

C.D. Howe Institute BACKGROUNDER

ECONOMIC GROWTH AND INNOVATION

Stress Test:

Demographic Pressures and Policy Options in Atlantic Canada

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In this issue...

A rapidly aging population means the Atlantic provinces face the prospect of shrinking workforces as early as 2010. To stem the population pressures of tomorrow, a suite of policies – such as those that boost workforce participation and others that prefund demographically sensitive government programs – is needed for today.

THE STUDY IN BRIEF

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ISBN: 978-0-88806-792-0 ISSN 0824-8001 (print); ISSN 1703-0765 (online) The twin demographic challenges of an aging population and slow workforce growth will affect Canada's Atlantic provinces more acutely than other regions of the country. Many years of low birthrates and youth outmigration mean that the Atlantic region faces diminished workforce growth and a fiscal squeeze as fewer taxpayers support a growing bill for public programs. The scarcity of populationattracting large urban centres in the region is a sobering fact for those hoping to address Atlantic Canada's demographic pressures through large inward flows of migrants.

This multifaceted challenge requires a multifaceted response to encourage work, foster investments in human and physical capital, and ensure fiscal sustainability. Boosting workforce productivity will need concerted action from providers of elementary, secondary and post-secondary education, as well as from employers and other promoters of adult literacy. Dealing with the looming fiscal challenge will require courage and imaginative approaches such as CPP-style pre-funding for health programs that face sharp demographically driven spending increases.

Successfully addressing the stresses of demographic change in Atlantic Canada will require not only a combination of policies from various provincial government departments, but also action by the federal government and employers to increase workforce retention and immigration by people of working age.

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The population of Canada's Atlantic provinces is aging faster than those of other provinces and territories. Challenges such as the sustainability of fiscal policy, the expansion and limits of public health services and the intergenerational fairness of current provincial tax regimes are therefore more pressing in New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island than elsewhere in the country.

A shrinking workforce, coupled with rising costs associated with an older population, will force changes on the current trajectories of taxes and public services.

Even should the Atlantic Provinces meet their targets to raise in-migration, or surpass them by reasonable margins, the momentum of growth and aging of the already resident population will force policy changes. In one critical area – providing medical drugs – an early response seems especially desirable. Early pre-funding of escalating costs for pharmacare can mitigate what would otherwise be an unconscionable burden on future taxpayers.

This *Backgrounder* outlines the likely evolution of the size and age-structure of each Atlantic province's population and highlights the potential impacts of international and interprovincial migration trends on living standards and fiscal sustainability in the years ahead. Finally, it canvasses some policy tools to deal with the challenges.

Our key conclusions are:

• Mitigating or even reversing the recent outmigration of young workers from the Atlantic provinces will not prevent a demographically driven rise in government spending relative to income in the decades ahead. Potential savings on education, as the youth share of the population declines, are far smaller than increases in healthcare costs as the elderly share increases.

- Economic growth will face a headwind from population aging, making policies to improve workforce productivity imperative. However, the correlation between higher education and mobility, evident in a tendency for young people with higher levels of education to leave Atlantic Canada, complicates the policy response. Improving adult literacy skills offers high returns with less of a threat of subsequent outmigration.
- The Atlantic provinces' relatively more rural population, particularly the scarcity of migrantattracting urban centres, heightens the challenge of achieving a better balance of in- versus outmigration.
- Combating these stresses requires a suite of policies from all levels of government. Improved labour market outcomes, workforce mobility, adult skill acquisition, competitive and generationally fair tax policies and the postponement of retirement are potentially important measures in attempts to offset demographic pressures on living standards in the region.

Demographic Projections

We begin by sketching Atlantic Canada's demographic future based on the normal starting assumption that key variables will remain in familiar ranges in the future. Because each province has distinct demographic and economic characteristics, we project provincial populations separately. The vital birth and death statistics in our projection are:

- Total fertility rates stay constant at 1.5 births per woman in Nova Scotia and New Brunswick; 1.46 in Newfoundland and Labrador; and 1.63 in Prince Edward Island.
- Life expectancy at birth in each province improves at rates similar to those in Statistics Canada's medium assumption throughout the projection period.

The authors would like to thank the presenters and attendees at the C.D. Howe Institute's demographic conference in Halifax on May 12, 2009. Their thoughts, suggestions and comments have contributed significantly to the content of this paper. In addition, we would like to thank the Atlantic Canada Opportunities Agency and the individual support and guidance of Steve Parker, Aldéa Landry and Colin Dodds, who provided helpful remarks and advice both before and after the conference.



Future migration levels are an exercise in conjecture. Convention in demographics is to base future migration assumptions on recent trends, but such "straight-line" projections immediately raise doubts in this instance. Should population losses continue at recent rates in Newfoundland and Labrador, for example, the population would shrink to nothing within 80 years, which is clearly unreasonable.

International migration is one key area of uncertainty. Canada as a whole attracts relatively large numbers of immigrants, but the share of permanent-resident immigrants to the country that settles in Atlantic Canada has tended to be very small – less than 3 percent in 2007, for example. Therefore, one key question is whether the Atlantic provinces can succeed in raising the number of immigrants who settle in the region.

Interprovincial migration is another uncertainty. Past interprovincial net migration, while volatile year to year, has been mostly outward from Atlantic Canada (Figure 1). Gross flows in and out have varied between about 65,000 and 38,000 annually, with the booming economies of western Canada pushing net Atlantic outmigration to a recent trough of about 11,500 in 2006. In an abrupt reversal, however, 2007 registered net regional immigration for the first time since 1983.

Over time, the cyclical population flows within Canada have shown some tendency toward balance: as net migration gains of high-growth provinces fall, there are fewer losses in the low-growth provinces (Statistics Canada 2005). Opposing forces – aging, on the one hand, work against mobility,¹ while rising education levels tend to foster it – will also have an impact in the years ahead.

A further factor that has tended to foster Atlantic Canada outmigration is the region's urban/rural split. The Atlantic provinces are more rural than Canada as a whole,² as can be seen in Figure 2 (see Box 1 for a presentation of this distinction). The Atlantic provinces contain few metropolises: Halifax, the region's largest urban centre (population 373,000), is Canada's 14th largest; St. John's, the second largest, ranks 20th; and Moncton, Atlantic Canada's thirdlargest city, ranks 29th. The rural share of Atlantic Canada's population (8.3 percent) is matched only in Manitoba and Saskatchewan. All other provinces are 2.6 percent rural or less.

Historically, the significance of this urban-rural split lies not in any tendency for outmigration from rural regions – very often, urban regions lose a

¹ As the population ages, declines in interprovincial migration can be reasonably expected – a trend evident since 1971 (Dion and Coulombe 2008).

² There are various ways to define rural – see du Plessis et al. (2002) – but all of them bear out this generalization.





Source: Authors' calculations from Statistics Canada 2006 Census.

Box 1: Categories for Modified Beale Codes Used to Define Population Centres

Metropolitan Regions

- Major metropolitan: central and fringe census divisions (CDs) of urban settlements of one million or more people.
- Mid-sized metropolitan: CDs containing urban settlements of 250,000 to 999,999 people.
- Smaller metropolitan: CDs containing urban settlements of 50,000 to 249,999.
- Non-Metropolitan Regions
- Non-metropolitan small city zone: nonmetropolitan CDs containing urban settlements of 20,000 to 49,999 people.
- Small-town zone: non-metropolitan CDs containing urban settlements of 2,500 to 19,999.
- Predominantly rural: non-metropolitan CDs containing no urban settlements (i.e., no places of 2,500 or more people).

• Northern hinterland: CDs that are entirely or largely north of the following parallels by region: Newfoundland and Labrador–50th; Québec and Ontario–49th; Manitoba–53rd; Saskatchewan, Alberta and British Columbia– 54th; and all of the Yukon, Northwest Territories, and Nunavut.

For Figures 6 and 7, we have the following aggregated categories:

- 1) Major Metro.
- 2) Mid-sized Metro.
- 3) Smaller Metro.
- 4) Non-Metro Urban (non-metropolitan smallcity zone and small-city zone).
- 5) Rural (predominantly rural and northern hinterland).



Figure 3: In- and Outmigration Patterns, Atlantic Provinces, Select Urban and Rural Regions

Sources: Authors' calculations from Statistics Canada 1996, 2001, and 2006 Census.

greater percentage of their population to outmigration than rural ones (Figure 3) - but in relatively low in-migration to more rural regions. While the future may hold surprises on this front as well, our working assumption is that the greater economic opportunities and attractions of a larger community in urban centres will continue to work against net migration to rural areas.

To bracket the range of likelier outcomes, we consider two separate migration scenarios:

 A "Pessimistic" Atlantic Canada scenario might result from a prolonged period of employment and economic leadership in the western and central provinces. In this scenario, net interprovincial outmigration for each Atlantic

province remains negative, but the outflow slowly shrinks from its 10-year average, in each age and sex category, becoming zero in 2018. International immigration for this scenario remains mildly positive at the latest 10-year average.

• An alternative "Optimistic" scenario might result from an eastward shift in economic leadership combined with successful policies by the Atlantic provinces to attract and retain more actual or potential migrants. In this scenario, each province surpasses its net in-migration targets.³ International immigration levels reflect the most recent targets set by each government,⁴ and net interprovincial migration is positive at roughly 10 percent of the international migration level.

³ We use the assumptions presented in The New Brunswick Population Growth Secretariat's "Be Our Future"; Newfoundland and Labrador's "Diversity: Opportunity and Growth"; Nova Scotia's "Immigration Strategy"; and Prince Edward Island's "Population Strategy." P.E.I. would like to see its annual population grow by 1.5 percent. But adjusting migration in each year proved unrealistic: immigration has to grow exponentially to meet the population target. So we assume that P.E.I.'s population growth targets are met through migration alone, and that migration levels adjust to allow the population to grow by 1.65 percent up to 2018, and are fixed thereafter.

⁴ We consider this feasible given the growth of international migration in Manitoba and its expanded Provincial Nominee Program (Statistics Canada 2008, 12).

Table A1 in the Appendix lists the assumptions and results of the projections.

These different migration assumptions produce very different population projections. The pessimistic scenario demonstrates the sizable effects of another 10 years of population loss through interprovincial migration (Figure 4). The optimistic scenario is considerably more buoyant for the region as a whole, although Newfoundland and Labrador still see declines. In the pessimistic scenario, Atlantic Canada's aggregate population falls to 1.9 million in 50 years' time; in the optimistic scenario, it increases to 2.7 million.

For the last 30 years, the Atlantic provinces have generally enjoyed significant additions to their potential workforce, for which we use the common definition of population aged 18 to 64. Under either scenario, the potential workforce does not grow in the decades ahead (Figure 5). In the pessimistic scenario, it shrinks immediately; in the optimistic scenario, it briefly grows in three of the four provinces, but even in them, it plateaus in 2011 and then starts to decline.

As the demographic bulge of babyboomers moves into older age groups, the old-age dependency ratio – the population aged 65 and over relative to the working-age population – will rise sharply (Figure 6). Although migrants are younger on average than already resident populations, this rise occurs in the optimistic scenario as well as in the pessimistic one.

Before exploring the implications of this change in age structure for the sustainability of provincial programs, we overlay some economic assumptions to produce alternative futures for output and income growth in Atlantic Canada.

Economic Projections

Over the past 10 years, Atlantic Canada's real GDP expanded at a per person rate of 3.1 percent annually. This was the result of an average 2.9 percent annual increase in output per working-age person and a small rise in the working-age population relative to the total. To get a sense of what might be achievable over longer timelines, we examine the 20-year span from 1989 to 2008, during which real GDP grew at 2.2 percent per year, or 1.9 percent per working-age person. For simplicity, we assume that real GDP per potential worker will grow by the 1989-2008 average in the near future and, to mitigate the impact of recent resource cycles on projected relative growth rates among the Atlantic provinces, that each province's growth per worker will gradually converge to the regional average over a 20-year period.

This assumption about output per working-age person, along with the projected shrinking share of provincial populations of working age, means that output per person is projected to rise more slowly than the most recent average under either migration scenario (Appendix Table A2).

Fiscal Consequences of Demographic Change

Slower workforce growth coupled with a rapid rise in the share of seniors in the population will have important fiscal consequences. Barring changes to the delivery of public services, demographic changes will force current and future taxpayers in Atlantic Canada to pay higher tax rates for the same package of public programs a person of a given age and sex enjoys today.

To quantify these effects, we take current patterns of public expenditure by age – and, in the case of healthcare, by sex – and project them forward as the age-structure of the population changes.⁵

Healthcare

The age/sex profile of healthcare spending interacts with demographic change to create increases in public healthcare costs.⁶ We assume that service costs per person rise in line with the productivity index, at 1.9 percent, and health-sector inflation continues at the same average annual pace recorded by the price index of provincial government consumption from 1994 to 2007.⁷

⁵ See Robson (2009) for a similar exercise carried out for all provinces and territories, and for further explanation of these projection methods.

⁶ These figures are for 20 different age groups taken from CIHI (2008), Series E.

⁷ This rate ranges from a high of 2.5 percent in New Brunswick to a low of 2.1 percent in Prince Edward Island.



Figure 4: Atlantic Canada Total Population and Workforce (WF) Under Two Migration Scenarios



Figure 6: Old-Age Dependency Ratio (ages 65+/18–64) UnderTwo Migration Scenarios



Education

In contrast to rising expenses in healthcare, demographic change should cause growth in education expenditures to abate. We project provincial spending on elementary school and postsecondary students on the basis of the populations aged 5 to 17 and 18 to 24, respectively. Service intensity rises, as with healthcare services per person, at 1.9 percent annually. Inflation in education costs is also projected at the same pace as the price index for provincial government consumption from 1994 to 2007.⁸

Seniors' Programs

Provincial seniors' programs include the New Brunswick low-income seniors' benefit and a comparable program in Newfoundland and Labrador, in addition to those provinces' disability support supplements and geared-to-age community programs. Our projections assume that the real benefits per senior will grow at the same pace as real payments per person aged 65 and up by the federal government under Old Age Security (OAS) and the Guaranteed Income Supplement (GIS), using the projections of Canada's Chief Actuary (OCA 2008). These provincial programs are not large relative to their budgets, so their cost increases do not significantly affect the results.

Demographically Sensitive Program Spending

Figure 7 compares the combined impact of expenditure growth and slower economic growth from demographic change under alternative migration scenarios. Since the mid-1980s, even during periods of substantial outmigration, GDP growth has contained the share of income absorbed by demographically sensitive programs in most provinces. This will not be true in the future, when all of Canada – and especially the Atlantic region – will see an increasing share of incomes absorbed by these programs (Robson 2009). 9

Policy Options

Safeguarding high living standards and boosting future levels of growth in the face of these trends requires policies in several areas:

- better labour-market participation incentives and labour-force flexibility;
- training to improve adult skills and literacy;
- improvements in the secondary and postsecondary education system – which must fuel growth and better match skill sets to meet the economy's needs – and equipping workers with better tools to do their jobs;
- attracting, integrating and retaining new migrants in the workforce;
- containing rising program costs and sharing them more fairly among generations.

Labour-Market Performance and Workforce Participation

Simple population projections can provide relatively reliable overall numbers. However, when it comes to output and incomes, the share of the adult population actually working is critical. In Atlantic Canada, the labour-market participation of workingage people has tended to be lower than elsewhere in the country. Although intervals of low workforce participation may be due to weak demand for workers, persistently low rates indicate a problem on the supply side.

One inhibitor of a better performing Atlantic Canada labour market is the regionally linked benefit system of the federal Employment Insurance (EI) program. While generous EI benefits can induce people to join the labour force, thereby boosting participation rates, they will discourage workers who are seasonally unemployed or affected by permanent

⁸ Although Newfoundland and Labrador, Nova Scotia and New Brunswick also offer child/family benefits, these programs are too small to affect these calculations. Per capita education-related data are from Blouin (2008). A substantial proportion of students attending university in Nova Scotia are from out of province: we allow for a recent downtrend in this share by raising the proportion of home-based students in our projections from 40 percent to 50 percent over 10 years, and holding it constant thereafter.

⁹ For comparison with the figures, Robson's (2009) results see national average healthcare costs rising from 7 percent of GDP per year in 2008 to 10 percent of GDP in 2030, and total demographically sensitive costs rising from 15 percent to 19 percent of GDP over the same period.





change in the economy from moving to places where opportunities may be better but EI benefits are lower. While the program's tendency to keep working-age people in the Atlantic region when they have better prospects elsewhere might seem an advantage from a demographic point of view, from an economic point of view it is not. There is evidence that the lack of uniformity in the EI program creates long-lasting pockets of high unemployment in Atlantic Canada's more rural regions (Guillemette 2007).

Another inhibitor of better labour-market performance in Atlantic Canada is skill depletion among discouraged unemployed workers. At the same time, pockets of high unemployment pressure the health and cohesion of communities, thus representing a significant misallocation of resources. Employment searches may last a long time – as evidenced by the Atlantic provinces' relatively high long-term unemployment rate – and can lead workers to withdraw from the labour force (Busby 2008). Building the political will for universality in EI's access requirements and benefit duration or, at a minimum, some form of portability in benefits, would likely provide a boost to a labour force that is less well deployed than the national average.

An aging population naturally focuses attention on policies affecting older actual and potential workers. A combination of government program incentives, in addition to personal wealth and job prospects, incent older workers to withdraw from the labour force. Later retirement, however, can boost output and incomes, especially in an aging population. Over the last three decades, participation rates among older workers have declined for men and risen for women, and the historic more than 20percentage-point gender gap is expected to narrow further as more educated cohorts of women stay in the workforce longer (Figure 8). For policymakers, cross-regional differences suggest that policies can affect these trends.

The most palatable reforms that target older workers would aim to make retirement decisions more neutral, as opposed to encouraging either early or late retirement. Because present federal programs tends to encourage early retirement (Tompa 1999), one option is to increase the benefit entitlement of later retirement in the Canada Pension Plan (CPP) relative to early retirement, moving the plan closer to actuarial neutrality.¹⁰ Other options include sheltering GIS recipients from clawbacks of increased CPP benefits related to delayed retirement, (Milligan 2005), and increasing the threshold eligibility ages for OAS, GIS and CPP to reflect increases in available working life and life expectancy.

The proposed removing of the early work-cessation test – which requires individuals who start their CPP pension before age 65 to either stop work or reduce their earnings – from the CPP in 2012 would reduce one incentive to leave the workforce. Delaying the age when contributions to private pension plans and RRSPs must cease could also help. Though many reforms that target older worker participation are Ottawa's responsibility, the Atlantic provinces control seniors' programs and other relevant frameworks such as pension regulation. Since the provinces are affected by federal policies that discourage work among older people, they have an interest in changes to those policies, and their dealings with Ottawa on pension and other issues should reflect that fact.

The private sector must also shoulder some of the responsibility for better workforce retention. Succession planning in Atlantic Canadian small and medium-sized enterprises (SMEs), for example, is a particularly important issue for the region (Dodds 2009). In this regard, the creation of flexible retirement schedules and other incentives could help firms retain workers more effectively than government reforms alone can do.

While each of these options has merit, working on this front alone has limited scope to mitigate demographically driven costs and slower workforce growth (Busby, forthcoming). McNiven (2009) has found that a highly unrealistic increase in aggregate participation rates of 0.5 percentage points per year would be necessary to offset the impact of changes in the population structure to meet future workforce demand. So policymakers seeking to more fully protect living standards in the Atlantic provinces from demographic pressure must look to other tools as well.

¹⁰ The May 25, 2009 information paper by the federal Department of Finance has modestly proposed such reforms for the CPP by increasing the early pension reduction to 0.6 percent per month for each month that a pension is taken before age 65; and augmenting late pension benefits by 0.7 percent per month for each month that the pension is taken after age 65.





Note: Dynamic calculations for these figures not in text. Contact authors for more information. Source: Busby (forthcoming).

International and Interprovincial Immigration

As noted already, a probable key factor in the Atlantic provinces' generally lower net in-migration rates is the trend to greater population growth in urban compared to rural regions. If attracting migrants to rural areas is a goal, awarding additional points within the Provincial Nominee Program (PNP) system for immigrants with occupations likelier to reside in these areas could help. So could more points for potential applicants with family or community ties in rural regions, targeting applicants who are likelier to stay.

Larger centres, however, seem to have more attraction power. Metropolitan population growth

rates in Atlantic Canada and other provinces are relatively similar (Figure 9). Sometimes, they are even in Atlantic Canada's favour. For example, in the "smaller metropolitan" categories, which range in size from 50,000 to 249,999 persons, those in New Brunswick and Newfoundland and Labrador grow at a faster rate than those in Ontario and Saskatchewan from 2001 to 2006.

The 2007 federal budget created new rules for an "experience class" of immigrants, which makes it easier for certain temporary workers and international students enrolled at Canadian postsecondary institutions to become permanent residents and, ultimately, citizens. Because of its large base of postsecondary institutions, Atlantic Canada stands to



Source: Authors' calculation from Statistics Canada 2001 and 2006 Census.

benefit from this change. A larger role for businesses in ensuring that immigrants have work upon arrival and exposure to the local culture – factors that improve the likelihood that they will stay where they first arrive could also help.

Improved tools to reduce interprovincial migration flows of young graduates are another policy option. For instance, the Nova Scotia Graduate Tax Credit allows for a one-time \$2,000 income-tax reduction that can be claimed immediately after graduation. Hence, it is weakly contingent on individuals staying and working in the province. New Brunswick, on the other hand, offers tax and tuition rebates that are directly contingent upon graduates staying within the province. New Brunswick offers a large tax reduction – \$4,000 per year over a five-year period – and a 50 percent tuition rebate that takes 20 years to fully claim (Schirle 2009). For such policies to be effective in keeping more graduates within the region, they need to follow more closely the New Brunswick design. Further, provinces may want to consider extending the length of tax reductions and allow them to increase in size each year over a longer, 10year post-graduation period.

Making Workers More Productive

Whether or not the Atlantic provinces are successful at blunting historically strong out-migration forces, efforts must also target productivity improvements in a local workforce that is likely to contract in the years ahead. Underperforming educational institutions are never acceptable: as fewer youth enter the labour force, the basic and higher skills of each person take on even more importance. If we rank the provinces among the 57 countries in the key "combined math" scores from the latest Programme for International Student Assessment round, where Canada as a whole rank 10th, Newfoundland and Labrador ranked 18th, Nova Scotia 21st, New Brunswick 24th and P.E.I. 30th (Appendix Figure A1). Compared to the other Canadian provinces, the Atlantic provinces tend to rank among the lowest (Buissière et al. 2007).¹¹

Future jobs will increasingly require postsecondary education training, highlighting the key role of the postsecondary education system in boosting workforce productivity. With the right amount of ongoing improvement, the stock of universities and colleges in Atlantic Canada today should provide a solid base to help cope with demographic change.

The human capital challenge continues later in life. The Atlantic provinces, indeed Canada generally, tend to lag behind other OECD countries in adult literacy scores and skill accumulations - key drivers of productivity and economic growth (Coulombe and Tremblay 2005). Over half of Atlantic Canadians 16 and over - nearly one million people suffer from low literacy (Appendix Figure A2). Although Nova Scotia's performane is better than average, roughly 21 percent of Atlantic Canadian adults perform at the lowest level of literacy, Level 1, while 30 percent have the second-lowest level of proficiency, Level 2 (ABC 2005). As rapid technological change forces workers to switch occupations over their working careers, low investments in adult training will limit the adaptability of workers, thus hindering the ability of regions to cope with demographic change. Greater acquisition and retention of these skills by adults is an important potential route to raise productivity and living standards.

The ability of workers to accomplish more with equal effort also rests on investing in the tools workers need to do the job. Regions with high levels of investment per worker increase their overall competitiveness and living standards. Setting aside Newfoundland and Labrador, where resource industries have boosted these figures, the rest of Atlantic Canada's performance on this score is weak (Appendix Figure A3). On average, workers in the Atlantic Provinces receive 75 cents for every dollar of investment in plant and equipment enjoyed by workers in Canada as a whole. Improving regional labour mobility, worker skills and more competitive tax regimes – along the lines that New Brunswick is designing – would enhance the attractiveness of the region as a place to invest.

Businesses in New Brunswick and Newfoundland and Labrador face some of the lowest marginal tax rates in Canada (Mintz and Chen 2009). This could also explain, in part, why their investment per worker performance is above that in the other two Atlantic provinces. Moving from an old retail sales tax to a value-added tax through GST harmonization would reduce marginal tax rates in P.E.I., and both Nova Scotia and P.E.I. could further improve their relative tax position on the cost of doing business if relatively high statutory corporate tax rates were lowered. That said, overall tax levels not only affect today's investment decisions, but the revenues raised from them also affect the size and scope of future public programs – a question to which we now turn.

Preparing for Demographic Pressure on Key Public Programs

The future stability and competitiveness of provincial taxes in Atlantic Canada depends on their governments' ability to contain the rapidly escalating costs of healthcare. In the past two decades, Atlantic provinces have seen real revenues grow alongside the economy, increasing from roughly \$5,500 per capita in 1986/87 to \$8,300 in 2007/08, a growth rate of 1.9 percent annually. Over this same period, real percapita public-health expenditure rose from \$1,600 in 1986/87 to \$3,100 in 2007/08, a rate of 3 percent annually. Service limits and more urban-focused service delivery can reduce these growth rates, but more fundamental changes must occur if tax burdens are not to rise intolerably.

One option is to prefund some healthcare programs whose costs are clearly about to rise (Robson 2002). For example, one program whose costs are climbing faster than others is family and senior pharmacare. Consider some additional scenarios – none remotely unreasonable – for increases in the cost of drug benefit programs in Nova Scotia and New Brunswick. In a 4 percent growth-per-person scenario, public drug

¹¹ In spite of these low average scores, another worrisome result from the recent PISA round is the variance. Rather than having a large cluster of students performing around the lower average results, the Atlantic Provinces have a relatively small proportion of high-performing students and a large proportion of poor performing ones (Buissière et al., 26, Table 1.3).

expenditures in Nova Scotia will rise to 2 percent of GDP from about 0.9 percent currently in 50 years' time. In a 6 percent growth scenario, the cost increase will be to 5.2 percent of GDP. For New Brunswick, the share of drug benefit expenses would rise from about 0.6 percent of GDP today to 0.9 percent in a 4 percent scenario and to 2.4 percent in a 6 percent growth scenario, over a 50-year period.¹²

Prefunding along lines similar to the changes that stabilized the Canada Pension Plan would require babyboomers to pay more into a fund before they begin drawing from it, levelling the cost over time. Using the most recent data, and targeting an assetexpenditure ratio of five in 50 years' time – much like the CPP reforms – we project the required level of prefunding in Appendix Table A3. The net contributions required to stabilize the cost of these programs are not trivial – several hundred dollars per adult, depending on cost escalation and returns on invested funds – but they would reduce the intergenerational stresses of these programs and likely ensure their survival for years to come.

Barring a quick turnaround in economic expansion for most Atlantic provinces, the growing levels of expenditures due to an aging population will place notable stress and attention on the horizontal equity of federal transfers to the provinces, especially the Canada Health Transfer (CHT) (Ruggeri 2009). One solution for avoiding a major reworking of the CHT would be for the federal government to create a seniors' health grant that would automatically cushion provinces from some of the consequences of different aging rates (Robson 2001). The alternative of ad hoc increases in response to emergency provincial funding needs is much less promising.

Conclusion

Without large future increases in output per working-age person in the Atlantic provinces, a shrinking workforce – which may be the case as soon as 2010 – will dampen future economic growth. Even if the trends of net outmigration were to reverse in coming years, slower growth in output and incomes per person are likely. Aging populations also mean that the Atlantic provinces should expect demographically driven program spending to outpace growth in the tax base.

To limit increases in their tax burdens, the Atlantic provinces could prefund the pharmacare element of their healthcare programs. The Atlantic provinces must also devote energy to attract more immigrants, likely through a targeted PNP, and look at how policies for the postsecondary education system and its larger cities can further the goal of attracting and retaining working-age people.

As well, workforce mobility and flexibility could be improved by removing the disincentives to move inherent in a regionally linked EI program. Future prospects would also improve were Atlantic regions to work with the federal government to reduce the incentives for older workers to leave the workforce.

The overall demographic challenge is a daunting one – too large for any single policy change to improve decisively. All the more reason, then, for an early start on the many fronts – migration, education and skills training, investment and fiscal programs – that taken together, can help Atlantic Canada prosper in the years ahead.

¹² Data by age group and sex were not available for P.E.I. and Newfoundland and Labrador.

Appendix

Table A1: Projection Assumptions and Results

2008 2018 2028 2038 2048 2058 Assumptions (estimates)							
Assumptions Here Life Expectancy at Birth (years) Newfoundland and Labrador Male 75.8 77.4 78.7 79.7 80.7 81.7 Female 81.3 82.9 83.9 84.9 85.9 86.9 Prince Edward Island 76.8 78.1 79.1 80.1 81.1 82.1 Female 81.6 83.2 84.2 85.2 86.2 87.2 Nova Scotia 70.1 80.1 81.1 82.1 82.2 86.2 87.2 New Scotia 79.1 80.1 81.1 82.1 82.2 86.5 87.2 New Brunswick 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1		2008 (estimates)	2018	2028	2038	2048	2058
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Female 81.3 82.9 83.9 84.9 85.9 86.9 Prince Edward Island Male 76.8 78.1 79.1 80.1 81.1 82.1 Female 81.6 83.2 84.2 85.2 86.2 87.2 Nova Scotia 76.5 78.1 79.1 80.1 81.1 82.1 Female 81.6 83.2 84.2 85.2 86.2 87.2 New Brunswick 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Ferrility Rate 1.46 1.46 1.46 1.46 1.46 1.63 1.63 New Foundland and Labrador 1.50 1.50 1.50 1.50 1.50 1.50 New Brunswick 1.50 1.50 1.50 1.50 1.50 1.50 New foundland and Labrador 0 1.50 1.500 1.500 1.500 1.500 <td>Male</td> <td>75.8</td> <td>77.4</td> <td>78.7</td> <td>79.7</td> <td>80.7</td> <td>81.7</td>	Male	75.8	77.4	78.7	79.7	80.7	81.7
Prince Edward Island International Allow International Allow	Female	81.3	82.9	83.9	84.9	85.9	86.9
Male 76.8 78.1 79.1 80.1 81.1 82.1 Female 81.6 83.2 84.2 85.2 86.2 87.2 Male 76.5 78.1 79.1 80.1 81.1 82.1 Male 76.5 78.1 79.1 80.1 81.1 82.1 New Brunswick 81.6 83.2 84.2 85.2 86.2 87.2 Male 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Ferrility Rate 1.66 1.46 1.46 1.46 1.46 1.46 1.63	Prince Edward Island					- , , ,	
Female 81.6 83.2 84.2 85.2 86.2 87.2 Nova Scotia Male 76.5 78.1 79.1 80.1 81.1 82.1 Male 81.6 83.2 84.2 85.2 86.2 87.2 New Brunswick 81.6 83.2 84.2 85.2 86.2 87.2 Male 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.50 <td>Male</td> <td>76.8</td> <td>78.1</td> <td>79.1</td> <td>80.1</td> <td>81.1</td> <td>82.1</td>	Male	76.8	78.1	79.1	80.1	81.1	82.1
Nova Scotia Init	Female	81.6	83.2	84.2	85.2	86.2	87.2
Male 76.5 78.1 79.1 80.1 81.1 82.1 Female 81.6 83.2 84.2 85.2 86.2 87.2 New Brunswick Male 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate New Foundland and Labrador 1.46 1.46 1.46 1.46 1.46 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.50	Nova Scotia						-,
Female 81.6 83.2 84.2 85.2 86.2 87.2 New Brunswick Male 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate	Male	76.5	78.1	79.1	80.1	81.1	82.1
New Brunswick Male Tr.0 Tr.0 Tr.0 Tr.0 Tr.0 Male 77.0 78.3 79.3 80.3 81.3 82.3 Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate	Female	81.6	83.2	84.2	85.2	86.2	87.2
Male Female 77.0 78.3 79.3 80.3 81.3 82.3 Total Fertility Rate 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate 1.46 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.63 1.50	New Brunswick						-,
Female 82.2 83.5 84.5 85.5 86.5 87.5 Total Fertility Rate Newfoundland and Labrador 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.46 1.63 1.	Male	77.0	78.3	79.3	80.3	81.3	82.3
Total Fertility Rate 1.46 <th1.50< th=""> 1.50 1.50<!--</td--><td>Female</td><td>82.2</td><td>83.5</td><td>84.5</td><td>85.5</td><td>86.5</td><td>87.5</td></th1.50<>	Female	82.2	83.5	84.5	85.5	86.5	87.5
Total Fertility Rate Image: Newfoundland and Labrador 1.46 1.50 1.50 1.50 <th< td=""><td>i cinaic</td><td>02.2</td><td>05.7</td><td>01.9</td><td>09.9</td><td>00.9</td><td>07.9</td></th<>	i cinaic	02.2	05.7	01.9	09.9	00.9	07.9
Newfoundland and Labrador 1.46 <th1< td=""><td>Total Fertility Rate</td><td></td><td></td><td></td><td></td><td></td><td></td></th1<>	Total Fertility Rate						
Prince Edward Island 1.63<	Newfoundland and Labrador	1.46	1.46	1.46	1.46	1.46	1.46
Nova Scotia 1.50	Prince Edward Island	1.63	1.63	1.63	1.63	1.63	1.63
New Brunswick 1.50 1.50 1.50 1.50 1.50 1.50 Net International Migration (persons) Newfoundland and Labrador Optimistic Migration Scenario 1,500 1,500 1,500 1,500 1,500 1,500 1,500 Pessimistic Migration Scenario 259 250	Nova Scotia	1.50	1.50	1.50	1.50	1.50	1.50
Net International Migration (persons) Newfoundland and Labrador 1,500 1,790	New Brunswick	1.50	1.50	1.50	1.50	1.50	1.50
Net International Migration (persons) Newfoundland and Labrador 1,500 1,790 1,179 1,179 1,179					, .		
Optimistic Migration Scenario 1,500 1,790 <t< td=""><td><i>Net International Migration (persons)</i> Newfoundland and Labrador</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	<i>Net International Migration (persons)</i> Newfoundland and Labrador						
Pessimistic Migration Scenario 259 2	Optimistic Migration Scenario	1,500	1,500	1,500	1,500	1,500	1,500
Prince Edward Island 1,790 351 3	Pessimistic Migration Scenario	259	259	259	259	259	259
Optimistic Scenario 1,790 1,179 <td>Prince Edward Island</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Prince Edward Island						
Pessimistic Scenario 351 351 351 351 351 351 Nova Scotia 0ptimistic Scenario 3,600 3,600 3,600 3,600 3,600 3,600 Pessimistic Scenario 1,179 1,179 1,179 1,179 1,179 1,179 New Brunswick 0ptimistic Scenario 5,100 5,100 5,100 5,100 5,100 5,100 Pessimistic Scenario 619 619 619 619 619 619 Atlantic Canada 0ptimistic Scenario 11,990 11,990 11,990 11,990 11,990 Pessimistic Scenario 2,408 2,408 2,408 2,408 2,408 2,408 Net Interprovincial Migration (persons) Newfoundland and Labrador 150 150 150 150 150 150	Optimistic Scenario	1,790	1,790	1,790	1,790	1,790	1,790
Nova Scotia John Scotia <thjohn scotia<="" th=""> <thjohn scotia<="" th=""></thjohn></thjohn>	Pessimistic Scenario	351	351	351	351	351	351
Optimistic Scenario 3,600 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 5,100 <td>Nova Scotia</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Nova Scotia						
Pessimistic Scenario 1,179 1,179 1,179 1,179 1,179 New Brunswick 0ptimistic Scenario 5,100<	Optimistic Scenario	3,600	3,600	3,600	3,600	3,600	3,600
New Brunswick 5,100	Pessimistic Scenario	1,179	1,179	1,179	1,179	1,179	1,179
Optimistic Scenario 5,100 619 61	New Brunswick				,	, · · ·	
Pessimistic Scenario 619 619 619 619 619 619 Atlantic Canada 0ptimistic Scenario 11,990 11,990 11,990 11,990 11,990 11,990 Pessimistic Scenario 2,408 2,408 2,408 2,408 2,408 2,408 Net Interprovincial Migration (persons) Newfoundland and Labrador 150 150 150 150 150 150	Optimistic Scenario	5,100	5,100	5,100	5,100	5,100	5,100
Atlantic Canada 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 2,408 <	Pessimistic Scenario	619	619	619	619	619	619
Optimistic Scenario 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 11,990 2,408	Atlantic Canada						
Pessimistic Scenario2,4082,4082,4082,4082,4082,408Net Interprovincial Migration (persons) Newfoundland and Labrador Optimistic Scenario150150150150150	Optimistic Scenario	11,990	11,990	11,990	11,990	11,990	11,990
Net Interprovincial Migration (persons) Newfoundland and Labrador Optimistic Scenario 150 150 150 150	Pessimistic Scenario	2,408	2,408	2,408	2,408	2,408	2,408
Newfoundland and Labrador Optimistic Scenario 150 150 150 150 150 150	Net Interprovincial Migration (persons)						
Optimistic Scenario 150 150 150 150 150 150 150	Newtoundland and Labrador	150	1.50	1 - 0	1.50	150	150
	Optimistic Scenario	150	150	150	150	150	150
Pessimisic Scenario -3,281 0 0 0 0 0	Pessimisic Scenario	-3,281	0	0	0	0	0
Prince Edward Island	Prince Edward Island						
Optimistic Scenario 597 597 597 597 597 597	Optimistic Scenario	597	597	597	597	597	597
Pessimistic Scenario -68 0 0 0 0 0 0	Pessimistic Scenario	-68	0	0	0	0	0
Nova Scotia	Nova Scotia						
Optimistic Scenario 360	Optimistic Scenario	360	360	360	360	360	360
Pessimistic Scenario -1,377 0 0 0 0 0 0	Pessimistic Scenario	-1,377	0	0	0	0	0
New Brunswick	New Brunswick						
Optimistic Scenario 510	Optimistic Scenario	510	510	510	510	510	510
Pessimistic Scenario -1,545 0 <td>Pessimistic Scenario</td> <td>-1,545</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	Pessimistic Scenario	-1,545	0	0	0	0	0
Atlantic Canada	Atlantic Canada						
Optimistic Scenario 1,617 1,617 1,617 1,617 1,617	Optimistic Scenario	1,617	1,617	1,617	1,617	1,617	1,617
Pessimistic Scenario -6,271 0 0 0 0 0	Pessimistic Scenario	-6,271	0	0	0	0	0

Source: CANSIM, Authors' calculations.

Table A1 (continued)

	2008 (estimates)	2018	2028	2038	2048	2058
Results	(030000005)					
Total Population (000s)						
Newfoundland and Labrador	508					
Optimistic Scenario		522	527	516	497	479
Pessimistic Scenario		487	471	441	401	363
Prince Edward Island	140					
Optimistic Scenario		166	193	218	242	266
Pessimistic Scenario		144	147	146	143	140
Nova Scotia	938					
Optimistic Scenario		980	1,010	1,016	1,011	1,005
Pessimistic Scenario		940	934	898	849	799
New Brunswick	747					
Optimistic Scenario		796	851	889	919	951
Pessimistic Scenario		742	732	700	654	607
Atlantic Canada	2,333					
Optimistic Scenario		2,464	2,581	2,639	2,669	2,701
Pessimistic Scenario		2,313	2,284	2,185	2,047	1,909
Working-Age Population (000s)						
Newfoundland and Labrador	340					
Optimistic Scenario		328	303	286	281	264
Pessimistic Scenario		301	264	232	213	195
Prince Edward Island	89	-		-	-	
Optimistic Scenario		104	116	130	145	156
Pessimistic Scenario		89	83	81	81	77
Nova Scotia	614					
Optimistic Scenario		617	583	580	586	565
Pessimistic Scenario		587	526	492	467	427
New Brunswick	489					
Optimistic Scenario		502	499	517	544	553
Pessimistic Scenario		462	414	381	355	323
Atlantic Canada	1,532					
Optimistic Scenario		1,551	1,501	1,513	1,556	1,538
Pessimistic Scenario		1,439	1,287	1,186	1,116	1,022
Ola-Age Dependency (65+718-64) (%)	21.6					
Newfoundland and Labrador	21.6	22.4	45.0	52.1	40 (521
Optimistic Scenario		32.4 25.2	45.9	52.1	49.6	55.1
Duin as Edward Island	22.7	33.3	32.1	02.8	61.9	60.6
Ontimistic Secondia	23./	27.5	22.0	25 /	25.0	20 /
Detamistic Scenario		2/.)	55.Z	5).4 49 7	55.0 46.5	28.4 50.0
Nerre Section	22.5	52.1	44.4	40./	40.)	50.0
Ontimistic Sconorio	23.3	20.9	426	46.2	<i>((</i> 2 0)	40.2
Dessimistic Scenario		30.0 32.6	42.0	40.2 54 4	43.9	40.3
New Brungwick	23.2	52.0	·1/./	94.4))./	90.1
Optimistic Scenario	23.2	30.5	40.0	42.1	30.0	42.1
Pessimistic Scenario		33.3	48.3	56.0	57.0	60.0
Atlantic Canada	23.0	55.5	-0.5	50.0	J/.0	00.0
Optimistic Scenario	23.0	30.8	41 7	45.0	42.7	45.9
Pessimistic Scenario		33.3	48.6	56.2	55.8	58.5
		5515	1010	, 3.2	22.0	,0.,

Source: CANSIM, Authors' calculations.

Appendix	Table A2: Annual Real GDP per capita Growth Under Various Scenarios, Actual and Projected				
		(percent)			
	Actual, 1989–2008				
	Atlantic Provinces	2.24			
	Newfoundland and Labrador	3.57			
	Prince Edward Island	2.00			
	Nova Scotia	1.60			
	New Brunswick	2.07			
	Pessimistic Scenario				
	Atlantic Provinces	1.63			
	Newfoundland and Labrador	1.74			
	Prince Edward Island	1.59			
	Nova Scotia	1.43			
	New Brunswick	1.51			
	Optimistic Scenario				
	Atlantic Provinces	1.72			
	Newfoundland and Labrador	1.78			
	Prince Edward Island	1.71			
	Nova Scotia	1.53			
	New Brunswick	1.67			
Source: Authors'	calculations as described in text.				



Backgrounder 120

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Source: ABC (2005).



Backgrounder 120

Appendix Table A3 : Contribution Rates to Stabilize Cost of Pharmacare over 50 Years						
		2009 Amount <i>\$ billion</i>	Contribution as share of GDP %	Contribution per person 18+ \$	Net contribution per person 18+ \$	Unfunded liability <i>\$ billion</i>
Nova Scotia						
Optimistic Scenario)					
Return on Fund	Assets: 3%					
Spending Growth	n 4%	0.6	1.6	723	309	9.4
Spending Growth	n 6%	1.0	2.9	1,352	929	30.0
Return on Fund	Assets: 5%					
Spending Growth	n 4%	0.5	1.4	662	247	5.1
Spending Growth	n 6%	0.9	2.5	1,144	721	15.3
Pessimistic Scenario						
Return on Fund A	Assets: 3%					
Spending Growth	n 4%	0.6	1.8	828	412	11.8
Spending Growth	n 6%	1.2	3.4	1,561	1,136	32.9
Return on Fund	Assets: 5%					
Spending Growth	n 4%	0.6	1.6	748	332	6.5
Spending Growth	n 6%	1.0	2.8	1,303	879	17.1
New Brunswick						
Optimistic Scenario)					
Return on Fund	Assets: 3%					
Spending Growth	4%	0.3	0.9	416	148	3.9
Spending Growth	n 6%	0.5	1.7	784	511	15.3
Return on Fund	Assets: 5%	•••		,		- ,
Spending Growth	n 4%	0.3	0.8	385	116	2.1
Spending Growth	n 6%	0.4	1.5	671	397	7.8
1 0						
Pessimistic Scenario						
Return on Fund A	Assets: 3%					
Spending Growth	n 4%	0.4	1.2	546	266	6.4
Spending Growth	n 6%	0.6	2.1	955	681	16.7
Return on Fund	Assets: 5%					
Spending Growth	n 4%	0.3	1.1	490	209	3.4
Spending Growth	n 6%	0.5	1.8	797	523	8.6

Source: Authors' calculations as described in text.

References

- ABC Canada Literacy Foundation. 2005. "International Adult Literacy and Skills Survey: Report Summary." ABC. November.
- Buissière, Patrick, Tamara Knighton and Dianne Pennock. 2007. "Measuring up: Canadian Results of the OECD PISA Study, The Performance of Canada's Youth in Science, Reading and Mathematics, 2006 First Results for Canadians aged 15." Catalogue no. 81-590-XIE. Ottawa: Statistics Canada.
- Busby, Colin. 2008. "Fixing a Persistent Problem: Canada's Regional Pockets of Unemployment." C.D. Howe Institute e-brief 66. Toronto: C.D. Howe Institute. October.
- —."In Play or on the Sidelines? Labour Force Participation and Demographic Aging in Canada." (Forthcoming.) C.D. Howe Institute Backgrounder. Toronto: C.D. Howe Institute.
- Busby, Colin, and William B.P. Robson. 2009. "Equipping Ourselves in Tough Times: Canada's Improved Business Investment Performance." C.D. Howe Institute e-brief no. 83. Toronto: C.D. Howe Institute. July.
- Canadian Institute for Health Information (CIHI). 2008. National Health Expenditure Trends, 1975-2008. Ottawa.
- Coulombe, Serge, and Jean-François Tremblay. 2005. *Public Investment in Skills: Are Canadian Governments Doing Enough?* C.D. Howe Institute Commentary 217. Toronto: C.D. Howe Institute. October.
- Dodds, Colin J. 2009. "Participation and Development of Skilled Workers." Presentation at the C.D. Howe Institute's Policy Conference on Atlantic Canada's Demographic Future. Halifax. May.
- du Plessis, Valerie, Roland Beshiri, Ray D. Bollman and Heather Clemenson. 2002. "Definitions of Rural." Agriculture and Rural Working Paper Series, Working Paper 61. Ottawa: Statistics Canada. Cat. 21-601-MIE.
- Guillemette, Yvan. 2007. "Chronic Ridgidity: The East's Labour Market Problem and How to Fix it." C.D. Howe Institute ebrief no. 51. Toronto: C.D. Howe Institute. December.
- McNiven, James D. 2009. "Changing Workforce Demographics: Nova Scotia's Biggest Challenge." Presentation at the C.D. Howe Institute's Policy Conference on Atlantic Canada's Demographic Future. Canmac Economics Ltd. Halifax. May.

- Milligan, Kevin. 2005. *Making It Pay to Work: Improving the Work Incentives in Canada's Public Pension System.* C.D. Howe Institute Commentary 218. Toronto: C.D. Howe Institute. October.
- Mintz, Jack, and Duanjie Chen. 2009. *The Path to Prosperity: Internationally Competitive Rates and a Level Playing Field.*C.D. Howe Institute Commentary 295. Toronto: C.D. Howe Institute. September.
- Office of the Chief Actuary (OCA). 2008. Actuarial Report (8th) on the Old Age Security Program as at 31 December 2006. Ottawa: Office of the Superintendent of Financial Institutions.
- Robson, William B.P. 2009. "The Boomer Bulge: Dealing With the Stress of Demographic Change on Government Budgets in Canada." C.D. Howe Institute e-brief 71. Toronto: C.D. Howe Institute. October.
- —. 2002. Saving for Health: Pre-Funding Health Care for an Older Canada. C.D. Howe Institute Commentary 170. Toronto: C.D. Howe Institute. January.
- 2001. Will the Baby Boomers Bust the Health Budget? Demographic Change and Health Care Financing Reform.
 C.D. Howe Institute Commentary 148. Toronto: C.D.
 Howe Institute. February.
- Ruggeri, Joe. 2009. "Fiscal and Economic Implications of Population Aging in Atlantic Canada." Presentation at the C.D. Howe Institute's Policy Conference on Atlantic Canada's Demographic Future. Halifax. May.
- Schirle, Tammy. 2009. "Fiscal Implications of Demographic Change and the Role of Education and Retirement Policy in Atlantic Canada." Presentation at the C.D. Howe Institute's Policy Conference on Atlantic Canada's Demographic Future. Halifax. May.
- Statistics Canada. 2005. "Population Projections for Canada, Provinces and Territories." Cat no. 91-520-XWE. Statistics Canada: Ottawa. December.
- ----. 2008. "Report on demographic situation in Canada: 2005 and 2006." Statistics Canada: Ottawa. July.
- Tompa, Emile. 1999. "Transitions to Retirement: Determinants of Age and Social Security Take Up." A Program for Research on Social and Economic Dimensions of an Aging Population. Research Paper 6. August.

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