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Quebec's GDP per Capita Falling Behind Ontario: Causes and Options

- **Quebec shows a significant and sustained gap for potential gross domestic product (GDP) per capita compared to Ontario. This gap is estimated at nearly 14% in 2018.**
- **Without new policies to boost potential GDP, we estimate that halving the gap would take until around 2035. In 2018, the Quebec government promised to attain this goal over a 5-year horizon.**
- **Quebec holds a labour productivity advantage over Ontario, especially regarding multifactor productivity, but is and will remain at a disadvantage with respect to the labour force participation rate of its working-age population.**
- **Policies requiring investment to boost participation rate and capital intensity per-worker should be introduced to improve Quebec's GDP per capita and living standards.**

A fundamental determinant for Quebec's living standards is the gross domestic product (GDP) per capita for which the province has long been trailing its main economic partners, including Ontario. In 2018, the Quebec government promised halving the GDP per capita gap relative to Ontario over a 5-year horizon. From our assessment and recent trends, we discuss the promise leading us to find that it cannot be achieved within this time frame under current policies. Consequently, additional and decisive actions will be essential in future budgets.

We discuss the contribution from different components of Quebec's potential—or trend—GDP per capita to its performance gap with Ontario to identify suitable measures to narrow it. Our goal is to examine longer-term GDP trends and main GDP components to determine which structural factors would have the strongest influence on per capita income. Putting emphasis on potential GDP, rather than current or observed, is thereby more relevant to this goal.

Our assessment suggests that Quebec holds a labour productivity growth advantage over Ontario, especially regarding its multifactor component, reflecting efficiency in combining production inputs. In all, since 2018, the capital intensity component of Quebec's trend productivity has grown at a similar rate to Ontario's. Increased investment in Quebec would still be welcomed to facilitate narrowing the potential GDP per capita gap between the two economies. The Quebec government must therefore introduce specific and targeted measures to further increase private investment in Quebec.

Quebec has an increasing demographic disadvantage. While Ontario welcomes many more immigrants allowing its population to grow more rapidly, it does not necessarily create a living standards advantage for its population, since it depends on labour productivity. On the other hand, immigration means that Ontario's population is getting younger while Quebec's is getting older, which

may favour Ontario's potential GDP by improving its labour force participation rate. In fact, the median age in Ontario has overall been decreasing since 2017 (now at 40.4 years) while it is increasing in Quebec (now at 43.1 years). This contributes to a structural decline in Quebec's participation rate, holding back potential growth in the economy. Policies to increase the participation rate of older people are therefore more necessary in Quebec than in Ontario or the rest of the country.

Without improvement, the potential GDP per capita gap between the two provinces will only very slowly narrow. As per our analysis, only half of the 2018 gap would be bridged by around 2035, so additional, decisive and sustained efforts are required.

COMPARING QUEBEC AND ONTARIO POTENTIAL GDP GROWTH—ANALYSIS METHODOLOGY

Potential GDP is the equilibrium level of real GDP. At this level, productive capacities are fully employed, price and income grow at stable paces, and the pace of economic activity is considered sustainable. Potential GDP is often associated with trend GDP.

The Quebec government's goal is to narrow the Quebec-Ontario GDP (and income) per capita gap significantly and permanently from our estimation of nearly 14% in 2018. The province must therefore introduce measures to sustainably raise potential GDP per capita growth beyond Ontario's.

How do Quebec and Ontario current potential GDP growth rates compare? To answer this question, we need to estimate Quebec and Ontario potential GDPs as they are not explicitly observable. For this purpose, a multivariate filter is applied to its main components to extract their trend—or equilibrium profile—and that of GDP. The methodology is also used by various economic institutions, including the Bank of Canada, the International Monetary Fund and other government agencies. The method allows to estimate potential GDP (*YPOT*) and the trend—equilibrium—profiles of its main components, namely employment levels (*Emp_eq*) and labour productivity (*Prod_eq*):

$$YPOT = Emp_eq * Prod_eq$$

The equilibrium employment level may itself be divided into the equilibrium unemployment rate (*UR_eq*), the equilibrium labour force participation rate (*PR_eq*) and the working age population (15+; *POP*):

$$Emp_eq = (1 - UR_eq) * PR_eq * Pop$$

It should be noted that the labour force participation rate is the proportion of the working-age population that is employed or seeking employment. The *Prod_eq*, *UR_eq* and *PR_eq* indicators are unobservable and must be inferred from observed data on labour productivity, the unemployment rate and the participation rate respectively. To do so, we apply the Hodrick-Prescott (HP) filter to each of these variables by choosing the appropriate smoothing parameter according to the literature. The HP filter allows extracting the trend of a given indicator. For *UR_eq* and *PR_eq* indicators, we combine HP filter results with an economic equilibrium relationship.

This approach allows to estimate potential GDP and contribution to its growth from (i) the equilibrium productivity growth rate, (ii) the equilibrium population growth rate, (iii) the equilibrium unemployment rate, and (iv) the equilibrium participation rate. It also permits to better identify Quebec's potential GDP growth strengths and weaknesses relative to Ontario.

QUEBEC-ONTARIO POTENTIAL GDP COMPONENT ANALYSIS

Our analysis of the results starts with the equilibrium unemployment rate (*UR_eq*). Chart 1 indicates a gradual decrease of Quebec's *UR_eq* relative to Ontario's. The sustained decrease has eliminated some of the gap between Quebec and Ontario's potential GDP per capita. We currently estimate that Quebec's *UR_eq* is only slightly higher than Ontario's (5.7% compared to 5.5%). Therefore, while reducing the growth gap between Quebec and Ontario's potential GDP through further reduction in Quebec's *UR_eq* is still possible, the resulting improvements will be modest.

Chart 1

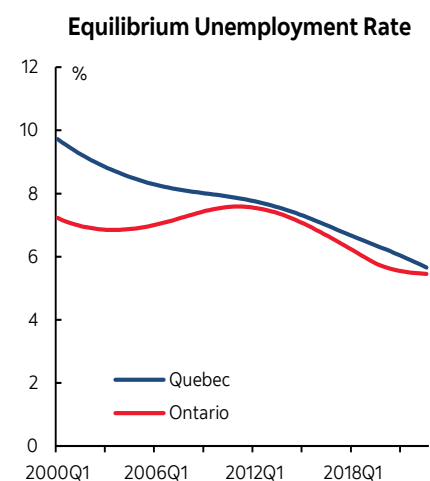


Chart 2

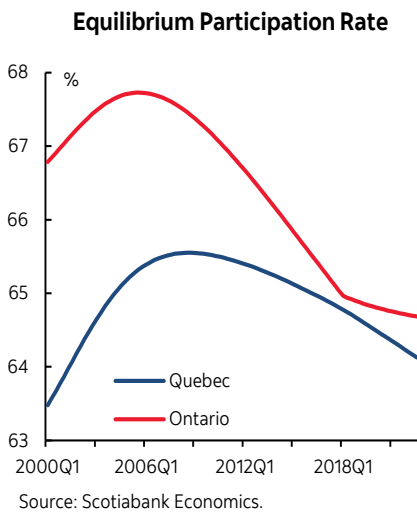


Chart 3

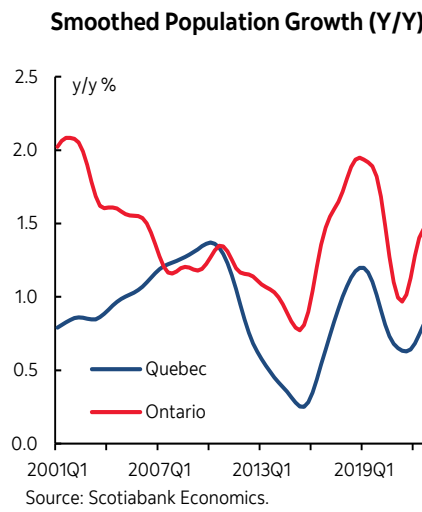
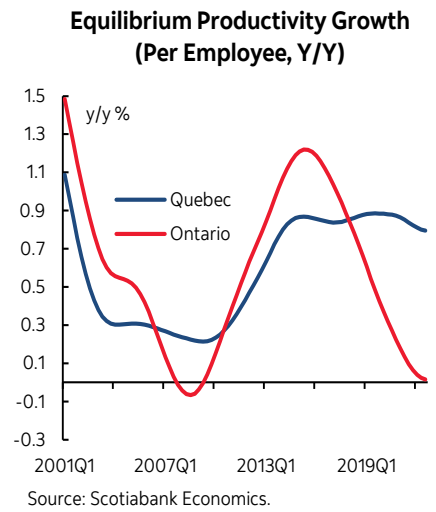


Chart 4



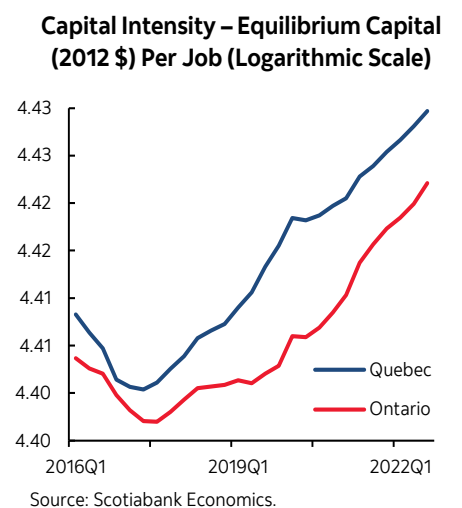
The same cannot be said for the equilibrium participation rate (chart 2). According to the results, we observe a much less noticeable decrease in the Quebec participation rate relative to Ontario between 2005 and 2018, benefiting Quebec’s relative potential GDP performance. The result is partly due to the introduction of low-cost childcare services in Quebec, which had a positive effect on women’s participation rate and offset the gradual and growing effect of the faster aging of the population in Quebec during this period. However, since 2019 the decline in the equilibrium participation rate has slowed in Ontario but continued in Quebec, thereby favouring Ontario’s potential GDP growth. We estimate Quebec’s current equilibrium participation rate at 64.1%, compared to 64.7% for Ontario. However, this gap is expected to increase over the next few years due to the anticipated faster aging of the Quebec population compared to Ontario. The average participation rate in Quebec will continue its decline relative to that of Ontario due to the increase in the demographic weight of the older group, which has a lower participation rate than other age groups. Consequently, the evolution of the participation rate will remain a weakness for Quebec unless the government introduces policies to counteract the decline. The implementation of new policies by the Quebec government to boost older people’s participation rate would be beneficial.

Due to higher immigration, it is no surprise that Ontario’s population growth is consistently above Quebec’s (chart 3). This is expected to continue, generating stronger trend growth in employment and potential GDP in Ontario than in Quebec. However, it does not affect the Quebec-Ontario potential GDP per capita gap¹.

The last, but not the least, component of potential GDP is equilibrium labour productivity. Since 2016, growth in Quebec labour productivity has been relatively stable, while it has plummeted in Ontario (chart 4). This adverse performance in Ontario has erased part of the gap between Quebec and Ontario’s potential GDP per capita, particularly since 2019. What can explain this phenomenon? To answer this, we must analyze the factors affecting labour productivity.

The growth in labour productivity can be explained by an increase in multifactor productivity (i.e., the efficiency in using production inputs, see appendix), an increase—through investment—in capital per job, or a combination of both. Chart 5 compares the evolution of the equilibrium capital stock per job in Quebec with that of Ontario. This

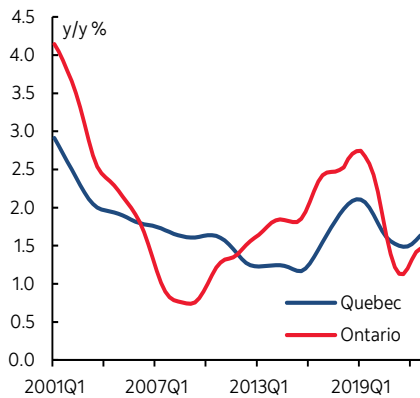
Chart 5



¹ At first glance, the impact of increased immigration on economy-wide productivity—and consequently on potential GDP per capita—is uncertain. For example, economy-wide productivity growth would be slowed (accelerated) if a significant proportion of the rising labour force from immigration was to be absorbed by the less (more) productive industries.

Chart 6

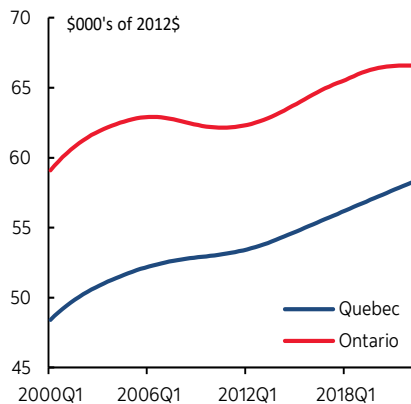
Potential GDP Growth (Y/Y)



Source: Scotiabank Economics.

Chart 7

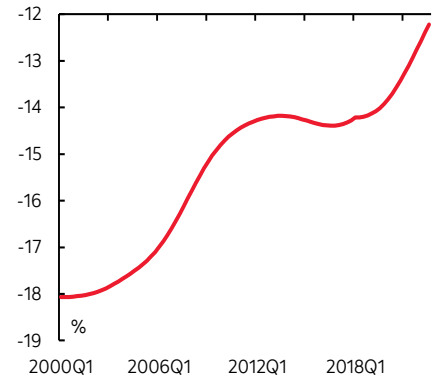
Potential GDP Per Capita (15 Years and Older)



Source: Scotiabank Economics.

Chart 8

Quebec-Ontario Potential GDP Per Capita Gap (15 Years and Older, %)



Source: Scotiabank Economics.

indicator is also called capital deepening—or intensity. From the beginning of 2017 to mid-2019, the trend growth in capital intensity was 1.0% in Quebec while it was 0.2% in Ontario, thereby favouring Quebec’s labour productivity growth relative to Ontario’s. However, since mid-2019 the growth in capital intensity has been similar in Quebec and Ontario.

Therefore, capital intensity per job can hardly explain the recent good performance of Quebec’s labour productivity growth relative to Ontario’s. The labour productivity growth is thus attributable to stronger multifactor productivity growth in Quebec than in Ontario. The Quebec government must still aim to increase the capital intensity per job to further raise productivity and increase GDP per capita. To achieve this goal, the province must increase investment and put in place policies to stimulate business investment in general.

QUEBEC AND ONTARIO POTENTIAL GDP AND GROWTH PROSPECTS ANALYSIS

Recent potential GDP growth is slightly higher in Quebec than in Ontario (1.6% compared to 1.5%; chart 6). It should be noted that the growth in potential GDP recorded since 2020 has been affected downwards by supply constraints and bottlenecks related to the COVID-19 pandemic. These constraints have strongly affected the automotive sector. Given the importance of this sector in Ontario, its potential GDP growth has likely been more affected by these pandemic-related supply disruptions than Quebec’s. However, these constraints are well on their way to being eliminated.

Mainly due to higher immigration and the gradual elimination of supply constraints recently affecting the automotive industry, we expect Ontario’s potential GDP to grow slightly faster than Quebec’s over the coming years (2.0% and 1.6% annually respectively). We also expect an annual 0.6-to-0.8 percentage point population growth differential favouring Ontario². Consequently, if no new initiatives to stimulate Quebec’s potential GDP are implemented, the gap between Quebec’s and Ontario’s potential GDP per capita will at best narrow by 0.4 percentage points per year. The gap observed in 2018 was about 14% (charts 7 and 8) and at the current rate, and given uncertainty, halving the gap would take up to 15 more years. Ambitious actions are therefore required to achieve this goal.

CONCLUSION: REDUCING THE GAP BETWEEN QUEBEC AND ONTARIO’S POTENTIAL GDP PER CAPITA

The Quebec government must implement policies to stimulate Quebec’s potential GDP, but how? The above analysis provides some ideas on targeting actions.

Our analysis indicates that Quebec performs well relative to Ontario in terms of the equilibrium unemployment rate and multifactor productivity growth. However, improvements are needed for the future direction of the labour force participation rate and capital

² Based on Statistics Canada’s median population growth scenarios.

intensity (through investment). Accordingly, we believe that the Quebec government's strategy for improving potential GDP growth should focus on:

- » Stimulating fixed capital investment and increase capital intensity per worker by implementing the following:
 1. The government may provide incentives for business investment, including:
 - I. Reducing business taxes,
 - II. Introducing investment tax credits,
 - III. Introducing targeted investment grants,
 - IV. Introducing business grants and tax credits for worker training.
 2. The government may also increase public investment in:
 - I. The education sector (e.g., schools, universities, and workforce training),
 - II. The health sector,
 - III. Efficient and accessible transportation systems, including public transit,
 - IV. Programs to ensure affordable housing costs, which would facilitate efficient (re)allocation of resources,
 - V. Increasing hydroelectric generation capacity to reduce production costs for goods and services.
- » Stimulating the labour force participation rate of older people by implementing the following:
 1. Incentives for retirees to return to the labour market,
 2. Incentives for older people to remain in the workforce longer.

Regarding measures necessary to stimulate business investment, we favour targeted subsidies and tax credits that increase per-worker capital intensity, and that appropriately match new capital to the needs and skills of workers. These measures are more closely related to investment and capital than simply reducing general corporate taxes as the latter also provides other options than investing in Quebec. Regarding measures to increase older-people labour force participation rate, we recommend incentive rather than coercive approaches. Incentives to increase the retirement age should be given serious consideration. Campaigns to increase financial literacy and inform workers of the implications of various decisions—including retirement age—on their retirement income would be beneficial.

APPENDIX: MULTIFACTOR PRODUCTIVITY INTERPRETATION

Conceptually, multifactor productivity reflects the efficiency with which an economy—or a firm—combines different inputs to produce goods and services. High multifactor productivity reflects a high return for production inputs.

Generally, multifactor productivity accounts for:

- The level of training and experience of the workers,
- The level of technology and innovation,
- The adequacy of physical capital, including machinery and equipment, to workers' tasks and skills,
- The business organizational structure, efficiency and fluidity of management and processes,
- The speed at which an organization adapts to changes (adjustment costs).

In a macro assessment approach as employed here, multifactor productivity also accounts for the contribution of omitted production inputs, including:

- The capital utilization rate,
- Hours worked per period,

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- The contribution of other inputs, such as energy and other raw materials, as well as intermediate goods and services,
- The shift in the economy's industrial structure between industries with different productivity levels,
- The public capital (infrastructure).

The latter set of factors influences our multifactor productivity estimates through the chosen estimation approach. The main objective of this step was to estimate, using a macro approach, the contribution of the major components to the performance gap of potential GDP per capita in Quebec relative to Ontario. A rather more micro approach would allow for a more detailed understanding of the contribution of these omitted factors to the relative productivity performance evolution and to better identify likely measures to increase Quebec's potential GDP—and per capita—and thus the improvement of the living standards for its population. In the coming months, we plan on refining our analytical framework to achieve this objective.

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