

ECONOMIC VIEWPOINT

Is Quebec's Potential Economic Growth Still around 1.5%?

Quebec's real GDP growth has been 2.5% or better in the last three years. This remarkable performance is due to several factors, including a housing market that is in a better position than elsewhere in Canada, a more diversified economy, Quebec's improved public finances, and an acceleration in U.S. demand.¹ The Canadian dollar's depreciation and ongoing low interest rates around the world may have also helped.

However, this cruising speed seems hard to sustain over a long haul, particularly when it is becoming harder to expand the number of workers due to less favourable demographic trends. This is an important aspect to consider in predicting mean economic growth over the long-term, also known as potential economic growth. Until quite recently, we were putting it at just under 1.5% per year. Let's see if that is still accurate.

Potential Economic Growth as an Indication of the Long-Term Trend

Potential economic growth is very useful in monitoring an economy's long-term trend, beyond temporary variations from business cycles. Projections can provide a good indication of what growth trajectory an economy could follow based on different assumptions. Aside from the labour factor, capital accumulation and efficiency gains are elements to consider in estimating and projecting potential growth (box on page 2).

Potential economic growth should not be construed as the maximum speed an economy can hit; rather, it is a normal pace that is based on reasonable use of the production factors, including labour. This means that the unemployment rate does not have to drop to 0% and factories do not have to be running at 100%. The economy sometimes operates below capacity, and sometimes above it. If an economy's growth exceeds its potential speed for several years, inflation and wages could accelerate in response to the overuse of labour and capital. In the opposite situation, price and wage growth will tend to slow instead.

All in all, potential economic growth remains hard to estimate. The main difficulties involve the availability of the data needed to obtain the most accurate estimate. The central banks and other national and international organizations develop a variety of estimates of potential economic growth. The Organisation for

Economic Co-operation and Development (OECD) estimates it for numerous countries. It put it below 2.0% for the United States over the last decade, down from previous decades. This downtrend is also being observed in the other major economies (table 1). The 2008–2009 financial crisis contributed to the weakening of potential economic growth, but other factors also come into play. In Japan, where population ageing is very significant, potential economic growth was around 0.5% from 2010 to 2019.

TABLE 1
Potential economic growth estimated for the major advanced economies

IN %	Average annual variations					
	1990	1999	2000	2009	2010	2019
United States	3.3		2.6		1.8	
Canada	2.4		2.5		1.9	
Euro zone	2.1		1.7		1.1	
United Kingdom	2.6		2.2		1.5	
Japan	2.2		0.7		0.5	

Sources: Organisation for Economic Co-operation and Development and Desjardins, Economic Studies

¹ *Quebec's Economy Soars: Several Factors Explain the Current Resilience*, Desjardins, Economic Studies, *Economic Viewpoint*, December 9, 2019, 6 p.; *The Structural Transformation of Quebec and Other Provincial Economies in the Last 60 Years*, Desjardins, Economic Studies, *Economic Viewpoint*, February 6, 2020, 14 p.

BOX

Estimate of Potential Economic Growth

According to economic theory, the factors that determine an economy’s output level (*Y*) are the quantities of labour (*L*) and capital (*K*) available, as well as another variable (*A*) that measures the degree of efficiency in using *L* and *K*. The relationship between the variables can be expressed using a Cobb Douglas functional form with constant returns to scale, corresponding to the following equation:

$$Y = AL^\alpha K^{1-\alpha}$$

Coefficient α corresponds to labour’s relative share in total output, established using the portion of total revenue generated by workers. The coefficient generally ranges between 65% and 75%, depending on the Organisation for Economic Co-operation and Development (OECD) nation. The equation’s linear form illustrates the variation in the different components. The variation in *Y* will depend on the variation in *A* as well as variations in *L* and *K* adjusted based on coefficient α

$$\Delta Y = \Delta A + \alpha(\Delta L) + (1 - \alpha)(\Delta K)$$

This equation makes it possible to estimate potential economic growth based on the trend for each component. The quantity of labour corresponds to the total number of hours worked, which will depend on labour pool size, labour market participation rate and unemployment rate. We also use a variable that measures the quantity of capital in the economy. The portion of potential growth associated with efficiency gains is approximated using residual economic growth. This is growth that, on average, is not explained by an increase in the number of hours worked and amount of capital.

In an *Economic Viewpoint* published in 2014, potential economic growth of just under 1.5% was projected for Quebec for 2015–2025. However, recent changes in a variety of variables may have altered the situation, at least for the short term.

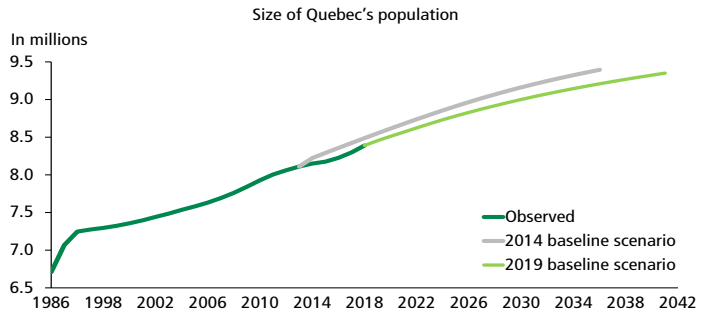
Population Growing a Little Less than Anticipated

First and foremost, demographic changes remain a sizable challenge in maintaining potential economic growth. It will be hard to find new workers to replace those who are retiring. The Institut de la statistique du Québec (ISQ) even trimmed its projections for population growth slightly (graph 1).²

According to ISQ projections, population growth should drop to closer to 0.5% per year. The population segment aged 15 to 64—which accounts for most workers—is even

² Institut de la statistique du Québec, *Perspectives démographiques du Québec et des régions, 2016-2066. Édition 2019*, July 2019, 86 p.

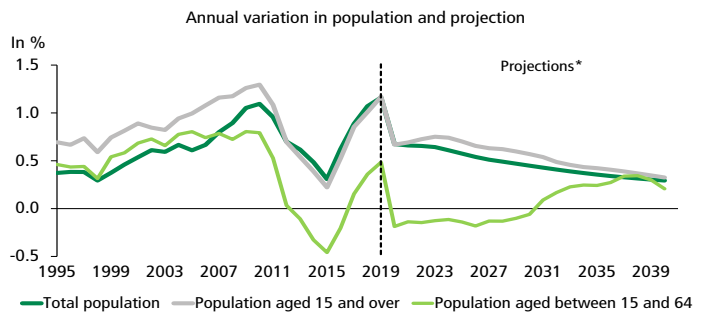
GRAPH 1
The demographic projections have been trimmed



Sources: Institut de la statistique du Québec and Desjardins, Economic Studies

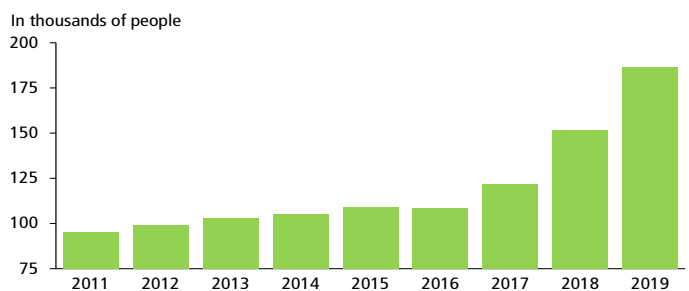
expected to shrink (graph 2). This age group’s numbers had previously declined between 2013 and 2016. The picture improved between 2017 and 2019, notably because of a big increase in the number of non-permanent residents (graph 3). The ISQ’s baseline scenario does not assume that this number will keep climbing this fast.

GRAPH 2
Demographics should quickly become unfavourable again, particularly for the 15–64 age group



* According to the Institut de la statistique du Québec 2019 baseline scenario. Sources: ISQ and Desjardins, Economic Studies

GRAPH 3
The number of non-permanent residents has shot up in Quebec

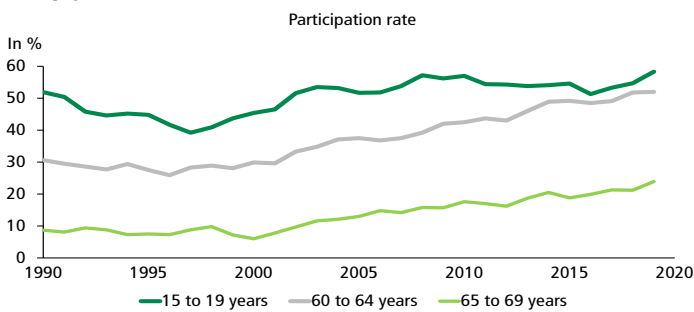


Sources: Statistics Canada, Institut de la statistique du Québec and Desjardins, Economic Studies

Participation Rate to the Rescue

Population size is only one of a number of variables that determine the trend for potential economic growth. The number of workers could keep rising even if the 15-to-64 segment declines slightly. For that to happen, the participation rates in various age groups will have to keep increasing. Among other things, Quebec has been seeing sustained growth among older workers, especially those over 64 (graph 4). The youngest workers have also expanded their labour market presence, particularly in the last three years.

GRAPH 4
The participation rates of younger and older workers are up sharply



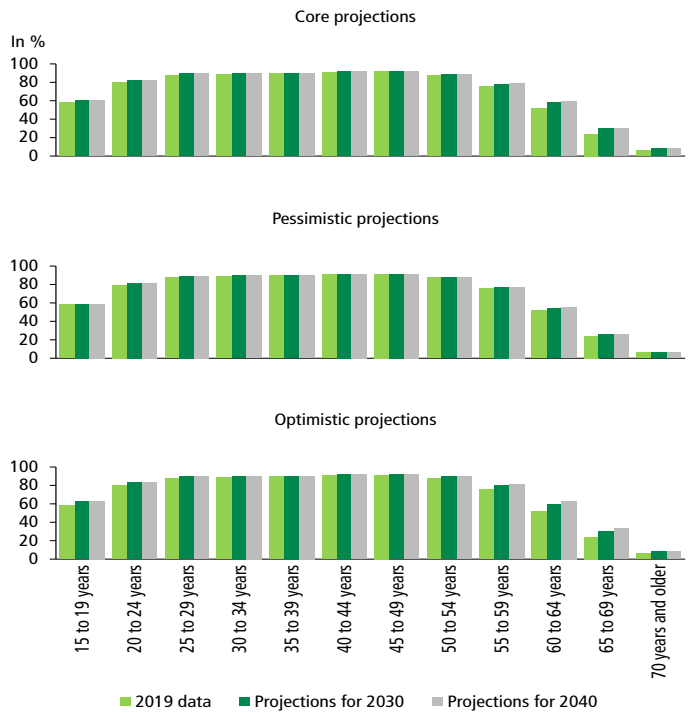
Sources: Statistics Canada and Desjardins, Economic Studies

Labour market participation rates will never hit 100%, of course. A number of factors will continue to explain why some of the population stays out of the labour market. That being said, based on recent trends for the different age groups, improvements can reasonably be expected in the coming years.

In estimating Quebec’s potential growth, three projections were done for the participation rate of people aged 15 and over. The baseline projection assumes that Quebec will continue to catch up with Ontario in terms of the participation rate of older workers, those aged 60 to 69. A slight increase is also assumed for workers aged 70 and older, and for younger workers, in line with recent trends. The pessimistic projection considers more modest improvements instead, while the optimistic projection banks on sharper growth in participation rates (graph 5).

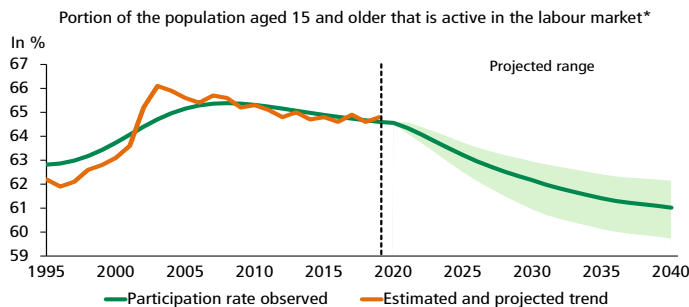
Although higher participation rates are assumed for several age groups, the projections still suggest a decline in the participation rate among people aged 15 and older (graph 6). This is because of the still rising weight of the elderly population, where participation rates will remain below the average for the other age groups. This does not necessarily augur poorly for potential economic growth: multiplying these projections by the projected

GRAPH 5
Participation rate assumptions for different age groups



Sources: Statistics Canada and Desjardins, Economic Studies

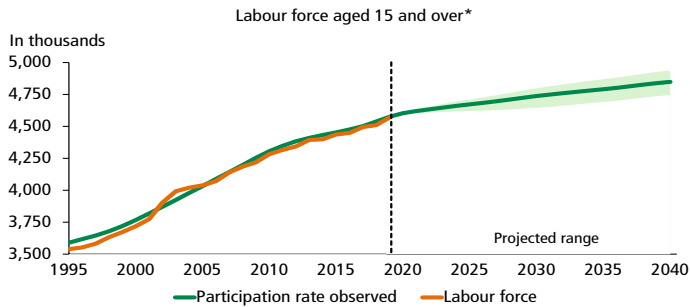
GRAPH 6
The participation rate will continue to decline and the trend should accelerate as the population ages



* Portion of the population that is employed or looking for work.
Sources: Statistics Canada and Desjardins, Economic Studies

size of the group aged 15 and older shows that the number of workers should still keep rising (graph 7).

GRAPH 7
The size of the labour force aged 15 and older should not decline



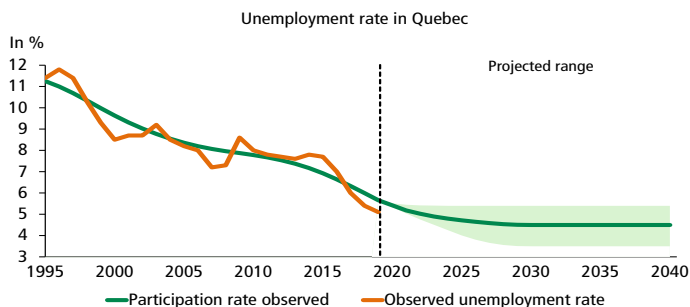
* Portion of the population that is employed or looking for work.
Sources: Statistics Canada and Desjardins, Economic Studies

Unemployment Rate Continues to Trend Down

The trend for the unemployment rate helps to hone projections for growth in the number of workers. The unemployment rate has dropped sharply in recent years, meaning that a larger proportion of the labour force held jobs. If the trend holds up, it would help Quebec’s potential economic growth.

The baseline assumption used in our projections is that the trend for the unemployment rate should remain downward over the short term, then stabilize at around 4.5%. The pessimistic projection assumes a more moderate decline, with the trend for the unemployment rate staying above 5%. The more optimistic projection instead assumes a trend converging on 3.5% by 2030 (graph 8).

GRAPH 8
The trend unemployment rate could decrease further



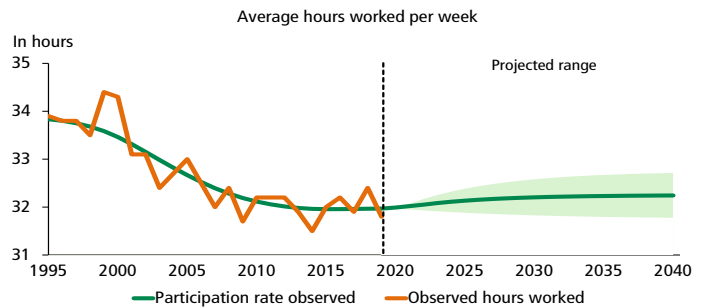
Sources: Statistics Canada and Desjardins, Economic Studies

Average Number of Hours per Worker Tough to Improve

To estimate the labour factor’s contribution to potential economic growth, the number of workers is multiplied by an average number of hours worked. This variable has been trending down for several years. For just over five years, the trend has been toward stabilization at close to 32 hours per worker.

Observations in recent years suggest that a sharp improvement in the number of hours worked per worker would be fairly astounding. For the projections developed, the baseline assumption selected is a very slight increase in the average number of hours per worker. Labour shortages could lead to an increase in average hours worked. At the same time, the younger and older workers who are expanding the ranks of the labour force are probably less inclined to rack up long hours. There are therefore at least two mechanisms with opposing impacts. On a net basis, the average number of hours could even decrease slightly in the coming years. This is the assumption used in the pessimistic projection. In the optimistic projection, the trend converges at just under 33 hours per worker, which is still much less than seen in the past (graph 9).

GRAPH 9
Hours worked could increase slightly due to the heavy labour shortages



Sources: Statistics Canada and Desjardins, Economic Studies

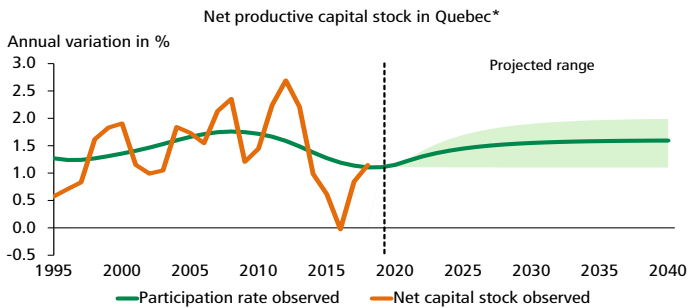
Capital Stock Grew Little

Investment is a major component of potential economic growth. Among other things, it helps increase the number facilities or their surface area used to produce goods and services, as well as the quantity of machinery, equipment and software. However, capital stock growth has been disappointing in recent years, remaining below the trend established in previous years. In contrast with the increase in the labour force and decrease in the unemployment rate, underperformance by investment appears to have been a drag on potential economic growth.

In the coming years, the base assumption selected is that capital stock growth should gradually go back above 1.5%. Given its recent evolution, the trend for this variable could also stabilize at

closer to 1%. Conversely, faster acceleration also seems credible, as businesses could invest heavily to offset the labour shortage. This is the assumption used in the optimistic projection, which has the annual increase in the capital stock converging on 2% (graph 10). This rate of capital growth was seen frequently in the past. The hardest aspect would be maintaining the pace over a long period.

GRAPH 10
Capital growth has been weak recently and must go up to support potential economic growth



* Estimate based infinite geometric depreciation assumptions.
Sources: Statistics Canada and Desjardins, Economic Studies

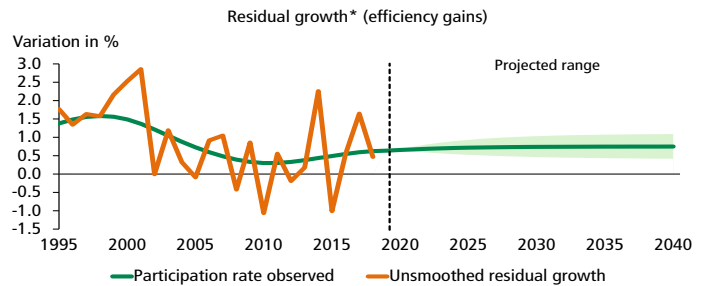
Residual Growth Appears Stronger

Residual growth is the portion of economic growth that does not correspond to the increase in the total number of hours worked or the increase in capital stock. It represents efficiency gains in the use of labour and capital. It is also known as multifactor productivity or total factor productivity.

Efficiency gains have been starting to trend up in recent years. For the projections, the baseline assumption is ongoing improvement in the coming years until the annual contribution tops out at around 0.75%. On the other hand, the improvement could be temporary: the pessimistic assumption is for a return to annual efficiency gains of around 0.4%, the average contribution seen between 2007 and 2016. The more optimistic projection assumes efficiency gains that accelerate to just over 1% (graph 11).

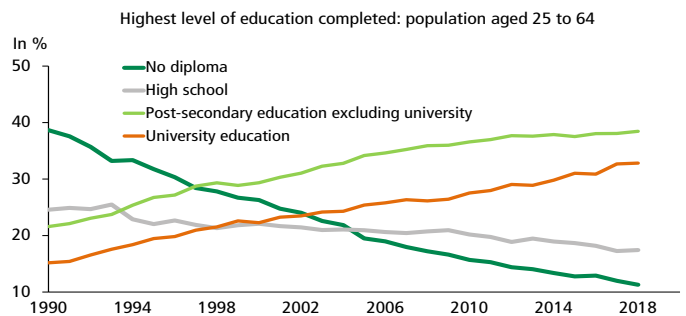
Establishing assumptions for this variable is not a straightforward matter. Efficiency gains can stem from a large number of sources. Workers' level of training and education is often cited as an example; in this area, the trends remain positive (graph 12). However, there is no proven formula for systematically generating efficiency gains. Reallocating tasks among a company's workers can be enough to generate substantial gains. The quality of investment, including the level of technological advancement, also has an impact.

GRAPH 11
Efficiency gains tend to be higher



* Change in real GDP that is not explained by the change in the number of hours worked and the change in capital stock.
Source: Desjardins, Economic Studies

GRAPH 12
The average education level of Quebec workers continues to rise



Sources: Institut de la statistique du Québec and Desjardins, Economic Studies

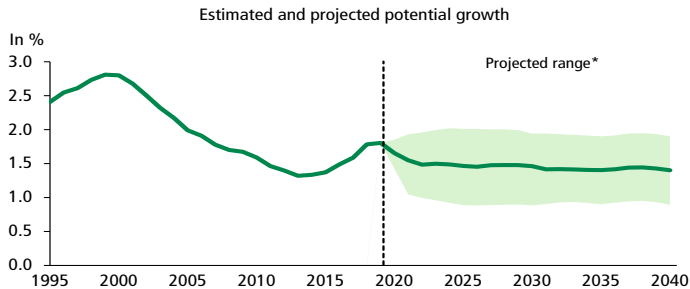
The recent increase in efficiency gains may be a direct result of the labour shortages plaguing some industries. That labour shortage forces businesses to review a variety of things, which could lead to better use of the resources available. Whether this pace can be maintained remains to be seen, so it seems preferable to be fairly conservative, excluding projections that could be deemed overly optimistic. The trend for efficiency gains did exceed 1.5% in the 1990s, but that lasted only a few years.

Estimate of Potential Economic Growth Changes Little for the Medium and Long Term

Our estimates suggest that Quebec's potential economic growth has increased in recent years, and would now be around 1.8%. This improvement would have drawn on an increase in efficiency gains, an unemployment rate that is trending down, and an increase in the participation rate for certain age groups. The change in demographics has also been more favourable in the last few years, particularly because of the higher, but probably temporary, growth among the 15-to-64-year-old segment. Based on the ISQ's demographic projections, this age group should probably shrink slightly in the current decade.

According to our baseline assumptions, a return to potential economic growth near 1.5% seems the most likely scenario. The more pessimistic assumptions indicate that potential economic growth could decline to around 1% instead, while the more optimistic assumptions suggest a pace of around 2% for several more years (graph 13).

GRAPH 13
The recent improvement in potential growth will be hard to maintain



* Among others, these projections are dependent on assumptions and estimates for the participation rate, number of hours worked, natural unemployment rate, capital stock and efficiency gains.
Source: Desjardins, Economic Studies

Apparently, it will be hard to keep the contribution from the labour factor from declining, even with the optimistic assumptions. The decline could be steeper within ten years, when additional participation rate gains could become increasingly small. The slight renewed growth by the population aged 15 to 64 around 2030 will not be enough to put things back on an even keel. The contribution from capital and efficiency gains will have to go up to maintain or raise potential economic growth (table 2).

TABLE 2
Projections for Quebec's potential economic growth

IN %	Average annual variations							
	2000	2009	2010	2019	2020	2029	2030	2039
Potential economic growth	2.15		1.51		1.50		1.42	
(minimum – maximum)					(0.98 – 1.98)		(0.92 – 1.93)	
Contributions by growth factor								
Labour	0.78		0.61		0.35		0.17	
(minimum – maximum)					(0.08 – 0.58)		(0.13 – 0.24)	
Capital	0.52		0.44		0.45		0.51	
(minimum – maximum)					(0.36 – 0.51)		(0.36 – 0.63)	
Efficiency gains	0.85		0.46		0.71		0.75	
(minimum – maximum)					(0.54 – 0.89)		(0.44 – 1.07)	

Source: Desjardins, Economic Studies

Real GDP Growth of Recent Years Does Not Seem Sustainable

In light of these results, it seems unlikely that Quebec's real GDP growth will record many more years above 2%. The gap between real GDP growth and potential growth is such that inflationary pressure is already emerging. It is especially visible in the area of wages, which are rising in response to companies' struggle to attract workers.

Our optimistic projections do suggest that potential growth could rise a little further and hold close to 2% for the coming years. However, these projections assume that a string of favourable adjustments to different variables will occur simultaneously. The chances of that happening are fairly low. Some variables could evolve in line with the optimistic assumptions, but others could ultimately evolve in line with the more pessimistic assumptions. For example, if the participation and unemployment rates evolve to the point that the quantity of workers continues to rise steadily, this could relieve the pressure to increase investment or make more efficiency gains.

It would be quite extraordinary to see all these factors move in a positive direction, which is why it seems preferable to bank on a more conservative projection for potential economic growth, in the neighbourhood of 1.5%. Moreover, this projection is already underpinned by noteworthy improvements in the participation rate, unemployment rate, capital stock and efficiency gains—a good illustration of the challenge awaiting Quebec in the coming decades. If nothing comes along to make up for unfavourable demographic trends, Quebec's economic growth will tend to sag.

Hendrix Vachon, Senior Economist