

A watercolor-style map of the province of Quebec, rendered in shades of blue and purple, serves as a background for the slide.

PRODUCTIVITY AND PROSPERITY IN QUEBEC 2020 OVERVIEW

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PRODUCTIVITY AND PROSPERITY 2020 IN QUEBEC OVERVIEW

About the Centre for Productivity and Prosperity – Walter J. Somers Foundation

The Centre for Productivity and Prosperity – Walter J. Somers Foundation has a twofold mission. First of all, it is devoted to research on productivity and prosperity, mainly in Quebec. The Centre then shares its research findings through knowledge transfer and educational activities.

About the Walter J. Somers Foundation

The Somers family established the Walter J. Somers Foundation in tribute to the founder of Walter Surface Technologies. Through different donations, the Foundation pursues the family heritage of commitment to the community and contributes to the prosperity of Quebec society, firstly by helping to improve its productivity but also by supporting excellence in youth education.

For more information on the Centre, visit www.hec.ca/cpp or write us at info.cpp@hec.ca

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MESSAGE FROM THE DIRECTOR

After ten editions of *Productivity and Prosperity in Quebec – Overview* and some one hundred studies on the topic, it must be recognized that the structural problem limiting economic prosperity in Quebec remains a fundamental part of the province's economic landscape: because it has not improved its productivity, Quebec is still struggling to create wealth. Politicians are paying more attention to this issue, it is true, and successive governments have worked hard to find a solution, but in the end the problem remains.

Now that the COVID-19 pandemic has confronted Quebec with the most serious economic crisis in its history, this inability to generate wealth at the same pace as other economies is a real concern for Quebecers. They are already coping with a structural disparity that is widening the economic gap between the province and the main Western economies, year after year, and now they must deal with the consequences of an unprecedented economic shock. At the same time, the lagging performance that has accumulated over time could limit the province's options for dealing with this new predicament.

To understand the extent of the problem, we can compare Quebec with Sweden, as the two are similar in terms of their populations and social safety nets. In 2018, the Quebec government was slightly larger than the Swedish one, with their expenditures standing at 47.6% and 47.1% of their respective GDPs. At first glance, Quebecers received government goods and services comparable to those received by Swedes. However, the per capita expenditure of Swedish public administrations was actually 21% higher than in Quebec, for a difference of over C\$5,300 per capita in purchasing power parity. This difference, intrinsically linked to the slower growth of the Quebec economy over the past 40 years, perfectly illustrates the limits imposed by the size of the provincial economy.

With its labour productivity growing 1.6 times faster since 1981, Sweden benefits from a significant wealth gap with Quebec. In 2019, Sweden generated 23% more wealth per capita than Quebec, meaning a monetary difference of nearly C\$12,500 per capita in purchasing power parity. In the early 80s, this gap was only C\$2,271. By creating proportionally more wealth, Sweden has managed to finance a larger number of public goods and services without the state occupying more space in the country's economy. On the other hand, since less wealth was generated in Quebec, the state ends up taking up more room in the economy even though it spends less. What this means is that Quebecers bear a significant tax burden without receiving more or better-quality public services in return.

Does this mean that Sweden will deal with the current situation more successfully than Quebec? Not necessarily. But one thing is certain: the Quebec government has less room to manoeuvre when it comes to restarting economic growth.

Given the size of its economy, the Quebec government has less financial resources available for massive injections to kick-start the recovery. And since it would be counter-productive to increase the tax burden on certain classes of taxpayers during a crisis to finance its spending, the government is bound to start a new cycle of recurring budget deficits to accomplish its goals. However, efforts to clean up public finances have produced results only too recently, and the government must proceed cautiously. Otherwise its actions to stimulate short-term economic growth will exacerbate the imbalance in intergenerational equity, a problem that remains very real despite politicians' promises over the past 20 years.

In the same way, it must be remembered that the federal government also has limited room to manoeuvre when it comes to intergenerational equity. By adding considerably to its deficits before the crisis to finance short-term growth, Ottawa boxed itself into a precarious situation. If borrowing conditions were to tighten up even slightly, the recovery could prove long or painful for future generations.

In view of this economic context, the CPP has taken a new tack in presenting its eleventh edition of *Productivity and Prosperity in Quebec – Overview*. When we examine both the structural and cyclical problems currently dragging the provincial economy down, we can see that the solution to these two issues relies on the same levers: education, innovation and investment. In other words, the key to the recovery is not a plan, but rather targeted actions applying these three levers of productivity.

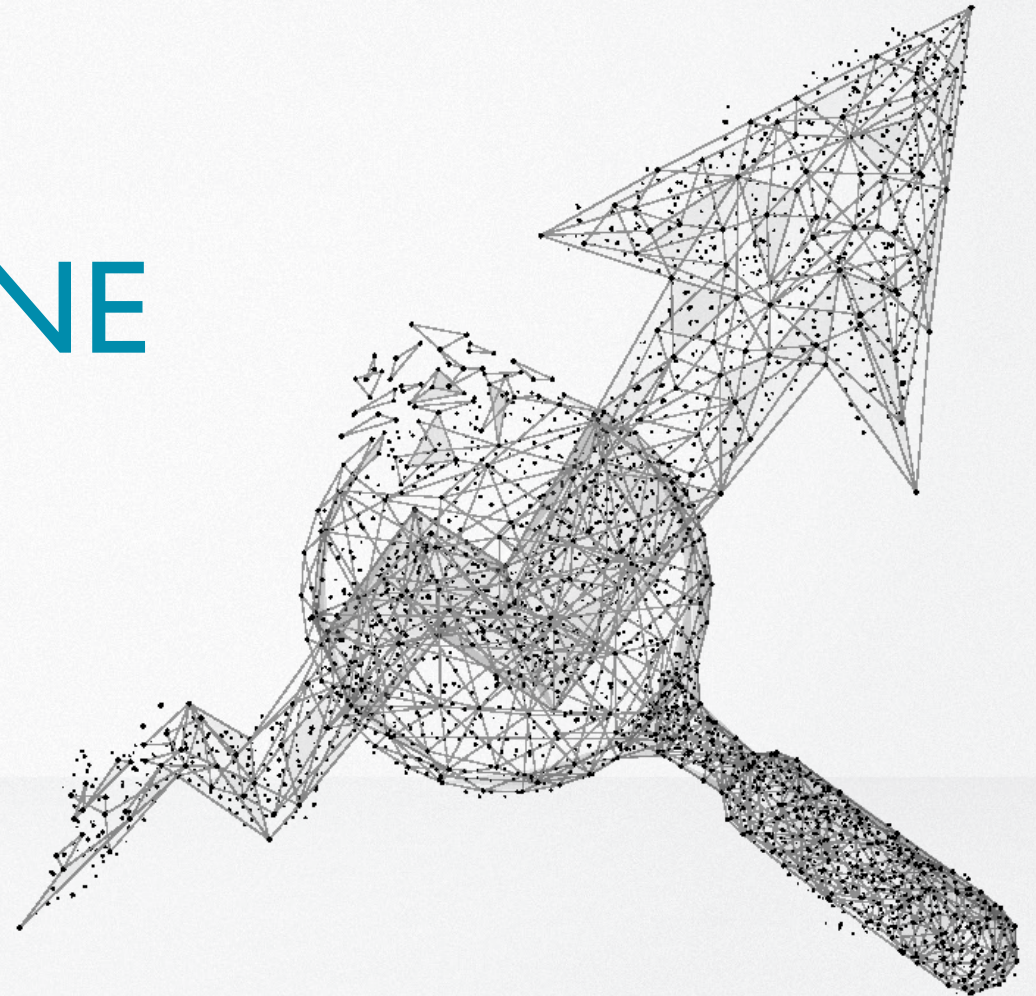
Read on and enjoy!

Robert Gagné

Director, Centre for Productivity and Prosperity – Walter J. Somers Foundation

Section I

QUEBEC'S ECONOMIC PROSPERITY: **A BRIEF OUTLINE**

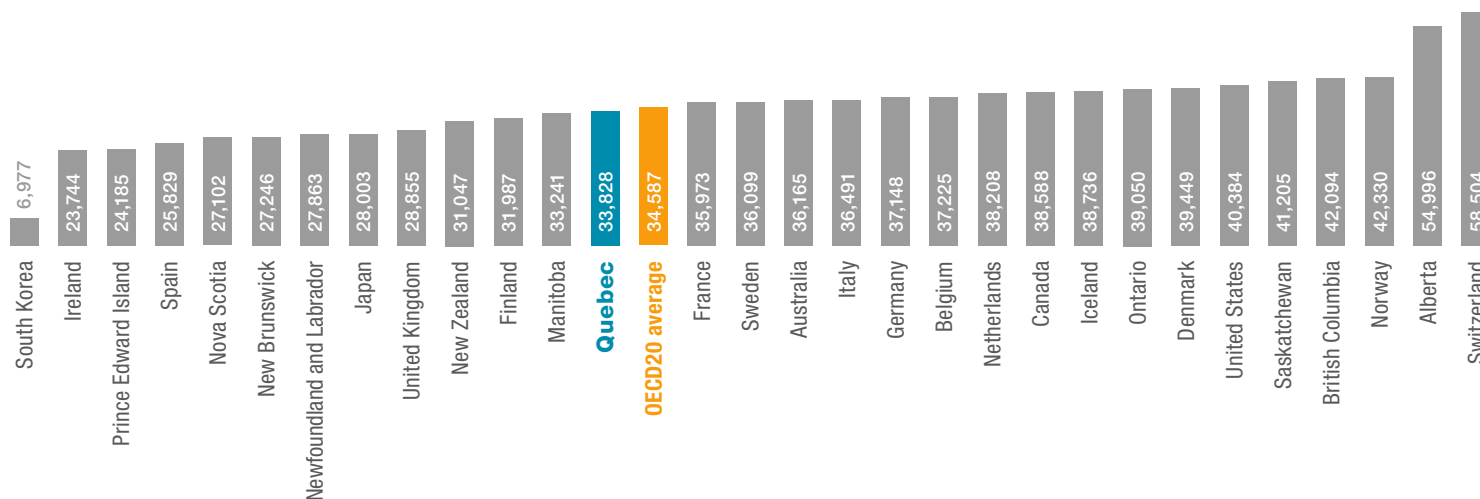


HOW DID THIS HAPPEN?

In the early 80s, Quebec was relatively well off in terms of economic prosperity. With a per capita standard of living of C\$33,828, the province came in just behind the average of countries in the OECD20 group (C\$34,587 p.c.). It not only outperformed countries like Finland and the United Kingdom, but also maintained a gap in the standard of living of less than C\$3,500 per capita – or about 10% – behind countries like Sweden and Germany.

FIGURE 1
STANDARD OF LIVING
AT PURCHASING POWER
PARITY IN 1981

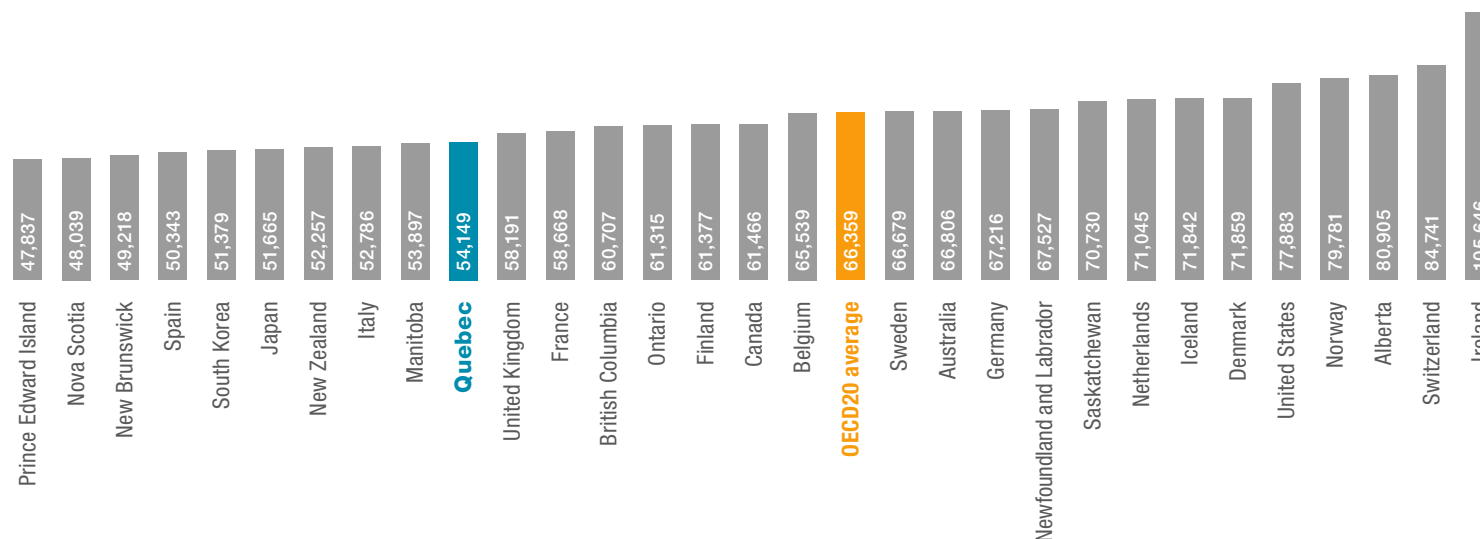
Per capita GDP in 2019 Canadian
Dollars at purchasing power parity



Quebec frittered away this advance over the following 40 years, however. With average annual growth of 1.2% in its standard of living between 1981 and 2019 (Figure 2), the province posted one of the slowest rates of the 30 economies analyzed. Only British Columbia, Italy, Switzerland, Alberta, Ontario and Canada as a whole recorded slower growth.

FIGURE 2
AVERAGE ANNUAL GROWTH
IN THE STANDARD OF LIVING
AT PURCHASING POWER
PARITY, 1981 TO 2019

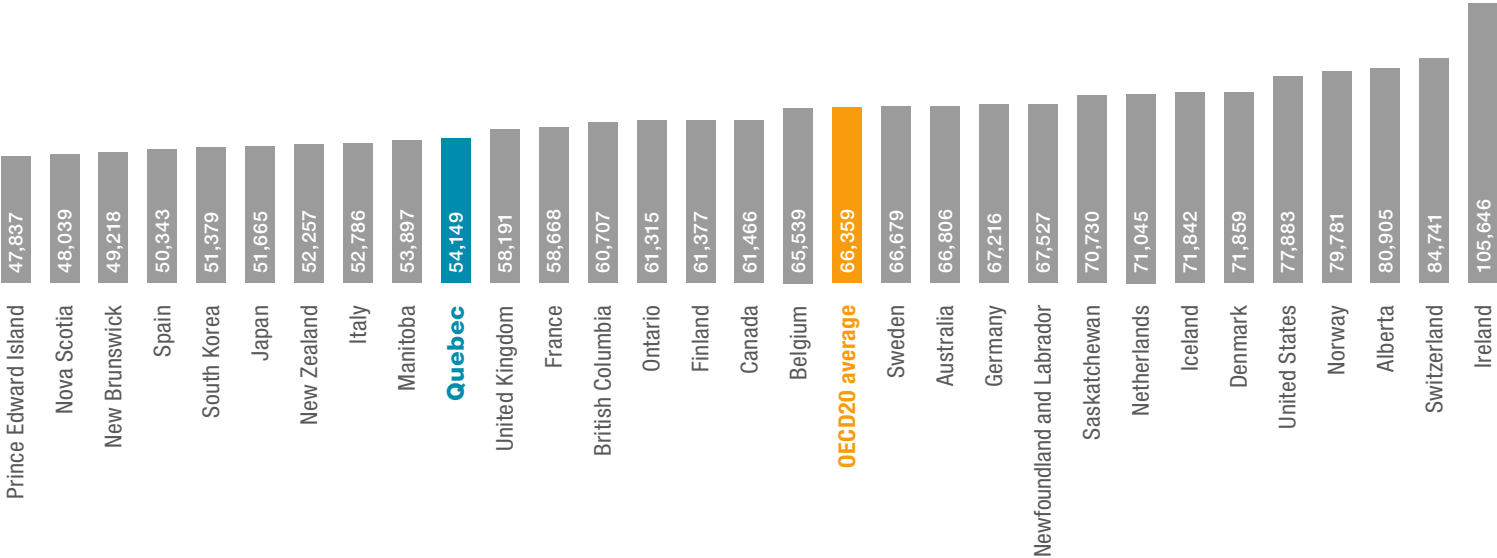
In percentages



By 2019, the gap between Quebec (C\$54,149 p.c.) and the OECD20 average (C\$66,359 p.c.) had widened to approximately C\$12,000 per capita. In other words, the countries in the OECD20 group now generate 22% more wealth per capita than Quebec, whereas the province had been just under this average in the early 80s.

Quebec also fell behind economies that had been closer in the early 80s. Finland, in particular, is C\$7,228 per capita, or 13%, ahead of Quebec. Similarly, countries that had been slightly ahead of Quebec in 1981 are now far in the lead. Sweden, for one, now sits more than \$12,000 per capita, or 23%, ahead.

FIGURE 3
STANDARD OF LIVING
AT PURCHASING POWER
PARITY IN 2019
Per capita GDP in 2019 Canadian
Dollars at purchasing power parity



PURCHASING POWER PARITY

When we compare the standard of living in Quebec with that in other countries, we have to be sure that we are comparing their performance in a common currency. The goal is quite simple: knowing that the per capita GDP of Sweden was 488,504 kronor in 2019 is not very useful if we are trying to determine whether Quebec lags economically with a per capita standard of living of \$54,159.

To convert standards of living into a common currency, we could use the market exchange rate, meaning the rate at which a bank would convert your dollars if you planned to travel outside Canada. While this approach has the advantage of being simple, it also has some serious flaws. Market exchange rates are subject to sharp and sometimes drastic fluctuations. These short-term variations may be completely unrelated to the country's actual economic conditions and could bias international comparisons. More important still, market exchange rates do not take account of the purchasing power of each currency, meaning the quantity of goods and services a Canadian dollar can buy, in comparison with another currency.

To get around this major problem, some organizations like the OECD publish purchasing power parity exchange rates. These exchange rates take account of differences in standards of living, by measuring the purchasing power of different currencies based on a standard basket of goods. Purchasing power parity exchange rates thus compare the amount of the national currency required to buy a specific quantity of goods and services, regardless of the country. They let us evaluate standards of living by compensating for the differences in prices between different countries.

We can see that 488,504 Swedish kronor per capita translates into a standard of living of C\$66,679 per capita once converted into purchasing power parity. This is slightly lower than if we had used the market exchange rate (C\$68,529), indicating a slightly higher cost of living in Sweden.

WHY 20 COUNTRIES?

The countries in the OECD20 group were selected because historical data were available for them. Out of the 37 OECD member countries, 20 were selected for analytical purposes. Greece, Austria, Portugal, Slovenia, the Czech Republic, Hungary, Estonia, Lithuania, Latvia, the Slovak Republic, Poland, Turkey, Luxembourg, Chile, Colombia, Mexico and Israel were excluded from this list.

AN EVOLVING DYNAMIC

If we compare the evolution of the standard of living gap between Quebec and the OECD20 average (Figure 4), we can see that the nature of the problem that has hindered the Quebec economy has changed over time.

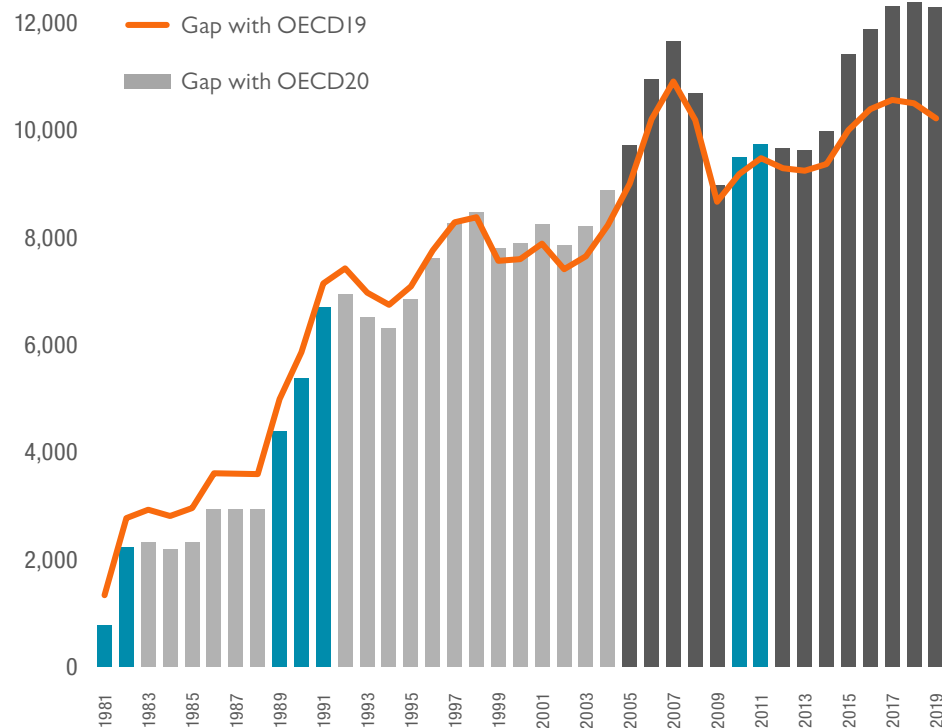
In the 1980s and 90s, the gap between Quebec and the OECD20 average widened because the province was harder hit by two recessions (blue bars in Figure 4). Once the Quebec economy recovered, it resumed much the same rate of growth as the countries in the OECD20 group, allowing the province to maintain a relatively constant gap.

Starting in the early 2000s, the gap again widened, although the economy was not to blame. The difference in the standard of living between Quebec and the OECD20 average grew by 47% between 2002 and 2007, even though there was no recession in Quebec. Essentially, the fundamentals of the Quebec economy seem to have prevented it from keeping pace with other countries, suggesting that there was a structural issue. The fact that Quebec was spared by the 2008 recession, overall, then temporarily reduced the gap with the OECD20 average. Once the OECD economies were back on track, however, the gap began spreading once again.

Note that this recovery was stimulated in large part by Ireland, where the standard of living jumped by more than 50% between 2014 and 2019, mainly because of changes in its accounting practices. If Ireland is removed from the list of OECD countries considered, the trend remains the same, albeit less marked. The difference between Quebec and the OECD19 average increased once the effects of the recession had faded.

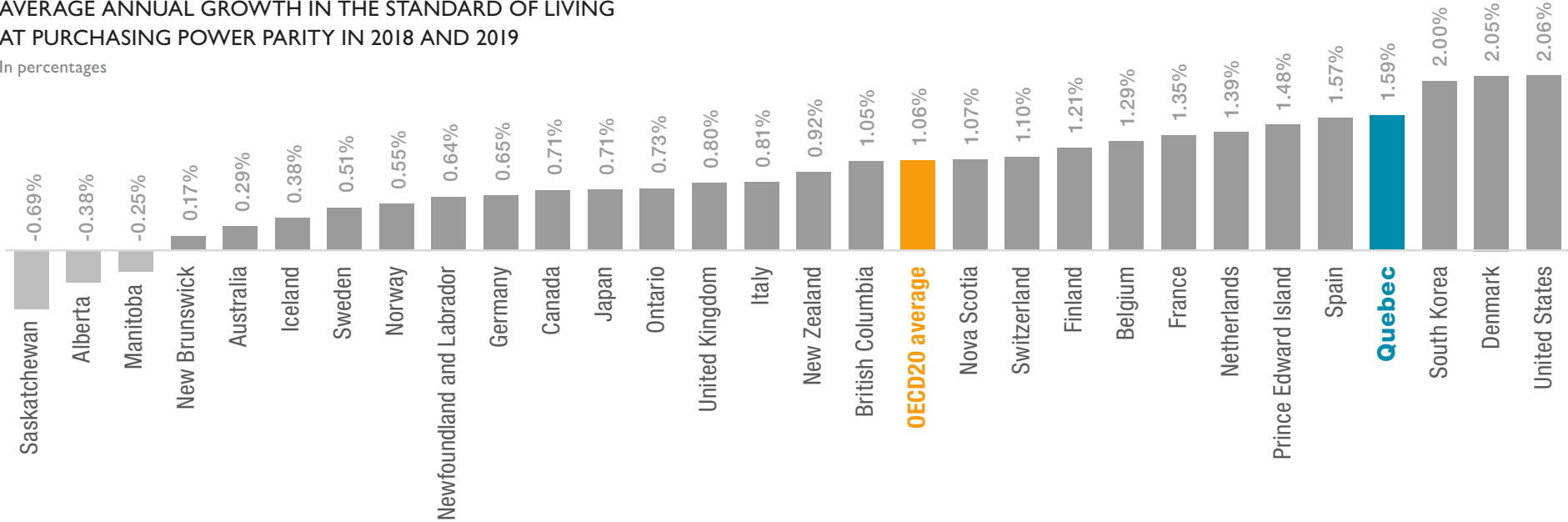
FIGURE 4
THE STANDARD OF LIVING GAP BETWEEN QUEBEC AND
THE OECD20 AVERAGE, 1981 TO 2019

Per capita GDP in 2019 Canadian Dollars at purchasing power parity



This being said, the past two years seem to have been particularly profitable for Quebec. With average annual growth of 1.6% in its standard of living in 2018 and 2019, the province was outstripped only by South Korea, Denmark and the United States (Figure 5). However, the economic roadblocks erected to deal with the COVID-19 pandemic stopped this encouraging growth cold.

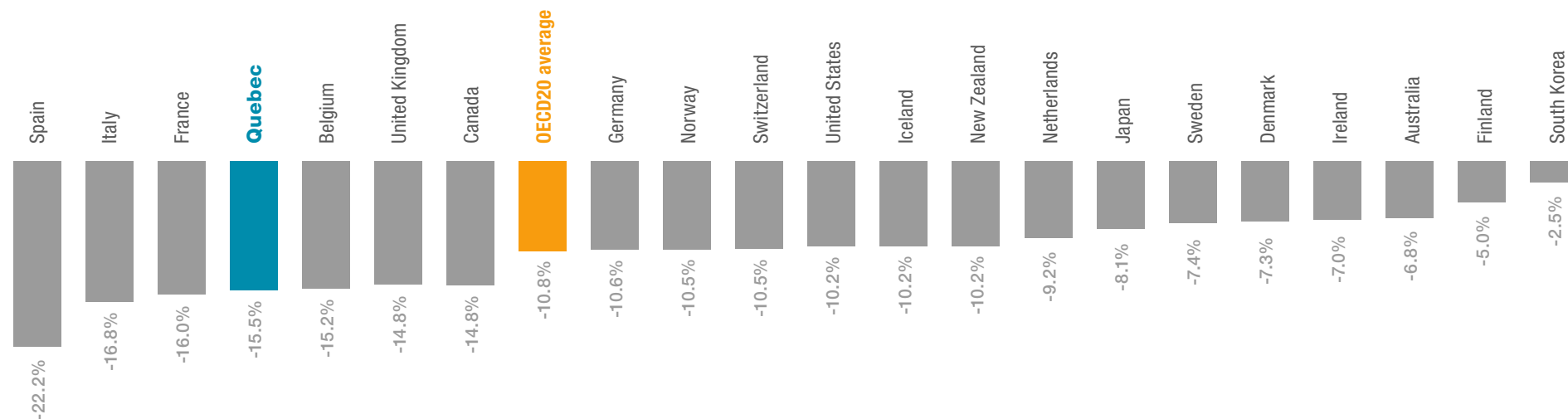
FIGURE 5
AVERAGE ANNUAL GROWTH IN THE STANDARD OF LIVING
AT PURCHASING POWER PARITY IN 2018 AND 2019
In percentages



COVID-19: A HISTORIC SHOCK

In the first six months of 2020,¹ Quebec's GDP plunged by 15.5% when the brakes were applied to the economy (Figure 6), a shock of historic magnitude. In the OECD20 group, only Spain, Italy and France suffered more serious declines during this period. Not surprisingly, these countries also reported particularly high numbers of virus cases.

FIGURE 6
GDP GROWTH IN THE FIRST SIX MONTHS OF 2020
In percentages

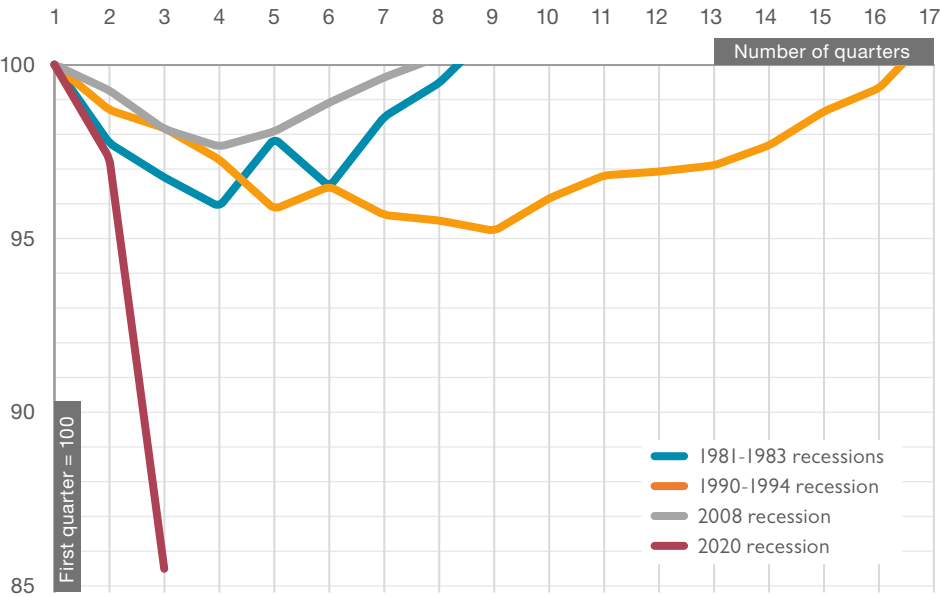


To fully understand the extent of the shock for Quebec, we can compare the length and gravity of recessions suffered in the previous four decades. The horizontal axis in Figure 7 shows the number of quarters it took for the economy to return to the peak GDP preceding each recession. The vertical axis shows the deviation from this peak GDP, for each of the quarters in the recession cycle.

While it is obviously too early as yet to determine the length of the current recession, this comparison is particularly revealing in terms of its gravity. With a drop of nearly 16% over the first two quarters of 2020, the shock is currently three times more serious than in the three previous recessions. Up until 2020, the largest decline had been recorded during the recession in the early 90s. In the depths of that recession, the GDP had shrunk by 4.8%.

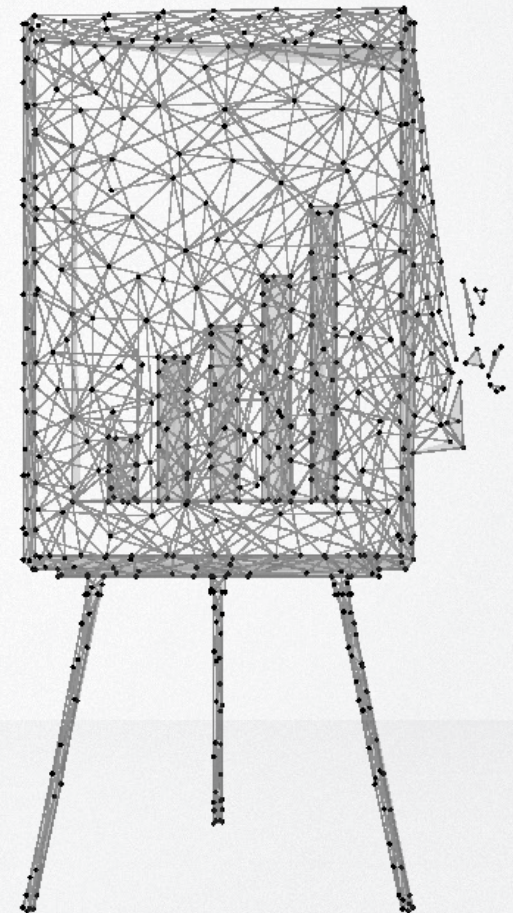
FIGURE 7
LENGTH AND EXTENT OF THE PAST FOUR RECESSIONS IN QUEBEC

Number of quarters (horizontal axis) – First quarter = 100 (vertical axis)



Section 2

THE ROLE OF LABOUR PRODUCTIVITY



A MATTER OF PRODUCTIVITY

After more than ten years of research into this issue, the reason for the slower growth of the Quebec economy is not only known, but also well documented: labour productivity in Quebec is too low. Because it generates less wealth per hour worked, on average, the Quebec economy grows more slowly. But while the origin of the problem has been clearly identified, it is still useful to illustrate just to what extent labour productivity plays a key role in economic growth. We have two options.

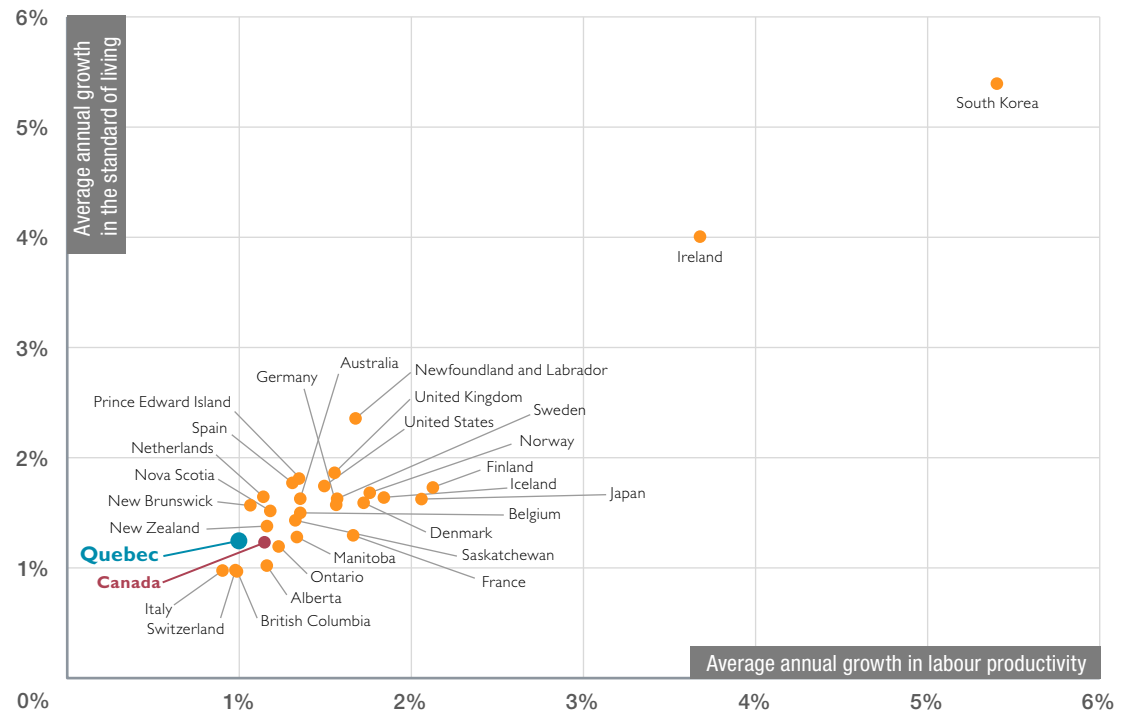
The first relates the average annual growth in labour productivity and in the standard of living between 1981 and 2019 in the economies analyzed (Figure 8). The picture it paints is quite clear.

On the one hand, the economies that enjoyed the greatest standard of living increases generally also reported large gains in labour productivity. That is the case for Ireland and South Korea, which managed to make up for their considerably lagging performances thanks to productivity gains since the early 1980s. On the other hand, economies with slow labour productivity growth were mainly relegated to the back of the pack in terms of improvements in their standards of living. This where we find Quebec.

Over the past 39 years, labour productivity in the province has risen at an average of 1.0% per year. Of the other 29 economies analyzed, only Switzerland, Italy and British Columbia have fared worse. Even if we exclude the exceptional performances of South Korea and Ireland, the average labour productivity growth in the OECD20 group was 1.5 times greater than here. With a difference of this size, it is no surprise that Quebec has fallen behind.

FIGURE 8
AVERAGE ANNUAL GROWTH IN LABOUR PRODUCTIVITY
AND THE STANDARD OF LIVING, 1981 TO 2019

In percentages



The second approach is to measure the contribution of labour productivity to growth in the standard of living. This can be done using a simple equation showing that the standard of living is the result of three factors:

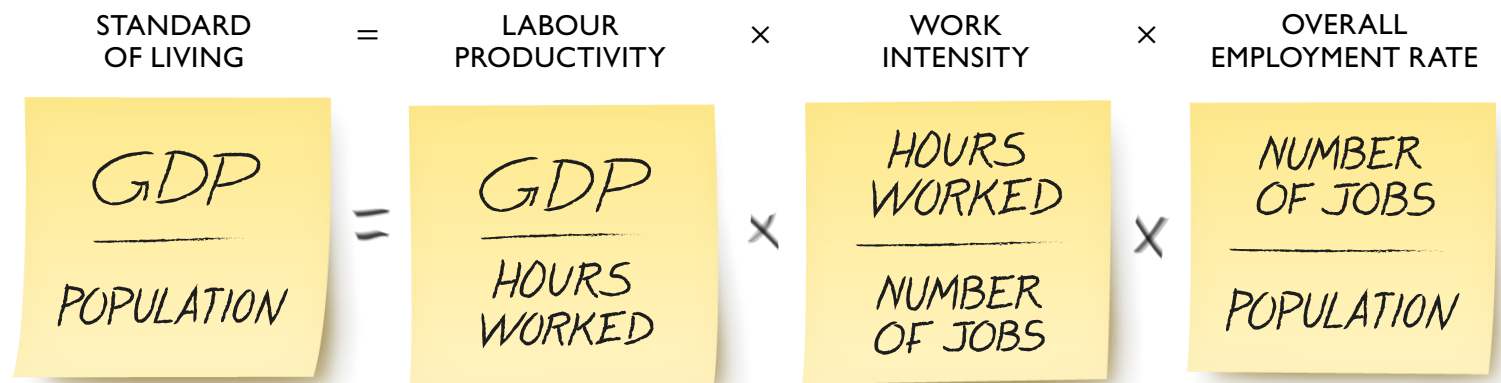
- labour productivity, which measures the average wealth created per hour worked
- work intensity, which measures the average number of hours worked per job
- the employment rate, which measures the proportion of the total population with jobs

In short, an economy's standard of living is determined by the efficiency with which it generates wealth (labour productivity), the proportion of the population that works (employment rate) and the average number of hours worked per job (work intensity). **In theory**, this means that a society has three levers it can use to stimulate standard of living growth:

- Work more efficiently by increasing the wealth created per hour worked
- Work longer by increasing the average number of hours spent working
- Work more by increasing the number of jobs

If we decompose standard of living growth in the countries in the OECD20 group and the Canadian provinces using this equation (Table I on next page), we can see that in the long term, **only productivity counts**.

DIAGRAM I
THE THREE DETERMINANTS
OF THE STANDARD OF LIVING



On average, labour productivity explained nearly 95% of the standard of living growth in the 30 economies analyzed between 1981 and 2019. The increase in the employment rate also contributed to standard of living growth in the vast majority of these economies, but its impact was attenuated by an underlying trend, i.e. decreasing work intensity. Note, in that connection, that only the United States and Sweden recorded an increase in the number of hours worked per job between 1981 and 2019.

If we focus on Quebec, we can see that the province reported one of the lowest absolute standard of living increases. With a total per capita increase of C\$20,321, Quebec outperformed only Italy and British Columbia. It comes as no surprise that the contribution of labour productivity (C\$16,287 p.c., or 80%) is one of the lowest among the 30 selected economies. Only New Brunswick and Italy reported weaker contributions.

As was true for the vast majority of cases, the decreasing work intensity in Quebec slowed per capita economic growth by C\$4,136 between 1981 and 2019. However, increased labour market participation helped stimulate economic growth here. The rising employment rate alone generated a per capita increase of C\$8,170 in Quebec's standard of living since 1981 – 33% greater than the average in the 30 economies analyzed.

TABLE I
SOURCES OF GROWTH IN THE STANDARD OF LIVING AT PURCHASING
POWER PARITY, 1981 TO 2019

Per capita GDP in 2019 Canadian Dollars at purchasing power parity

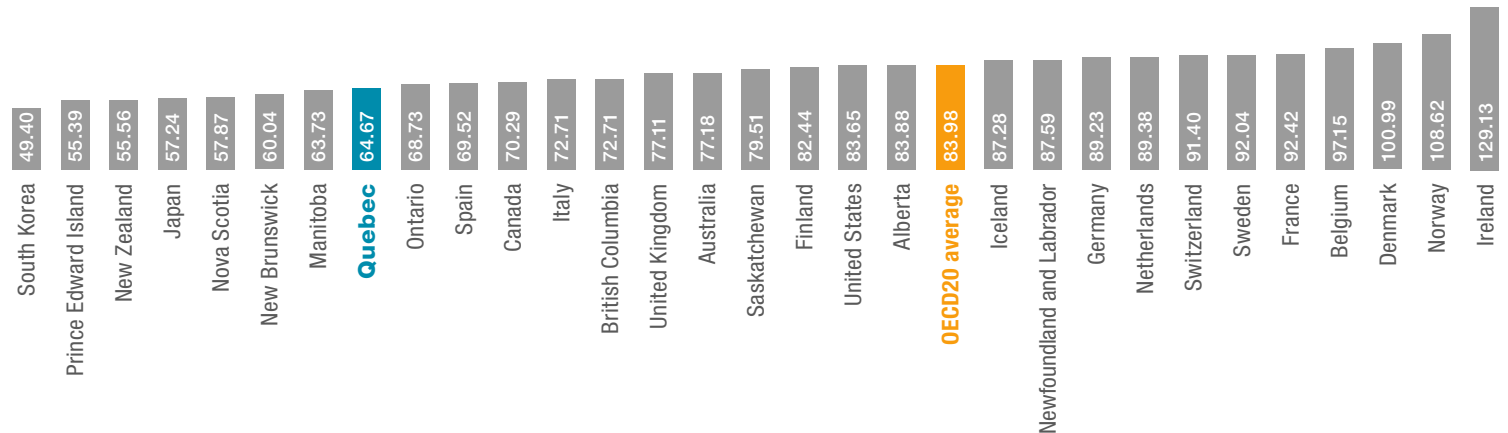
VARIATION IN THE STANDARD OF LIVING, 1981 TO 2019		VARIATION IN THE STANDARD OF LIVING EXPLAINED BY:		
		LABOUR PRODUCTIVITY	WORK INTENSITY	OVERALL EMPLOYMENT RATE
IRELAND	81,902	75,284	-9,118	15,736
SOUTH KOREA	44,402	44,560	-8,322	8,164
NEWFOUNDLAND AND LABRADOR	39,664	28,288	-3,006	14,383
NORWAY	37,452	39,127	-7,445	5,769
UNITED STATES	37,349	32,142	1,041	4,166
ICELAND	33,106	37,138	-7,452	3,419
NETHERLANDS	32,837	22,799	-4,096	14,134
DENMARK	32,410	35,069	-6,129	3,470
AUSTRALIA	30,641	25,521	-3,173	8,293
SWEDEN	30,580	29,471	2,715	-1,606
GERMANY	30,068	29,880	-11,151	11,339
SASKATCHEWAN	29,525	27,339	-4,519	6,706
FINLAND	29,390	36,028	-5,142	-1,496
UNITED KINGDOM	29,336	24,499	-781	5,619
BELGIUM	28,314	25,841	-3,335	5,808
SWITZERLAND	26,237	26,676	-9,433	8,994
ALBERTA	25,909	29,410	-6,018	2,517
SPAIN	24,513	18,147	-4,085	10,451
JAPAN	23,662	29,915	-9,568	3,315
PRINCE EDWARD ISLAND	23,652	17,630	-2,027	8,049
CANADA	22,878	21,283	-3,735	5,330
FRANCE	22,695	29,055	-7,935	1,575
ONTARIO	22,265	22,892	-3,041	2,415
NEW BRUNSWICK	21,972	14,944	-1,006	8,033
NEW ZEALAND	21,210	17,865	-296	3,641
NOVA SCOTIA	20,937	16,301	-2,844	7,480
MANITOBA	20,656	21,532	-3,593	2,718
QUEBEC	20,321	16,287	-4,136	8,170
BRITISH COLUMBIA	18,613	18,964	-3,918	3,567
ITALY	16,295	15,068	-3,567	4,794

LABOUR PRODUCTIVITY: THE ONLY REAL LEVER OF ECONOMIC GROWTH

Given its particularly weak productivity growth over nearly 40 years, in 2019 Quebec reported one of the lowest levels of labour productivity of the 30 economies analyzed (Figure 9). With per capita labour productivity of C\$64.67/hr, Quebec was trailed only by South Korea, New Zealand, Japan, Manitoba and the three Maritime provinces. In comparison, average labour productivity in the OECD20 group was 30% higher than here. This means that on average these countries made nearly C\$20.00 more than Quebec for each hour worked. Hence it is no surprise that the province has trouble keeping up with other countries.

FIGURE 9
LABOUR PRODUCTIVITY
IN 2019

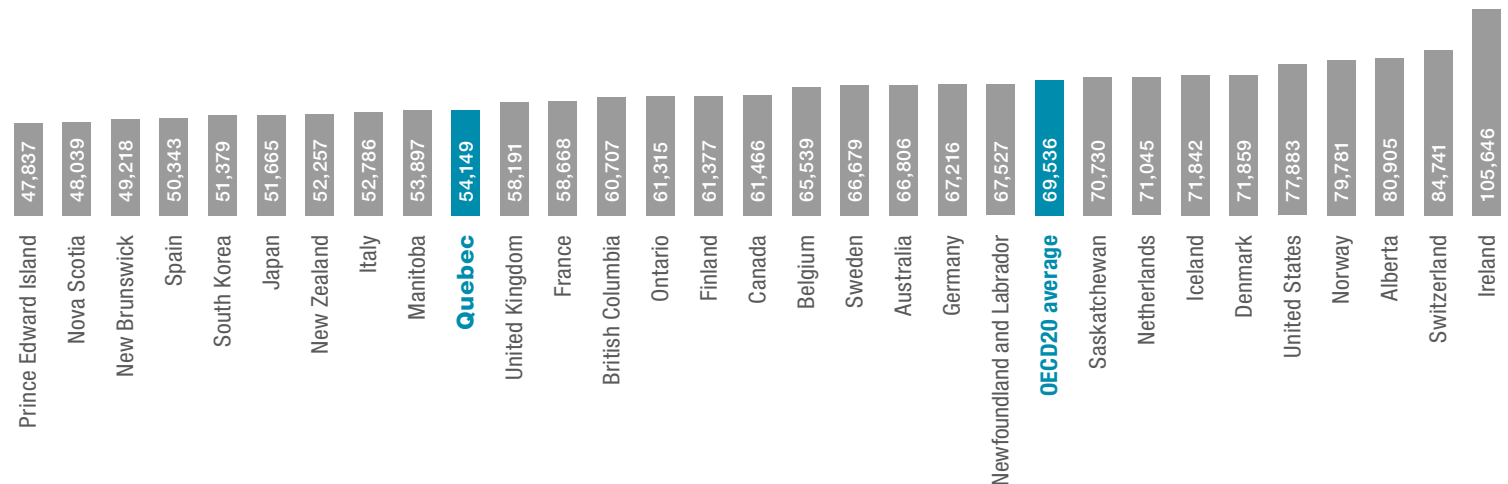
GDP per hour worked in Canadian Dollars at purchasing power parity



To give a clearer picture of the impact of Quebec's low productivity growth, if the province had maintained an annual labour-productivity growth rate similar to the OECD20 average since 1981, all else being equal, the standard of living in Quebec would now be 28% higher. In other words, the Quebec economy would generate about C\$15,300 more per capita than it does now (Figure 10). Quebec would rank among the higher standards of living, just behind Saskatchewan and the Netherlands.

FIGURE 10
STANDARD OF LIVING
IN 2019

Per capita GDP in Canadian Dollars at purchasing power parity





In comparison, Quebec's standard of living gains would be lower if its work intensity were higher (Figure 11) or if its labour market participation were higher (Figure 12).

With work intensity similar to that of Alberta, one of the highest in Canada, Quebec's standard of living would be scarcely 5.9% higher than it is now (Figure 12), a fairly modest gain since it would mean 100 additional hours of work per job. The same applies for the employment rate. Supposing that labour market participation in Quebec were the same as in Alberta, Quebec's standard of living would rise by only \$4,746 per capita, or about 8.8% from its current level. Once again, a relatively modest gain, since part of the inactive population would have to re-enter the labour force in order to reach this employment rate.



FIGURE 11
WORK INTENSITY IN 2019
Number of hours worked per job

FIGURE 12
STANDARD OF LIVING IN 2019
Per capita GDP in Canadian Dollars
at purchasing power parity

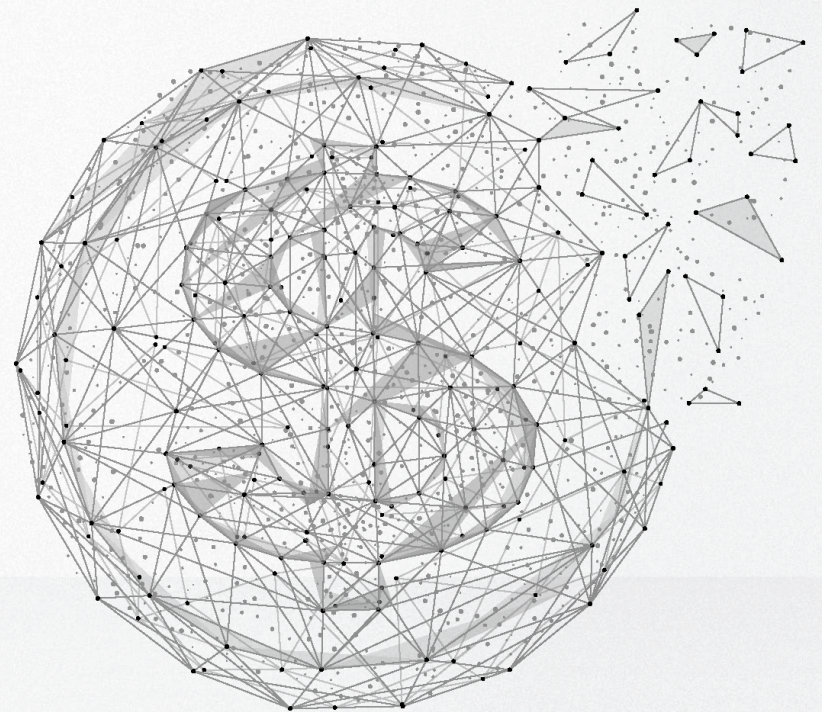
FIGURE 13
EMPLOYMENT RATE IN 2019
Proportion of total population with jobs

In the end, the conclusion is obvious. To achieve a lasting improvement in Quebec's economic prosperity, it is not enough to work harder or longer: the key is to work better. In other words, only productivity counts. At a time when Quebec is faced with the most serious economic crisis in its contemporary history, the productivity issue should be front and centre in our concerns about the recovery.

Section 3

WHY WORRY ABOUT THE RELATIVELY LOW STANDARD OF LIVING IN QUEBEC?

Given that they already enjoy an enviable quality of life in many respects, should Quebeckers really be concerned about their province's low standard of living? The answer is a definite yes. Year after year, this underperformance affects them directly, not only by reducing their government's financial capability to provide public goods and services, but also by limiting their ability to spend and save.



LIMITING HOUSEHOLD SAVING AND CONSUMPTION

Since the standard of living is first and foremost an indication of economic prosperity, and offers little information on quality of life or how wealth is distributed, Quebecers might be tempted to downplay the consequences of their province's low standard of living. Yet they are directly affected by Quebec's weak economic prosperity.

As Figure 14 shows, Canadian households' disposable income – i.e. the average after-tax amounts at their disposal to spend and save – is intrinsically linked to their province's standard of living: the higher the standard of living, the more people have to spend and save (Figure 14). Given Quebec's weak economic prosperity, Quebecers have less disposable income than most people in other provinces. In 2019, Quebecers each had \$3,137 less than the average Canadian to spend and save (Figure 15). This is a considerable difference, given that the per capita difference in the early 80s was \$1,862.

FIGURE 14
STANDARD OF LIVING AND DISPOSABLE INCOME IN CANADA IN 2019
In Canadian Dollars per capita

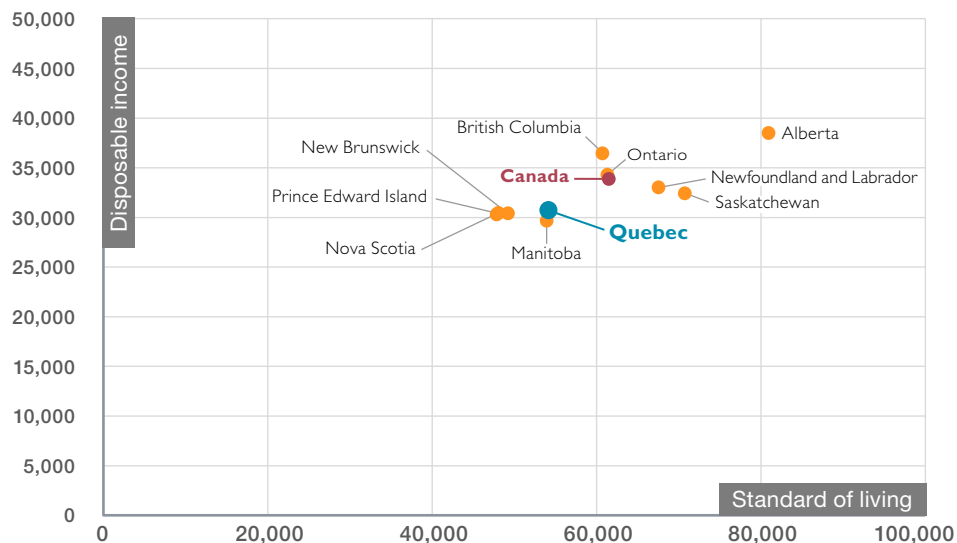
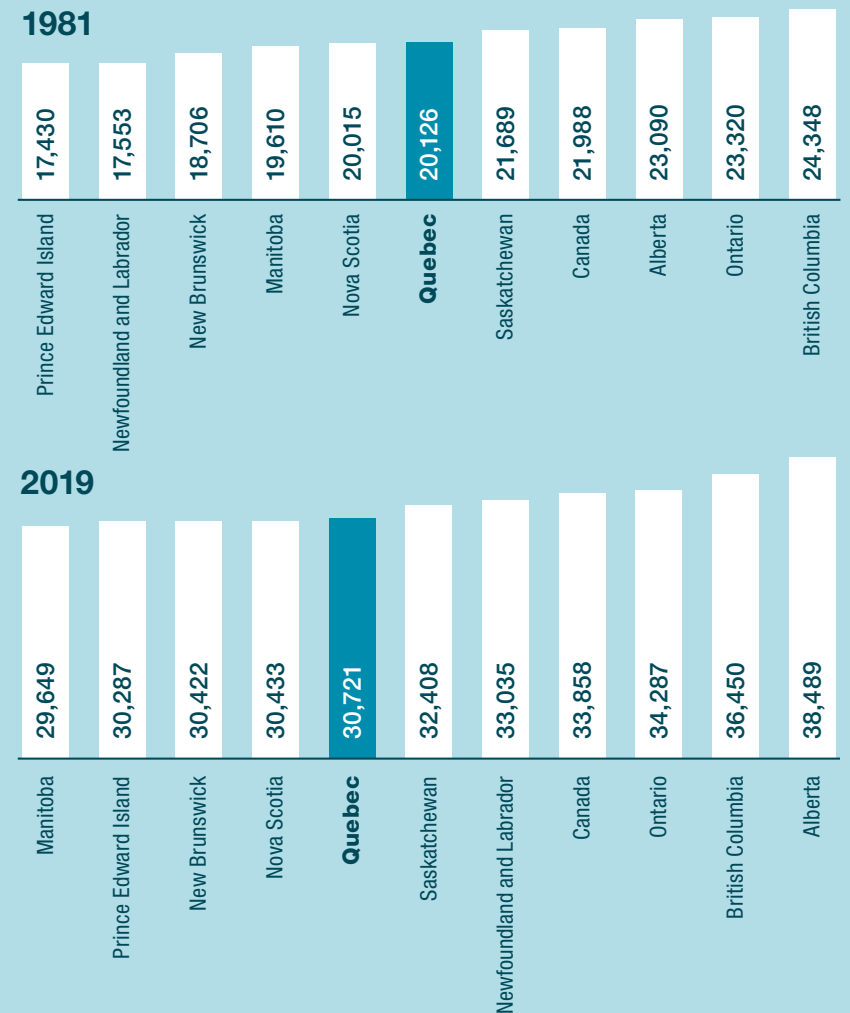


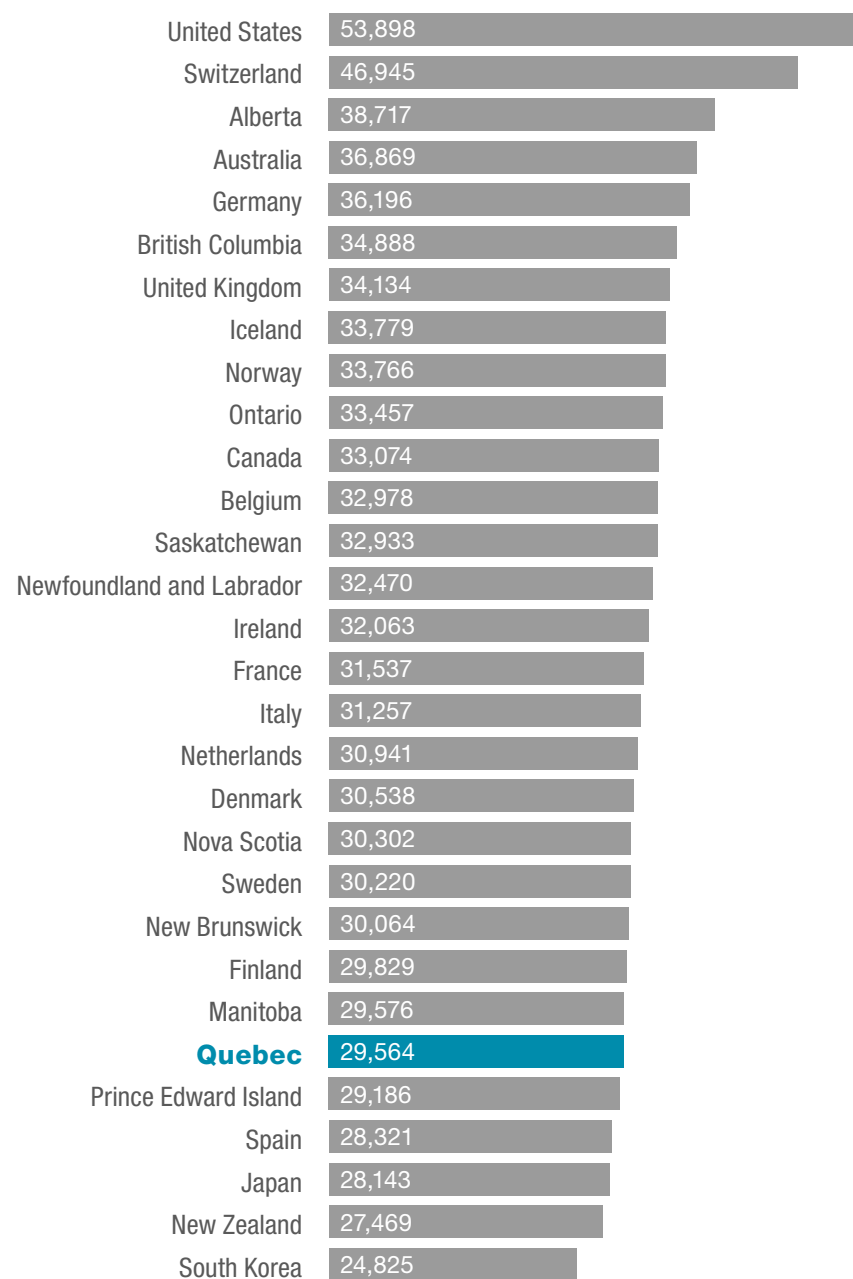
FIGURE 15
DISPOSABLE INCOME IN CANADA, 1981 AND 2019
In 2019 Canadian Dollars per capita



Note, in passing, that this observation also applies when we extend the comparison of disposable income to the international scene (Figure 16).² While the ranking is slightly different from that for the standard of living, because of the variety of tax systems involved (which is why the United States is so far ahead at the top of the ranking and why Finland is near the bottom), one fact remains: Quebec once again trails the pack.

FIGURE 16
PER CAPITA DISPOSABLE INCOME IN 2018

In Canadian Dollars per capita at purchasing power parity



At this point, we could always downplay the impact of Quebec's economic prosperity on its population by invoking the issue of wealth redistribution. In short, the argument goes like this: the average income in Quebec may be lower, but on the other hand wealth is more equitably distributed. This hypothesis, while attractive, is mistaken.

First of all, it must be acknowledged that this hypothesis is based on a proven fact: thanks to government intervention, the wealth gap is narrower in Quebec. To illustrate this statement, we need only compare the distribution of income among Quebecers before and after the government has redistributed it.

If we first compare the average market income per quintile (Figure 17), that is the average income before taxes and government transfers, it can be seen that there is a huge divide separating Quebecers. According to 2018 data – the most recent at this level of disaggregation – the average market income of the richest 20% was 19.2 times greater than that of the poorest 20%. In other words, the wealthiest portion of the population possessed almost 20 times as many resources as the poorest portion. Only two other provinces had higher ratios. Note, in comparison, that Alberta was a model in this respect, with a ratio of 13.1.

When we consider the distribution after the government has levied taxes and redistributed wealth by means of transfers (Figure 18), the picture is quite different. The ratio between the income of the richest 20% and the poorest 20% in Quebec falls to 4.4, meaning that the wealthiest Quebecers now have 4.4 times more money to spend and save than do the poorest members of the population. Only New Brunswick and Prince Edward Island have smaller gaps. Quebec is quite different from Ontario, which sits at the bottom of the ranking with a ratio of 5.3.

Everything seems to suggest that the government is doing an excellent job in its mission of redistributing wealth. So should we conclude that Quebecers are better off in the end? Not really.

FIGURE 17
RATIO BETWEEN THE MARKET INCOME OF THE RICHEST
AND POOREST 20%, IN 2018

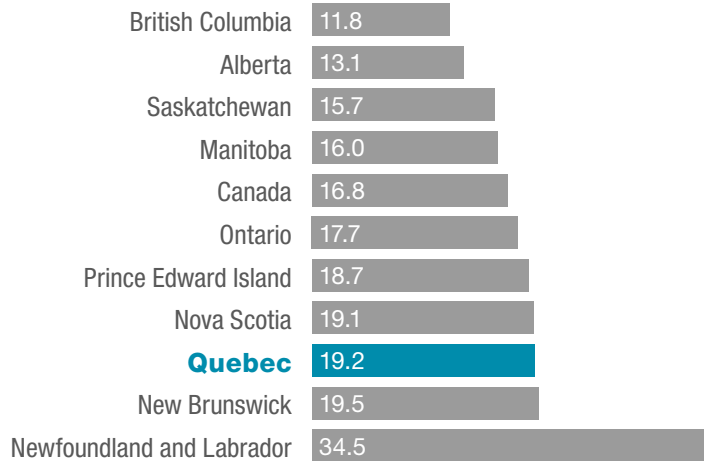
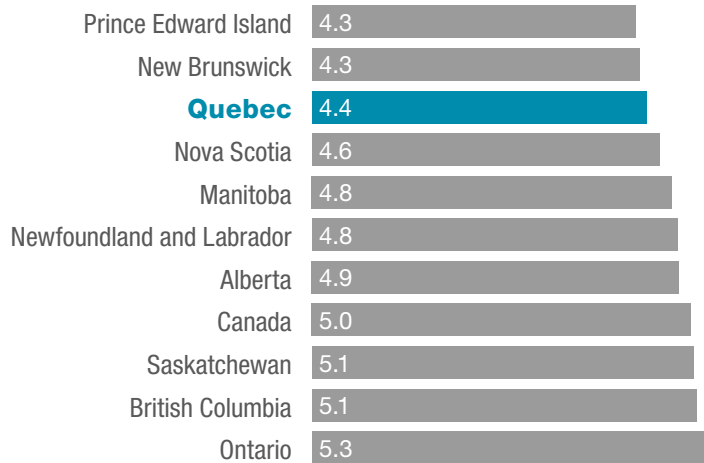


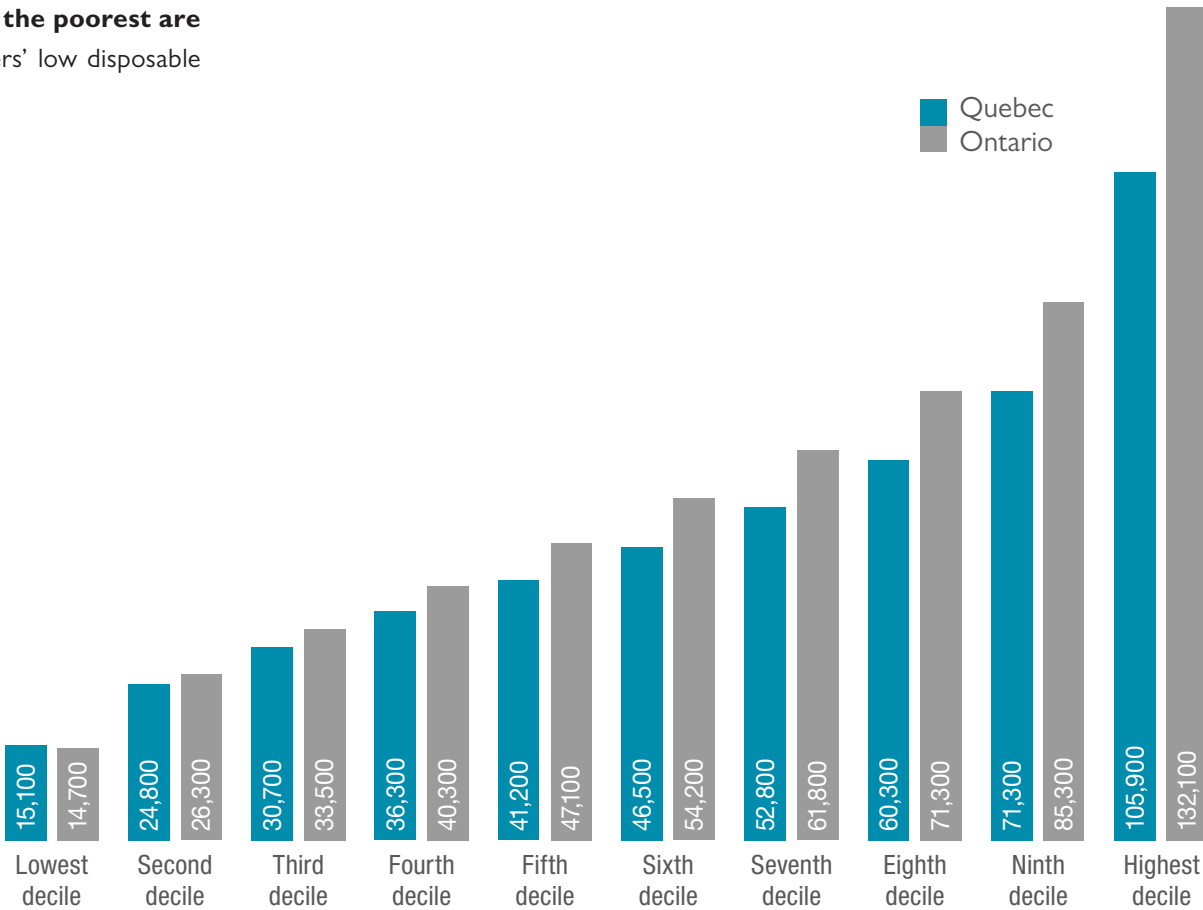
FIGURE 18
RATIO BETWEEN THE DISPOSABLE INCOME OF THE RICHEST
AND POOREST 20%, IN 2018



While it is true that there is less income inequality in Quebec than in Ontario, in particular, this fact tends to conceal a worrisome situation, to say the least: on average, 90% of Quebec households have less disposable income than their Ontario counterparts.

As shown in Figure 19, only the households in the first decile – the poorest 10% – have disposable incomes slightly higher than their Ontario counterparts. In the other deciles, Ontarians' disposable income is systematically higher than that of their Quebec equivalents. Thus the most affluent Ontario households have disposable incomes 25% higher than their Quebec counterparts, or a difference of approximately \$26,000 available to spend and save. **In short, there is less inequality in Quebec than in Ontario because the wealthiest portion of the population has lower incomes, and not because the poorest are better off.** This means that it is difficult to justify Quebecers' low disposable income by pointing to a better redistribution of wealth.

FIGURE 19
DISTRIBUTION OF HOUSEHOLD DISPOSABLE INCOME IN 2018
In Canadian Dollars per capita



A MORE BURDENSOME AND LESS GENEROUS GOVERNMENT

In addition to its impact on disposable income, the province's low economic prosperity also affects Quebecers' day-to-day lives through its consequences for the government's ability to finance its objectives. Since its tax base is necessarily smaller, the government's resources for financing its activities are limited. The result is a more burdensome government, and often a less generous one.

To illustrate this situation, we can compare the weight of spending by public administrations as a percentage of GDP with their per capita value.³

With a relative weight estimated at 47.6% of GDP in 2018 (Figure 20), Quebec is in the higher portion of the ranking, a few places behind Denmark and Finland, and ahead of Sweden and Norway. It is far ahead of Ireland, which sits at the bottom of the ranking with government expenditures evaluated at 24.7% of its GDP.

The picture changes when we assess these same expenditures in light of their populations (Figure 21). At per capita public spending of C\$24,998, Quebec drops ten places and ends up on a par with Ireland. In addition, there is now a difference of close to 21% with Sweden. Although they represent less of the economy, Swedish public administrations still spend C\$5,358 more per capita than their Quebec counterparts.

This gap is a direct consequence of Quebec's low economic prosperity. Since proportionally less wealth is generated, the government takes a larger bite of the economy, even though its spending is proportionally lower. In other words, the government's room to manoeuvre is limited by the size of its economy.

If Quebec can achieve a lasting improvement in its economic prosperity, it will be able to finance more public goods and services without the government burden increasing, or maintain the same level while lightening its economic load. In either case, in the end Quebec society as a whole would benefit, either through more or higher-quality programs, more government transfers, or less taxation.

FIGURE 20
SPENDING BY PUBLIC ADMINISTRATIONS AS A PROPORTION OF GDP IN 2018
In percentages

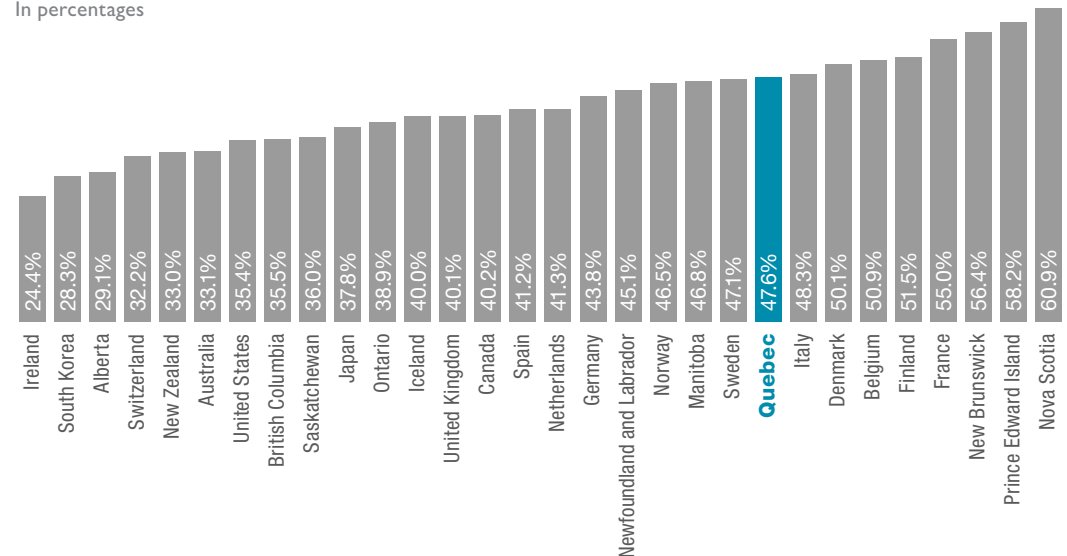
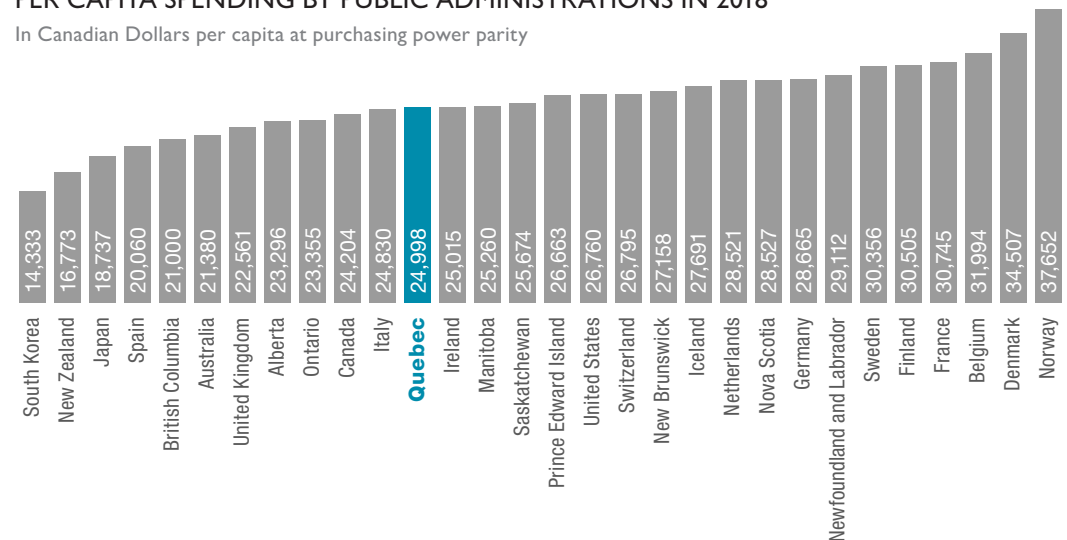


FIGURE 21
PER CAPITA SPENDING BY PUBLIC ADMINISTRATIONS IN 2018
In Canadian Dollars per capita at purchasing power parity



The conclusion is clear: because of the province's low economic prosperity, the vast majority of Quebec households have less money to spend and save. And regardless of the government's efficiency in redistributing wealth, the situation will not change until the province's economic prosperity improves.



Section 4

COVID-19:

DESPERATE TIMES CALL FOR DESPERATE MEASURES



While it is still too early to assess the total consequences of the economic crisis arising from the COVID-19 pandemic, we have enough information to know that 2020 will leave an indelible imprint on the country's public finances. In view of the expenditures incurred by all levels of government in coping with the pandemic, Canada will likely report the largest budgetary deficit in the OECD20 group in 2020 (Figure 2). Estimated at 19.9% of national GDP, the weight of the deficits accumulated by the country's public administrations will probably be twice the OECD20 average.

FIGURE 22
2020-2021 BUDGETARY BALANCE AS A PROPORTION OF THE GDP OF OCDE20 COUNTRIES*



* These data on the budgetary balances of public administrations are from the latest IMF update, on October 16, 2020. Consequently they do not reflect the increase in the federal deficit reported in late November 2020 by the federal government, in *Supporting Canadians and Fighting COVID-19: Fall Economic Statement 2020*.

COVID-19: A HUGE IMPACT ON CANADA'S FINANCES

In the years leading up to the 2020 crisis, the provincial and federal governments adopted diametrically opposed budgetary policies. Quebec City, striving to maintain a balanced budget, gave itself the necessary tools to rein in the province's public debt without compromising government services. Ottawa took the opposite tack, using debt to leverage short-term economic growth. This was a major turnaround, since the previous administration had instead worked to minimize the long-term repercussions of the 2008 recession, gradually returning to balanced budgets by reducing its program spending (Figure 23).

Taking advantage of particularly low interest rates that reduced the impact of debt service on the budget, Ottawa pushed its program spending to historic highs before the pandemic, accumulating a deficit of approximately \$75 billion as it did so (Figure 24). When the pandemic struck, the federal government had no cushion to absorb the blow. The spending to support Canadians set a new record in the history of federal public finances.

The latest forecasts call for program spending by Ottawa to increase by 71% during this fiscal year, to nearly \$15,900 per capita. In other words, the federal government's response to the COVID19 pandemic will have cost over \$6,000 per capita on average in the 2020–2021 fiscal year.

As a result, Canada will be faced with the largest budgetary deficit in its contemporary history. At the time of writing, the latest forecasts called for a deficit of \$381.6 billion. Even when inflation is taken into account, this deficit will be at least four times as large as the one in 1984, which set a new record with a real negative balance of \$81.1 billion.

FIGURE 23
BREAKDOWN OF TOTAL PER CAPITA FEDERAL SPENDING
In 2019 Canadian Dollars per capita

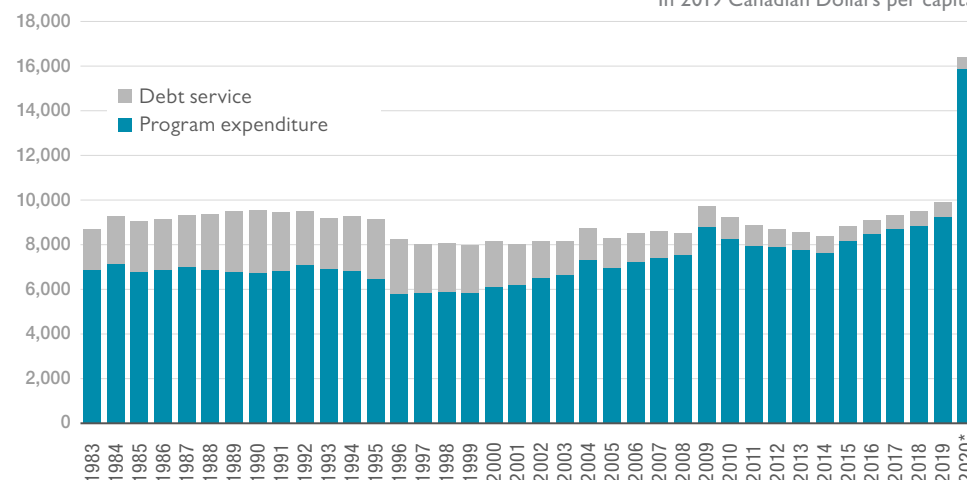
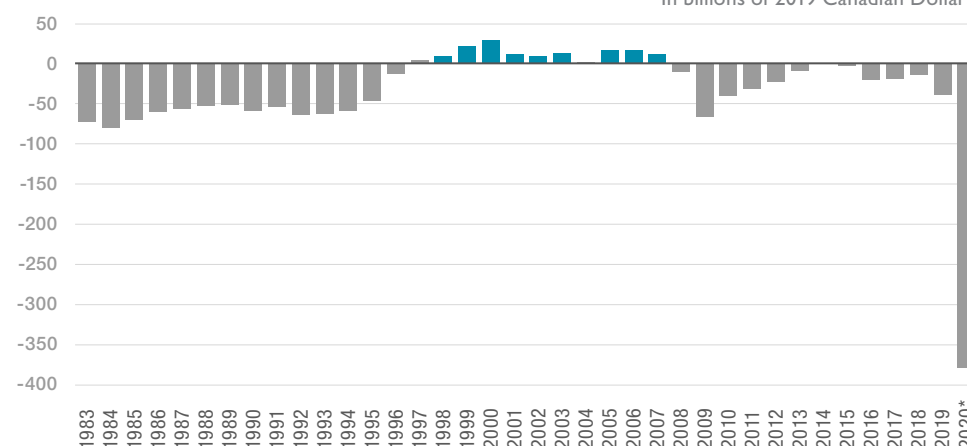


FIGURE 24
EVOLUTION OF THE FEDERAL GOVERNMENT BUDGETARY BALANCE
In billions of 2019 Canadian Dollars



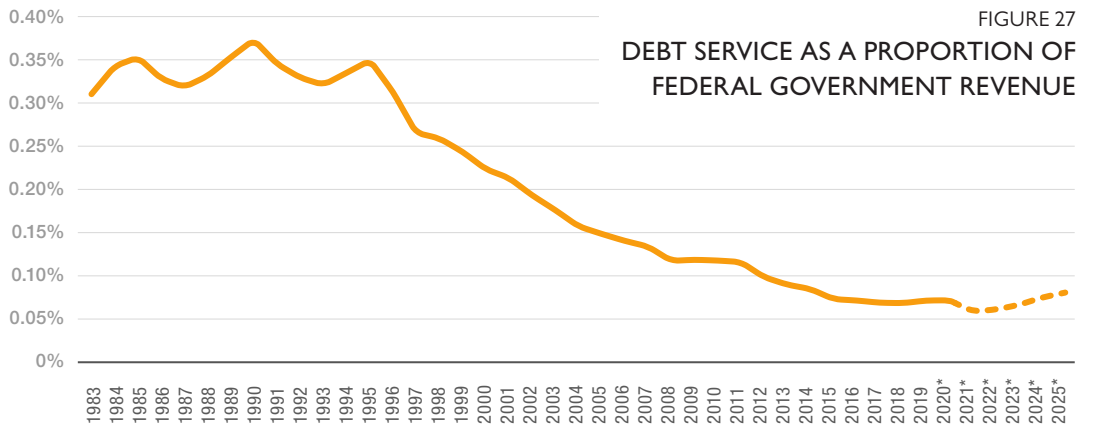
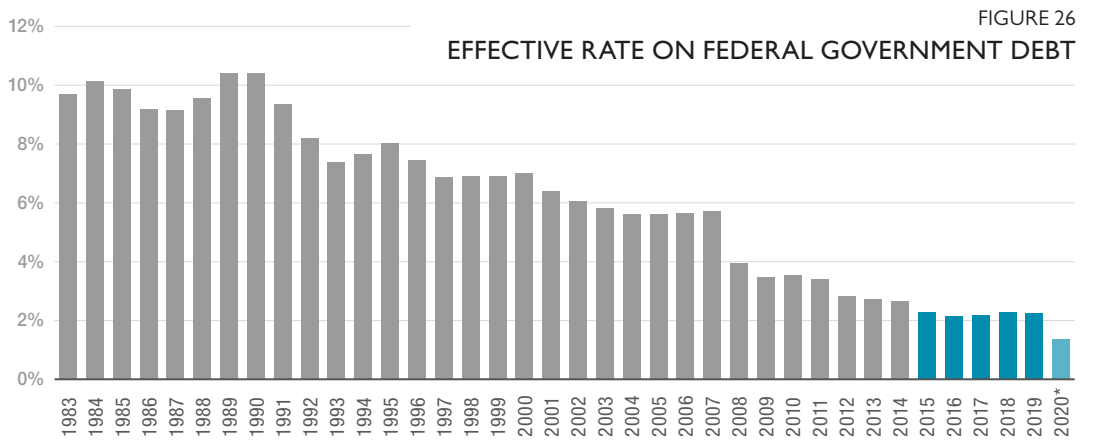
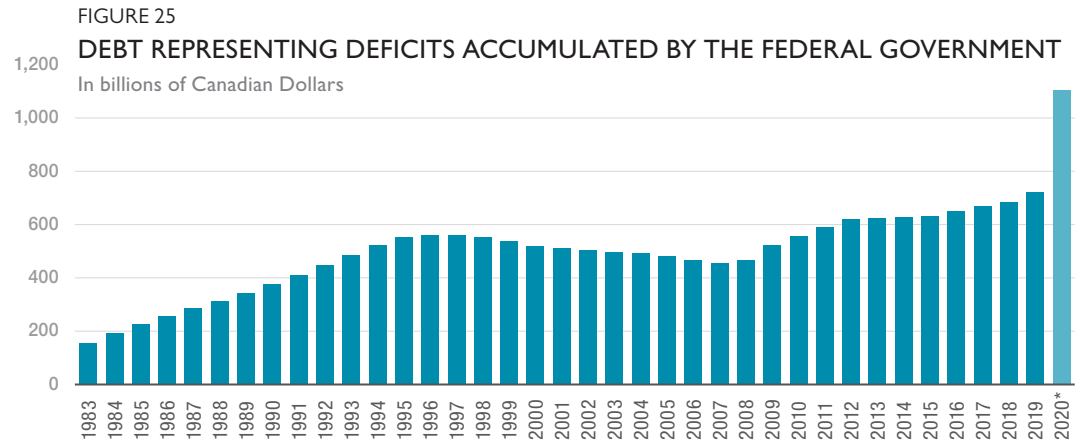
* forecast data

The anticipated 2020 federal deficit alone is likely to push the debt representing accumulated deficits up by 54% (Figure 25). If we add the deficits accumulated before the crisis to finance short-term economic growth, we see that the federal government will have added \$475.7 billion to its consumer debt since 2015, for an overall increase of 76%.

Nevertheless, barring a major turnaround, the federal government's budgetary response to COVID-19 should not compromise its ability to provide goods and services in the short term. Since the debt was taken on at historically low interest rates, the effective interest rate on the debt declined in 2020 (Figure 26). As a result, the budgetary pressure of debt service has not increased (Figure 27) although the debt itself has exploded in the past year.

The lack of a plan for returning to a balanced budget may change the situation, however. According to the November 30, 2020 economic update, \$271 billion of additional debt may have to be taken on to finance deficits over the coming five years. Thus Ottawa plans to remain in deficit until the 2025–2026 fiscal year. In the current conditions, this should bring the cost of debt service to the level that applied before this administration was elected (8.2%). While this seems acceptable at first glance, the government's strategy may well compromise its ability to continue providing services in the longer term.

Nearly three-quarters of the debt contracted at particularly low rates will have to be renegotiated in the next ten years. If borrowing conditions were to tighten up, for example because rating agencies lowered the government's rating, the bond market became saturated or simply because interest rates rose, the shock could be brutal. In short, while the federal government still has some room to manoeuvre, it must work to return to balanced budgets. Otherwise its risk management could seriously compromise intergenerational equity.



* forecast data

COVID-19 IN QUEBEC:

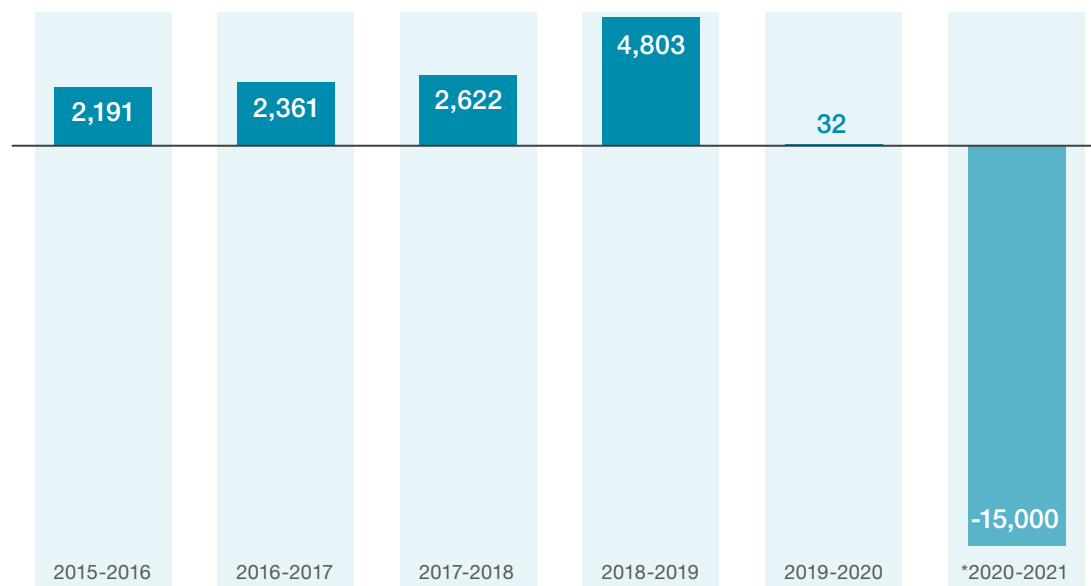
THE BENEFITS OF RESPONSIBLE BUDGET MANAGEMENT

Although Quebec has been particularly hard hit by the pandemic in health terms, the shock in terms of public finances will be largely softened by the government's responsible management of the budgetary balance over the past five years (Figure 28).

According to its November 2020⁴ update, the Quebec government is forecasting a \$12.3 billion deficit for the 2020–2021 fiscal year. If we include the planned payment of \$2.7 billion to the Generations Fund, the government will emerge with a shortfall of \$15.0 billion.

In theory, most of this deficit should be “soaked up” by taking the \$12 billion from the stabilization reserve fund, a fictional reserve representing the surpluses accumulated since 2015. In reality, all of this deficit will be added to the debt, as the surpluses racked up since 2015 were used to reduce the government's financing requirements in the year they were recorded.

FIGURE 28
QUEBEC GOVERNMENT BUDGETARY BALANCE
(AFTER PAYMENT INTO THE GENERATIONS FUND)
In millions of Canadian Dollars



Quebec's situation remains stable, nonetheless. Although in practice the stabilization reserve fund is just an accounting entry, it allows the government to resort to budgetary deficits without compromising the province's financial health. And that is exactly what has happened. Thanks to responsible budget management in recent years, indicators of indebtedness and intergenerational equity will remain under control despite the health crisis and the resulting economic shock. The debt to GDP ratio (53.0% – Figure 29) should remain lower than in 2015 (54.7%) and debt service as a percentage of government revenue (6.4% – Figure 30) will remain much lower than when efforts to bring the budget under control began (10.0%). The reduction in the effective interest rate on the debt (Figure 31) of course plays a part in achieving this relative stability.

FIGURE 29
INTEREST-BEARING DEBT AS A PROPORTION OF GDP

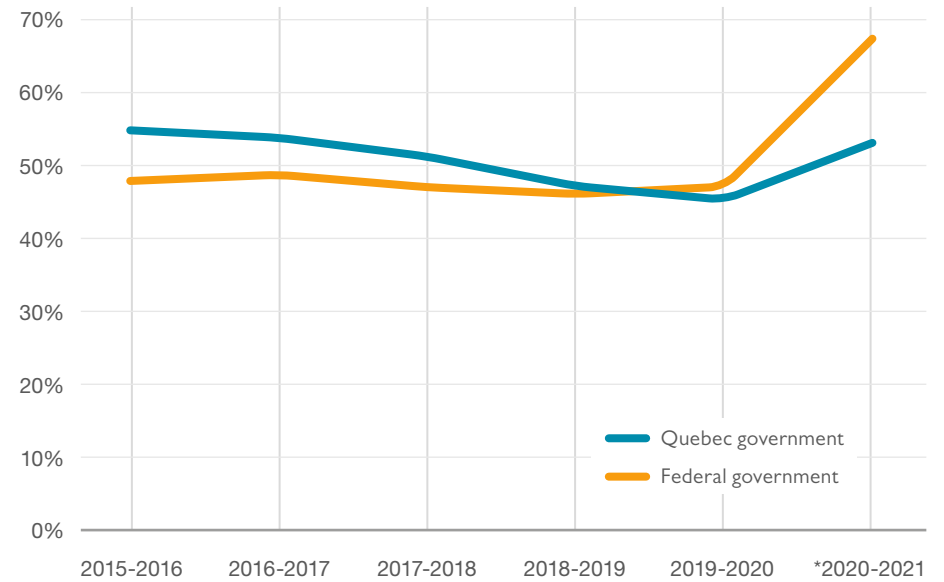


FIGURE 30
DEBT SERVICE AS A PROPORTION OF GOVERNMENT REVENUE

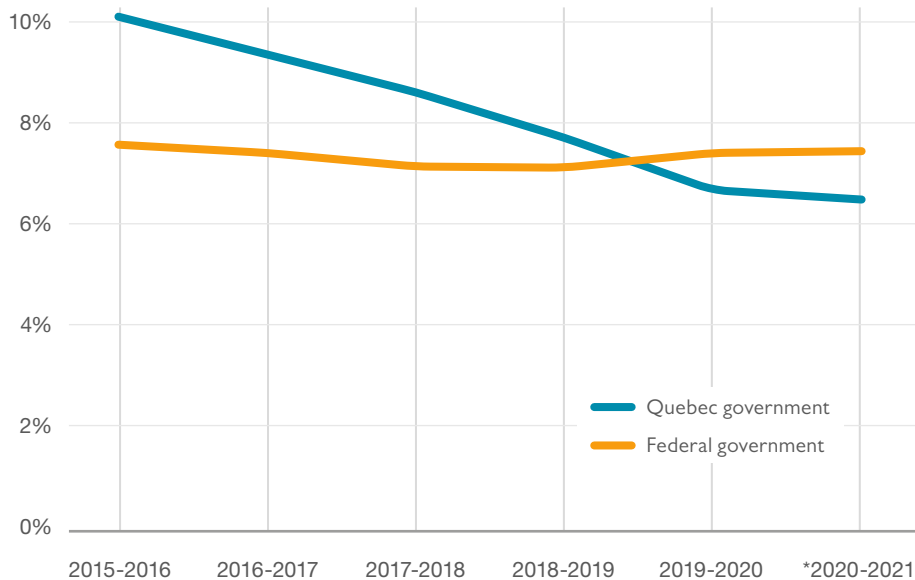
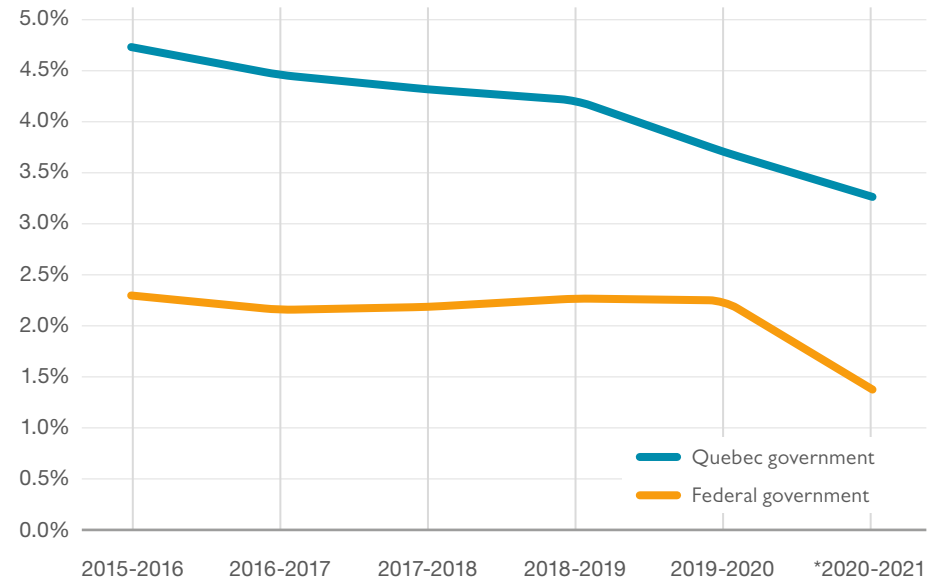


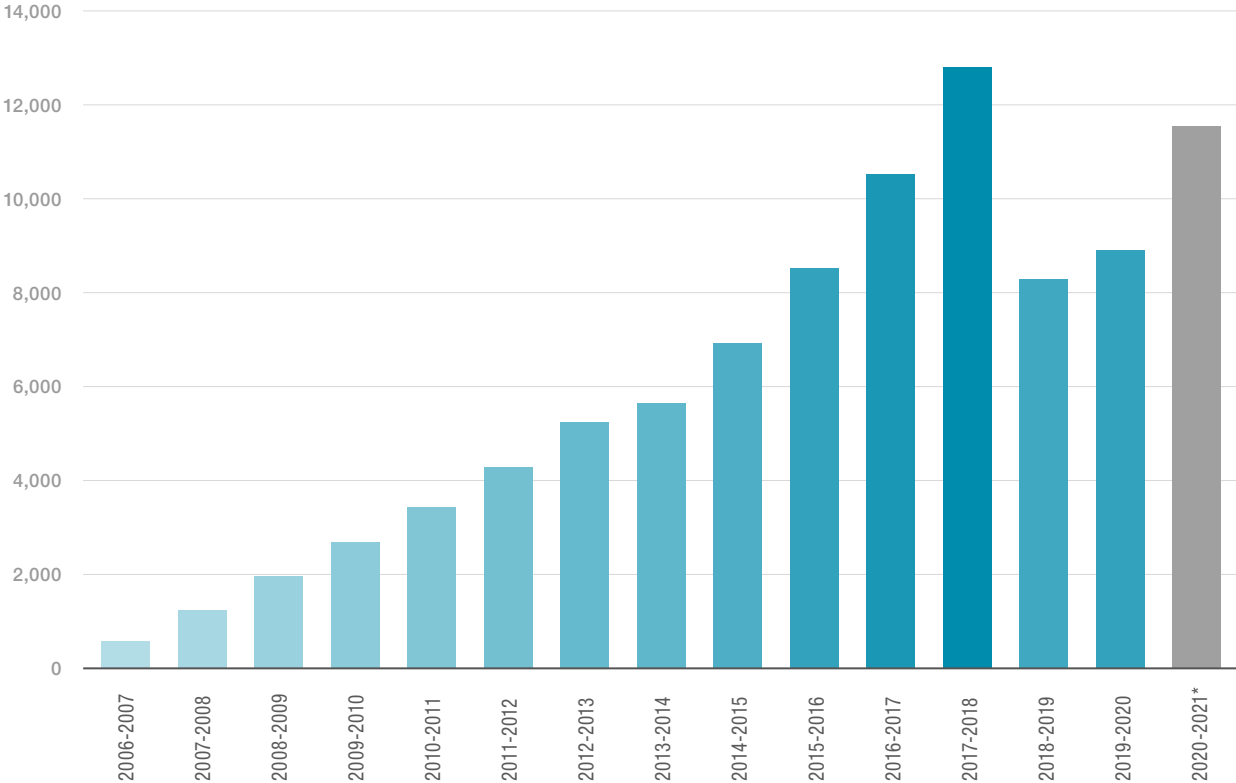
FIGURE 31
EFFECTIVE INTEREST RATE ON GOVERNMENT DEBT



* forecast data

In short, then, Quebec’s public finances are in better shape than Canada’s as a whole. The proportion of interest-bearing debt is now lower in Quebec, and the weight of debt service is slightly lower, although the federal government has a great advantage thanks to its low borrowing rates. Even though the Quebec government does not expect to balance its budget before the 2025–2026 fiscal year, and expects to incur deficits of \$9 billion before making payments to the Generations Fund in the next two fiscal years, it has a financial reserve of nearly \$12 billion in the Generations Fund (Figure 32). This Fund, a result of past political efforts to encourage intergenerational equity, should be liquidated over the coming years to reduce the economic impact of the current crisis and ensure that future generations do not bear the cost. Thanks to the revenue freed up in the coming years, the government will be able to continue with its program to renew the province’s public infrastructure, a problem that represents a concrete threat to intergenerational equity.

FIGURE 32
BALANCE OF THE GENERATIONS FUND
In millions of canadian dollars



THANKS TO THE CRISIS, QUEBECKERS' DISPOSABLE INCOME HAS INCREASED

The federal government's massive budgetary response to the pandemic has created an interesting one-time effect: Quebec households' disposable income rose during the first months of the crisis. In other words, they had more available to spend and save than in the months before the crisis. While Quebec faced the worst economic contraction in its contemporary history, average disposable income was up by nearly 13% between the first and second quarters of 2020, for a per capita increase of \$4,066 as an annualized value (Figure 33). Far from being limited to Quebec, this phenomenon applied throughout Canada (Figure 34). Canadians' average disposable income grew by 10.6% between the first and second quarters of 2020, for an average per capita increase of \$3,718 as an annualized value.

FIGURE 33

QUARTERLY CHANGE IN PER CAPITA DISPOSABLE INCOME IN QUEBEC, ANNUALIZED

In Canadian Dollars per capita

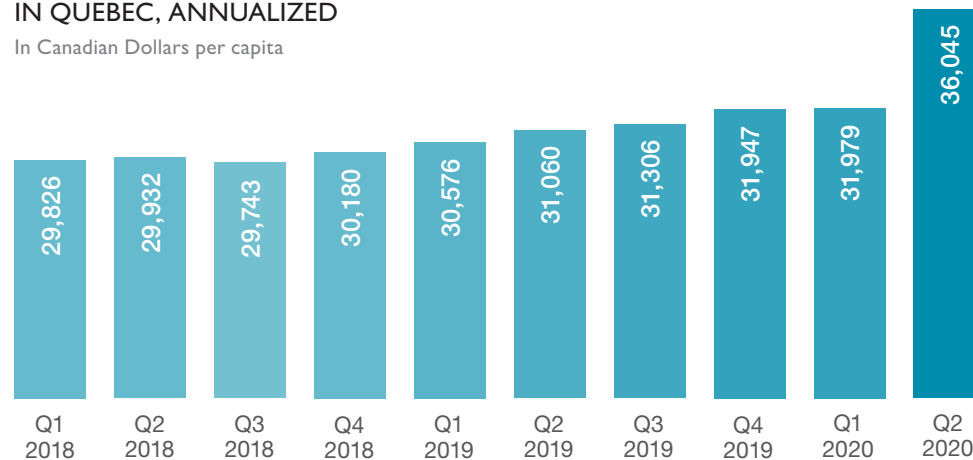
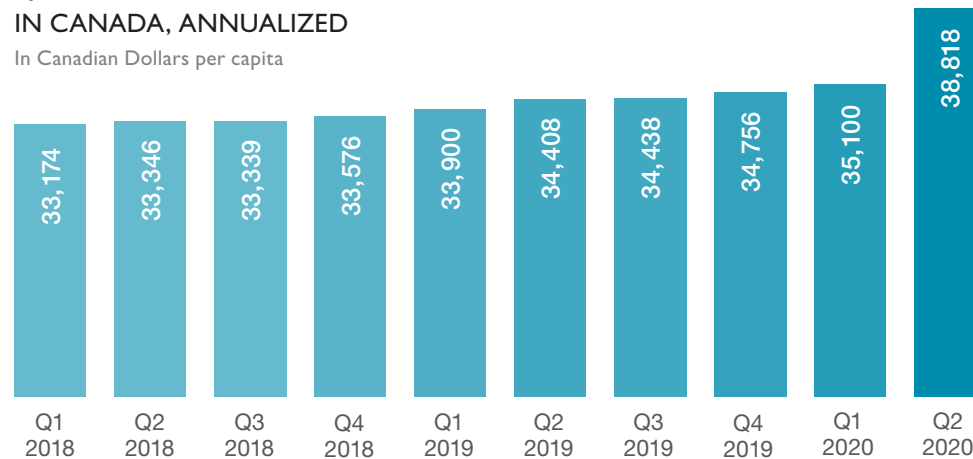


FIGURE 34

QUARTERLY CHANGE IN PER CAPITA DISPOSABLE INCOME IN CANADA, ANNUALIZED

In Canadian Dollars per capita



Of course, the massive financial support offered by the federal government has something to do with this phenomenon. Ottawa has tried to safeguard jobs, by supporting businesses through the Canada Emergency Wage Subsidy (CEWS). At the same time, it has provided financial support for individuals who have lost their jobs, through the Canada Emergency Response Benefit (CERB). As a result, growth in **government transfers** between the first and second quarters of 2020 (\$6,949 per capita – Figure 35) clearly outpaced losses in **primary income** because of job losses (-\$3,049 per capita), and household disposable income rose. The same situation applied throughout Canada (Figure 36). At first glance, the federal government looks to have overreacted to the impact of the crisis by providing both kinds of support.

FIGURE 35
BREAKDOWN OF THE INCREASE IN DISPOSABLE INCOME IN QUEBEC
BETWEEN THE FIRST AND SECOND QUARTERS OF 2020

In Canadian Dollars per capita

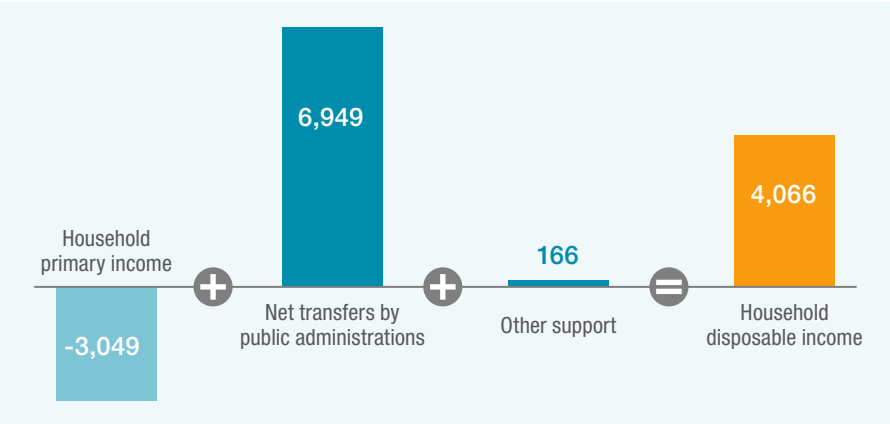
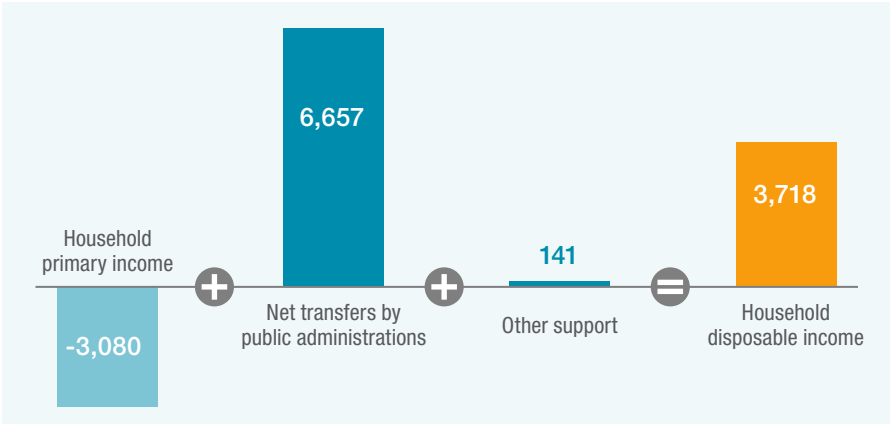


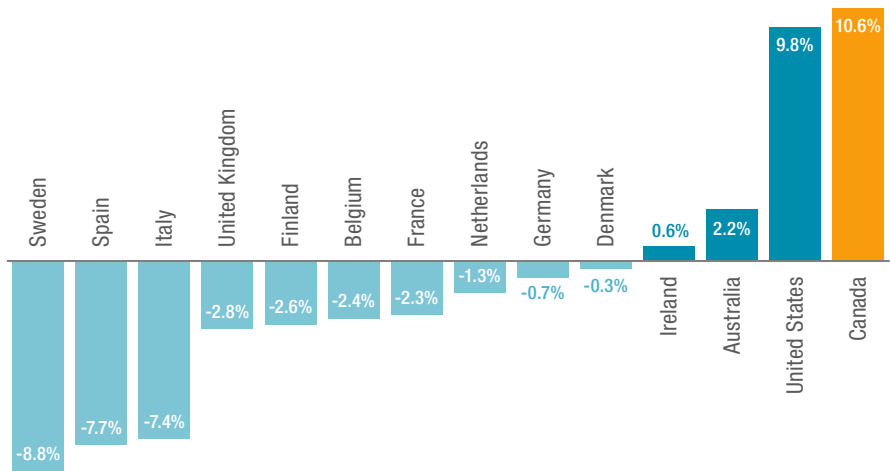
FIGURE 36
BREAKDOWN OF THE INCREASE IN DISPOSABLE INCOME IN CANADA
BETWEEN THE FIRST AND SECOND QUARTERS OF 2020

In Canadian Dollars per capita



Note, finally, that a similar situation has been observed in the United States, where a huge budgetary deficit is also expected in 2020 (Figure 37). Although the limited availability of data makes it difficult to compare, the fact remains that the North American response has been much more sustained than in other countries of the OECD20 group. Now it remains to be seen whether the recovery will be, as well.

FIGURE 37
GROWTH IN DISPOSABLE INCOME BETWEEN THE FIRST
AND SECOND QUARTERS OF 2020



Section 5

EDUCATION, INVESTMENT AND INNOVATION: THE LEVERS OF A STRUCTURAL AND CYCLICAL RECOVERY

Rather than relying on passive measures to support a recovery in all sectors and jobs, regardless of their viability or growth potential, Quebec must prioritize active measures to encourage a structural recovery. Consequently, the province must focus on the three levers of labour productivity: education, investment and innovation.



LABOUR PRODUCTIVITY:

MORE THAN AN INDICATOR OF WORKERS' EFFICIENCY

Despite what the term might suggest, labour productivity does not depend on workers, but rather on the interaction of its three components:

- Labour composition, which measures the quality of the workforce according to workers' education and experience
- Capital intensity, which measures the capital stock – machinery, equipment, infrastructure, etc. – available to workers
- Multifactor productivity (MFP), an indicator of the combined efficiency of labour and capital that measures the contribution of technological change, an intangible factor associated with innovation.

In the long run, then, productivity growth is determined by changes in the quality of human capital, the quantity and quality of physical capital at workers' disposal, and the economy's general innovativeness.

If we express labour productivity growth in these terms (Figure 38), we can determine why labour productivity has increased by only \$3.10 per hour worked between 2009 and 2018 in Quebec, amounting to an additional shortfall of \$1.68 per hour worked in comparison with Ontario, and \$2.72 per hour worked as compared with the Canadian average:

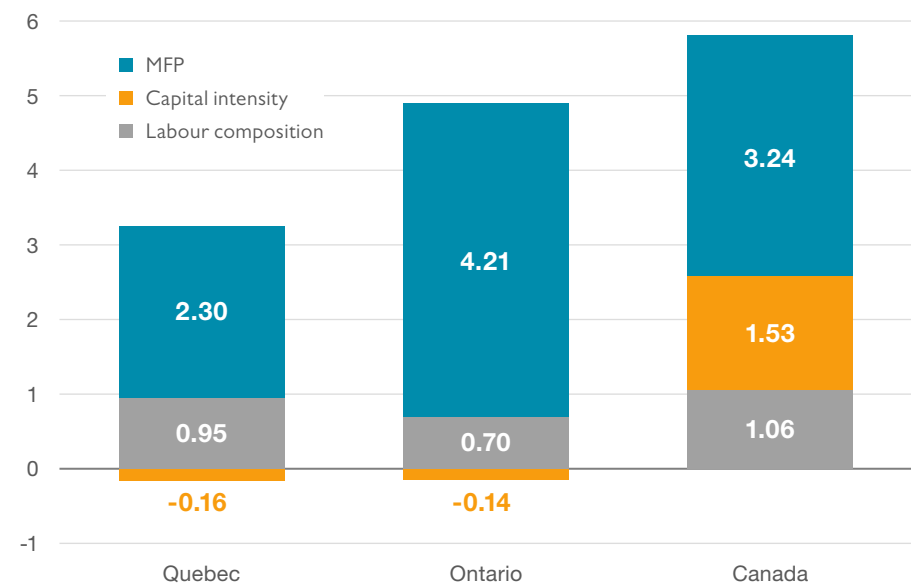
- First of all, we can see that the gains associated with MFP were 1.8 times greater in Ontario, and 1.4 times greater in Canada as a whole, meaning that overall production efficiency grew more quickly than in Quebec. In other words, innovation made a smaller contribution in Quebec.
- We can also see that Canada as a whole benefited from a particularly rapid increase in its capital intensity. This means that on average, Canadian employees managed to increase their efficiency more rapidly thanks to an increase in the capital stock at their disposal, although this was not the case for workers in Quebec and Ontario. This is due mainly to natural resource extraction in the Western provinces.
- Lastly, the contribution of the labour component was similar in both provinces, although Quebec slightly outpaced Ontario. The difference is not enough to make up for Quebec's cumulative shortfall in this respect, however.

Accordingly, Quebec can take action in three closely related areas to boost its labour productivity and thereby foster sustained and lasting economic growth:

- Improve the quality of its workforce
- Stimulate private investment
- Encourage innovation

FIGURE 38
LABOUR PRODUCTIVITY GROWTH IN THE BUSINESS SECTOR,
2009 TO 2018

GDP in 2012 Canadian Dollars per hour worked



LABOUR QUALITY CONTINUES TO LAG

The fact that the contribution of the labour component in Quebec has been similar to the Canadian average tends to obscure a worrisome reality: the Quebec labour market relies on a less-skilled workforce. Although the situation has improved since the 1960s, Quebec still has not closed the cumulative gap.

- The proportion of 15 to 19 year-olds no longer in school remains high. Quebec has caught up to the Canadian average, it's true, but a large gap remains with the OECD20 countries (Figure 39).
- This gap is not the result of greater enrolment in vocational training at the secondary school level, in which case students would leave the school system earlier, since few young Quebecers opt for vocational training (Figure 40).
- The proportion of young people ages 25 to 34 with a university degree equivalent to or higher than a bachelor's degree is lower than in most of the economies we are comparing with Quebec (Figure 41).

In other words, because there are fewer young Quebecers in the educational system, there are fewer of them with the technical and vocational skills needed to supply the labour market.

FIGURE 39
PROPORTION OF THE POPULATION AGES 15 TO 19 NOT IN SCHOOL

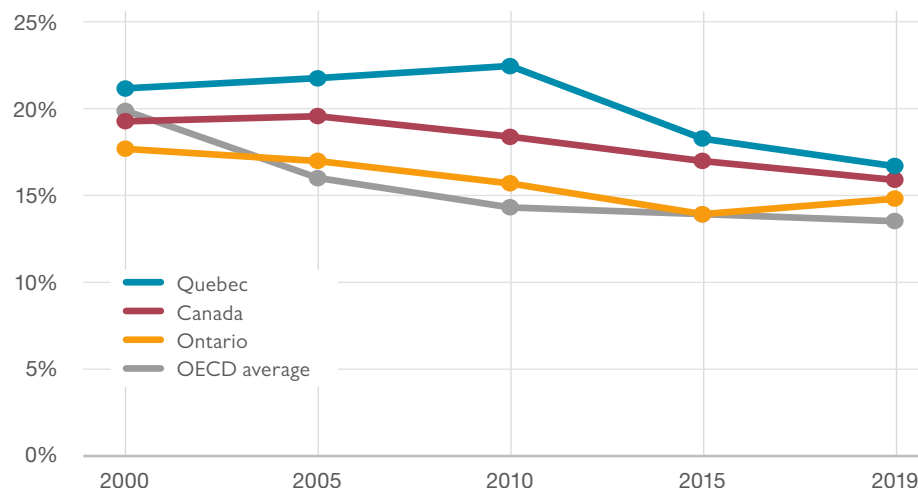


FIGURE 40
PROPORTION OF THE POPULATION AGES 15 TO 19
IN VOCATIONAL TRAINING IN 2018

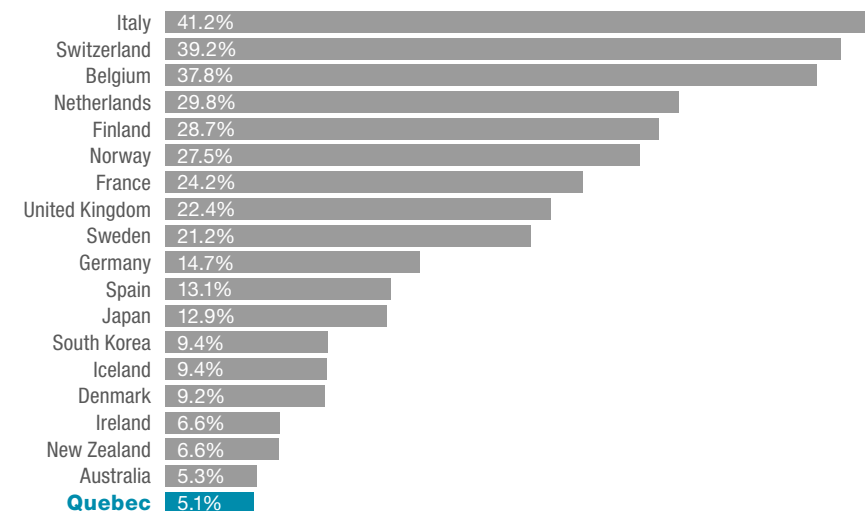
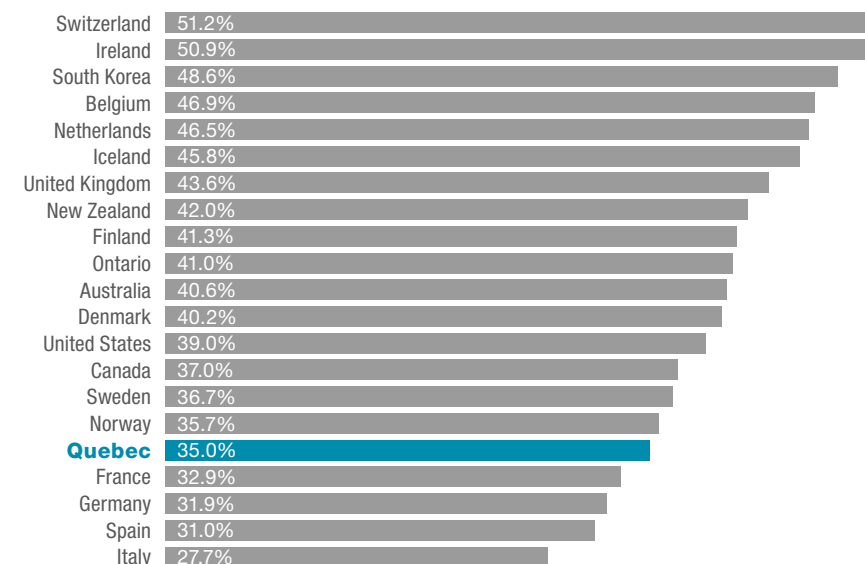


FIGURE 41
PROPORTION OF THE POPULATION AGES 25 TO 34 WITH A BACHELOR'S
DEGREE OR HIGHER IN 2018



LABOUR QUALITY: INVEST MORE, INVEST BETTER

If we compare budgetary expenditure on education by target population, i.e. young people from ages 5 to 25, in this case, we can see that spending over the past 11 years has clearly not been enough to reverse the trend. Since 2008, real budgetary expenditure on education has increased by only 14% (Figure 42), a particularly slow pace in comparison with the Canadian average of 23%. As a result, budgetary expenditure on education remains proportionally lower in Quebec than in the vast majority of Canadian provinces (Figure 43). In 2019, average budgetary expenditure by the other Canadian provinces was 8.7% higher than in Quebec. Only British Columbia spent less than Quebec.

In short, Quebec must invest more in human capital to stimulate its labour productivity. And these efforts apparently must be focused on post-secondary education.

If we compare the public financing of elementary and secondary educational institutions by target population (Figure 44), we can see that there is a gap of less than 5% between Quebec and the Canadian average. In other words, financing is proportionally similar across Canada at these levels. On the other hand, there is a larger discrepancy when it comes to post-secondary education. Average budgetary expenditure on post-secondary education in the rest of Canada in 2019 was proportionally 17% higher than in Quebec.

Given these figures, the long-term solution has two parts:

- 1) stimulate secondary school attendance, for instance by offering a dual stream combining vocational and technical training with traditional programs;
- 2) increase financing for post-secondary education.

FIGURE 42
REAL GROWTH IN PER CAPITA BUDGETARY EXPENDITURE
ON EDUCATION, AGES 5 TO 25, 2008 TO 2019

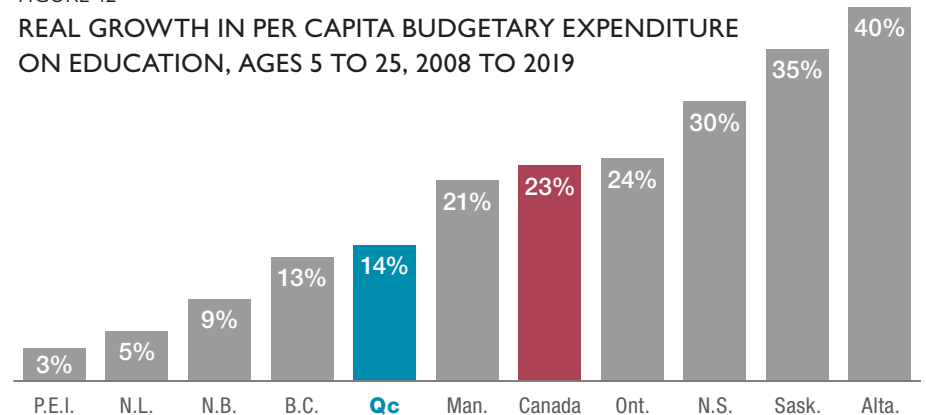


FIGURE 43
PER CAPITA BUDGETARY EXPENDITURE ON EDUCATION,
AGES 5 TO 25, IN 2019

In Canadian Dollars per capita from ages 5 to 25

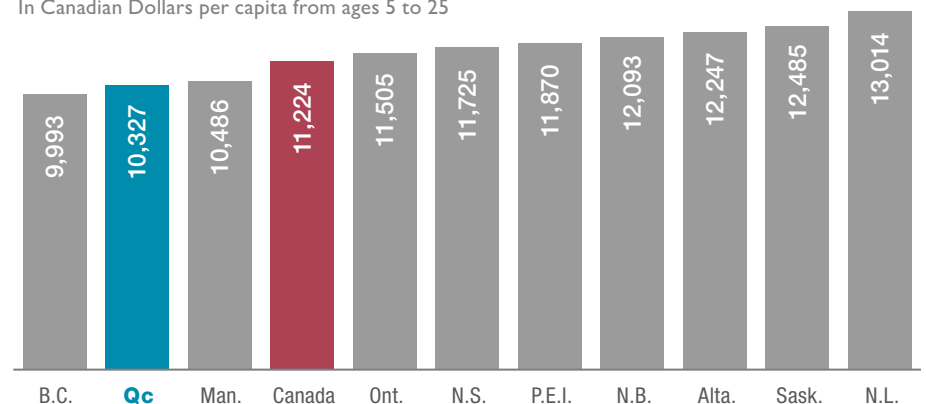
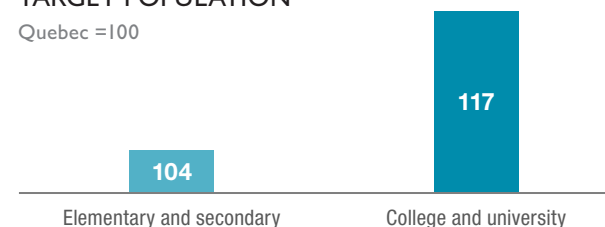


FIGURE 44
AVERAGE BUDGETARY EXPENDITURE ON EDUCATION IN CANADA
AS A WHOLE COMPARED WITH QUEBEC IN 2019, BY LEVEL AND
TARGET POPULATION

Quebec = 100



FOSTERING INNOVATION: EDUCATION'S TWOFOOLD ROLE

The benefits of greater investment in post-secondary education are not limited to its impact on labour quality. In the long term, investing in education also influences the economy's innovativeness. Since research and development (R&D) activities are generally associated with graduate university education, the low rate of Master's and PhD degrees in Quebec affects businesses' ability to innovate. This is probably what has shaped Quebec's economy.

- The proportion of Quebecers ages 25 to 34 with a Master's or PhD degree (Figure 45) is lower than in most of the economies we are comparing with the province. With a graduation rate of barely 11% in the 25–34 age group, Quebec trails the rest, along with Canada as a whole. Only Australia, New Zealand and South Korea have lower graduation rates.
- Ontario is doing better than Quebec, with a lead of 2 percentage points, but remains far behind the rates in many European economies.

In short, Quebec's limited university graduation rate has probably reduced the province's ability to innovate. And at first glance the consequences seem clear:

- If we compare the number of patents filed per million inhabitants – one of the rare tangible measures of innovation – it can be seen that Quebec is once again near the back of the pack (Figure 46).
- Although this indicator is only a partial measure of innovation – only products, devices and processes constituting original advances can be patented – it nonetheless points to a disturbing reality: Quebec is in no way a leader in innovation.

FIGURE 45
PROPORTION OF THE POPULATION AGES 25 TO 34
HOLDING A MASTER'S OR PhD DEGREE IN 2018

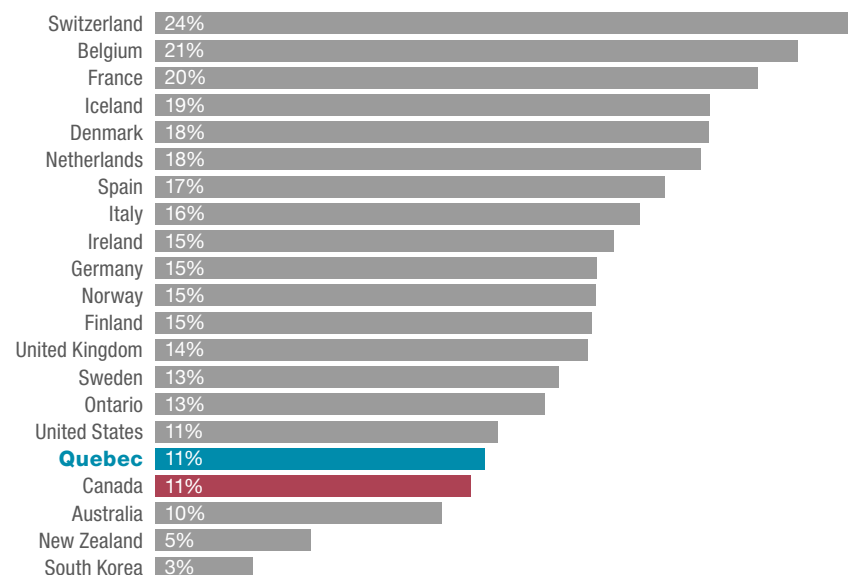
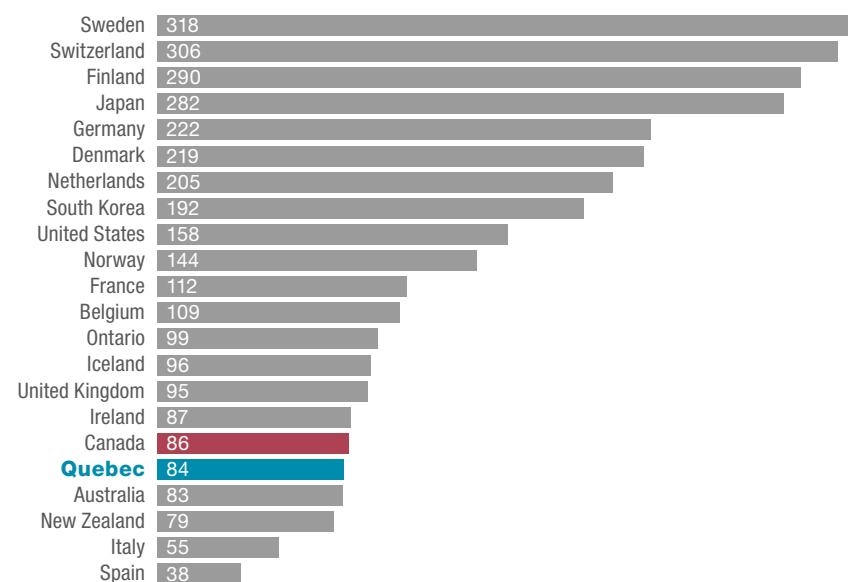


FIGURE 46
NUMBER OF PATENTS FILED UNDER THE PATENT TREATY, BY
MILLION INHABITANTS, 2007-2013 AVERAGE



FOSTERING INNOVATION: REINVIGORATING PRIVATE R&D

The Quebec economy is limited in its ability to innovate not only by its relatively low university graduation rates for ages 25–34, but also apparently by its R&D intensity. Proportionally speaking, year after year Quebec spends less on R&D than most Western economies:

- In 2017, Quebec devoted \$2,301 per job to R&D (Figure 47). Finland, by comparison, spent close to \$1,100 per job, or over 45% more than Quebec on R&D.
- In all likelihood, Quebec sits near the bottom of the rankings because of low spending by businesses, and not because of government efforts.
- Real private spending on R&D in Quebec stopped growing around the year 2000 (Figure 48). Between 2001 and 2017, corporate R&D spending fell by 17%, with inevitable repercussions on the province's already weak relative position.

In addition to improving its university graduation rate, Quebec will have to encourage businesses to invest in R&D if it is to improve the economy's innovativeness and thereby stimulate its productivity growth.

FIGURE 47
PRIVATE AND PUBLIC R&D SPENDING PER JOB IN 2017
In Canadian Dollars per job at purchasing power parity

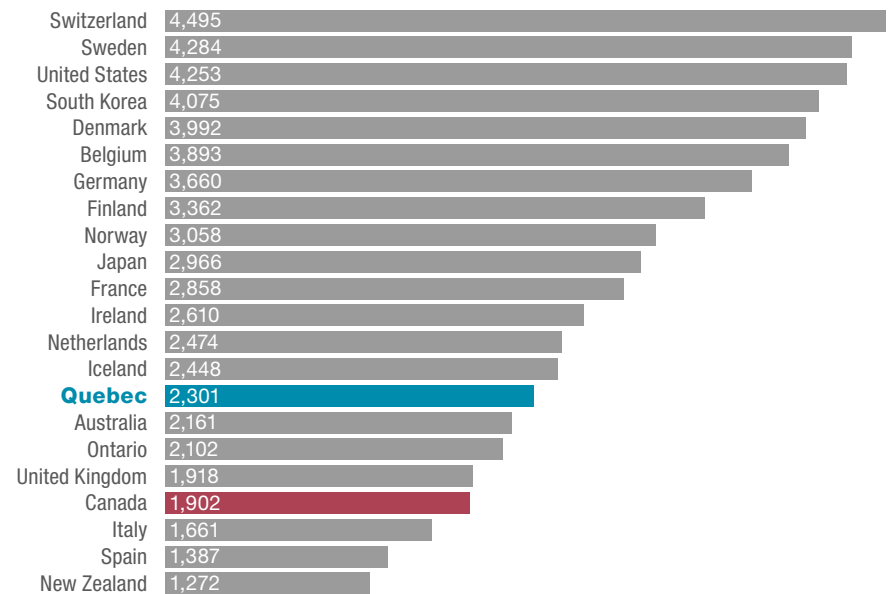
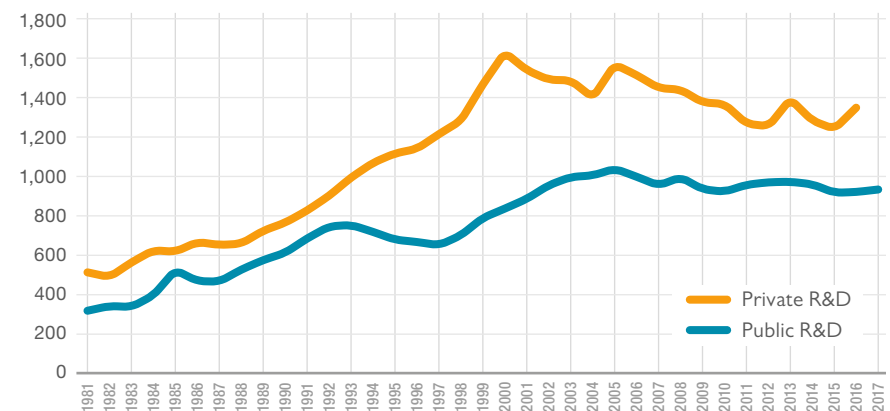


FIGURE 48
REAL PRIVATE AND PUBLIC R&D SPENDING PER JOB, 1981-2017
In 2017 Canadian Dollars per job



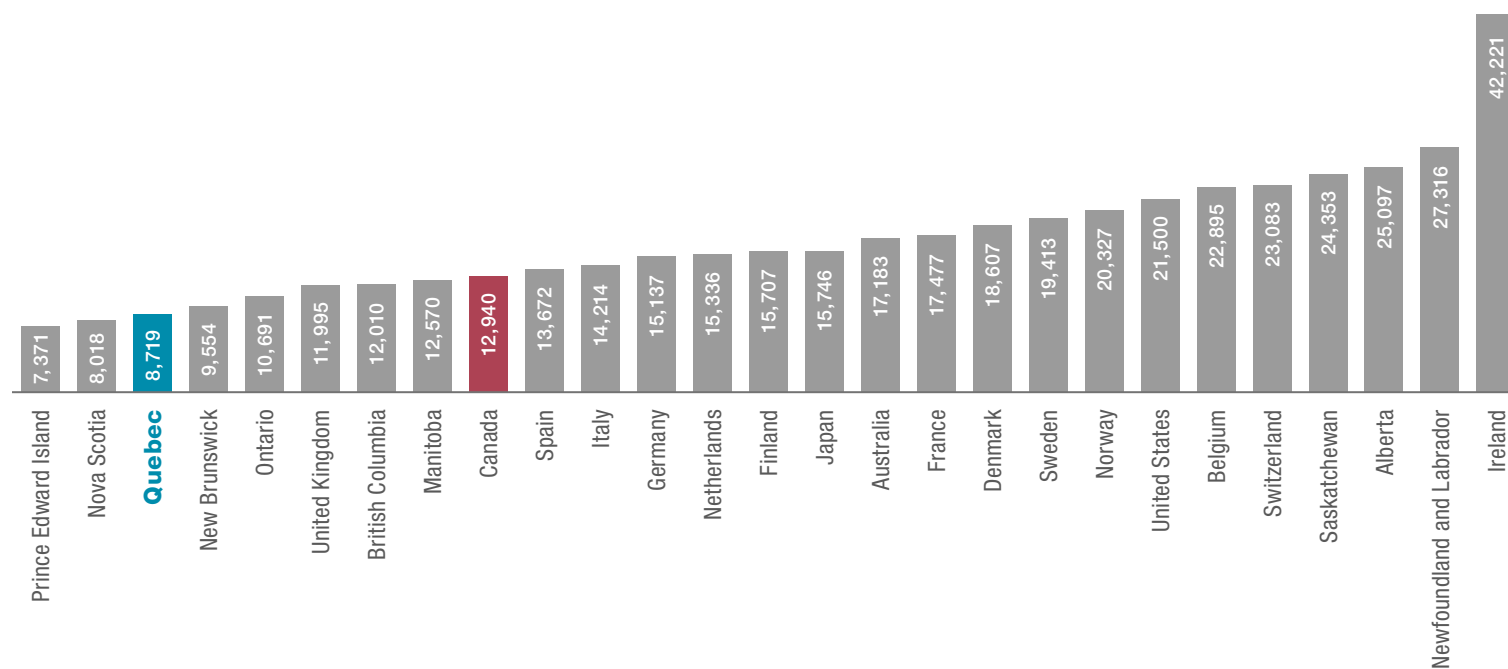
PRIVATE INVESTMENT: QUEBEC'S ACHILLES HEEL

The relatively low private R&D spending reflects a broader problem: businesses in the province invest less overall than those in other economies we are comparing with Quebec (Figure 49). With private non-residential investment at \$8,719 per job in 2018, Quebec trails the pack. Only two Maritime provinces have a lower level of investment. Note that private non-residential investment in Finland is 1.8 times higher than in Quebec and yet Finland is far from exceptional in this regard.

In the end, the conclusion to be drawn from all this is clear: Quebec has low capital intensity because businesses invest less. The province will see considerable benefits if it manages to convince businesses to increase their investment.

FIGURE 49
PRIVATE NON-RESIDENTIAL
INVESTMENT IN 2018

In Canadian Dollars per job at
purchasing power parity



CONCLUSION

We cannot conclude this 11th edition of *Productivity and Prosperity in Quebec – Overview* without reminding readers that the Quebec government has limited room to manoeuvre. Its responsible budget management in recent years certainly allowed it to absorb the first wave of the crisis, but these efforts were applied too late to build up a sufficient reserve to cope with the continuing repercussions. In addition, there has been no solution to the issue of intergenerational equity, despite the promises made over the past two decades. The problem relating to public finances has been eased by efforts in recent years, it is true, but in the meantime the province has accumulated a significant deficit when it comes to maintaining its infrastructure. The government will have to proceed carefully, as otherwise its actions to support the recovery could well disrupt the fragile balance between generations, either by passing along a higher bill to future generations when it accumulates further deficits, or by neglecting the province's infrastructure.

The government will have to target its actions if it wishes to support the recovery. Rather than attempting to respond to the crisis through passive measures to support all industries and all jobs, regardless of their viability or growth potential, it must focus on one or more of the three pillars of productivity: education, innovation and investment. By not blindly supporting all industries, the government will succeed in fostering a lasting recovery, while tackling the structural problems that have been hindering the province's economic growth for too long now. The Quebec government's recent economic update has set the tone – now it remains to be seen whether it will manage to hold this course in years to come. To give itself more room to manoeuvre, the government could liquidate the Generations Fund. This would reduce the impact of the next two deficits on the debt, and at the same time free up funds for repairing and upgrading the province's infrastructure, a problem that poses a concrete threat to intergenerational equity.

FIGURE 6

Canada

GDP chained 2012 \$: Statistics Canada, CANSIM, table 380-0064

Quebec

GDP chained 2012 \$: Institut de Statistique du Québec
(Comptes économiques)

OECD member countries

GDP chained 2015 \$: OECD.StatExtracts
(National Accounts Section)

FIGURE 7

Quebec

GDP chained 2002 \$, quarter 1981-2010: special compilation

GDP chained 2012 \$, quarter 2019-2020: ISQ, Comptes
économiques du Québec, second quarter 2020

FIGURE 8

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Total population: Statistics Canada, CANSIM, table 051-0001

Hours worked: Statistics Canada, CANSIM, table 383-0033
and special compilation

United States

Nominal GDP: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.5

GDP chained 2012 \$: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.6

Total population: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 7.1

Hours worked: Statistics Canada,
National Economic Accounts Division, special compilation

OECD member countries

Nominal GDP: OECD.StatExtracts (National Accounts Section)

GDP chained 2015 \$: OECD.StatExtracts
(National Accounts Section)

Total population: OECD.StatExtracts
(National Accounts Section, National definition of population)

Hours worked: OECD.StatExtracts (Productivity Section)

Purchasing power parity exchange rate: OECD.StatExtracts
(National Accounts Section)

TABLE I

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Total population: Statistics Canada, CANSIM, table 051-0001

Hours worked: Statistics Canada, CANSIM, table 383-0033
and special compilation

Employment: Statistics Canada, CANSIM, table 383-0033
and special compilation

United States

Nominal GDP: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.5

GDP chained 2012 \$: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.6

Total population: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 7.1

Hours worked: Statistics Canada,
National Economic Accounts Division, special compilation

Employment: Statistics Canada, National Economic Accounts Division,
special compilation

OECD member countries

Nominal GDP: OECD.StatExtracts (National Accounts Section)

GDP chained 2015 \$: OECD.StatExtracts
(National Accounts Section)

Total population: OECD.StatExtracts
(National Accounts Section, National definition of population)

Hours worked: OECD.StatExtracts (Productivity Section)

Employment: OECD.StatExtracts (Productivity Section)

Purchasing power parity exchange rate: OECD.StatExtracts
(National Accounts Section)

FIGURE 9

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Hours worked: Statistics Canada, CANSIM, table 383-0033
and special compilation

United States

Nominal GDP: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.5

GDP chained 2012 \$: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.6

Hours worked: Statistics Canada,
National Economic Accounts Division, special compilation

OECD member countries

Nominal GDP: OECD.StatExtracts (National Accounts Section)

GDP chained 2015 \$: OECD.StatExtracts
(National Accounts Section)

Hours worked: OECD.StatExtracts (Productivity Section)

Purchasing power parity exchange rate: OECD.StatExtracts
(National Accounts Section)

FIGURE 10

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Total population: Statistics Canada, CANSIM, table 051-0001

United States

Nominal GDP: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.5

GDP chained 2012 \$: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 1.1.6

Total population: Bureau of Economic Analysis,
National Income and Product Accounts Tables, Table 7.1

OECD member countries

Nominal GDP: OECD.StatExtracts (National Accounts Section)

GDP chained 2015 \$: OECD.StatExtracts
(National Accounts Section, National definition of population)

Total population: OECD.StatExtracts
(National Accounts Section, National definition of population)

Purchasing power parity exchange rate: OECD.StatExtracts
(National Accounts Section)

FIGURE 11

Canadian provinces

Hours worked: Statistics Canada, CANSIM, table 383-0033 and special compilation

Employment: Statistics Canada, CANSIM, table 383-0033 and special compilation

United States

Hours worked: Statistics Canada, National Economic Accounts Division, special compilation

Employment: Statistics Canada, National Economic Accounts Division, special compilation

OECD member countries

Total population: OECD.StatExtracts (National Accounts Section, National definition of population)

FIGURE 12

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Total population: Statistics Canada, CANSIM, table 051-0001

United States

Nominal GDP: Bureau of Economic Analysis, National Income and Product Accounts Tables, Table 1.1.5

GDP chained 2012 \$: Bureau of Economic Analysis, National Income and Product Accounts Tables, Table 1.1.6

Total population: Bureau of Economic Analysis, National Income and Product Accounts Tables, Table 7.1

OECD member countries

Nominal GDP: OECD.StatExtracts (National Accounts Section)

GDP chained 2015 \$: OECD.StatExtracts (National Accounts Section, National definition of population)

Total population: OECD.StatExtracts (National Accounts Section, National definition of population)

Purchasing power parity exchange rate: OECD.StatExtracts (National Accounts Section)

FIGURE 13

Canadian provinces

Total population: Statistics Canada, CANSIM, table 051-0001

Employment: Statistics Canada, CANSIM, table 383-0033 and special compilation

United States

Total population: Bureau of Economic Analysis, National Income and Product Accounts Tables, Table 7.1

Employment: Statistics Canada, National Economic Accounts Division, special compilation

OECD member countries

Total population: OECD.StatExtracts (National Accounts Section, National definition of population)

Employment: OECD.StatExtracts (Productivity Section)

FIGURE 14

Canadian provinces

Household disposable income: Statistics Canada, CANSIM, table 384-0040

Total population: Statistics Canada, CANSIM, table 051-0001

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

FIGURE 15

Canadian provinces

Household disposable income: Statistics Canada, CANSIM, table 384-0040

Total population: Statistics Canada, CANSIM, table 051-0001

FIGURE 16

Canadian provinces

Household disposable income: Statistics Canada, CANSIM, table 384-0040

Total population: Statistics Canada, CANSIM, table 051-0001

OECD member countries

Household disposable income: OECD.StatExtracts (National Accounts Section, simplified non-financial accounts)

Total population: OECD.StatExtracts (National Accounts Section, National definition of population)

Purchasing power parity exchange rate: OECD.StatExtracts (National Accounts Section)

FIGURE 17

Canadian provinces

Average disposable income, market income, by income decile: Statistics Canada, CANSIM 206-0032

FIGURE 18

Canadian provinces

Average disposable income, by income decile: Statistics Canada, CANSIM 206-0032

FIGURE 19

Canadian provinces

Average disposable income, by income decile: Statistics Canada, CANSIM 206-0032

FIGURE 20

Canadian provinces

Government expenditure: Statistics Canada, CANSIM 384-0047

Nominal GDP: Statistics Canada, CANSIM 384-0038

OECD member countries

Government expenditure: IMF, Government Finance Statistics, Detailed Expense breakdown

Nominal GDP: stats.oecd.org (National Accounts Section)

FIGURE 21

Canadian provinces

Government expenditure: Statistics Canada, CANSIM 384-0047

Nominal GDP: Statistics Canada, CANSIM 384-0038

Population: Statistics Canada, CANSIM 051-0001

OECD member countries

Government expenditure: IMF, Government Finance Statistics, Detailed Expense breakdown

Nominal GDP: stats.oecd.org (National Accounts Section)

Population: stats.oecd.org (Demographics and Population Section)

Exchange rate PPP: stats.oecd.org (National Accounts Section)

FIGURE 22

OECD member countries

Government revenue and expenditure: International Monetary Fund, World Economic Outlook Database, October 2020

FIGURE 23

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Program expenses: Department of Finance of Canada.

Fiscal Reference Tables, 2020; Department of Finance of Canada. Fall 2020 Economic Statement

Debt service: Department of Finance of Canada.

Fiscal Reference Tables, 2020; Department of Finance of Canada. Fall 2020 Economic Statement

Population: Statistics Canada, CANSIM 051-0001

FIGURE 24

Budgetary balance: Department of Finance of Canada.

Fiscal Reference Tables, 2020; Department of Finance of Canada. Fall 2020 Economic Statement

Consumer Price Index: Statistics Canada, CANSIM 326-0021

FIGURE 25

Department of Finance of Canada. Fiscal Reference Tables, 2020

Department of Finance of Canada. Fall 2020 Economic Statement

FIGURE 26

Department of Finance of Canada. Fiscal Reference Tables, 2020

Department of Finance of Canada. Fall 2020 Economic Statement

FIGURE 27

Department of Finance of Canada. Fiscal Reference Tables, 2020

Department of Finance of Canada. Fall 2020 Economic Statement

FIGURE 28

Ministère des Finances du Québec.

Update on Québec's Economic and Financial Situation – Fall 2020

Ministère des Finances du Québec.

Public Accounts 2018-2019 – Volume I

Ministère des Finances du Québec. Budget 2018-2019 –

Additional information 2018-2019 – Québec's Budgetary Statistics

FIGURE 29

Quebec

Ministère des Finances du Québec.

Update on Québec's Economic and Financial Situation – Fall 2020

Ministère des Finances du Québec.

Public Accounts 2018-2019 – Volume I

Ministère des Finances du Québec. Budget 2018-2019 –

Additional information 2018-2019 – Québec's Budgetary Statistics

Canada

Interest-Bearing Debt: Department of Finance of Canada.

Fiscal Reference Tables, 2020; Department of Finance of Canada. Fall 2020 Economic Statement

Nominal GDP: Statistics Canada, CANSIM 384-0038

FIGURE 30

Quebec

Ministère des Finances du Québec.

Update on Québec's Economic and Financial Situation – Fall 2020

Ministère des Finances du Québec.

Public Accounts 2018-2019 – Volume I

Ministère des Finances du Québec. Budget 2018-2019 –

Additional information 2018-2019 – Québec's Budgetary Statistics

Canada

Department of Finance of Canada. Fiscal Reference Tables, 2020

Department of Finance of Canada. Fall 2020 Economic Statement

FIGURE 31

Quebec

Ministère des Finances du Québec.

Update on Québec's Economic and Financial Situation – Fall 2020

Ministère des Finances du Québec.

Public Accounts 2018-2019 – Volume I

Ministère des Finances du Québec. Budget 2018-2019 –

Additional information 2018-2019 – Québec's Budgetary Statistics

Canada

Department of Finance of Canada. Fiscal Reference Tables, 2020

Department of Finance of Canada. Fall 2020 Economic Statement

FIGURE 32

Ministère des Finances du Québec.

Update on Québec's Economic and Financial Situation – Fall 2020

Ministère des Finances du Québec.

Public Accounts 2018-2019 – Volume I

Ministère des Finances du Québec. Budget 2018-2019 –

Additional information 2018-2019 – Québec's Budgetary Statistics

FIGURE 33

ISQ. Comptes économiques du Québec, second quarter 2020

Population estimates, quarterly: Statistics Canada, CANSIM 051-0005

FIGURE 34

Current and capital accounts – Households, Canada, quarterly:

Statistics Canada, CANSIM 380-0072

Population estimates, quarterly: Statistics Canada, CANSIM 051-0005

FIGURE 35

ISQ. Comptes économiques du Québec, second quarter 2020

Population estimates, quarterly, Statistics Canada, CANSIM 051-0005

FIGURE 36

Current and capital accounts – Households, Canada, quarterly:

Statistics Canada, CANSIM 380-0072

Population estimates, quarterly: Statistics Canada, CANSIM 051-0005

FIGURE 37

Non-financial accounts by sectors – Gross household and NPI disposable income: OECD.StatExtracts (National Accounts Section)

Methodological note: The concept used in this figure is gross household and NPI disposable income (so including NPI fixed-capital consumption) quarterly, non-annualized.

FIGURE 38

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 383-0026 and special compilation

Real GDP in 2012 \$: Statistics Canada, CANSIM, table 383-0026 and special compilation

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Education expenditure: Statistics Canada, CANSIM, table 385-0041

Population: Statistics Canada, CANSIM, table 051-0001

Hours worked: Statistics Canada, CANSIM, table 383-0026 and special compilation

Labour compensation: Statistics Canada, CANSIM, table 383-0026 and special compilation

Labour input: Statistics Canada, CANSIM, table 383-0026 and special compilation

Capital cost: Statistics Canada, CANSIM, table 383-0026 and special compilation

Capital input: Statistics Canada, CANSIM, table 383-0026 and special compilation

FIGURE 39

Education Indicators in Canada: An International Perspective, 2019

FIGURE 40

Quebec

Enrolment: Database of official statistics on Quebec, Vocational education enrolment, by different variables, 2005-2006 to 2018-2019 school years, Quebec

Population: Statistics Canada, CANSIM, table 051-0001

OECD member countries

Enrolment: OECD.StatExtracts (Education and Training Section, Education at a Glance, Enrolment by age)

Population: United Nations, Population Division, World Population Prospects 2019

FIGURE 41

Quebec, Ontario and Canada

Statistics Canada, CANSIM, table 477-0135

OECD member countries

Education at a Glance 2019, OECD indicators

FIGURE 42

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Education expenditure: Statistics Canada, CANSIM, table 385-0041

Population: Statistics Canada, CANSIM, table 051-0001

FIGURE 43

Canadian provinces

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Education expenditure: Statistics Canada, CANSIM, table 385-0041

FIGURE 44

Quebec and Canada

Education expenditure: Statistics Canada, CANSIM, table 385-0041

FIGURE 45

Quebec, Ontario and Canada

Statistics Canada, CANSIM, table 477-0135

OECD member countries

Education at a Glance 2019, OECD indicators

FIGURE 46

Quebec, Ontario and Canada

Patents: OECD.StatExtracts (Science, Technology and Patents Section, Patents by regions)

Total population: Statistics Canada, CANSIM, table 051-0001

FIGURE 47

Quebec, Ontario and Canada

Expenditure on R&D: Statistics Canada, CANSIM, table 358-0001

Employment: Statistics Canada, CANSIM, table 383-0033

OECD member countries

Expenditure on R&D: OECD.StatExtracts (Science, Technology and Patents Section, Gross domestic expenditure on R&D by sector of performance and source of funds)

Employment: OECD.StatExtracts (Productivity Section)

Purchasing power parity exchange rate: OECD.StatExtracts (National Accounts Section)

FIGURE 48

Quebec

Nominal GDP: Statistics Canada, CANSIM, table 384-0038

GDP chained 2012 \$: Statistics Canada, CANSIM, table 384-0038

Expenditure on R&D: Statistics Canada, CANSIM, table 358-0001

Employment: Statistics Canada, CANSIM, table 383-0033

FIGURE 49

Canadian provinces

GDP by expenditure approach: Statistics Canada, CANSIM, table 384-0038

Employment: Statistics Canada, CANSIM, table 383-0033

OECD member countries

GDP by expenditure approach: OECD.StatExtracts (National Accounts Section)

Total population: OECD.StatExtracts (National Accounts Section, National definition of population)

Purchasing power parity exchange rate: OECD.StatExtracts (National Accounts Section)