

Canadian Economic Observer

Projected trends to 2031 for the Canadian labour force

by Laurent Martel*, Éric Caron Malenfant*, Jean-Dominique
Morency*, André Lebel*, Alain Bélanger**, Nicolas Bastien**



Statistics
Canada

Statistique
Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

email at STATCAN.infostats-infostats.STATCAN@canada.ca

telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following numbers:

- | | |
|---|----------------|
| • Statistical Information Service | 1-800-263-1136 |
| • National telecommunications device for the hearing impaired | 1-800-363-7629 |
| • Fax line | 1-514-283-9350 |

Depository Services Program

- | | |
|------------------|----------------|
| • Inquiries line | 1-800-635-7943 |
| • Fax line | 1-800-565-7757 |

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under “Contact us” > “Standards of service to the public.”

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Standard table symbols

The following symbols are used in Statistics Canada publications:

- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

Published by authority of the Minister responsible for Statistics Canada

© Minister of Industry, 2011

All rights reserved. Use of this publication is governed by the Statistics Canada [Open Licence Agreement](#).

An HTML version is also available.

Cette publication est aussi disponible en français.

Projected trends to 2031 for the Canadian labour force

By Laurent Martel*, Éric Caron Malenfant*, Jean-Dominique Morency*, André Lebel*, Alain Bélanger**, Nicolas Bastien** [1](#)

Highlights

- The Canadian labour force is projected to grow, according to all five projection scenarios in this paper. The labour force is projected to reach between 20.5 and 22.5 million people by 2031, up from 18.5 million in 2010.
- The share of the labour force among the total population aged 15 years and over would decrease in the forthcoming years, according to all projection scenarios. The overall participation rate would fall from 67.0% in 2010 to between 59.7% and 62.6% in 2031, a level not observed since the 1970s.
- According to three of the five scenarios in this paper, close to one person out of four in the labour force is projected to be 55 years or over by 2021. This proportion was 16.9% in 2010.
- By 2031, the number of persons in the labour force for each person aged 65 years or over not in the labour force could be lower than three according to all scenarios. This ratio was close to five to one in 2010.
- By 2031, about one in three persons in the labour force could be foreign-born. This proportion would be higher in Ontario and British Columbia.
- About one person out of three in the labour force would belong to a visible minority group by 2031. This proportion was 15.7% in 2006. It could reach about 40% in Ontario and British Columbia by 2031.

Introduction

Along with productivity, the labour force is a major determinant of the gross domestic product (GDP) of Canada. Therefore, how the labour force evolves in the coming years is important, especially in the current context of recovery following the 2008-2009 recession.

However, projecting the labour force is complex, since a number of factors must be considered. One of the most important factors is the aging of the population, which is already affecting the labour force, as the proportion of working persons aged 55 or over has increased rapidly in the past few years. Recent demographic projections made by Statistics Canada have shown that the aging of the population will accelerate starting in 2011 [2](#) as the baby boom cohorts age, resulting in a steady increase in retirements.

Other demographic factors must also be taken into account, including immigration, which since the end of the 1980s has been sustained at high levels and has primarily originated from Asian countries. [3](#) While immigrants may help to sustain population growth and meet some of Canada's labour needs, their participation rates are usually lower than those of the rest of the population. [4](#) Immigration is also quickly changing the

ethnocultural make-up of Canada's labour force, since the proportion of people belonging to visible minority groups has been rising for several years now.

Other factors also will affect how the labour force evolves in the future. For example, the expected impact of retirements within the baby boom cohorts might be lessened by the increased labour force participation of women ⁵ and of persons aged 50 years and over. ⁶ Finally, the steady rise in the education level of the Canadian population, observed for several decades, may also have an effect, since persons who are more educated tend on average to have higher participation rates but also to enter and leave the labour force later.

The purpose of this article is to present the main results of updated projections of Canada's labour force to 2031, projections that were made using Statistics Canada's Demosim microsimulation model. ⁷ Under this model, it is possible to simultaneously consider not only the demographic components of projected changes in the labour force, but also projected changes associated with education, immigration and visible minority groups. Analyzed from the perspective of five different scenarios for future change, these projections, which are useful for planning purposes and were developed as part of a project financed by three Federal departments, ⁸ also provide a context for the economic and social challenges that Canada will face in the coming decades with respect to economic growth, retirement, knowledge transfer, human capital, policies on older workers, economic integration of immigrants, employment equity, recognition of foreign credentials and vocational training.

The results are presented in two parts, which follow a section on the projection scenarios. The first part focuses on projected trends with respect to the size, growth and age structure of the labour force. ⁹ The second part shows what the ethnocultural make-up of the Canadian labour force might be in 2031. A description of the Demosim microsimulation model and the methods that underlie these projections are provided in the Appendix.

Projection scenarios

Five alternative scenarios were developed for these projections (Table [3.1](#)) in order to capture the effect of changing trends in demographics and participation rates and to reflect the uncertainty inherent in any projection exercise. These scenarios combine three assumptions on future population growth with three assumptions on future labour force participation rates. All the scenarios take into account upward trends in the education level of the Canadian population as well as differences in the labour force participation of immigrants and visible minority persons (see Appendix).

The three population growth assumptions, which were formulated for each province, ¹⁰ provide a range for the possible future change in the population. A detailed description of these assumptions can be found in Projections of the Diversity of the Canadian Population, 2006 to 2031. ¹¹ Under the medium growth scenario for Canada, a fertility rate of 1.7 children per woman is assumed to be reached in the first year of projection and remains constant for the entire period; life expectancy at birth in 2031 is projected to be 83.1 years for males and 86.6 years for females; the immigration rate is 7.5 per thousand, corresponding to the average recorded between 1990 and 2008; and internal migration is based on average migratory patterns for the periods 1995-1996, 2000-2001 and 2005-2006.

The low and high population growth assumptions on population growth differ from the medium growth assumption for fertility, mortality and immigration but are identical to it with respect to internal migration. Under the low and high growth assumptions, respectively, the fertility rate reaches 1.5 or 1.9 children per woman in 2013 and remains constant thereafter. Life expectancy at birth is only 81.7 years for males and 85.4 years for females in 2031 under the low growth assumption and reaches 84.5 years and 87.7 years, respectively, under the high growth assumption. Immigration declines to 6.0 per thousand under the low growth assumption, reflecting the lowest rate recorded since 1990; it rises to 9.0 per thousand according to the high growth assumption, which is also the highest rate recorded since 1990.

By comparing scenarios A, C and D, which differ only in the population growth assumptions, it is possible to isolate the effect that changes in fertility, mortality and immigration could have on the labour force in the future.

Three assumptions were formulated regarding the future trends in participations rates. ¹² The first assumption, called "constant participation rates", takes the participation rates of men by age group, province and education level that were recorded in 2008 ¹³ and keeps them constant over the entire projection period. The second, called the "recent trends in participation rates" assumption, takes the changes observed at the national level over the 10 years between 1999 and 2008 and extrapolates them over the next 10 years. Thus, for all age groups

between 15 and 79 years, ¹⁴ a linear extrapolation of trends, mostly upward, was applied until 2018. After 2018, the rates are held constant to the end of the projection period. The third assumption, called "long-term trends in participation rates" is similar to the second assumption, but the extrapolation of trends was based on a longer reference period, from 1990 to 2008. As a result, the participation rates under this assumption are mostly downward, in particular for age groups below 60 years, as the reference period includes the early 1990s when participation rates were decreasing. Therefore, the last two assumptions on participation rates provide a wide range of future possible trends.

For women, under the three assumptions the projected participation rates are derived from the rates projected for men by using ratios that compare male and female participation rates for a given age group and education level. These ratios are calculated using data from the Labour Force Survey (LFS) over the period 2006 to 2010. For age groups under 50 years, these ratios are held constant for the entire projection period, while for the other age groups, it is the cohort ratio that is held constant for the projection period, so as to gradually eliminate a cohort effect, since women born later in the 20th century have a labour force participation rate that increasingly approaches that of men. For example, the ratio of 0.91 observed between the participation rate of women aged 45 to 49 years and that of men of the same age is used for the group aged 50 to 54 five years later (2013), and so forth.

By comparing scenarios B, C and E, which differ only in the participation rates assumptions, it is possible to isolate the effect of different participation rates on the labour force in the future.

Results: Between 20 and 23 million persons in the labour force in 2031, but slower growth

In 2010, Canada's labour force numbered approximately 18.5 million. According to all scenarios developed in this exercise, the labour force is projected to increase in the next two decades and could rise to between 20.5 and 22.5 million in 2031 (Figure [3.1](#)). Scenario C, "Recent trends in participation rates," suggests that Canada's labour force could number 21.5 million at that point and scenario E, "Long-term trends in participation rates", yields 20.5 million.

These results are a slight upward revision of the levels published in our previous article. ¹⁵ The differences are mainly due to updates to projection assumptions that incorporate the recent demographic situation. Specifically, since 2005 Canadian population growth has increased slightly, mainly due to a rise in fertility, while the participation rates of some age groups also rose.

While the Canadian labour force is projected to continue to increase in size over the next two decades, all projection scenarios still suggest a major slowing in the growth of the population (Figure [3.2](#)), primarily as a result of the retirement of baby boomers.

The average annual growth in the labour force between 2006 and 2010 was approximately 1.4%. By 2016, this growth is projected to be less than 1% in all scenarios and could range between 0.2% and 0.7% during the period 2021-2026. By comparison, the annual change in the labour force reached just over 4% during the period 1971-1976, when the large baby-boom cohorts were entering the labour market. In four of the five scenarios, the slowing of labour force growth is projected to be completed after 2026, when most baby boomers will have left the labour force.

It is interesting to note that scenarios B, C and E, which differ only in their assumptions on participation rates, show very similar results in 2031 even though, over the period 2011-2026, growth slows more markedly in Scenario B and E. This is an indication that in the short term, the continued rise in participation, taken into account in scenario C, would reduce the expected impact of the decrease in population growth. On the other hand, the various demographic assumptions lead to quite different results in both the short and long terms, indicating that both the size and growth of the labour force over the next two decades are sensitive to factors such as immigration and, to a lesser extent, fertility. In fact, if Canada were to admit no immigrants over the next

two decades, the labour force would begin to shrink in 2017 and would be reduced to 17.8 million by 2031. Similarly, low fertility would lead to a slowing in the growth of the labour force throughout the projection period.

The overall participation rate also declines in all scenarios

As the growth of the labour force loses pace, the population aged 65 and over will grow more rapidly in the next two decades as a result of the aging of the baby boomers. Consequently, the proportion of the total population 15 years and over in the labour force—also known as the overall participation rate ¹⁶—is projected to decline over the next two decades in all projection scenarios (Figure 3.3).

From 67.0% in 2010, the overall participation rate is projected to decline through to 2031, to a range between 59.7% and 62.6%. By that time, it would be the lowest observed since the late 1970s.

While all the scenarios used for these projections indicate a decrease in the overall participation rate, higher participation rates in the future could limit the magnitude of the decline, since scenario B, which suggests constant participation rates, and scenario E, which assume a decrease in the participation rates in the future, lead to lower overall participation rates by 2031. The expected decrease in the overall participation rate over the next two decades is largely attributable to demographic phenomena such as the aging of the baby-boom cohorts, below replacement-level fertility as well as increasing life expectancy. However, it is the change over time in participation-related behaviours, more than changes in the components of population growth (fertility, immigration, mortality) that may limit the magnitude of this decrease in the future. Apart from the continued rise in participation, a reduction in differences in labour force participation between immigrants or visible minority groups and the rest of the population also could limit the expected decrease in the coming years. For example, in a scenario where the participation of immigrants and visible minority groups was equal to that of the rest of the population, the overall participation rate would stand at 63.9% in 2031.

Finally, it is worth noting that in the past few years, Canada's overall participation rate has been high, averaging approximately 67%. This level has seldom been reached in the past. International comparisons also show that in 2010, Canada's overall participation rate was higher than that of the main industrialized countries (Figure 3.4). The long-term perspective that emerges from the projections yields two findings in this regard: first, the Canadian economy currently benefits from a high labour force participation rate, with the vast majority of baby boomers still in the labour force. Second, even though it will be lower than at present, the expected overall participation rate in Canada in 2031 could remain higher than the rate for 2010 in many industrialized countries.

Nearly one person in four in the labour force is projected to be 55 years or older by 2021

The aging of the baby boomers, which is largely behind the expected drop in the overall participation rate in the coming years, has already had a major impact on the aging of the labour force. The proportion of the labour force who were 55 years and older rose to 17% in 2009 from approximately 10% in 2001, an increase of 7 percentage points in only nine years as the first baby boomers turned 55 years old.

This trend is projected to continue during the 2010-2021 period, when the succeeding cohorts of baby boomers in turn will reach age 55. In the labour force in 2021, according to three of the five scenarios, close to one in four (roughly 24%) could be 55 years of age or over, a proportion never seen before in Canada. Only the scenarios with participation rates remaining constant at their 2008 level or extrapolating the long-term (1990 to 2008) trends in participation rates lead to a slower increase in the proportion of the labour force aged 55 and over (respectively 21% and 22% in 2021), since the projected participation rates of persons 50 years and over are lower in those scenarios. Scenarios A, C and D, which differ from each other in their assumptions on fertility,

immigration and mortality, yield few differences in their outcomes; this shows how small the potential effect of possible demographic changes could be for participation rates, at least in the short term. With its roots in past demographic events, notably the baby boom between 1946 and 1965, the aging of both the labour force and the Canadian population as a whole is inevitable.

The ratio of the labour force to retirees is projected to fall in half in 50 years

The ratio of the labour force to persons aged 65 and over and not in the labour force—mostly retirees—is a relevant indicator for many important issues such as the future of the public retirement systems in Canada, in particular for those which are wholly or partly based on a defined contribution system.

In 1981, there were approximately six people in the labour force for each person aged 65 or over not in the labour force. This ratio declined to roughly 4.6 by 2010. According to all the projection scenarios, it would be less than three in 2031 (Figure [3.6](#)), or half the number 50 years previously. Neither more rapid population growth nor a rise in the participation rate would prevent a significant decline in the next two decades.

In 20 years, one in three in the labour force could be foreign-born

Although sustained immigration in the coming years could neither prevent the overall participation rate from declining nor lessen the aging of the labour force, it could contribute to labour force growth while also filling various specific labour force needs. It would also alter the ethnocultural make-up of the labour force, which has already changed considerably since the early 1990s.

The proportion of the foreign-born in the labour force [17](#) has increased since 1991 from 18.5% to 21.2% in 2006 (the last available data). If recent immigration levels were to continue, that proportion could reach almost 33% in 2031 under scenarios C and E (Figure [3.7](#)). In other words, about one in three Canadians in the labour force could be an immigrant within two decades.

Scenarios A and D also yield similar future increases, notably because the immigration assumptions, which are based on the minimums and maximums observed in the past 20 years, do not differ enough to generate major variations. Without any immigration between now and 2031, the proportion of the foreign-born in the labour force would decline, reaching 17.4% in 2031. Finally, it is worth noting that if Canada's immigrants have the same participation rates as Canadian-born persons, the proportion of the foreign-born in the labour force by 2031 would reach 33.3%.

More than 30% of the labour force in 2031 could belong to a visible minority group

For more than 20 years, Canadian immigration has come mainly from Asian countries. Consequently, the proportion of the labour force belonging to a visible minority group increased from 10% to 15% between 1996 and 2006. Projection scenario C indicates that this proportion could reach 32% in 2031 (Figure [3.8](#)), double what it was 25 years earlier. In all other scenarios, this proportion would be very similar (Table [3.4](#)), indicating that nearly one in three Canadians in the labour force by 2031 could be a member of a visible minority group. [18](#)

All the scenarios in this paper lead to a significant increase in this proportion, even though the projections hold constant the gaps separating visible minority groups and recent immigrants with regard to their labour force participation. Even if there was no immigration over the 2009-2031 period, the proportion of persons in the labour force belonging to a visible minority group would increase to approximately 23.1% in 2031, mainly

because of this group's younger age structure (which means few visible minority persons retire by 2031) and also because the children of recent immigrants would gradually enter the labour force.

Between 2006 and 2031, an increasing proportion of visible minority persons in the labour force will be Canadian-born (Figure [3.8](#)). These persons accounted for approximately 17% of all visible minorities in the labour force in 2006, and could rise to roughly 25% in 2031 in scenario C. This increase is mainly due to the combination of two factors: first, the children of immigrants who have arrived since the early 1990s will gradually enter the labour market ; and second, Canadian-born visible-minority persons tend to have a high level of education, [19](#) and therefore participate more in the labour force.

Major variations from one province to another

With the Demosim projection model, the analysis can be expanded to the provincial level. Provincial results are very sensitive to assumptions regarding internal migration that can change greatly from one year to the next. Therefore, this section shows only results that are robust to future internal migration patterns, a finding made possible by computing a special scenario "zero internal migration" not presented in this paper (although it is sometimes referred to in this section to highlight the robustness of some future trends).

Under all the scenarios in this paper, the overall participation rate is projected to decrease in all provinces between now and 2031 (Table [3.2](#)), although the rate of decline would differ from one province to another. The drop would be much more rapid in eastern Canada (Quebec and the Atlantic provinces) than in the west. As a result, this would widen the gap in overall participation rate between eastern and western Canada. In the absence of internal migration, the overall participation rate would still decline, but slightly less: for example, it would reach 52.6% in Newfoundland-and-Labrador and 68.0% in Alberta.

At the same time, the ratio of persons in the labour force to non-working persons aged 65 and over would also decline in every province, according to all the scenarios (Table [3.3](#)), including the zero interprovincial migration scenario. In 2010, this ratio was within a range between 3.8 (in Newfoundland and Labrador) and 6.4 (in Alberta). In all scenarios, the number of persons in the labour force for each non-working senior in 2031 would range between 1.4 (in Newfoundland and Labrador) and 3.7 (in Alberta). This ratio would be only marginally different in the zero internal migrations scenario. Similar to the participation rate, this indicator would be lower in 2031 in all the eastern provinces than in the western provinces.

These provincial differences are largely based on the past fertility trends of each province that shaped the current age structure of its population. With higher fertility until the end of the baby boom (around 1965) and lower fertility thereafter, Canada's eastern provinces have seen their age structure shaped by a larger gap than in the west between the baby boom (and pre-baby boom) cohorts and the succeeding cohorts (born after 1965). It is in fact in 2031 that the last baby boomers will reach age 65. Since the cohorts destined to replace them will have been smaller in the east, the demographic weight of seniors will be higher there, which also affects their overall participation rate and the ratio of working persons to non-working seniors.

Even though all the provinces will experience an aging labour force in the next two decades, major gaps are likely to remain for the same reasons. Quebec, for example, could have a younger labour force than elsewhere in 2031 because of the low number of persons aged 55 and over at that time, a situation related to the lower fertility observed in the 1970s in that province.

Finally, as is the case in Canada as a whole, the ethnocultural diversity of the labour force would rise in all provinces, even though there would continue to be major differences from one place to another across the country (Table [3.4](#)). In Ontario in 2031, for example, approximately 41% of the labour force could be foreign-born, a much higher proportion than might be observed in the Atlantic provinces (7%). [20](#) Similarly, Ontario and British Columbia would have the largest proportion of the labour force belonging to a visible minority group in 2031, at nearly two in five. The proportion would be much lower in the Atlantic provinces. These variations are

essentially linked to the importance of immigration in provincial population growth: provinces that attract more immigrants, such as Ontario and British Columbia, would have in 2031 a labour force more ethnoculturally diverse than the other provinces.

Conclusion

This article profiled what the Canadian labour force might be from 2010 to 2031, based on a five projection scenarios. According to these scenarios, the absolute number of persons in the labour force is projected to continue to grow over the next two decades. However, this increase is expected to slow, since it will not be sufficient to offset the many retirements that will occur between now and 2031. As a result, the overall participation rate is expected to decline significantly, along with the ratio of the labour force to non-working seniors.

The gradual movement of the baby boom cohorts into retirement, and their replacement by much smaller cohorts, explain most of these outcomes. Neither a rise in immigration, an increase in fertility nor higher education levels significantly alter these trends. However, a continuation in the rise in participation rates among seniors could lessen or even delay the drop in the overall participation rate. After 2031, all the baby boomers will have reached age 65, and the pace of retirements should therefore fall off considerably.

The projections described in this article also show that if recent trends were to continue, the labour force would be increasingly diversified ethnoculturally in the future. There would be a growing proportion of foreign-born persons and visible minorities. This makes future trends in the labour force participation and integration of these groups all the more important for the labour market.

This projection exercise explicitly took into account the population aging, rising education levels within the population, the evolution of participation rates over time and gaps in labour market activity between immigrants and various visible minority groups and the rest of the population. However, there are other major factors that could not be considered. This is because labour supply is not independent of labour demand, economic cycles or public policies, especially with respect to older workers. Accordingly, these projections should be seen as a set of plausible assumptions designed to inform decision-making and planning, rather than as predictions of what the future will be.

Appendix

Demosim, a microsimulation model for population projections

The labour force projections from 2006 to 2031 presented in this article were obtained using a microsimulation projection model called Demosim. The use of microsimulation makes it possible to simultaneously project a large number of characteristics of the population, such as immigrant status, place of birth, visible minority status, education level and labour force participation. It also allows us to easily consider a number of behaviours that differ from one population subgroup to another, such as the fact that the most educated persons have higher participation rates and recent immigrants have lower rates. Finally, microsimulation lends itself to developing a number of scenarios of how things could evolve in the future.

Demosim's starting population comes from the microdata file of the 20% long form sample of the 2006 Census, adjusted for net undercoverage. That file contains nearly 7 million individuals with some of their characteristics relevant to the projections, including education level, immigrant status and membership in a visible minority group. The microsimulation model projects one individual at a time and adds, over the course of the simulation, new persons when births occur or immigrants arrive (either permanent or temporary).

Each individual in Demosim is subject to the risk of experiencing demographic events, the main ones being the birth of a child, death, migration from one part of Canada to another, emigration, change in education level, change in marital status and change in labour force activity status. When an event occurs, the probabilities are recalculated to reflect the new situation of the simulated individual.

It is beyond the scope of this article to describe how all the probabilities associated with the events simulated in Demosim are calculated. For more information on this subject, readers are invited to consult a document entitled *Projections of the Diversity of the Canadian Population, 2006 to 2031*, published on March 9, 2010 and available on the Statistics Canada website. ²¹ However, it is relevant to provide a brief description here of how education level and labour force participation were modelled in Demosim.

Education modelling

Four education levels are defined in Demosim: less than a high school diploma, high school diploma only, post-secondary diploma below the bachelor's level, and bachelor's degree or higher.

Education is modelled on the basis of the probabilities of graduating. These probabilities vary according to birth cohort, age, sex, place of birth and membership in a visible minority group. They were calculated using data from both the 2001 General Social Survey and the 2006 Census.

The modelling of probabilities of graduating assumes that the rising education level of the Canadian population will slow between now and 2031, since the rise in recent decades was too large to be maintained for two more decades, at least for some population groups. A second assumption is made regarding the continuation of education gaps between ethnocultural groups in the future. Members of visible minority groups usually have higher probabilities of graduating than the rest of the population. This assumption is justified by the remarkable stability of these gaps over time.

Modelling of labour force participation

Labour force participation is simulated by annually imputing an activity status to each individual living in a Canadian province. The imputation is based on participation rates constructed in two stages. First, a participation rate is selected according to the simulated individual's age, sex, highest level of education and province of residence. These participation rates are drawn from the LFS, and assumptions are made about their future evolution (see section on projection scenarios).

Second, this rate is increased or decreased using a ratio to take into account other characteristics, namely immigrant status, period of immigration and membership in a visible minority group. The ratios are calculated using participation data from the 2006 Census, and vary for each combination of age, sex and education level. The ratios are calculated for Canada as a whole, and then applied to each province, under the assumption that the gap between persons belonging to a visible minority group and the rest of the population, for example, does not vary from one province to another.

The labour force projections presented in this article therefore explicitly consider the future evolution of the composition of the population with respect to education level and ethnocultural diversity.

Notes

1. * : Demography Division, Statistics Canada ** : INRS – Urbanisation Culture Société, Montreal For more information, contact Laurent Martel (613) 951-2352 or email laurent.martel@statcan.gc.ca. The authors wish to thank the Demosim Team and Labour Statistics Division, especially Jacques Ouellet, for their assistance with Labour Force Survey data. They also wish to thank all persons involved in the peer review process at Statistics Canada and in other Federal Departments, including the Department of Finance Canada and Human Resources and Skills Development Canada.
2. Statistics Canada, 2010. Population projections for Canada, provinces and territories, 2009 to 2036, catalogue number [91-520-X](#), May 2010.
3. Chui, T. ; Tran, K. & H. Maheu (2007). Immigration in Canada : a portrait of the foreign-born population, Analytical document from the 2006 Census. Statistics Canada, catalogue number [97-557-X](#), 39 p.
4. Gilmore, J. & C. LePetit (2009). The Canadian immigrant labour market in 2007 : analysis by region of postsecondary education. The immigrant labour force analysis series, Statistics Canada, catalogue number [71-606-X](#), 34 p.
5. Roy, F. (2006). From she to she : changing patterns of women in the Canadian labour force. Canadian Economic Observer. Statistics Canada, catalogue number [11-010-X](#), pp. 3-1 à 3-10.
6. Marshall, K. & V. Ferrao (2007). Participation of older workers. Perspectives on Labour and Income. Statistics Canada, catalogue number [75-001-X](#), pp. 5-12. Uppal, S. (2010). Labour market activity among seniors. Perspectives on Labour and Income. Statistics Canada, catalogue number [75-001-X](#), pp. 5-20.
7. Caron Malenfant, Éric ; Lebel, André & Laurent Martel. Projections of the diversity of the Canadian population, 2006 to 2031, catalogue number [91-551-X](#), March 2010, 71 p.
8. The Department of Canadian Heritage, the Labour Program of Human Resources and Skills Development Canada as well as Citizenship and Immigration Canada.
9. This part of the article is an update of an earlier article, published in June 2007 in the Canadian Economic Observer: Martel, Laurent ; Caron Malenfant, Éric ; Vézina, Samuel & Alain Bélanger. Labour force projections for Canada, 2006-2031. Canadian Economic Observer, Statistics Canada, catalogue number [11-010-X](#), June 2007, pp. 3.1 to 3.13.
10. The population studied in this article excludes the territories as well as Indian reserves located in the provinces.
11. Caron Malenfant, Éric ; Lebel, André & Laurent Martel. Projections of the diversity of the Canadian population, 2006 to 2031, catalogue number [91-551-X](#), March 2010, 71 p.
12. Those assumptions were submitted to the approval of the three funding partners of the project as well as to a consultation process involving other Federal Departments and an independent scientific committee composed of recognised Canadian academics.
13. While the participation rates recorded in 2009 and 2010 are taken into consideration in the projection model, they were not used to develop assumptions regarding future trends because of their lower level due to the recession that struck the Canadian economy these years. These rates are unlikely to be maintained over a long period. Also, the 2008 participation rates are very close to the average observed over the period 2005 to 2009.
14. From age 80 onward, a zero participation rate is assumed.
15. Martel, Laurent ; Caron Malenfant, Éric ; Vézina, Samuel & Alain Bélanger. Labour force projections for Canada, 2006-2031. Canadian Economic Observer, Statistics Canada, catalogue number [11-010-X](#),

- June 2007, pp. 3.1 to 3.13.
16. The overall participation rate is the percentage of the population aged 15 and over in the labour force. This indicator therefore reflects the relative weight of the labour force in the total population 15 years and over, which includes students, retirees, persons with long-term family obligations and all others who are not looking for work, in addition to those in the labour force. The overall participation rate is an indicator that is comparable from one country to another, since it controls for different population sizes.
 17. In this study, the concept of the foreign-born population (also called the immigrant population) is used to designate persons who are, or have been, landed immigrants in Canada. In other words, this definition of foreign-born does not include either non-permanent residents or persons born outside Canada who are Canadian citizens by birth. The latter are considered part of the Canadian-born or non-immigrant population.
 18. According to the Employment Equity Act, members of a visible minority group are "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour." Those persons can either be born outside Canada or in Canada.
 19. Spielauer, M. (2009). Ethno-cultural diversity and educational attainment : The modeling of education in the Canadian Demosim population projection model. Paper presented at the 2009 conference of the International Microsimulation Association, June, Ottawa.
 20. Results from the interprovincial migrations scenario are very similar.
 21. Caron Malenfant, Éric ; Lebel, André & Laurent Martel. Projections of the diversity of the Canadian population, 2006 to 2031, catalogue number [91-551-X](#), mars 2010, 71 p.

Chart 3.1 Observed (1946 to 2010) and projected (2011 to 2031) size of the labour force according to five scenarios, Canada

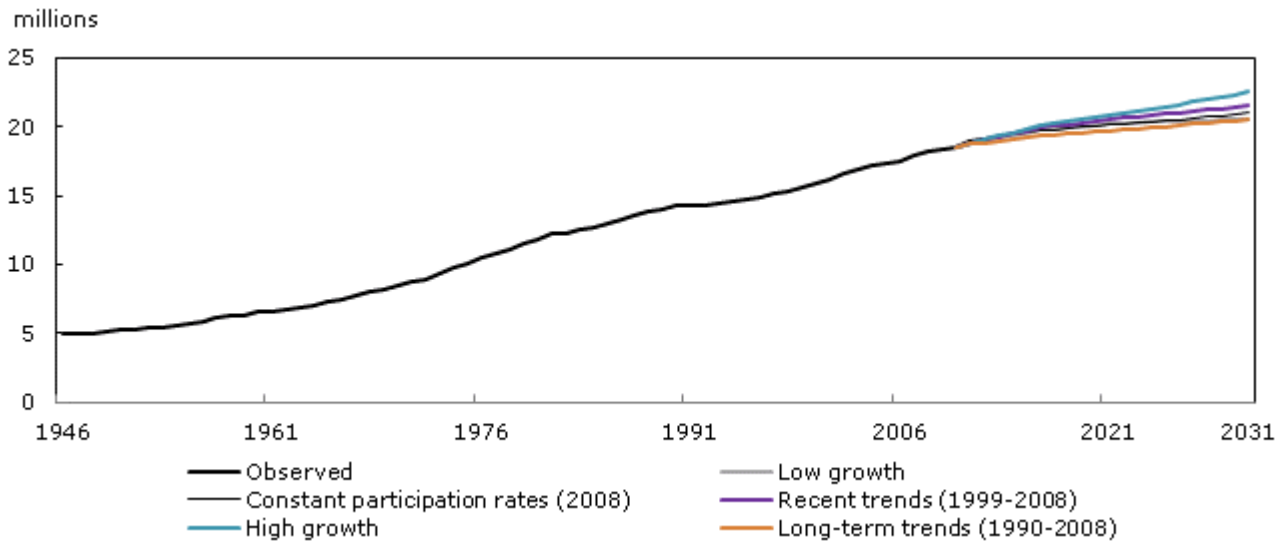


Chart 3.2
Observed (1946 to 2006) and projected (2006 to 2031) annual growth of the labour force according to five scenarios, Canada

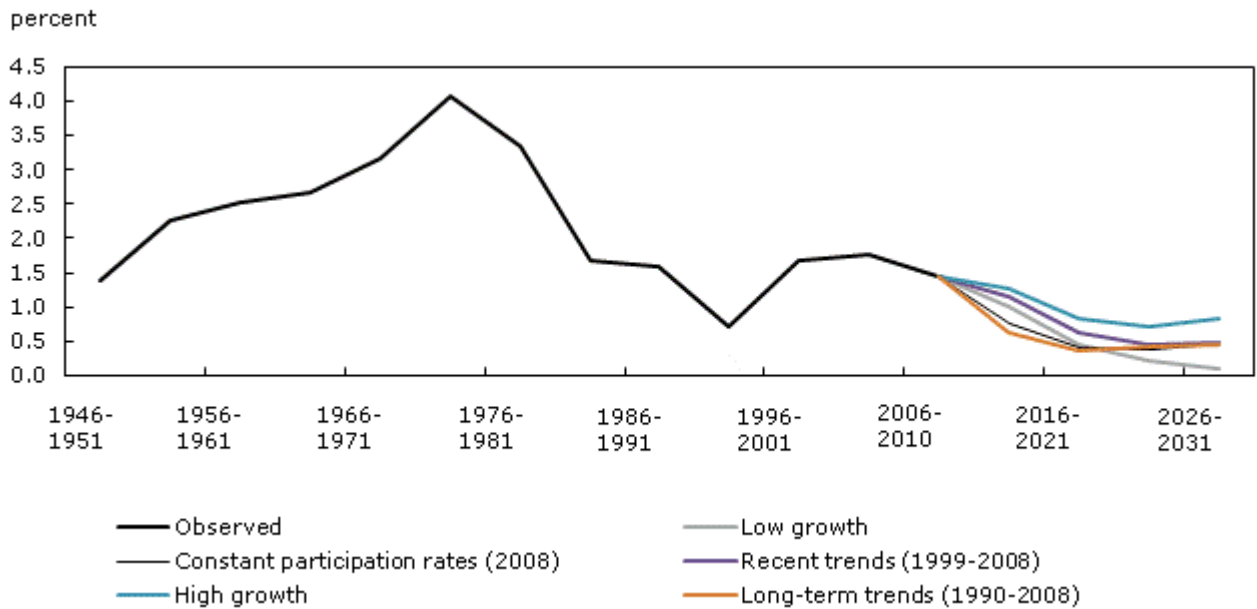


Chart 3.3 Observed (1981 to 2010) and projected (2011 to 2031) overall participation rate according to five scenarios, Canada

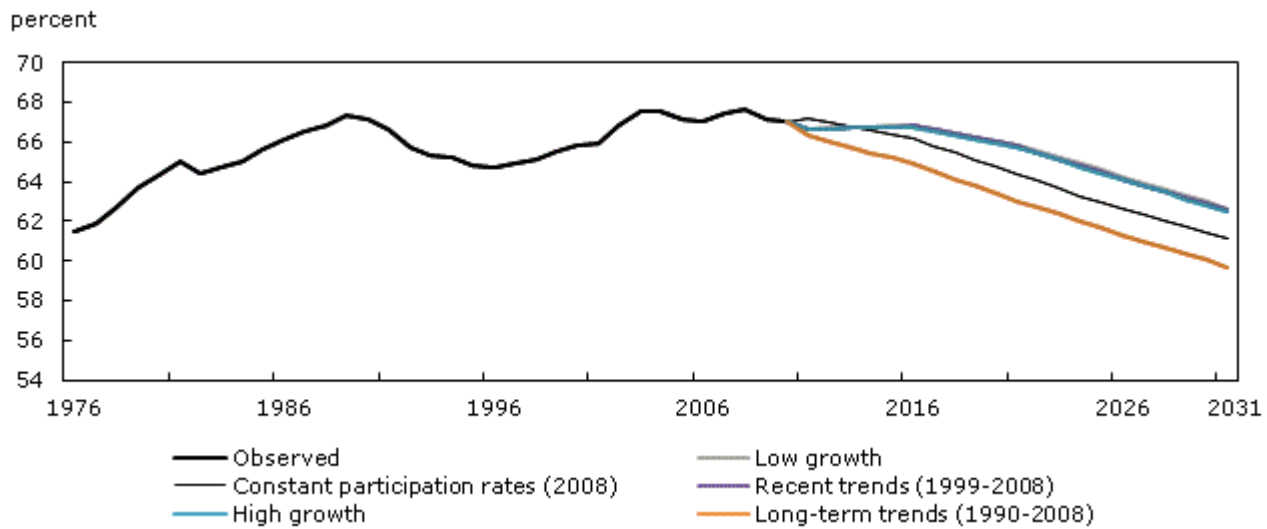
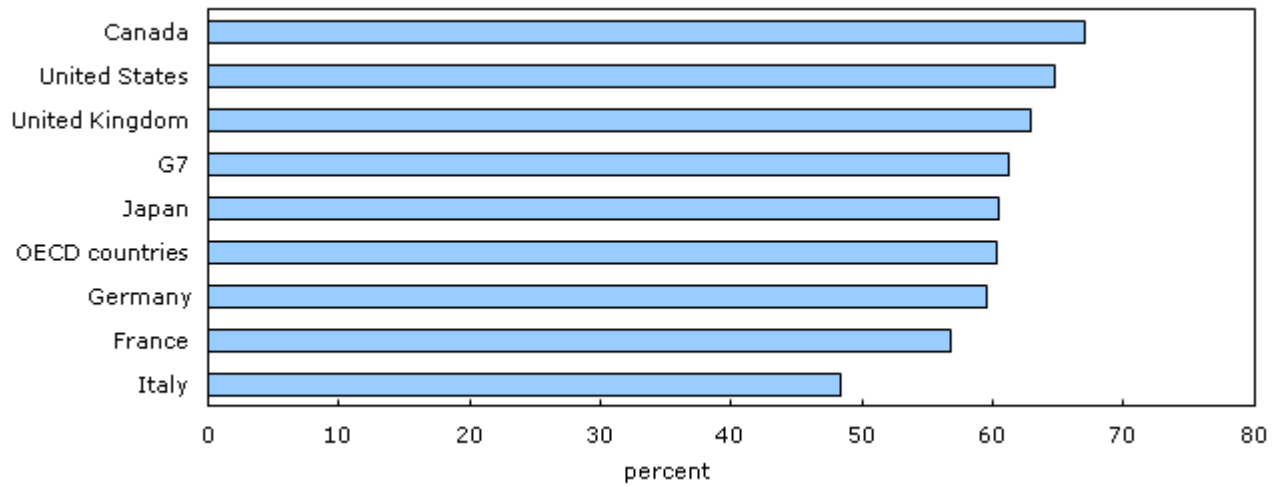


Chart 3.4
Overall participation rate, selected countries, 2010



Source(s): OECD

Chart 3.5 Observed (1981 to 2010) and projected (2011 to 2031) percentage of labour force aged 55 years and over according to five scenarios, Canada

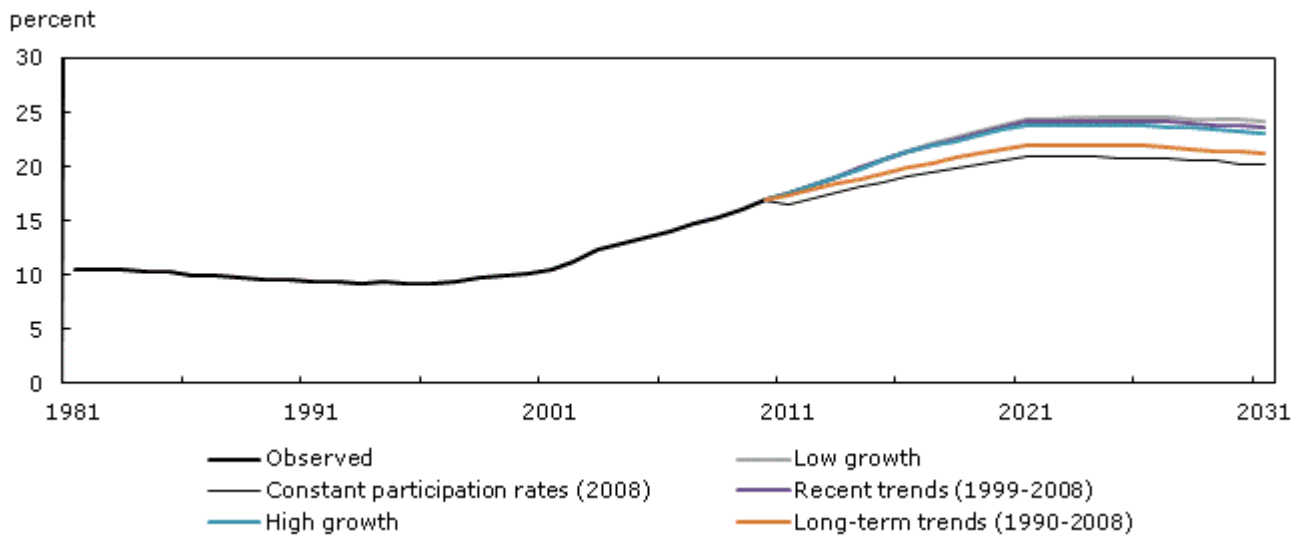


Chart 3.6

Observed (1981 to 2010) and projected (2011 to 2031) ratio of the labour force to persons aged 65 years and over and not in the labour force according to five scenarios, Canada

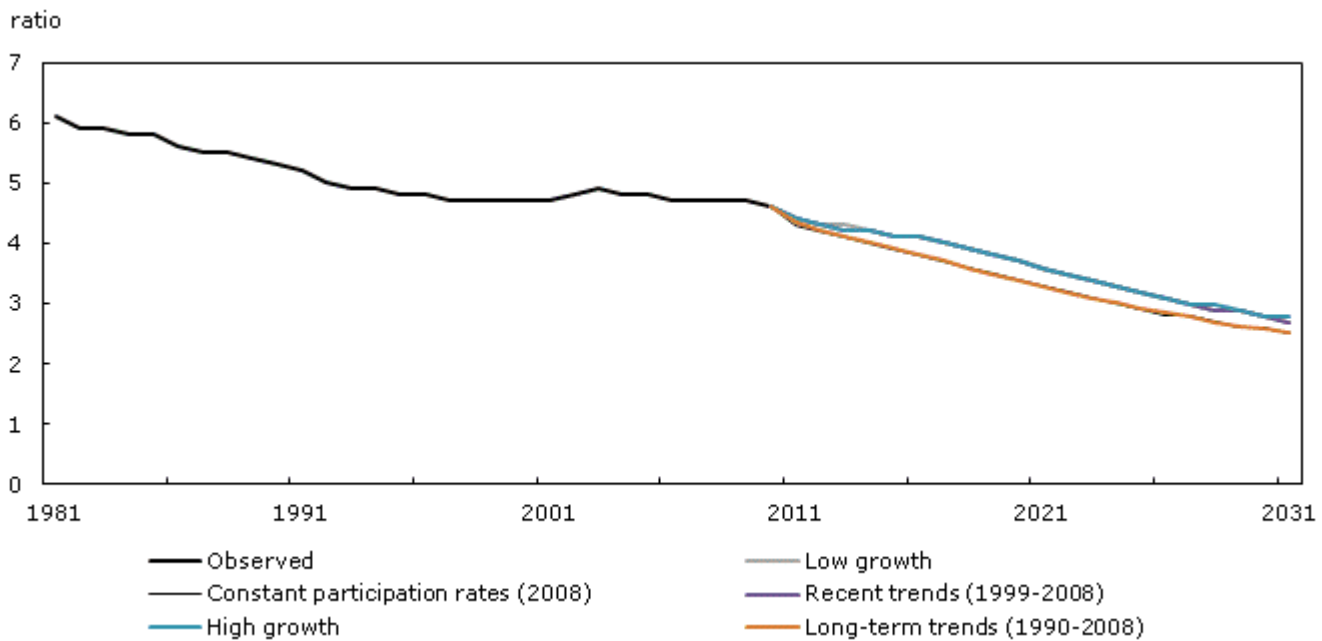


Chart 3.7
Observed (1981 to 2006) and projected (2011 to 2031)
proportion of persons born abroad in the labour force according
to five scenarios, Canada

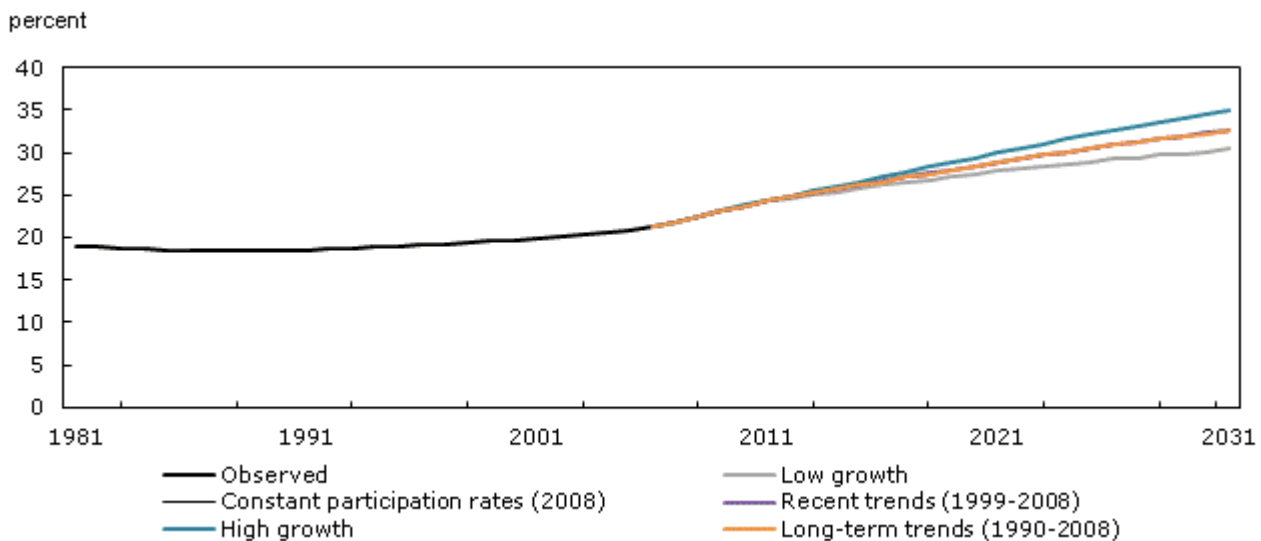
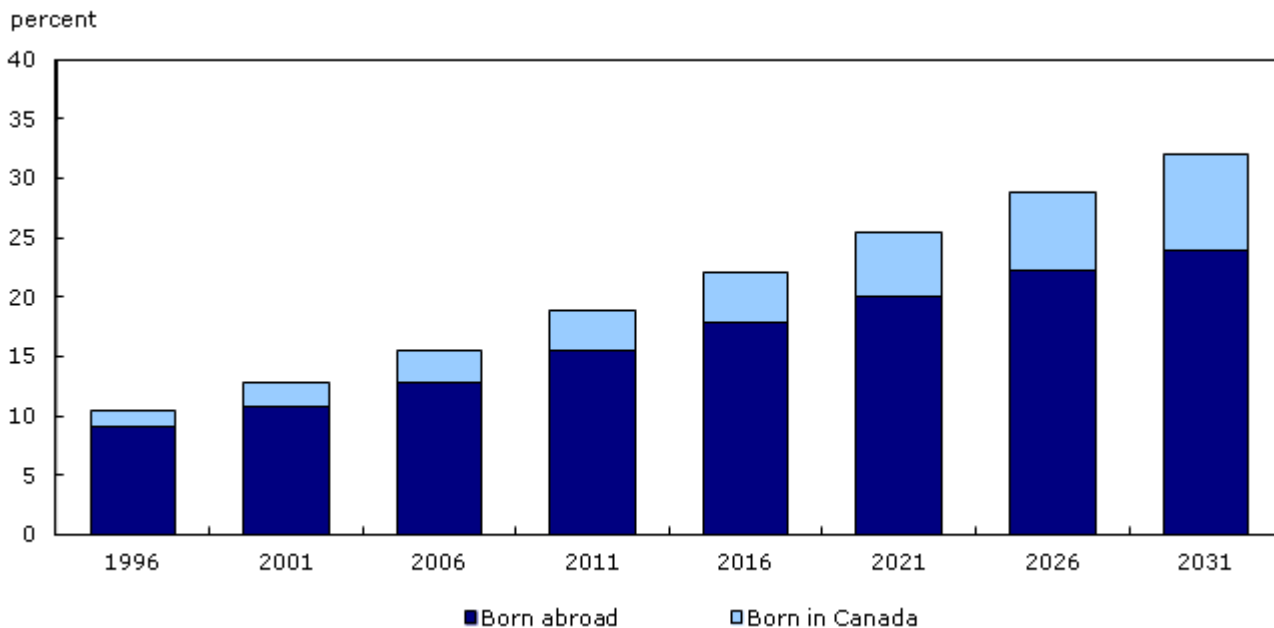


Chart 3.8
Observed (1996 to 2006) and projected (2011 to 2031)
proportion of labour force belonging to visible minority groups
according to immigrant status, scenario "continuing trends"
(C), Canada



Text table 3.1

Scenarios for the projection of the labour force in Canada

Scenarios

- A - Low growth
- B - Constant participation rates (2008)
- C - Recent trends in participation rates (1999 to 2008)
- D - High growth
- E - Long-term trends in participation rates (1990 to 2008)

Assumptions about population growth

- Low growth
- Medium growth
- Medium growth
- High growth
- Medium growth

Assumptions about participation rates

- Continuing trends (1999 to 2008)
- Constant (2008 levels)
- Continuing trends (1999 to 2008)
- Continuing trends (1999 to 2008)
- Continuing trends (1990 to 2008)

Text table 3.2

Overall participation rates observed (2010) and projected (2031) by province according to five scenarios

	2010	A - Low growth	B - Constant participation rates (2008) rate (percentage)	2031 C - Recent trends (1999 to 2008)	D - High growth	E - Long-term trends (1990 to 2008)
Newfoundland and Labrador	59.9	49.4	48.1	49.0	48.7	46.6
Prince Edward Island	67.9	62.1	57.7	61.8	61.4	58.5
Nova Scotia	64.2	57.1	54.1	56.8	56.6	54.1
New Brunswick	63.6	57.8	54.4	57.5	57.1	54.7
Quebec	65.4	58.7	56.5	58.7	58.7	56.2
Ontario	67.1	63.7	62.3	63.7	63.7	60.8
Manitoba	69.6	65.4	62.9	65.3	65.4	62.2
Saskatchewan	69.9	65.5	62.5	65.2	64.9	61.8
Alberta	72.9	69.0	69.2	68.8	68.7	65.7
British Columbia	65.5	61.8	60.3	61.7	61.7	59.0
Canada	67.0	62.6	61.1	62.6	62.5	59.7

Note(s): The three territories are excluded from the analysis.

Text table 3.3

Observed (2006) and projected (2031) percentage of persons aged 55 years or older in the labour force and ratio of the number of people in the labour force for every retired persons aged 65 years or older, by province according to five scenarios

	2010		A - Low growth		B - Constant participation rates (2008)		2031 C - Recent trends (1999 to 2008)		D - High grow	
	55+ in labour force	labour force/retired 65+	55+ in labour force	labour force/retired 65+	55+ in labour force	labour force/retired 65+	55+ in labour force	labour force/retired 65+	55+ in labour force	labour force/reti
	percent	ratio	percent	ratio	percent	ratio	percent	ratio	percent	ratio
Newfoundland and Labrador	13.1	3.8	27.8	1.4	25.9	1.4	27.6	1.4	27.4	
Prince Edward Island	15.5	4.3	29.2	2.3	23.2	1.9	28.9	2.2	28.7	
Nova Scotia	13.5	3.8	26.7	1.9	22.8	1.7	26.5	1.9	26.2	
New Brunswick	13.3	3.9	27.3	1.9	22.5	1.7	27.1	1.9	26.9	
Quebec	13.2	4.2	22.8	2.2	18.2	2.0	22.2	2.2	21.7	
Ontario	14.1	4.6	24.5	3.0	20.5	2.8	23.8	3.1	23.2	
Manitoba	15.3	4.3	25.7	2.9	21.1	2.6	25.2	2.9	24.6	
Saskatchewan	15.7	4.0	28.1	2.7	23.7	2.4	27.9	2.7	27.6	
Alberta	13.2	6.4	23.9	3.6	21.2	3.5	23.4	3.6	22.9	
British Columbia	15.1	4.1	23.6	2.7	19.7	2.5	23.1	2.7	22.6	
Canada	14.0	4.5	24.2	2.7	20.2	2.5	23.6	2.7	23.1	

Note(s): The three territories are excluded from the analysis.

Text table 3.4

Observed (2006) and projected (2031) percentage of foreign born persons and persons belonging to a visible minority in the labour force population by province according to five scenarios

	2006		2031									
	Foreign born	Visible minority	A - Low growth		B - Constant participation rates (2008)		C - Recent trends (1999 to 2008)		D - High growth		E - Long-term trends (1990 to 2008)	
			Foreign born	Visible minority	Foreign born	Visible minority	Foreign born	Visible minority	Foreign born	Visible minority	Foreign born	Visible minority
Newfoundland and Labrador	2.0	1.1	3.5	3.0	3.9	3.2	3.8	3.2	4.2	3.5	3.8	3.2
Prince Edward Island	3.7	1.3	5.4	2.5	6.1	2.8	6.2	2.7	6.8	3.0	6.2	2.7
Nova Scotia	5.3	3.7	8.5	7.0	9.5	7.6	9.4	7.5	10.3	8.0	9.4	7.6
New Brunswick	3.9	1.6	5.9	4.1	6.5	4.5	6.5	4.4	7.0	4.7	6.5	4.4
Quebec	12.9	8.3	22.9	18.9	25.2	20.6	25.0	20.2	27.2	21.5	25.1	20.4
Ontario	31.3	22.1	38.6	39.8	40.7	41.9	41.1	41.5	43.5	43.1	40.9	41.7
Manitoba	15.6	10.1	22.8	19.5	24.7	21.0	24.8	20.7	26.9	22.0	24.8	20.9
Saskatchewan	5.8	3.6	8.7	7.3	9.4	7.9	9.5	7.8	10.3	8.4	9.5	7.9
Alberta	18.1	13.0	23.8	24.7	25.5	26.2	25.7	26.1	27.6	27.4	25.6	26.3
British Columbia	30.1	24.0	36.2	39.6	38.1	41.4	38.5	41.2	40.8	42.7	38.3	41.4
Canada	22.2	15.7	30.4	30.4	32.5	32.4	32.6	32.0	34.9	33.5	32.6	32.2

Note(s): The three territories are excluded from the analysis.