they simply cannot be avoided. Greater financial transfers to the provinces would make life easier for provincial governments, but the burden would then be squarely on the federal government to make the tough fiscal decisions. And in general terms the federal government has no more fiscal levers at its disposal than does any provincial government. With a limited fiscal capacity of its own, the federal government would only be able to make larger transfers to the provinces if it could either restrain its other spending or increase taxes, or some combination of the two. From the perspective of the country as a whole, it is more useful to focus on the overall need for fiscal adjustment — apart from the difficult issue of how the adjustment will be apportioned between the various levels of government.

Perhaps the obvious place to begin the discussion of fiscal adjustment is whether and to what extent the growth of health care spending can be reduced. Presumably, however, the goal will be to restrain the growth of health care spending while maintaining or even improving the quality of delivered health care services. Once this discussion begins in earnest, it is

inevitable that we will start asking about possible changes to the existing delivery mechanism, perhaps including an increased role for the private sector in Canada's mostly public health care system. Such a discussion will be uncomfortable for many Canadians. We briefly flirted with these issues in the mid-1990s when the federal government reduced its transfers to the provinces, thus putting significant financial pressures on the health care systems — the provinces' largest and fastest-growing budget item. But a quick fiscal turnaround

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aided by a fast-growing economy allowed us to avoid a protracted and unpleasant discussion. The coming demographic forces are strong and sustained, however, and Canadians will likely return to this debate in a more serious way. We should all brace ourselves. As former Bank of Canada Governor David Dodge has said recently, Canadians need to have an "adult conversation" about how we finance our future health care system.

Whatever realistic restraint can be placed on the growth of age-

related spending, it is important to keep in mind that the underlying demographic forces are so strong that they will still cause this spending to rise more quickly in the future than it has in the past. Canadian governments will therefore need to respond to this rising demand for spending. As is always the case, the simple arithmetic of government budgets implies that there are only two broad fiscal choices available.

First, if governments can adequately reduce the growth rate of non-age-related spending, they can make room in their budgets for the coming increases in age-related spending without the need for higher taxes. But such restraint is always difficult for governments to accomplish, despite what they sometimes claim on the political campaign trail. Powerful and often vocal political forces are entrenched within those groups that benefit from any existing government program, and many governments initially committed to restraint have later been compelled to stand down in the face of public outcry. Slowing the growth of a spending program is tough enough; cutting or eliminating programs altogether is even more difficult. As Milton Friedman once famously said, "Nothing is so permanent as a temporary government program." Past experience in Canada and elsewhere, however, has proven that cutting spending is possible, despite the inevitable hurdles and controversy. Committed political leadership and effective communications are required.

The second broad fiscal option is to accommodate the rising demands for health care spending by raising taxes. In this way, Canadians can simply be asked to pay for the greater services they will be receiving. Apart from the general unpopularity of

higher taxes, an important choice would then need to be made concerning which taxes would be raised and by how much. Unfortunately, there is typically a misalignment between the efficiency of a tax and its popularity, so that any tax increase will generate either significant economic or politi-

spending occurring simultaneously with the slowdown of the tax base. But such an increase in government debt is not a genuine long-term solution; it can only delay the inevitable fiscal adjustment, as any debt incurred now must ultimately be repaid with future resources —

the past half-century was constructed during a time when the demographic forces were very advantageous: a young and fast-growing population. The implications were rapidly advancing living standards and the ability to easily fund many government programs. But as the oldest baby boomers

reach 65 next year, and these demographic forces move into reverse for roughly 30 years, there will be a need to adjust this machine of government. The adjustment can occur primarily on the spending side or primarily on the revenue side — or indeed can

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cal costs. For example, most economists would agree that increasing a broad-based consumption tax like the GST would be the best way to raise taxes because it would have the smallest negative effect on growth. But given the GST's status as the most vilified tax in recent Canadian history, it would surely be the least popular tax increase one could imagine implementing. In contrast, many Canadians would argue that if taxes must be increased, corporations should be asked to pay more; yet economists know very well that higher corporate taxes are an almost certain route toward reduced economic growth and that the burden of such taxes ultimately falls on workers.

Finding the right balance between the economic costs and political costs requires considerable finesse on the part of the government, a balancing act that would be aided with clearly stated objectives and careful but honest communications.

Being forced to choose between these broad fiscal options will be unpleasant for future Canadian governments, but some combination of these choices will be inevitable. Any attempt to avoid these unpleasant fiscal realities would only result in increased government borrowing, made necessary by the acceleration of

financed through either higher taxes or lower spending.

Over the past 50 or so years, Canadians have built an impressive "machine" of government. This machine reaches into our pockets and collects resources in various ways, by taxing personal income, corporate profits, expenditures and property values. The same machine uses this revenue to finance the delivery of goods and services that Canadians presum-

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ably value — the justice system, national parks, public education, health care, national defence, roads and highways, and much more. Naturally we can and should debate the efficiency of this machine, and should constantly be exploring ways to improve its effectiveness. We should also continue to question whether its scale is best suited to the needs and aspirations of Canadians, and whether it is providing the optimal mix of goods and services.

The key point is not about such debates. Rather, the key point is that this government machine built over

occur on both. But some adjustment will be necessary. None of this is an argument specifically for a "smaller" machine or a "larger" one; it is only that whatever level of spending the machine provides must be balanced by the level of taxes it collects. And the coming demographic changes imply that achieving this balance in the future will only be possible if Canadian governments make deliberate and significant policy adjustments. Ignoring this fact is a sure route to the

future problems that come from high levels of government indebtedness.

Only time will tell how our governments choose to confront the productivity and fiscal challenges created by population aging. But they need to begin thinking about them very soon.

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