

The Coming Demographic Challenges for Atlantic Canada: Implications for Industrial Change and Productivity

Paper for the Annual meeting of the Atlantic Canada Economics Association
October 2003

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1. Introduction²

This paper looks forward over the coming 30 to 50 years to explain and comment on the projected, demographic changes that lie ahead, in the context of the economies of the Atlantic Provinces. There have been several analyses of the coming major demographic challenges in the Canadian and world context and the purpose of this paper is to reflect on their implications for our own region.

The paper references several sources. Work by the Conference Board of Canada, published in their report in 2000 on *Performance and Potential*, is utilized, as well as a significant paper presented to the Canada Pension Plan's Seminar on *Demographic, Economic and Investment Perspectives for Canada 2003 to 2050*, this May by David Baxter, Executive Director of the Urban Futures Institute, Vancouver. The paper also relies on our own population modeling capability in the PEI Treasury and many thanks go to Hank Spierenburg for his patience in running simulations and putting together the charts that are displayed. I should also note the work of the Atlantic Provinces Economic Council on the aging population in Atlantic Canada, the Report of the *Prince Edward Island Population Strategy 1999*, the population modeling work of Statistics Canada and their annual *Reports on the Demographic Situation*, and reports of the Newfoundland and Labrador Government on *Demographic Change*.

2. Population Trends

It was Reverend Thomas Malthus who, at the end of the 18th Century, in his "*Essay on the Principle of Population*" developed the disturbing theory that population growth would invariably outstrip the ability of the economy to provide for itself, leading to famine and labor surpluses. This also led to the term of Economics as the Dismal Science.

¹ The paper represents solely the views of the author and should not be construed in any way to represent an expression of provincial government policy.

² Note that the text does not include full references. These can be found at the end of the paper.

Malthus was proven very wrong so far as the global economy is concerned, because productivity gains, through the introduction of technological change, outstripped growth of the population. The present prospect for Canada, as well as much of the western world for the coming century puts Malthus's underlying assumption even more on its head. We can look forward to a future where our population is actually in a protracted decline as a result of the dropping family size.

The popular book of David Foot, *Boom Bust and Echo, How to Profit from the Coming Demographic Shift* emphasizes the fallout from the baby boom of the postwar period, the subsequent baby bust in the 1960's and the weak echo effect of the 1980's. The echo effect is presently the cause for the large student enrolments being experienced in Canadian colleges and universities. But following this temporary upsurge in the population structure one finds reductions in all subsequent age categories, leading to a progressive decline in the size of the population, starting in different periods in different provinces.

The population requires at least 2.1 children per family to grow from Natural Increase. Statistics Canada notes that in no female age cohort borne since 1946 has the average total fertility rate in Canada exceeded that number. Even at present fertility rates of less than 1.6 the population will inevitably shrink from Natural Decrease in due course. David Baxter notes that population projections that assume no change in the present fertility rate will induce a Natural Decrease in the population for Canada after about 2015. But as is shown in Chart One, from his work, the new population of maturing adults are tending to have children progressively later in their lives and fewer children overall. He notes that countries such as Japan, Spain, Greece, Portugal and Italy already have a total fertility rate at about 1.3, where Canada is heading. Chart Two portrays his projection for Canada to 2051. This being the case the decline in population induced by Natural Decrease will accelerate in coming years.

Total fertility rates for the Atlantic region are compared to Canada in Table One. With the exception of PEI, Atlantic Canadians have fertility rates which are well below the national average, and in the case of Newfoundland, at 1.24 in 2001, are exceptionally low already by international standards. In all cases the degree of shrinkage in family size that this implies is striking.

The mortality rate among older populations is expected to fall slowly and marginally in the coming years, which will have the effect of slowing the overall population decline in the medium term. But after 2025 the large number of baby boomers in the population will begin to reach the late 70's and the number of deaths will inevitably accelerate.

For the Atlantic Provinces the move from Natural Increase to Natural Decrease is very predictable and will occur sooner than in other provinces. Chart Three displays the projected Natural Decrease in the populations of each of the Atlantic Provinces. It can be seen that in the case of Newfoundland this actually started in 2003. For the region generally, one can expect to see Natural Decreases between now and 2013, and continuing into the future. This will continue as far as one can project, if the fertility rates remain on average below 2.1.

The structure of the population at present and in the next 30 years is very much the product of the Baby Boom generation which is today the dominant group in the Canadian population. These people are presently 40 to 55 years of age. This bulge in the population structure dominated movement of people into schools and colleges in the 1960's and into the labor force in the 1970's and 1980's. It will soon dominate movement of the population into retirement and later into death. The changing age structure of the PEI population can be clearly seen in Chart 4. It might be noted that the representation of the population in this chart is in absolute numbers.

The dominant characteristic of the new population over the longer term, is the lowering of the birth rate and the reduction in number of children moving through the system. This can be seen in the Chart. Moving forward beyond 2030, one can picture less children moving into the child bearing years having less children, producing a continuing cycle of population decline.

This is a future that is truly unique in the history of Canada. In fact the only Canadian groups that fall outside this fundamental trend are the aboriginal populations. The same is true of the Hispanic population of USA.

Immigration has played a key role in the growth of the Canadian population since the early 19th Century. Immigration can offset to a degree the impact of the future Natural Decrease. However in examining the potential growth of the Canadian labor force in the coming 20 years the Conference Board of Canada noted that even taking an optimistic view of the potential future level of immigration into Canada, there will not be enough immigrants to fully offset the effects of lower fertility rates and an aging population. To provide a context for this. Annual immigration levels of 84,000 in 1985 were raised to 257,000 by 1993. But from 1995 to 1998 they declined to 207,000. In fact, in more recent years target levels of 200,000 to 225,000 per year have not been achieved.

The work of the Urban Futures Institute, on behalf of the Canada Pension Plan, found that in order to maintain a weakly growing labor force in Canada through the 21st Century immigration had to progressively rise to levels in excess of 400,000 per year, in ever increasing numbers.

Table Two shows the Net International Migration figures to Canada, on average 1996 to 2001 for the Atlantic Provinces and Canada total. In this period it averaged 156,000. For this region, international immigration is very small. Table Three shows the share of actual immigrants to Canada in 2001 by province, by comparison with provincial shares of the Canadian population. Whereas the region has 7.5 per cent of the Canadian population it only had 1.3 per cent of Immigrants that year.

The recent revisions to the population of Canada, incorporating the 2001 Census results by Statistics Canada indicate that in the Atlantic Provinces, the populations of Newfoundland and New Brunswick declined 1996 to 2001 while those of Nova Scotia and PEI showed a very small amount of growth. The growth by province is displayed in Chart 5. With the exception of Ontario, Alberta and to a degree British Columbia, population growth across Canada has already become slight. One might bear in mind that the move to Natural Decrease had not occurred in the 1996 to 2001 period.

In terms of the moderating impact of Immigration, this is concentrated in Toronto, Montreal and Vancouver. In addition, the Atlantic region continues to lose population to interprovincial migration, which is concentrated in the 20 to 30 year olds. Levels of immigration may increase to a degree but one cannot be optimistic that their effect on the Atlantic Provinces will be high. Even at the Canada level demographers have concluded that immigration can only moderate the prospect of future population decline to a degree, it cannot reverse it.

In view of the declining number of births and the population aging, the population of the region is very likely to shrink in absolute terms over the very long term as Natural Decrease takes its toll. Chart Six projects the population of PEI to the year 2030 (these projections do not incorporate the latest population estimates from Statistics Canada and are too high). In the case of Newfoundland, its population has been in steady decline from 1991 and at 520,000 is presently less than it was in 1971 when it was 531,000.

The degree of aging will be accentuated in the Atlantic provinces by comparison with other provinces as is shown in Table Four, which is from the work of Professor Merette of the University of Ottawa. Evidently the situation in Newfoundland, with a ratio of 56 per cent expected by 2040 will be most pronounced. The present pattern of elderly dependency is very similar across provinces, but as we move into the 21st Century so disparities will build, and the rate at which the population will age is higher in the Atlantic region.

The recent paper by APEC on *Urbanization and the Aging Population: What's Ahead for Atlantic Canada* emphasized that the future prospects for population growth in the region lie heavily in the larger urban centres. Other work by HRDC also noted that the rural areas of Nova Scotia are already predominantly older than the Halifax CMA and will be facing population pressures in the coming years. For PEI the largest concentration of older Islanders is actually in Charlottetown, with the youngest populations in Stratford, Cornwall and the surrounding rural areas. But beyond the urban fringe many rural areas have been in slow population decline for many decades already.

Clearly Canadian cities such as Vancouver, Toronto and Montreal that can attract international migrants to live, and cities that are attractive to interprovincial migration, such as Edmonton and Calgary, are more likely to avoid the prospect of population decline and rapid aging that the Atlantic provinces and other communities will experience in the medium term.

3. Labour Force Trends

The 2000 Conference Board of Canada study of the Canadian labor force concluded that the underlying demographic changes taking place will cause a massive labor shortage, lowering economic growth and making reliance on productivity gains imperative in the next 20 years. They also note that the growing difficulty in hiring and or retaining existing employees will dramatically alter the structure of Canadian labor markets.

A more sanguine view is provided by David Foot who sees a future of an older, perhaps more wise,

likely more wealthy, older population, leading Canada into a period of major productivity improvements, which we have avoided with the large labor surplus that characterized the 20th Century. He notes that an older population is more likely to be an investing population by contrast with a young population that requires extensive borrowing.

A similar, more positive view is held by Professor Merette from the University of Ottawa, in the article *The Bright Side: A Positive View on the Economics of Aging*, which notes that the participation rate of the labor force over 55 years will likely rise and technological change accompanied by deepening of human capital investment will create a stronger economy than some predict. However he does note that there will be regional tensions created by differing impacts across regions of Canada.

The PEI labor force is projected to continue to increase to about 2012, largely because of increased female labor force participation in the coming decade. Labor force participation of the older population is also likely to increase from present levels as labor shortages become more pronounced. Despite this, the overall participation rate of the over 15 year population will decline, simply because of the coming age structure, as can be seen in Chart Seven.

Chart Eight provides the projection of the female and male labor force for PEI which shows that after about 2005 the male labor force slows while the female labor force continues to expand. Chart Nine compares the younger participants in the labor force with the older. One can see that the labor force will be dominated by over 55 year olds after 2017, whose numbers move into a slow decline after that point. After 2020 both the population and the labor force will be significantly older than the present or at any past period in Canadian history.

In view of the differential impacts of these demographic changes across Canadian provinces one can see that the Atlantic region is vulnerable to population loss of younger members of its labor force to the more prosperous provinces which could create serious labor shortages in services. The projections do not presume increased interprovincial out migration.

In view of the aging of the population the number of retirees will escalate sharply. At the same time the number of children will be falling. Chart Ten shows the projection of 0-14 year olds and the over 65 year olds for PEI between now and 2030. One can see that at present there are 26,000 youngsters and 18,000 seniors. By 2030 that has reversed to 19,000 youngsters and 38,000 seniors.

Combining the projection of the over 65 year olds with the labour force projection provides an estimate of the Beneficiary ratio, that is the population likely to be receiving pension. Chart Eleven shows the result for PEI. The ratio increases from about 25 per cent at present, to 55 per cent by 2030. David Baxter projects that for Canada, retiree dependence will rise to about 49% by 2051, with immigration being the moderating factor in larger provinces. Without immigration the ratio rises to 69 per cent.

In summary, the aging population in Canada will by itself create its own special features. These can

be moderated by immigration. The demographic challenges facing the Atlantic region in the future will be more acute in view of the limited role of immigration and the history of interprovincial migration. The region's present population structure also indicates that these challenges will come earlier to this region than elsewhere.

4. Industrial Change and Productivity.

The economic demands of the coming population are set both by individual choices and those as expressed by governments. The Conference Board notes that the coming labor shortage will bid up the price of skilled staff and force productivity changes to occur.

It is likely that unemployment will fall drastically.

When looking at industrial change in the region the movement of the labour force out of goods production into services is a predominant trend. A future labor force increasingly dominated by females and older workers will accentuate this long term trend. Further, one might expect significant changes within the service sector itself. Presently the largest private sector employer is retail and wholesale. Introduction of new technologies in this sector is already occurring and one might see labor saving changes in this large employing sector.

One can speculate on the ability and desire of an older population to adopt new technologies that will be necessary to sustain economic progress in the coming world.

Demands for health services and elderly care will undoubtedly increase given the high level of utilization of these services by the older population. One might question whether a society that is dominated by pensioners in a highly competitive environment will be able to afford the level of individual care that is presently available. The region will become increasingly dependant on pension incomes, which are generally less than income from wages and salaries.

The proportion of the Atlantic provinces' economies that are devoted to Health services is already higher than say Alberta or Ontario. Table 5 displays the percent of the labor force in Health and Social Services in 2001 by province. One can see that Newfoundland at 12.6 per cent is already the highest in Canada.

Atlantic provinces are already concerned over federal transfers that are per capita based and have no special feature to assist provinces with high proportionate levels of elderly. Equalization may assist offset to some degree the lower relative incomes that the region will experience with such a heavy dominance of retirees in the coming years. But per capita based federal transfers will decline in tandem with population declines. Professors Serge Coulombe and Marcel Merette analysed the differential benefits of per capita transfers in the Canadian Tax Journal in 2000, titled *Fiscal Needs and the CHST Per Capita Division Rule*, which shows the relative advantages to Ontario and Alberta of these arrangements.

Education services are critical to the development and retention of a knowledgeable labor force. Given the secular decline in numbers of school age children that is beginning and the pending drop in the university and college populations, once the baby boom echo has passed through the system, one can expect a relative diversion of public resources to the health system in future years.

In terms of industrial prospects there will be a large number of relatively well off, healthy, elderly people in the North American economy in the coming 30 years. Thus the prospect for such sectors as the tourist sector and financial services should be very good. This is one aspect of the general move to a more service based economy that can be anticipated.

For rural regions, those beyond the reach of urban centres, population growth and aging are trends that have already been in place for some time, though it has been out migration, not reduced family size that has been the main determining factor. The reduction in number of farms as farms become larger, the move of larger stores to the outskirts of towns, the movement of younger populations to the larger urban centres, the decline in employment across most goods producing sectors, and rising service needs of an older population suggests that small communities will continue to face severe challenges.

In the May 2003 issue of Policy Options, Mario Polese and Richard Shearmur, concluded that proximity to a metropolitan area still remains key to competitiveness for most economic activities, despite the new information age. They state that rather than clinging to “the mirage of employment and population growth”, policy should focus on managing the coming population decline in these regions and ensuring that the in situ population has adequate access to public services.

In 2002 Professor Natalie Jackson, from the University of Tasmania in Australia came to PEI to discuss demographic change in the State of Tasmania. In her presentation “*When the Population Clock stops Ticking*”, she foresaw the decline in the population and the move to an elderly population that is about to occur in Australia and Tasmania particularly. She would likely agree with Mario Polese and Richard Shearmur that efforts to turn this around through economic stimulus aimed at employment growth would be futile. She was so taken by her findings as to come to PEI to explain the similarities.

Professor Jackson advocates three Policy Prescriptions, A - Accept the inevitable and say goodbye to a “populate or perish mentality”, B- Buffer the shorter term impacts of an aging population, and C- Celebrate the opportunities that a smaller population will bring for economic prosperity.

5. Conclusions

The Canadian economy is on the verge of a very significant shift not only to an older population but to a slowing growth in the labor force, leading to a slow but persistent decline in its population over an extended period. Accelerated rates of immigration are likely to offset this to a degree. For Atlantic Canada the decline in numbers will be more accelerated than at the national level in view of the role of immigration in the equation. While it is likely that there will be some increased immigration to

the region to help fill critical labor shortages in specific skills, the prospect of large scale immigration to the region at a level that would offset population trends is remote. In addition one must consider the desirability of promoting population growth for its own sake.

In closing, the coming longer term trends in the region's population pose significant public policy challenges. Policy prescriptions as advanced by Professors Jackson and Poles and Shearmur will not be accepted readily in the Canadian context. Evidently there will be an accentuation in shifts in industrial structure which in many ways are a continuation of trends that are apparent today. Many other countries are ahead of Canada in terms of the underlying demographic trends. The Atlantic region is also ahead of the country more generally in that regard, as will be seen in the coming decades.

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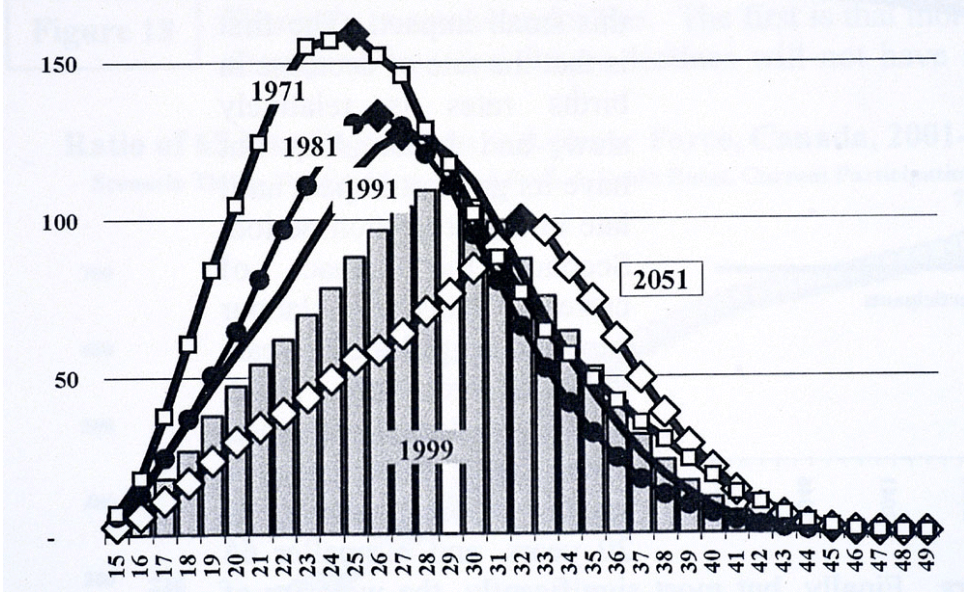
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**Births per 1000 Women in Age Group
1971 to 1999 Actual, 2051 Trend**



**Average Number of Births Per 1000 Women Aged 15 to 49,
Canada, 1921 to 1999 Actual, 2000 to 2051 Trend**

