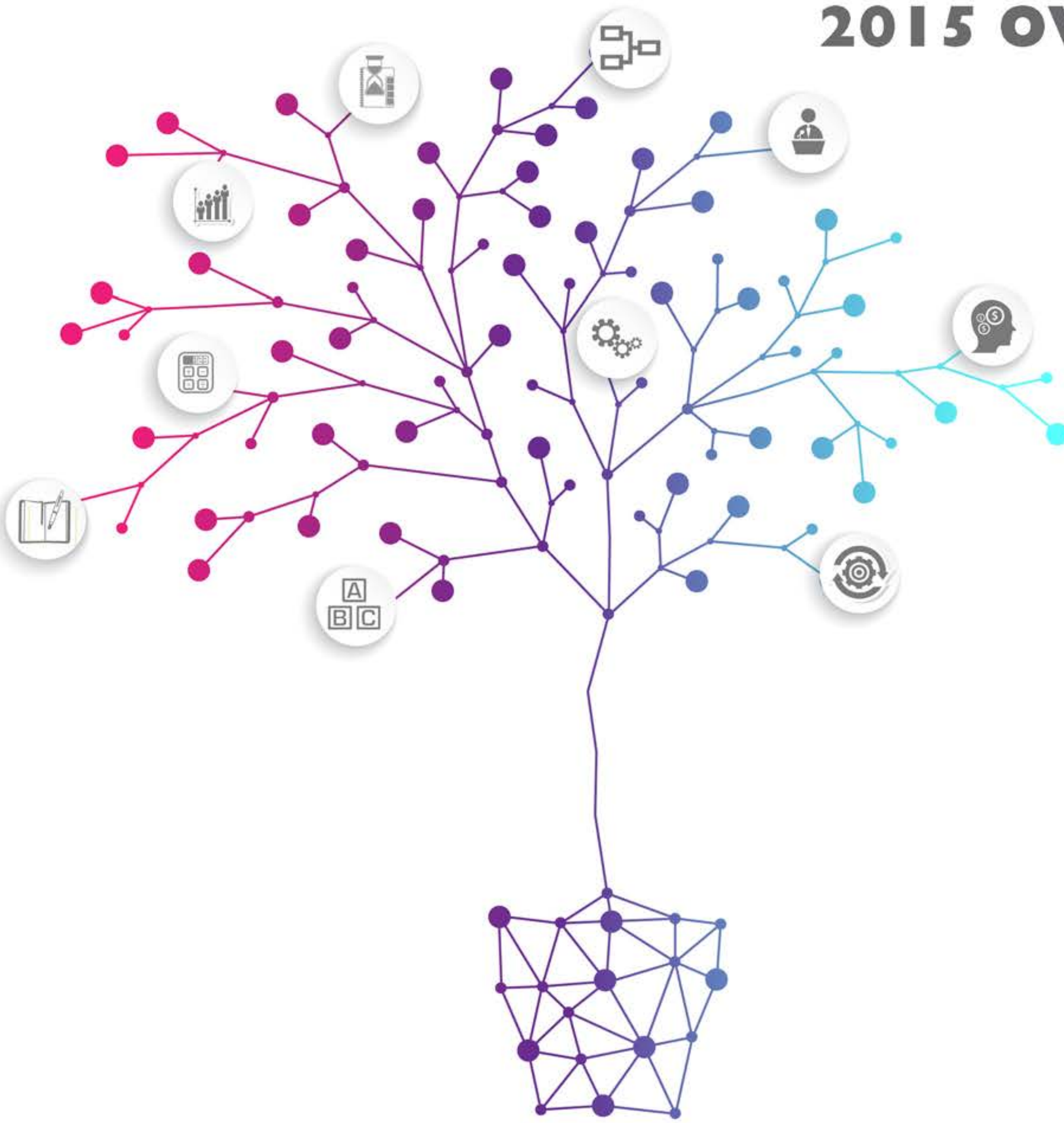
Centre for Productivity and Prosperity

PRODUCTIVITY AND PROSPERITY IN QUEBEC

2015 OVERVIEW



HEC MONTRÉAL

The HEC Montréal Centre for Productivity and Prosperity, created in 2009, has a twofold mission. First of all, it is devoted to research on productivity and prosperity, mainly in Quebec and in Canada as a whole. The Centre then shares its research findings, making them widely accessible and, in the end, educating people about productivity and prosperity.

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Productivity and Prosperity in Quebec – 2015 Overview

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SUMMARY

In this seventh edition, *Productivity and Prosperity in Quebec* takes an objective look at the challenges facing the Quebec economy and suggests some considerations that should guide the government in formulating a real economic development policy for the province.

The first part of *Productivity and Prosperity in Quebec* lays the groundwork for our analysis by offering a clear picture of the province's economic situation. One of the observations is that Quebec's relative situation in terms of economic prosperity has gradually deteriorated since the 1980s. While Quebec was positioned relatively well in comparison with the main Western countries over 30 years ago, today only a few countries have a lower standard of living, as measured by gross domestic product (per capita GDP). The picture is no more positive when just the other Canadian provinces are considered, as Quebec surpasses only the Maritime provinces.

How to explain this state of affairs? Essentially by the province's labour productivity performance. Quebec's economy has been hampered by especially weak productivity gains, and has been unable to support the growth necessary to maintain its prosperity. As a result it has fallen behind those countries that have managed to generate such growth.

Overall, this first section points to a particularly important observation for the rest of the analysis: in the long term, productivity is the only true lever of economic prosperity. In other words, if the government wishes to support economic growth, it has no choice but to focus its efforts on boosting productivity. Yet since the early 2000s, government interventions to bolster the province's economic performance have been less effective than might have been expected.

On the one hand, its strategy for supporting businesses has not been very efficient. In recent years, the Quebec government granted up to three times more in aid to business than did the Ontario government, but in return it collected more income and other taxes from all businesses. The result? Quebec businesses' tax burden today is about 30% higher than for Ontario businesses, while their output remains proportionally lower.

On the other hand, if the government wishes to foster productivity through innovation, it needs to be able to rely on properly trained human capital. Since the early 2000s, however, the government does not seem to have prioritized education. Between 2002–2003 and 2012–2013, real per capita spending on health and social services grew five times faster than spending on education, and this means that the Quebec government needs to inject another $1.6 billion if it hopes to restore its education spending to a level near the Canadian average.

In short, if Quebec is aiming for long-term economic growth, the government has some important choices to make. Basically, it will have to introduce reforms to ensure that government initiatives do more to foster a culture of innovation, the key to boosting labour productivity. To do so it must concentrate on two approaches: make education its main priority, and give the province a real economic development policy, one that provides more effective support for businesses and reduces

the burden on them. These notions form the basis for the second part of this edition of *Productivity and Prosperity in Quebec*.

To establish a lasting culture of innovation, the government must start by making education its main priority. Rather than simply injecting money into the education system on an ad-hoc basis, it needs to focus on two main initiatives in order to effectively address the school dropout problem and encourage young people to earn specialized diplomas that adequately prepare them for the labour market.

First of all, children should start school earlier, through free and universal kindergarten for 4-year olds. While many OECD countries offer preschool education as a normal part of the schooling process (sometimes starting at age 3, as in France), it is quite rare in Quebec for them to start at age 4. Instead, the province favours a system of daycares, administered by the Ministère de la Famille. This means that children who are old enough to attend school are kept in a parallel system. Although institutions affiliated with the daycare network are supposed to offer an educational component, the teaching they offer is not strictly regulated, with the result that children do not all have the same skills when they start school. Moreover, the close to one-quarter of all children who do not attend these daycares almost all have their first experience with the school system at age 5. It is worth pointing out that 98% of five-year olds attend kindergarten, a free and universal, albeit optional, system offered throughout Quebec.

Having children start school earlier by offering free, universal and optional kindergarten at age 4 would have a number of particularly important benefits for their future. Beginning schooling at an earlier age would allow for better control over what is taught, speed up the process of diagnosing and addressing learning difficulties and ensure consistency in children's schooling. It might also be a way to tackle the school dropout phenomenon, by acting to prevent it. The OECD states, in this respect, that "Strengthening equity in education is cost-beneficial, and investing in early years yields high returns, since it makes it possible to reap the benefits and reinforce equity efforts made at subsequent education levels. Early acquisition of skills and knowledge makes it easier to acquire skills and knowledge later on."[1]

Second, Quebec could do more to tackle the problem of school dropouts at the high school level. When we analyze the approaches taken in certain countries with which Quebec is often compared, we can see that they have better drop-out statistics because they offer a wider range of options in high school. Vocational training is promoted as a way of retaining those students most likely to drop out of the regular stream, and giving them a specialized diploma that will help them find a job. At the same time, coercive measures could be used to discourage students from dropping out before earning a diploma. Education could be made compulsory to age 18, unless students earn their diplomas earlier, and unemployed youths under age 25 could be required to take 18 months of specialized training. Benefits for unemployed young people could also be limited to loans and bursaries, as a way of encouraging them to go back to school.

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[1] OECD (2013), *Education Today 2013: The OECD Perspective*, OECD Publishing.

In conjunction with its efforts to make education a priority, the government needs to review its actions to assist businesses and formulate a real economic development policy aimed at creating an economic environment that fosters the emergence of new companies and sustains the dynamism of existing ones. It should give priority to four actions to ensure that the aid given to companies produces the best results at the lowest cost: reducing the use of fiscal aid and relying more on budgetary aid; doing more to target small and medium-size businesses; establishing better-defined aid targets and parameters; and establishing a systematic review process so that government interventions can be adjusted periodically, based on tangible measurements of their effectiveness.

Taken together, these four measures should allow the Quebec government to support businesses more effectively, using fewer resources. And by reducing the amount of aid required, the government will be able to assist as many businesses as possible by lightening their tax burden. Here again, the focus should be on SMBs and two measures should be given priority. The government should start by lowering small business taxation rates – at present SMBs pay tax rates 1.8 to 4 times higher than anywhere else in Canada. Small businesses should also be exempted from contributing to the Health Services Fund, the first step toward completely eliminating this tax.

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INTRODUCTION

In its efforts to rethink the way things work in Quebec, the government has conducted various exercises to consider ways of redressing the province's finances and accelerating its economic growth.[2] Although these efforts have led to only minor reforms as yet, the changes have generated so much criticism and doubt that it has become difficult to identify the real nature of the challenges facing the province. So much so that people have begun to question the true obstacles hampering its economy. Yet there should be no doubt about the conclusion: Quebec simply must change its approach if its citizens are to preserve their quality of life.

This observation serves as the starting point for this seventh edition of *Productivity and Prosperity in Quebec*. Alongside the different commissions established to guide the reforms implemented by the Quebec government, this edition takes an objective look at the challenges facing the province and suggests the main principles that should guide the government's thinking in its economic development policy.

In keeping with a tradition dating back to 2009, the first part of *Productivity and Prosperity in Quebec* examines the province's widening economic gap since the early 1980s. While Quebec was in a relatively good position in comparison with many Western countries at that time, its relative economic prosperity has since steadily declined. Out of the 20 main OECD countries,[3] only Italy, South Korea and Spain now have a standard of living lower than Quebec, measured in this case by per capita gross domestic product (GDP). The situation is no more encouraging if we compare Quebec to the other Canadian provinces, as it now surpasses only the Maritime provinces in terms of economic prosperity.

When we look for the origin of this poor standing for Quebec's economy, we can see that it is essentially due to weak productivity gains over the past 34 years. Hampered by particularly low productivity gains, the Quebec economy has been unable to support the growth required to sustain its prosperity, and so has been left further and further behind by countries that have managed to generate such growth.

This first section leads us to reiterate a concept fundamental to the analyses of the commissions established by the government: in the long term, productivity is the only real lever of economic prosperity. Consequently, if the government wishes to maintain the gains made by the province, it has no choice but to focus its efforts on the issue of productivity.

[2] The bodies in place include the Quebec Taxation Review Committee and the Commission de révision permanente des programmes, which submitted their final reports in the past year.

[3] The OECD countries used in our analysis were chosen mainly according to what historical data was available, since our study covers the years from 1981 to 2014. Out of the 34 OECD member countries, 20 were selected for this analysis: Australia, Germany, Belgium, Canada, Denmark, Finland, France, Italy, Ireland, Iceland, Japan, the Netherlands, New Zealand, Norway, South Korea, Spain, Sweden, Switzerland, the United Kingdom and the United States. Note that Greece, Portugal and the Eastern European countries were not included because it was impossible to obtain historical data.

This observation is far from new; we have made this point again and again over the past decade. Yet the results to date have been modest and, to judge by the proposed reforms, the situation does not seem to be improving.

Of all the factors that might explain this situation, the most important one is the lack of consistency between the different policies aimed at fostering the province's economic development. To properly stimulate its economic growth, government policies must be harmonized to ensure a consistent approach to improving productivity in the province. The idea is not just to introduce an ad hoc program or policy to meet the needs of the economy at a particular time. Rather, consistent and strategic policies must be introduced to help the Quebec economy grow in the long term.

Unfortunately, the fact remains that Quebec has no real economic development policy. Ideas emerge from one government to the next and, even though there have been some superficial changes, nothing as yet has made it possible to create the far-reaching transformations required for an effective economic development policy. And without a coherent overall policy, each reform on its own – no matter how significant it may be – has not been enough to restore the Quebec economy to a solid footing. The only way to put the province back on the road to prosperity is a real economic development policy.

Consequently, the second part of *Productivity and Prosperity in Quebec* lists a number of proposals that should guide the government in formulating a real economic development policy for Quebec.

Fundamentally, this policy needs to be structured in such a way that government initiatives do more to foster a culture of innovation, which is the key to boosting labour productivity. In this respect, the economic development policy should focus on two main areas: education and the province's economic environment.

Education lays the foundations for innovation by providing a skilled, competent and educated workforce. But our analysis shows that Quebec is doing less to fund its education system than other Canadian provinces and many OECD countries. Although public funding is in line with the province's ability to pay, not enough money is being allocated to meet Quebeckers' training needs. And since real per capita spending on health and social services has grown five times faster than spending on education, it is hard to believe that education is a priority for the government. Yet if the government is aiming to establish a lasting culture of innovation, it has to start by giving top priority to education. Two main initiatives should be prioritized in this respect.

First of all, children could begin their normal schooling earlier, through a universal and free system of kindergarten at age 4, as is done in many countries. At present, Quebec favours a system of daycares. Starting schooling at an earlier age would allow for better control over what is taught, speed up the process of diagnosing and addressing learning difficulties and ensure consistency in children's schooling. It should also be a way to tackle the school dropout phenomenon, by acting to prevent it. The OECD states, in this respect, that "Strengthening equity in education is cost-beneficial, and investing in early years yields high returns, since it makes it possible to reap the benefits and reinforce equity efforts made at subsequent education levels. Early acquisition of skills and knowledge makes it easier to acquire skills and knowledge later on."[4]

Second, Quebec could do more to address the problem of high school dropouts. When we analyze the approaches taken in certain countries with which Quebec is often compared, we can see that they have better drop-out statistics because they offer a wider range of options in high school. Vocational training, in particular, is promoted as a way of retaining those students most likely to drop out of the regular stream, and giving them a specialized diploma that will help them find a job. In Quebec, attendance statistics show that vocational training is undervalued by young people, and seen more as a last resort. At best, youths having difficulties quit school after earning a high school diploma, a general diploma that does not prepare them for the labour market; at worst, they drop out before even getting that far.

In conjunction with its efforts to make education its main priority, the government needs to review its initiatives to assist businesses, so as to create a stimulating economic environment that encourages the emergence of new companies and sustains the dynamism of existing ones, while making adequate use of the competencies and knowledge of the skilled labour force. As it stands, the government's strategy is mainly to tax all companies more heavily in exchange for giving some of them significant financial support. The Quebec government hands out three times as much aid to companies as does the Ontario government, but Quebec companies bear a 30% higher tax burden.

This strategy has not achieved its target. Despite the valuable financial support granted since the late 1990s, Quebec companies continue to post far from satisfactory results. Under the circumstances, the government should reconsider the balance between businesses' tax burden and the amount of support it gives them.

To ensure that the aid given to companies produces better results at a lower cost, the government should redirect its efforts, focusing on SMBs, using more direct aid and defining its targets more carefully. The support allocated should also be systematically reviewed, so that government interventions can be adjusted periodically based on tangible measurements of their effectiveness. Since this strategy would reduce the amount of aid required, the government would be able to lighten the tax burden on SMBs and thereby help as many companies as possible. In this respect, priority should go to two measures: offering exemptions from payroll taxes, which hinder job creation, and lowering small business taxation rates – at present SMBs pay tax rates 1.8 to 4 times higher than anywhere else in Canada on their first $500,000 of taxable income.

In the following sections we explain these proposals in detail, starting with an examination of Quebec's economic situation, and then addressing the themes of education and government aid to business.

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[4] OECD (2013*), Education Today 2013: The OECD Perspective*, OECD Publishing.

CHAPTER 1

THE CURRENT STATE OF AFFAIRS

While Quebec's lagging economic performance has been widely reported in recent years, the flood of information in this regard is making it difficult to establish a clear portrait of the province's economy, and for most citizens to understand Quebec's dire economic situation.

Consequently, in this section we look at Quebec's current economic situation and, based on our analysis, answer three fundamental questions:

1. Can we really say that Quebec's economy is lagging and, if so, to what extent?
2. Why is this situation worrisome?
3. What are its causes?

HOW DOES QUEBEC MEASURE UP?

To be able to evaluate Quebec's prosperity, we first have to be able to measure it. The standard of living, measured by gross domestic product (per capita GDP), is one of the rare measurements that can be used to concretely assess a country's economic prosperity. In the same way as a household's wealth is determined on the basis of family income, GDP is used to determine a country's wealth by adding up all the revenue generated by businesses, individuals and public administrations in the country over the space of a year. By dividing this wealth by the population, we get a per capita measurement that can be used to directly compare the economic prosperity of two countries of different sizes.

That being said, when we compare the standard of living in Quebec with that in various countries, we have to be sure that we are comparing their performance in a common currency. The objective is quite simple: knowing that the per capita GDP of Sweden was 404,101 kronor in 2014 is not very useful if we are trying to assess Quebec's economic performance, given its standard of living of $45,048 per capita.

To convert standards of living into a common currency, we can convert data using the official exchange rate, meaning the rate at which a bank would convert your dollars if you travelled outside Canada. While this approach has the advantage of being simple to use, it also has some serious flaws. Official 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, official exchange rates do not take account of the differences in the purchasing power of each currency, meaning that they do not reflect the quantity of goods and services that a Canadian dollar can buy in comparison with another currency.

To address this serious limitation, some organizations like the OECD publish purchasing power parity exchange rates. These rates take account of differences in the cost 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 in a specific country, making it possible to evaluate standards of living by compensating for price differences from one country to another.

While the standard of living is a useful measurement for international comparisons, it must be remembered that it tells us little about the quality of life or how this wealth is distributed among citizens. In short, people in two countries with identical standards of living can in theory have diametrically opposed qualities of life. For instance, one individual may hold 99% of the wealth produced in economy A, whereas in economy B the same wealth may be shared evenly among citizens. In the end, the standard of living in the two countries would be similar, but their citizens would have vastly different qualities of life. While there is no such gap in the countries with which we compare Quebec, we must keep in mind that the standard of living as measured by per capita GDP is primarily an indicator of an economy's ability to generate wealth, rather than of quality of life.

THE CURRENT SITUATION

In 2014, the standard of living in Quebec was $45,048 per capita, meaning that the province trailed most other Canadian provinces and many OECD countries (Figure 1).

In Canada, Quebec outperformed only the Maritime provinces, with a standard of living from 6% to 10% higher than Prince Edward Island, Nova Scotia and New Brunswick. On the other hand, it lagged considerably behind most other Canadian provinces. For instance, the standard of living in Alberta was twice as high as in Quebec. Saskatchewan and Newfoundland, second and third among Canadian provinces, posted standards of living 41% to 64% higher than Quebec.

Taking a wider view, only three of the 20 selected OECD countries[5] have standards of living lower than Quebec: South Korea, Spain and Italy. And as with the Canadian ranking, Quebec is much closer to those countries at the bottom of the list than it is to those at the top.

If we look at Figure 1 overall, it can be seen that the overall ranking is led by those provinces and countries that actively exploit their natural resources.[6] This is the case for Alberta, Norway, Saskatchewan and Newfoundland and Labrador, where natural resources account for 25%, 26%, 33% and 34% of GDP, respectively. By way of comparison, natural resource exploitation represents 6% of Quebec's GDP, or four to six times less than in those provinces and countries. It can also be seen that Switzerland ranks near the top of the list, as an important financial centre, as does the United States, as both an important financial centre and an active exploiter of its natural resources. In the circumstances, are we to conclude that exploiting natural resources or being a financial centre are essential to economic prosperity?

It appears not. While exploiting natural resources gives many countries and provinces a definite advantage, it can be seen that many countries in the top half of the overall ranking have an

[5] Note that 20 of the 34 OECD member countries were chosen for analysis in *Productivity and Prosperity in Quebec,* depending on whether economic data were available since 1981. Countries for which these date were not available in the first editions have been removed from the analysis. They are: Austria, Chile, the Czech Republic, Estonia, Greece, Hungary, Israel, Luxembourg, Mexico, Poland, Portugal, Slovakia, Slovenia and Turkey.

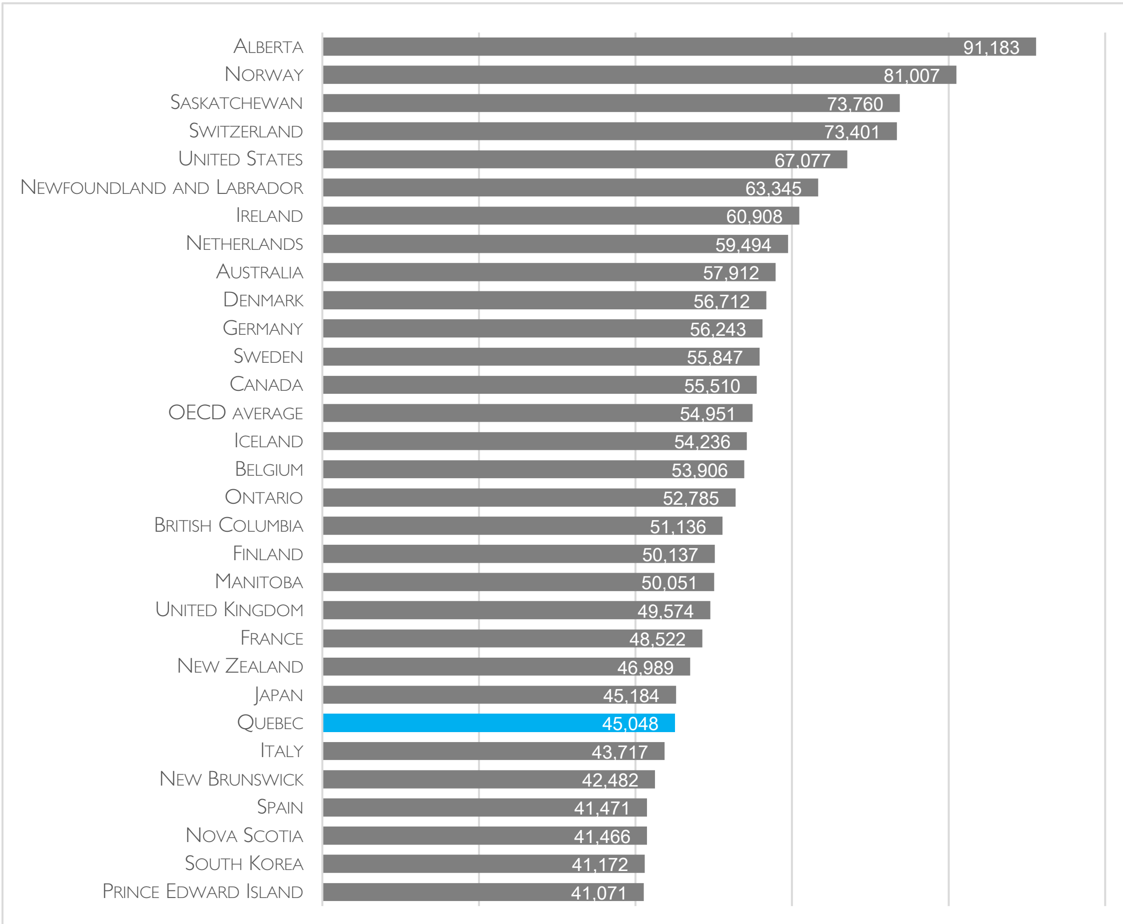
[6] The industries linked to the exploitation of natural resources are agriculture, forestry, hunting and fishing, mining, oil and gas, and public utilities such as electricity production, transmission and distribution and natural gas distribution

economic structure similar to Quebec's. This is the case for Australia, Germany, Denmark, Sweden, Belgium and the Netherlands, which all have standards of living at least 20% higher than Quebec.

FIGURE 1

STANDARD OF LIVING AT PURCHASING POWER PARITY IN 2014

(PER CAPITA GROSS DOMESTIC PRODUCT IN 2014 CANADIAN DOLLARS)



Source: http://statcpp.hec.ca/bilan2015/graphique1.xlsx

In short, the observations we can draw from this ranking tell us a great deal about Quebec's situation. Only a minority of provinces and countries have lower standards of living. In Canada, Quebec leads only the Maritime provinces, while it is ahead of just three of the 20 selected OECD countries.[7] The ranking also underscores the fact that a number of economies sharing some characteristics with Quebec are in much better shape. This is the case for Sweden and Denmark, where the standard of living is about 25% higher than in Quebec. Yet both are small economies where the government plays a large role, and in both cases natural resource exploitation is less extensive than in Quebec.

[7] Remember that 14 OECD member countries were removed from the analysis because certain data were not available. They are: Austria ($58,232/pc), Chile ($28,067/pc), Estonia ($33,929/pc), Greece ($32,729/pc), Hungary ($31,163/pc), Israel ($41,926/pc), Luxembourg ($122,682/pc), Mexico ($22,488/pc) Poland ($30,812/pc), Portugal ($35,796/pc), Slovakia ($34,950/pc), Czech Republic ($38,298/pc), Slovenia ($37,797/pc), Turkey ($23,998/pc).

WHY SHOULD WE CARE ABOUT THE STANDARD OF LIVING IN QUEBEC?

Knowing that the standard of living in Quebec is lower than in most of these countries and provinces is one thing, but understanding the impacts of this lagging performance is another. Given the complexity of the interactions governing the workings of the economy, the benefits associated with greater economic prosperity are felt in different ways by citizens, businesses and governments. This makes it difficult to truly identify the nature of the hidden issues underlying Quebec's economic gap.

The current context leads us to underscore one particularly important reality that ties economic prosperity to how governments finance their spending and individuals' ability to spend or save.

First of all, it must be remembered that the standard of living is primarily used to measure the wealth generated by an economy (the GDP), and is calculated in such a way as to reflect the size of its population. Consequently, Quebec's lower standard of living means that its economy generates proportionally less wealth than most of the provinces and countries we are comparing it with. Does that mean that Quebeckers live less well or have a poorer quality of life? Not necessarily! Remember that this measurement of economic prosperity provides little information on quality of life or how wealth is distributed among citizens, so it does not lend itself to any conclusions in this respect.

That being said, it must be understood that governments are financed entirely from the wealth generated by their economies. Consequently, when an economy generates less wealth per capita than others, its government has fewer resources to fund its spending and reduce inequalities. It must either increase taxes if it wishes to fund the same amount of per capita spending, or spend less than other governments. In both cases, citizens are the ones who pick up the bill, either by paying more taxes or receiving fewer or lower-quality public services.

In Quebec's case, its less prosperous economy translates directly into less revenue and indirectly into heavier taxes. And ultimately, Quebec households are the ones affected, in that they have less disposable income, i.e. less money to spend and save.

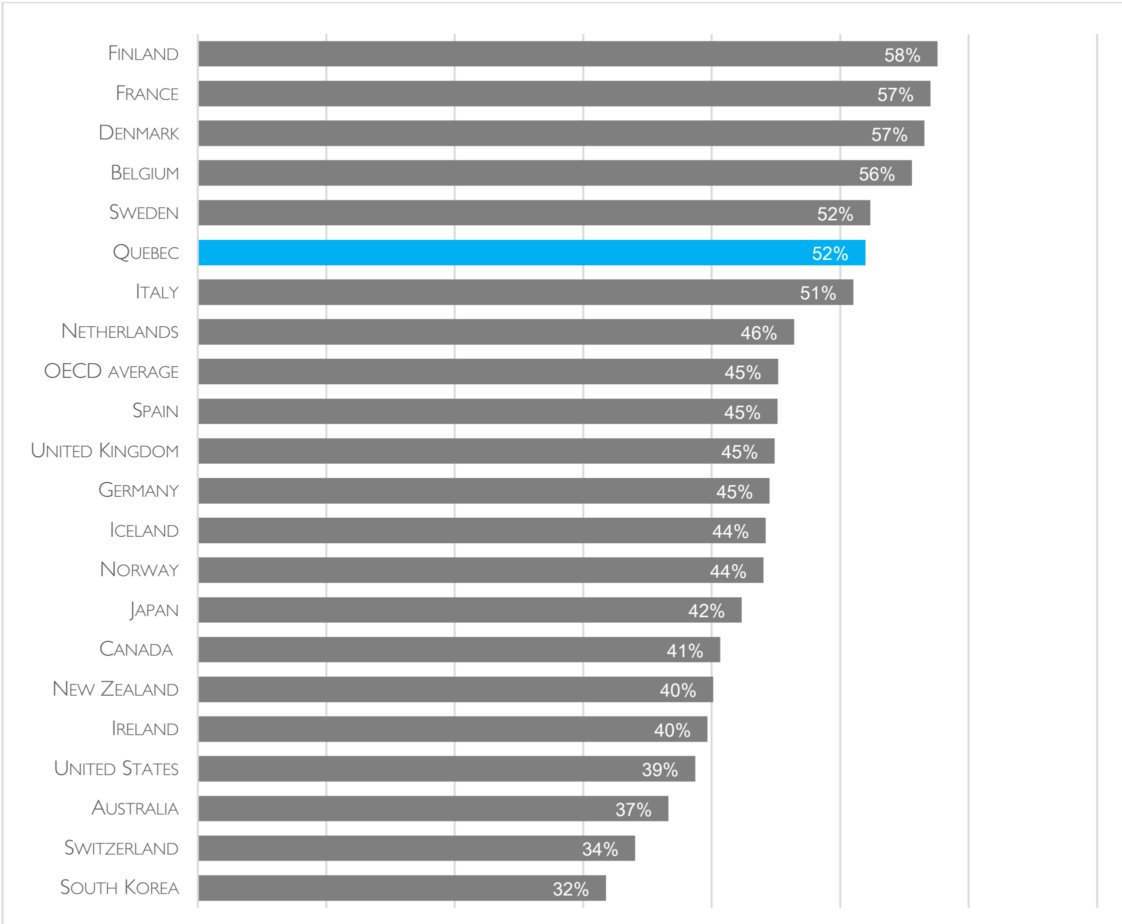
If we compare Figures 2 and 3 we can see that to finance a level of spending similar to that in many countries and provinces Quebec governments must use a larger share of the wealth generated by the economy. Note also that public spending as a proportion of GDP in Quebec is higher than in most provinces and countries (Figure 2), but that per capita spending is not (Figure 3).

For instance, on average public administrations in Sweden spend $5,670 more per capita than in Quebec, while this spending as a percentage of Swedish GDP is barely greater than in Quebec's. In the Netherlands, public administrations spend $4,051 more per capita than in Quebec, on average, while this spending as a percentage of the Dutch GDP (46%) is much lower than in Quebec (52%). In Germany, per capita spending similar to that in Quebec results in a much lower burden (45%).

FIGURE 2

PUBLIC SPENDING AS A PERCENTAGE OF GDP IN 2013

(PERCENTAGE)

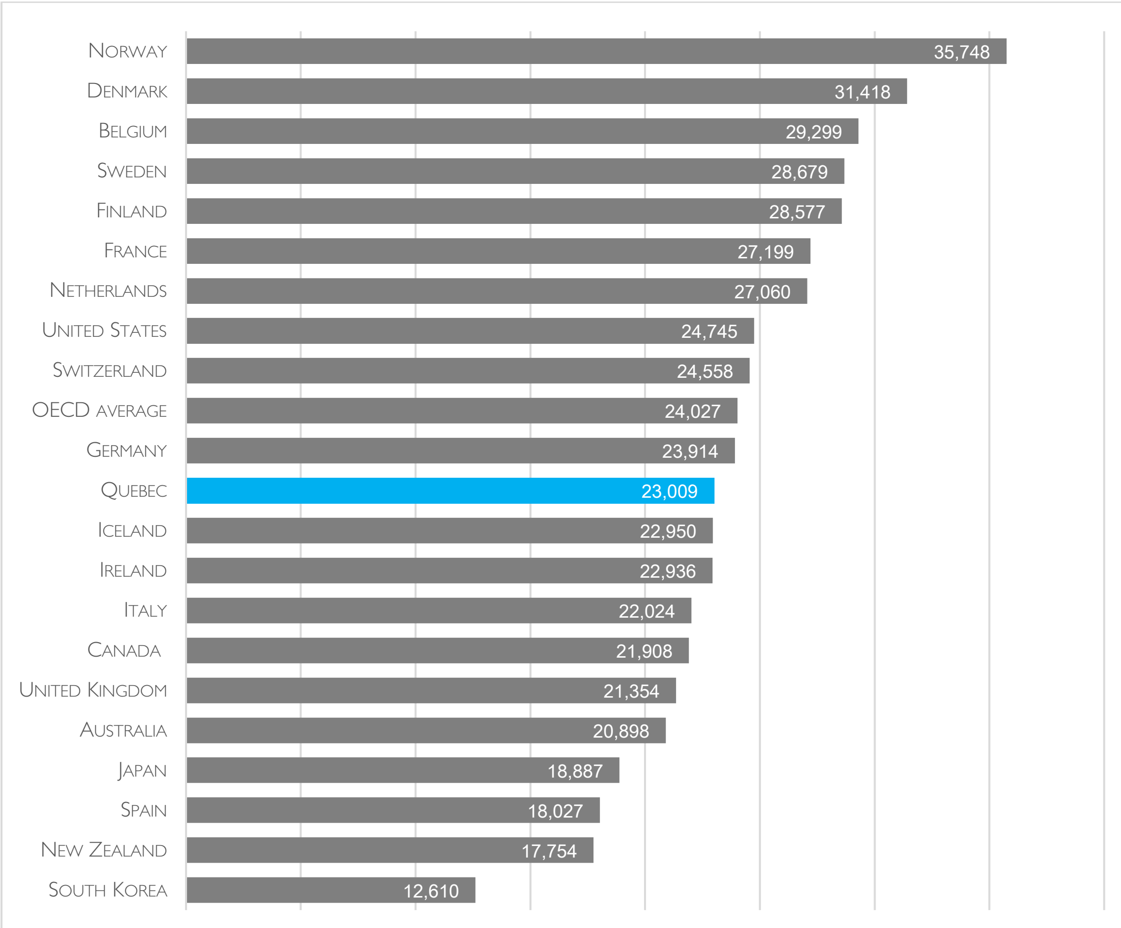


Source: http://statcpp.hec.ca/bilan2015/graphique2.xlsx

FIGURE 3

PER CAPITA PUBLIC SPENDING AT PURCHASING POWER PARITY IN 2013

(IN 2013 CANADIAN DOLLARS PER CAPITA)



Source: http://statcpp.hec.ca/bilan2015/graphique3.xlsx

In short, it is not so much the amount of public spending that is endangering Quebec's social safety net today, but rather the economy's low prosperity. Given its lagging economic performance, the government has to tax businesses and individuals more heavily to finance its spending. This results in a vicious circle, where the heavy tax burden weighs down the economy, which in turn produces less revenue. As a result the government must tax more heavily to continue financing its spending.

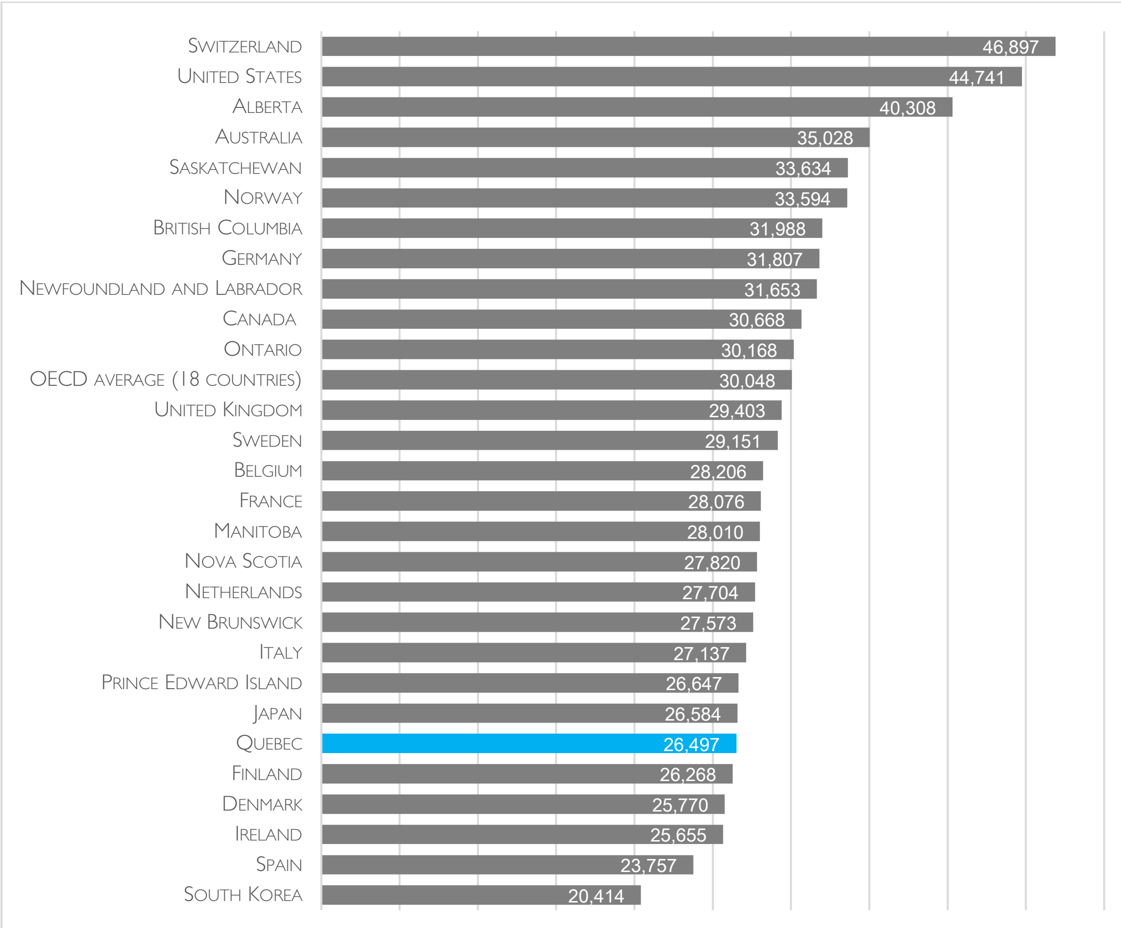
In the end, taxpayers are stuck with the bill: on the one hand because the poorly performing economy inevitably impacts their incomes and, on the other hand, because they must pay higher taxes to finance public spending. The result is that Quebeckers today have less disposable income[8] than in the vast majority of the countries and provinces analyzed (Figure 4).

[8] I.e. the average revenue after taxes and transfers at the disposal of each Quebecker for spending and saving.

FIGURE 4

PER CAPITA DISPOSABLE INCOME AT PURCHASING POWER PARITY IN 2013

(IN 2013 CANADIAN DOLLARS PER CAPITA)



Source: http://statcpp.hec.ca/bilan2015/graphique4.xlsx

Now, if we return to our original question, of why we should care about Quebec's prosperity, it must be understood that seeking a higher standard of living is in the public interest in two ways. First of all, boosting the standard of living directly contributes to raising the amount of money households can spend and save. Secondly, raising the standard of living lets the government finance the same level of spending while reducing the tax burden on businesses and individuals, thereby indirectly raising their disposable income. And if the government maintained the same tax structure, it would have more resources to finance its spending.

WHERE DID QUEBEC STAND 30 YEARS AGO?

If we are to determine the sources of Quebec's current economic performance, we must first know where the province stood a few decades ago. For purposes of this analysis, Figure 5 shows the standard of living in the 20 selected OECD countries and nine other Canadian provinces in 1981 and 2014 in comparison with the standard of living in Quebec in those years. A standard of living of

120 in the Figure means that the standard of living in the country or province was 20% higher than in Quebec; inversely, a standard of living of 80 means that it was 20% lower. Although this approach is less intuitive than a standard of living expressed in dollars, it lets us evaluate relative standard of living trends in Quebec and see whether Quebec has been at a disadvantage from the beginning or whether the gap formed over the past few decades.[9]

The general conclusion from this exercise is clear: the province's relative position declined between 1981 and 2014. Out of the 29 provinces and countries analyzed, only Italy, British Columbia and Switzerland[10] have seen their lead over Quebec shrink in recent decades. In other words, a vast majority of these countries and provinces have outperformed Quebec in the past 30 or so years. This is the case in particular for Sweden and Germany, where the standard of living today is 25% higher than in Quebec, whereas in the early 1980s the gap was only 7% and 10%, respectively. Other countries, meanwhile, managed to catch up from far behind over this period: South Korea's standard of living rose from 22% of that in Quebec in 1981, to 91% in 2014 (from 22 to 91 in the Figure). Moreover, Ireland and Finland are now ahead of Quebec in terms of their standards of living whereas they were behind in the early 1980s.

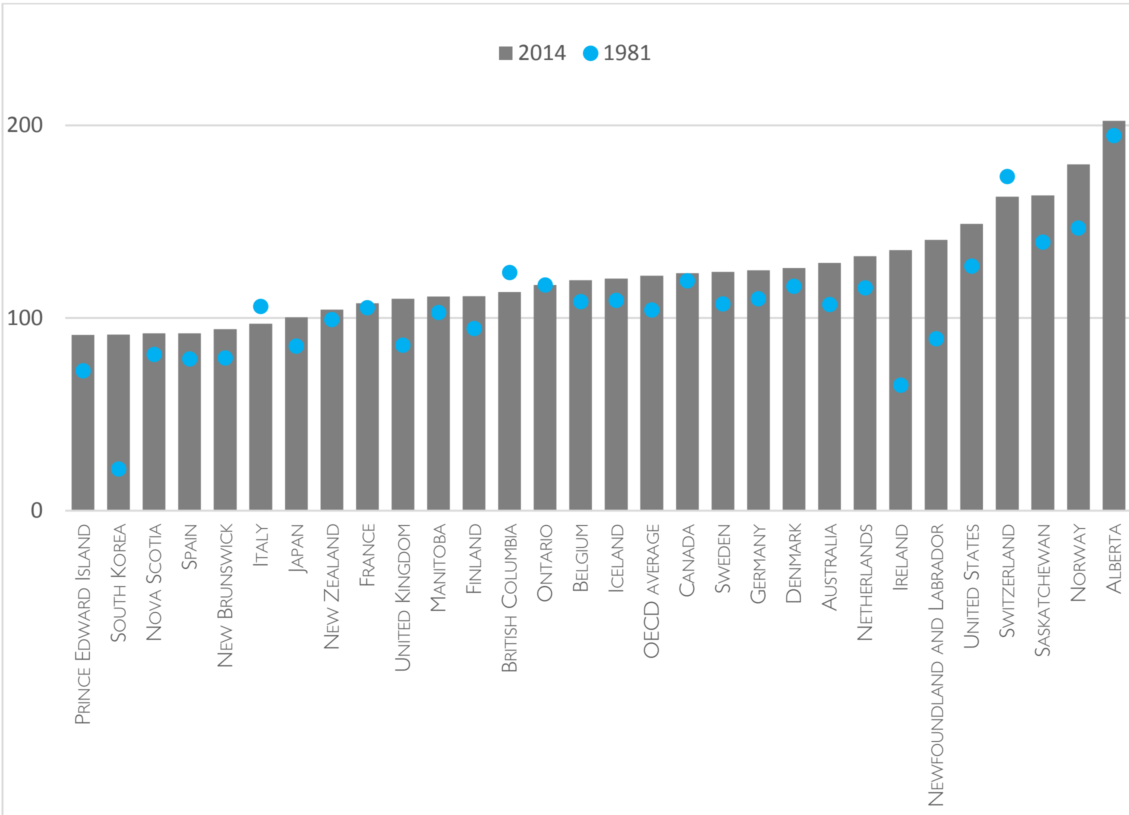
Our analysis highlights two trends, depending on whether Quebec is compared with the OECD average or the Canadian average. As Figure 5 shows, the average standard of living in OECD countries in the early 1980s was only 4% higher than in Quebec, whereas by 2014 the gap had widened to 22% (104 vs 122 in the Figure). In other words, the OECD countries' economic growth (1.69% average annual growth) outpaced growth in Quebec (1.20% average annual growth), a sign that the province is falling behind the OECD average. The variance with the Canadian average, on the other hand, remained essentially stable over this period. In 1981, the average standard of living in all of Canada was 19% higher than in Quebec while in 2014 the difference was 23% (119 vs 123 in the Figure). Thus we can deduce that like Quebec, Canada as a whole (1.30% average annual growth) has also lost ground to its OECD counterparts.

[9] Remember that these data are corrected to reflect the evolution of prices over time in an economy, and for price differences between economies.
[10] In Switzerland's case, this situation is essentially attributable to the fact that the country enjoyed a particularly high standard of living in the early 1980s.

FIGURE 5

STANDARD OF LIVING AT PURCHASING POWER PARITY AS COMPARED WITH QUEBEC, 1981 AND 2014

(PER CAPITA GROSS DOMESTIC PRODUCT IN 2014 CANADIAN DOLLARS, QUEBEC=100)



Source: http://statcpp.hec.ca/bilan2015/graphique5.xlsx

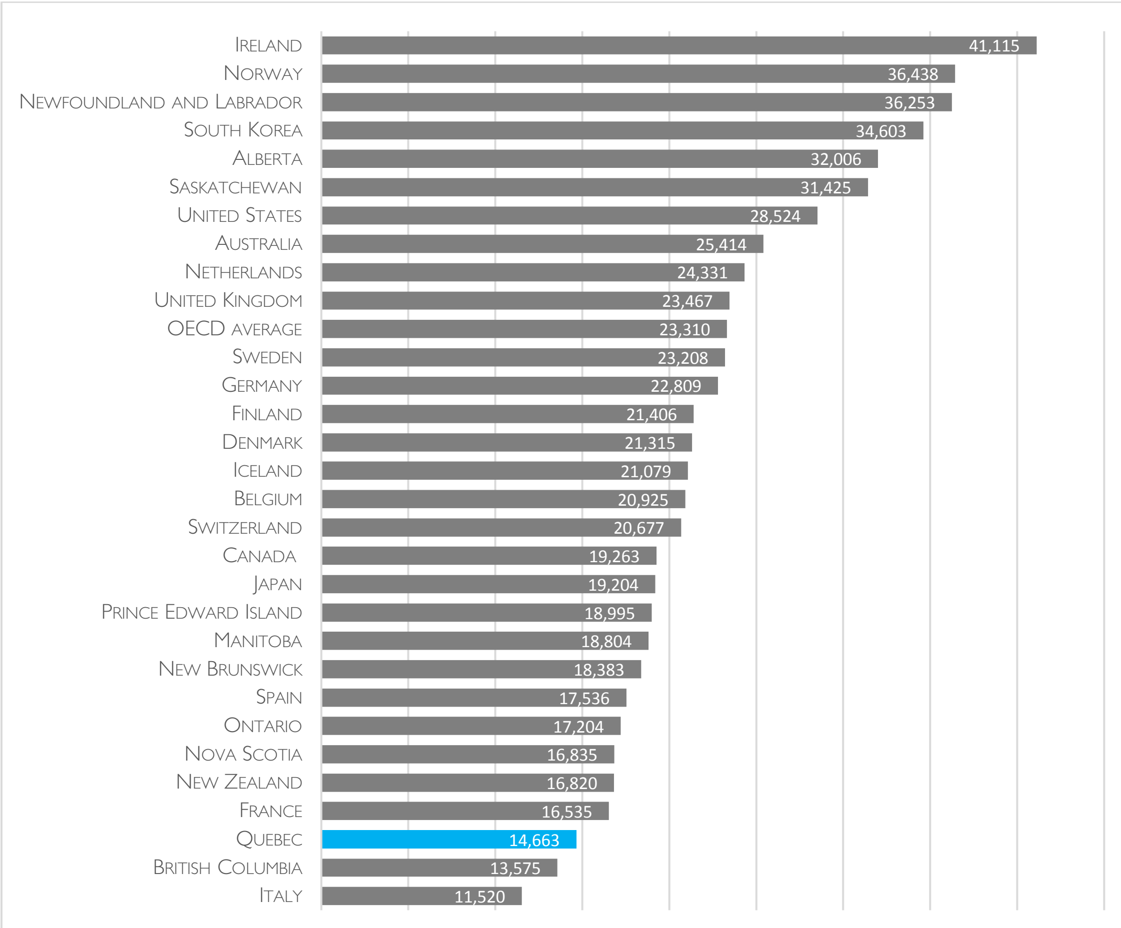
Once we know that Quebec is falling behind, we can grasp the seriousness of the situation by measuring standard of living trends in dollars (Figure 6). We can see that with a rise of $14,663 per capita, or average annual growth of 1.20%, Quebec has one of the smallest gains among the 30 countries and provinces analyzed. In fact, only British Columbia and Italy posted poorer standard of living growth. Given this performance, Quebec was unable to match the pace of growth in countries like Australia ($25,414/pc or 1.77% average annual growth), although it had a standard of living similar to Quebec's in 1981.[11]

[11] In 1981, the standard of living in Quebec was $30,385 per capita, and in Australia, $32,498 per capita.

FIGURE 6

INCREASE IN THE STANDARD OF LIVING AT PURCHASING POWER PARITY, 1981 TO 2014

(PER CAPITA GROSS DOMESTIC PRODUCT IN 2014 CANADIAN DOLLARS)



Source: http://statcpp.hec.ca/bilan2015/graphique6.xlsx

WHY HAS THE STANDARD OF LIVING IN QUEBEC RISEN MORE SLOWLY?

To determine the origin of standard of living growth, we can decompose per capita GDP using three determinants: labour productivity, which measures the average value of the wealth created per hour worked; work intensity, which measures the average hours worked per job; and the employment rate, which measures the number of jobs as a proportion of the total population during the year (Diagram 1). In other words, a given economy's standard of living is determined by combining the efficiency with which it generates wealth, how hard its population works, and its population's labour market participation.

DIAGRAM 1

THE THREE STANDARD OF LIVING DETERMINANTS

$$\textit{Standard of living} = \textit{Work productivity} \times \textit{Work intensity} \times \textit{Overall employment rate}$$

$$\frac{\textbf{GDP}}{\textbf{Population}} = \frac{\textbf{GDP}}{\textbf{Hours worked}} \times \frac{\textbf{Hours worked}}{\textbf{Number of jobs}} \times \frac{\textbf{Number of jobs}}{\textbf{Population}}$$

When we analyze standard of living growth using this breakdown, we can measure the contribution of each of its elements (Table 1). For instance, we saw that the standard of living in Quebec rose by \$14,663 per capita between 1981 and 2014. Based on the above decomposition, we can see that 85% of this increase, or \$12,477 per capita, is attributable to the increase in labour productivity while 39%, or \$5,716 per capita, comes from the higher employment rate. Since the contributions of labour productivity and the employment rate add up to 124%, we can logically deduce that work intensity made a negative contribution to standard of living growth. Its contribution was –24%, meaning that the number of hours worked per job declined between 1981 and 2014.

If we apply this decomposition to all the provinces and countries concerned, we can make two observations.

First, the decline in work intensity cut into the potential standard of living gains that could have been made in the vast majority of the countries and provinces. With the exception of the United States and Sweden, all the countries and provinces analyzed showed a negative contribution by work intensity, a sign that the average hours worked per job have declined almost everywhere since the early 1980s.[12] So Quebec is no exception in this regard. On the other hand, most of these countries at the same time saw their employment rate rise, meaning that in the long run the combined effect of these two components was limited. In other words, the decline in the average hours worked per job was generally offset by an increase in the employment rate in most of these countries.

This first observation underscores the second one, i.e. the fundamental role of labour productivity in boosting the standard of living in the selected provinces and countries. As shown in Table 1, almost all the standard of living growth observed since 1981 in the selected provinces and countries is attributable to labour productivity gains. Thus it can be seen that from 62% to 146% of standard of living growth between 1981 and 2014 is attributable to labour productivity gains.

[12] On average, work intensity in the selected OECD countries fell by 9.8% between 1981 and 2014, while in Quebec it declined by 9.0%.

TABLE 1

SOURCES OF STANDARD OF LIVING GROWTH AT PURCHASING POWER PARITY BETWEEN 1981 AND 2014

(PER CAPITA GROSS DOMESTIC PRODUCT IN 2014 CANADIAN DOLLARS AND IN PERCENTAGES)

	Variation in the standard of living	Share of the variation in the standard of living attributable to a change in:		
	between 1981 and 2014	Labour productivity	Work intensity	Employment rate
IRELAND	41,115	99%	–18%	19%
NORWAY	36,438	98%	–16%	17%
NEWFOUNDLAND AND LABRADOR	36,253	64%	–5%	41%
SOUTH KOREA	34,603	98%	–17%	18%
ALBERTA	32,006	94%	–8%	14%
SASKATCHEWAN	31,425	82%	–9%	27%
UNITED STATES	28,524	91%	3%	6%
AUSTRALIA	25,414	88%	–14%	26%
NETHERLANDS	24,331	82%	–20%	39%
UNITED KINGDOM	23,467	86%	–2%	16%
SWEDEN	23,208	99%	10%	–10%
GERMANY	22,809	111%	–45%	34%
FINLAND	21,406	137%	–22%	–15%
DENMARK	21,315	111%	–14%	3%
ICELAND	21,079	111%	–17%	6%
BELGIUM	20,925	99%	–16%	17%
SWITZERLAND	20,677	99%	–35%	36%
CANADA	19,263	93%	–14%	22%
JAPAN	19,204	132%	–36%	3%
PRINCE EDWARD ISLAND	18,995	66%	–10%	44%
MANITOBA	18,804	95%	–14%	19%
NEW BRUNSWICK	18,383	62%	–5%	43%
SPAIN	17,536	86%	–19%	33%
ONTARIO	17,204	109%	–15%	6%
NOVA SCOTIA	16,835	73%	–12%	39%
NEW ZEALAND	16,820	92%	–12%	21%
FRANCE	16,535	146%	–48%	2%
QUEBEC	14,663	85%	–24%	39%
BRITISH COLUMBIA	13,575	104%	–19%	16%
ITALY	11,520	108%	–26%	18%

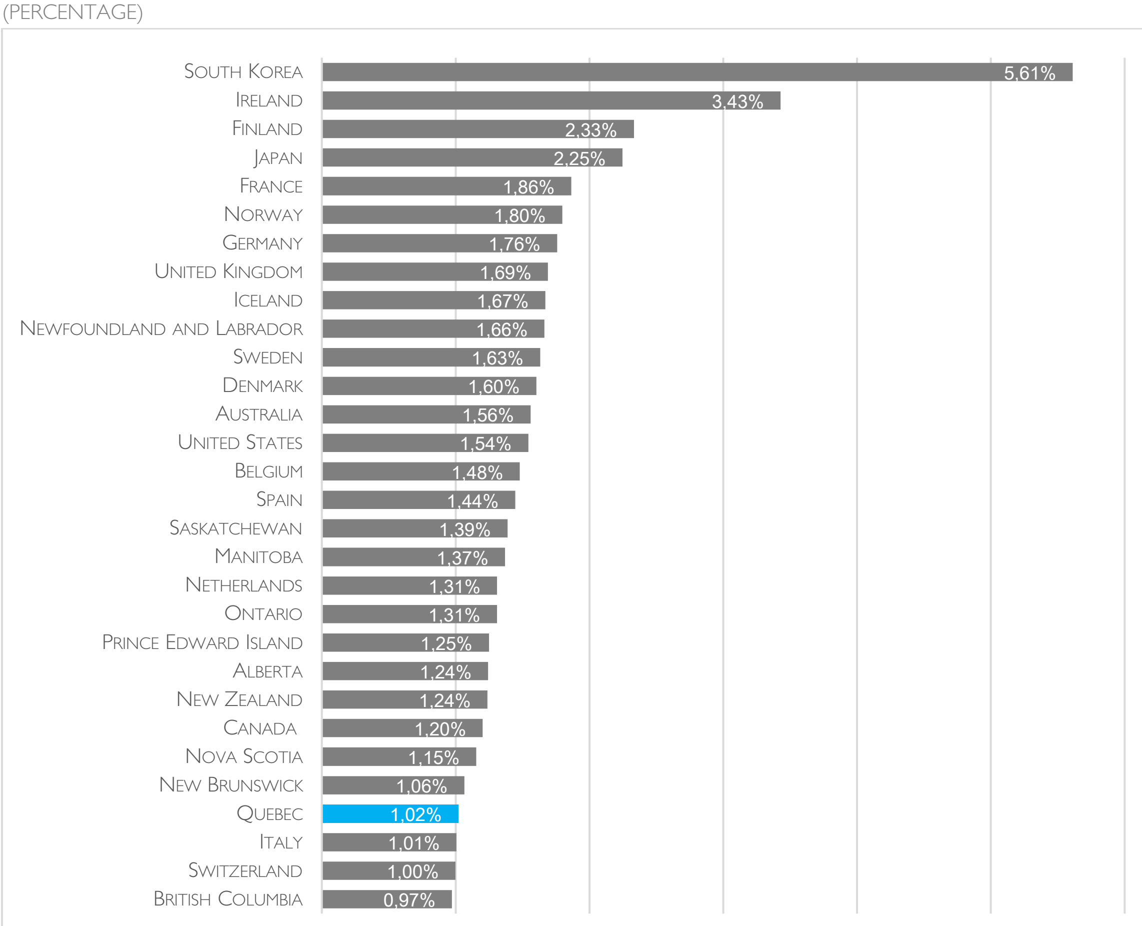
Source: http://statcpp.hec.ca/bilan2015/tableau1.xlsx

In short, this shows that long-term standard of living growth inevitably requires productivity gains. In the circumstances, countries and provinces where labour productivity growth has been weak all posted weak standard of living gains. This is precisely what explains Quebec's economic gap. Between 1981 and 2014, labour productivity in Quebec rose by an annual average of just 1.02%, or the fourth-weakest growth among the 30 provinces and countries analyzed (Figure 7). Only British Columbia (0.97%), Italy (1.01%) and Switzerland (1.00%) posted lower growth in this respect. Remember that these three economies also outperformed Quebec in terms of their standard of living growth over the same period. This performance leaves Quebec far behind countries like Sweden and Denmark, where labour productivity growth was about 1.6 times greater. Note also that Finland and Ireland, the two countries that managed to outpace Quebec in terms of their standards of living, posted productivity gains much higher than those recorded in Quebec. Between 1981 and 2014, labour productivity growth in those two countries was 2.3 to 3.4 times greater, respectively, than in Quebec. In short, labour productivity growth very clearly appears to be the main determinant of long-term standard of living growth.

FIGURE 7

AVERAGE ANNUAL LABOUR PRODUCTIVITY GROWTH BETWEEN 1981 AND 2014

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique7.xlsx

IS INCREASING WORK INTENSITY THE RIGHT CHOICE?

Since we know that declining work intensity reduced the potential standard of living gains in Quebec, we have to wonder about the importance of hours worked. Is it possible that by increasing the number of hours worked, the province could improve its economic prosperity? Absolutely! However, the limitations of this approach would quickly become apparent.

For instance, if Quebec ($45,048/pc) wanted to catch up to the average standard of living in OECD countries ($54,951/pc) while maintaining its current labour productivity and employment rate, the province would have to boost its work intensity to 1,994 hours per job – an increase of 359 hours per job. This would place the province near the top of the work intensity rankings (Figure 8), just behind South Korea (2,124 hours per job). In the circumstances, it appears impossible to sustain growth in the Quebec economy simply by boosting hours worked, because this increase is much too large to be realistic.

It must also be understood that the impact of increasing work intensity to levels comparable with those in the other countries and provinces would be limited. For instance, if work intensity in Quebec were the same as in Alberta, the Canadian leader in terms of hours worked (1,635 hours per job vs 1,828 hours per job), its standard of living would rise by only $5,326 per capita, still below the OECD average and far behind Alberta.

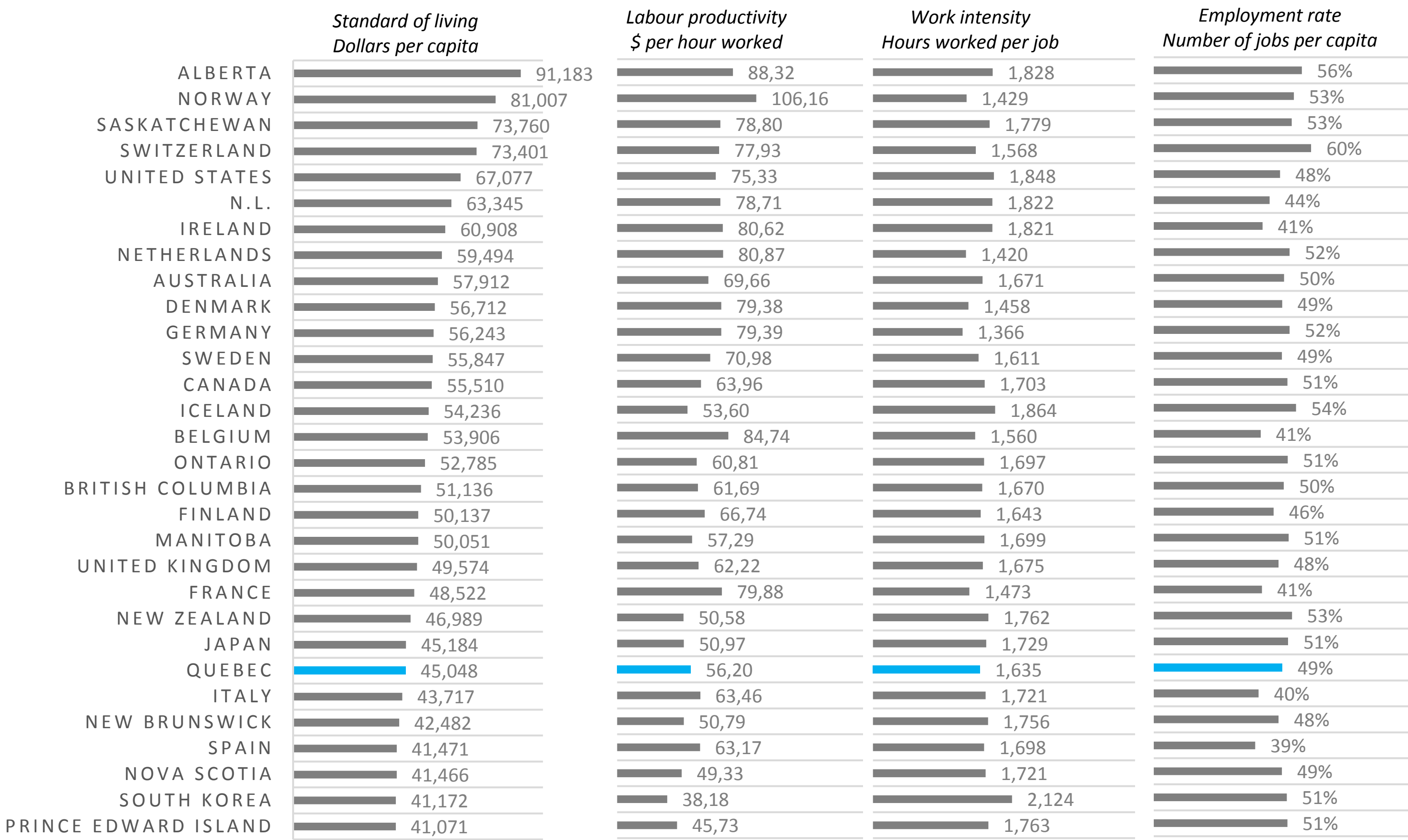
If the same logic is applied to the employment rate, boosting labour productivity has a much greater – and much more realistic – impact on the standard of living.

For instance, if Quebec maintained its current work intensity and employment rate, every additional $1 per hour worked would translate into an increase of $801 in the standard of living. In other words, every $1 increase in labour productivity would boost collective wealth by $801 per capita, even without any change in work intensity and the employment rate. So we can see that it is not so much the gap in the number of hours worked that explains Quebec's poor performance as the productivity of the hours worked.

We should point out here that productivity is not simply about pure economic growth. It also gives a society the opportunity to support the choices it makes in terms of hours worked. If we look at Figure 8 again, we can see that several countries with higher standards of living than Quebec actually have lower work intensity. In Sweden, Belgium, Denmark, Germany and the Netherlands, for example, work intensity is as much as 16% lower than in Quebec. On the other hand, these countries have much higher labour productivity. In Sweden, it is 26% higher than in Quebec. In Denmark and Germany, the difference is about 41%. And in Belgium, labour productivity is approximately 50% higher than in Quebec. In other words, their higher productivity lets people in these countries work less, and yet enjoy a higher standard of living.

FIGURE 8

STANDARD OF LIVING, LABOUR PRODUCTIVITY, WORK INTENSITY AND EMPLOYMENT RATE IN 2014



Although succinct, this first section has focused on the basic causes of Quebec's economic gap, i.e. the weak productivity gains over the past three decades that have slowed the pace of growth in the province's standard of living.

This is not a new observation; it has been made many times since the early 2000s. Yet the Quebec economy does not seem to have grasped the importance of productivity, since very few advances have been observed in recent years. Between 2004 and 2014, average annual productivity growth was just 0.79%, clearly not enough for Quebec to bridge the gap that has formed over the past three decades. Result: average annual standard of living growth was 0.52%, almost three times slower than the pace between 1981 and 2004.

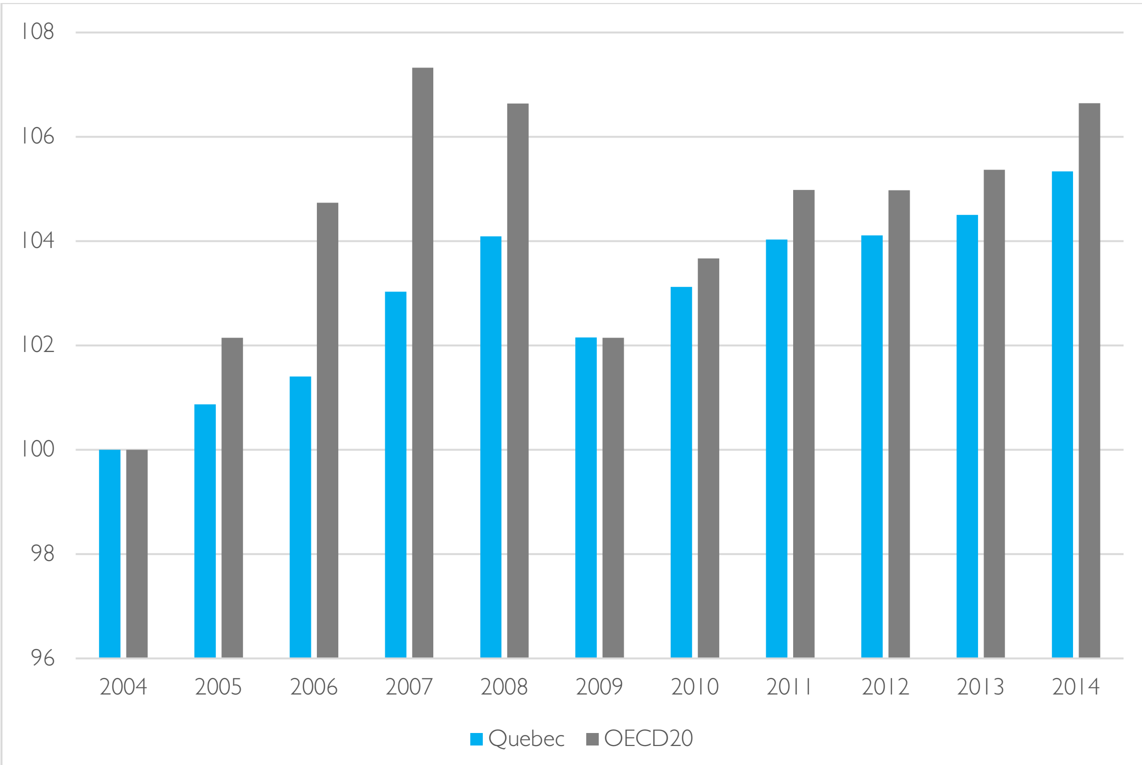
That being said, since we know that standard of living growth in Quebec was similar to average growth among OECD countries between 2004 and 2014, it might appear that Quebec's situation is not as dire as the picture painted here, and that it is very gradually catching up. But that is not exactly the case.

In fact, Quebec's economy weathered the 2008 recession more successfully than the vast majority of OECD countries. Consequently, while Quebec's performance was comparable to the OECD average, it is mainly because the economic slowdown was more drastic elsewhere in the OECD, and not because Quebec's economy grew especially quickly (Figure 9). Had it not been for the recession, the gap between Quebec and the OECD average would be much wider.

FIGURE 9

CHANGE IN THE STANDARD OF LIVING AT PURCHASING POWER PARITY, 2004–2014

(2004=100)



Source: http://statcpp.hec.ca/bilan2015/graphique9.xlsx

In the circumstances, we have to wonder why Quebec has not managed to boost labour productivity, unlike many other countries. Especially since the ins and outs of productivity are well known: in the long term, productivity gains inevitably depend on innovation. This means that it is essential to examine the efforts made in recent years to improve Quebec's economic performance.

CHAPTER 2

CREATING A CULTURE OF INNOVATION IN QUEBEC

To understand just how essential innovation is to achieving long-term economic growth, we must start by defining innovation.

In the 1930s, Schumpeter[13] laid the foundations of the economic concept of innovation. For Schumpeter, innovation was the dynamic that made it possible to replace old technologies and ways of doing things with new ones. He recognized five forms of innovation:

- Development of new products
- Development of new production methods
- Development of new structures and organizations
- Opening of new markets
- Adoption of new sources of supply

Schumpeter explained the importance of innovation for economic growth by referring to "creative destruction," a process by which economic growth results from a dynamic of creation, destruction and reorganization. To illustrate this process, we need only think of the different audio media over the years, from vinyl to cassettes, CDs and MP3 readers, each of which competed with its predecessors, sometimes to the point of eliminating them.

While the theory of innovation has evolved since Schumpeter, the basics remain essentially the same. Innovation is still defined as a tangible or intangible change that affects ways of doing things, of producing, organizing, structuring, marketing things, etc. Innovation is not limited to advanced research and technology, and affects not only the production of goods and the delivery of services. It relates to all an organization's activities, from the way work is organized to penetrating new markets. Innovation is not defined only by radical changes, but also applies to routine updates to an organization's ways of doing things.

Note also that innovation does not occur only in businesses. It affects all organizations, in both the private and public sectors. Public policies must also be examined to make sure they support the dynamism required for innovation.

While the Quebec government has not achieved the anticipated results in this respect, it is obviously aware of the need to stimulate innovation in order to boost productivity. When we analyze all the strategies, policies and programs implemented over the past ten years, and consider the different budgets brought down over that same period, it is clear that the government has made considerable efforts to encourage businesses to innovate more.

That being said, it is not enough to use government programs, income tax credits and ad hoc grants to encourage businesses to innovate when the goal is to create a culture of innovation. To achieve this goal, the government must use two levers.

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[13] Joseph Alois Schumpeter (1883–1950) of Austria was a leading 20th-century economist recognized for his writings on the role of innovation in economic development.

On the one hand, it must attack the roots of the problem, and it must be understood that education is the very foundation of innovation. Even before trying to support company innovation through its policies and programs, the government must put in place an efficient education system that year after year trains the human capital needed for economic development. And by this we mean both university education and vocational and technical skills training. On the other hand, the government must give the province a real economic development policy, so that its actions reflect a long-term vision.

Quebec has no such policy. The orientations that govern Quebec's economic development are generally determined by budgetary decisions, rather than economic goals, and too often reflect short-term political imperatives. In fact, until quite recently, the measures, programs, credits and grants intended to stimulate the province's economic development were almost never evaluated. As a result, many of the efforts made to accelerate growth failed to bear fruit, and because the measures taken were not systematically evaluated, the necessary reforms were never carried out. Indeed, education does not seem to have been the government's top priority. If we look at growth in government spending by mission between 2002–2003 and 2012–2013, it can be seen that spending on health and social services grew five times faster than education spending.

In the circumstances, the government should be using these two levers to foster economic growth. By making education its main priority, the government would nourish the roots of innovation by providing businesses with a skilled, competent and educated workforce. Then, by implementing a real economic development policy for Quebec, it would structure its actions to ensure that they effectively encouraged the emergence of new businesses and sustained the vitality of existing ones. Taken together, these two levers should allow the government to take a coherent approach to boosting the Quebec economy, by creating a true culture of innovation.

The rest of this chapter is organized as follows. The first section looks at the issue of education in Quebec, and concludes that Quebec's education system is underfunded in comparison with many OECD countries, and that school attendance levels are hindering the province's economic growth, in particular by limiting businesses' ability to hire skilled and competent workers. The second section looks at how government actions could reshape the province's economic environment so as to foster the emergence of new companies and the vitality of existing ones.

EDUCATION: A PROACTIVE APPROACH

Education is at the root of an innovation strategy for a simple reason. For businesses to be able to adopt new technologies, introduce new processes and develop new products and approaches, they must be able to count on a well-trained workforce. In short, we cannot hope to foster economic growth through innovative and successful businesses if they cannot depend on competent and skilled workers. Consequently, the government must be proactive if it wishes businesses to be properly equipped to sustain economic growth in the long term.

The funding of Quebec's education system has frequently been in the news since the early 2000s, and there is every indication that it has suffered from the different crises it has been through. The result is that we must now wonder about the condition of the educational system. Are the resources allocated to it sufficient to ensure the development of Quebec's human capital? Are the existing structures and organization of the educational system adequate, considering Quebeckers' current training needs?

HOW DOES THE FUNDING COMPARE?

To answer these questions, we must start by looking at how education funding in Quebec compares with that elsewhere in Canada and the OECD countries. To begin with, we must determine the government's contribution. We will use budgetary expenditure, as defined by the amounts spent by the government to support education, meaning its direct spending and transfers to educational institutions and school boards.[14] This will serve as a starting point.

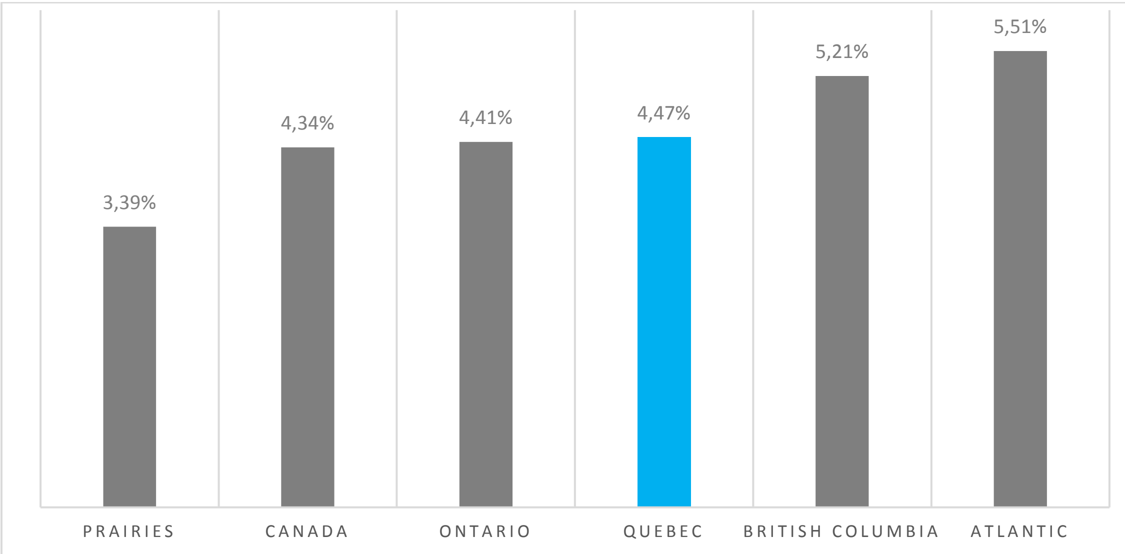
With spending on education representing 4.47% of provincial GDP in 2012, the Quebec government's education funding is comparable to the Canadian average and that of Ontario. Only British Columbia and the Atlantic provinces spent more of their GDP on education (Figure 10). So we can say that, considering the size of the economy, the proportion of public expenditure devoted to education in Quebec compares with the Canadian average.

[14] Budgetary expenditure on education includes all permanent and voted appropriations allocated to the Ministère de l'Éducation, du Loisir et du Sport (Volume 2 of the *Public Accounts*). This includes appropriations for *Administration and consultation*, for *Organizations involved with specialized training programs*, *Financial assistance for education*, *Preschool, primary and secondary education*, *Higher education*, the *Development of recreation and sport* and *Retirement plans*. Note that about 85% of the appropriations are in the form of subsidies to school boards and educational institutions at all levels. This should not be confused with budgetary expenditure allocated to the "Education and culture" mission in the government's consolidated financial statements (Volume 1 of the *Public Accounts*) and which include the appropriations used by the Ministère de l'Éducation, du Loisir et du Sport, the Ministère de la Culture, des Communications et de la Condition féminine, the Ministère de l'Immigration et des Communautés culturelles and spending by organizations in the education network (after eliminating some to avoid double counting) recognized in the government reporting entity. The latter include 72 school boards, 48 CEGEPs and 11 universities in the network of the Université du Quebec and its institutions. The names of the government departments and the number of organizations in the education network refer to the 2012–2013 fiscal year.

FIGURE 10

BUDGETARY EXPENDITURE ON EDUCATION AS A % OF GDP, 2012–2013

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique10.xlsx

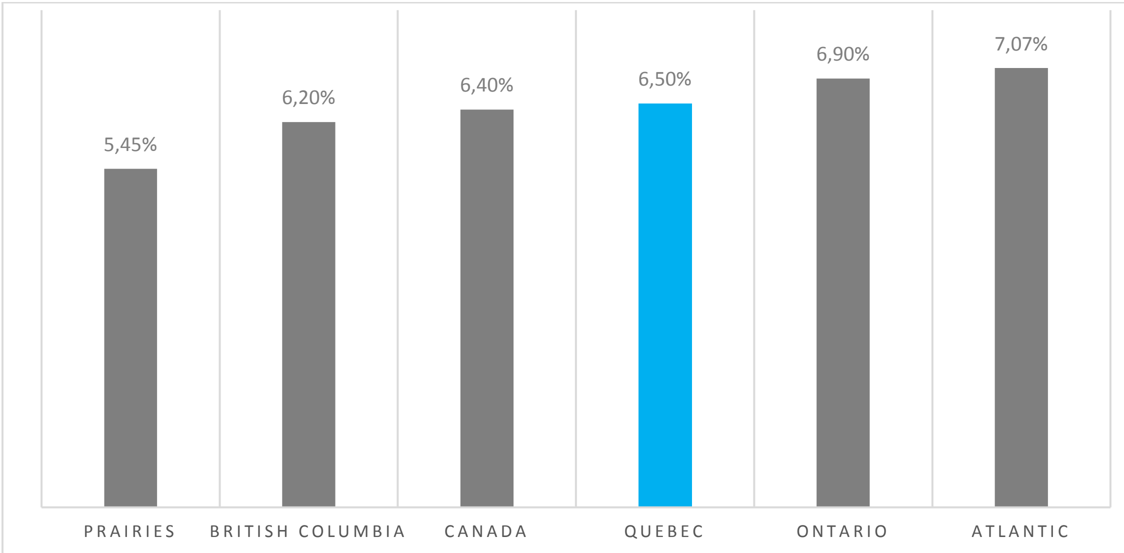
Since the proportion of education funding from private sources varies across Canada, we cannot look only at the public portion when estimating education funding in Quebec. This leads us to consider *all* spending by educational institutions and other affiliated bodies, i.e. all the resources collectively devoted to education. In doing so we obtain a measurement that ignores the choices made regarding education funding methods.

This reveals certain differences in comparison with the previous ranking, indicating that the private portion of education funding varies from one province to another. Education funding as a proportion of GDP in Ontario now exceeds that in Quebec, while British Columbia falls to below the Canadian average. Despite these changes, the proportion of funding for education as a proportion of GDP in Quebec remains slightly above the Canadian average (Figure 11).

FIGURE 11

PUBLIC AND PRIVATE SPENDING ON EDUCATION AS A % OF GDP, 2010[15]

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique11.xlsx

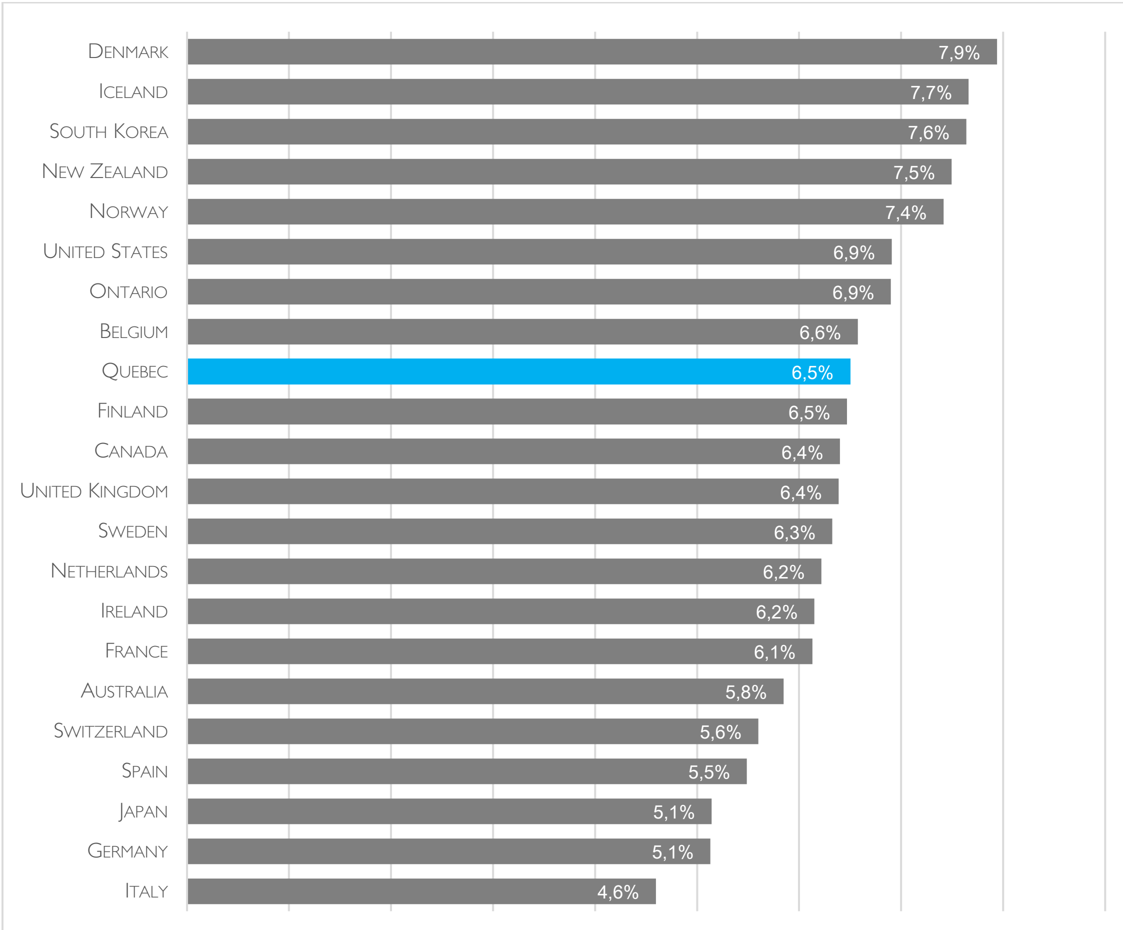
This way of looking at education funding also lets us extend the comparison to OECD countries. We can see that with overall spending on education at 6.5% of Quebec's GDP, the province once again fares well when compared with European countries like Belgium, Finland and Sweden (Figure 12).

[15] To ensure that data from Quebec are comparable with those from other Canadian provinces and the OECD countries, from this graph forward all data on public and private expenditure by educational institutions are those provided in *Education Indicators in Canada: An International Perspective 2014* from Statistics Canada. Expenditure (public and private) with regard to educational institutions includes "spending on both instructional and non-instructional educational institutions, i.e. entities that provide instructional programmes (e.g., teaching) to individuals directly in an organized group setting or through distance education and those that provide advisory, administrative or professional services to other educational institutions but do not enrol students themselves." The data exclude all expenditure related to organizations' debt service.

FIGURE 12

PUBLIC AND PRIVATE SPENDING ON EDUCATION AS A % OF GDP, 2011[16]

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique12.xlsx

At this point, it might seem that education is adequately funded, considering the Quebec economy's ability to pay. That being said, it must be remembered that the amount of educational services required cannot be measured simply as a percentage of GDP. When we use an economy's ability to pay as a way of evaluating its education funding, we implicitly justify the fact that poorer economies will devote fewer resources to education while more prosperous economies will spend more on it.

This is particularly important in the case of an economy like Quebec's, where per capita GDP is lower than in most of the provinces and countries analyzed. Spending on education in Quebec may be in line with the province's ability to pay – which is less than elsewhere – without meeting Quebeckers' actual needs in terms of education.

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[16] The reference year is 2010 for Canada and the Canadian provinces.

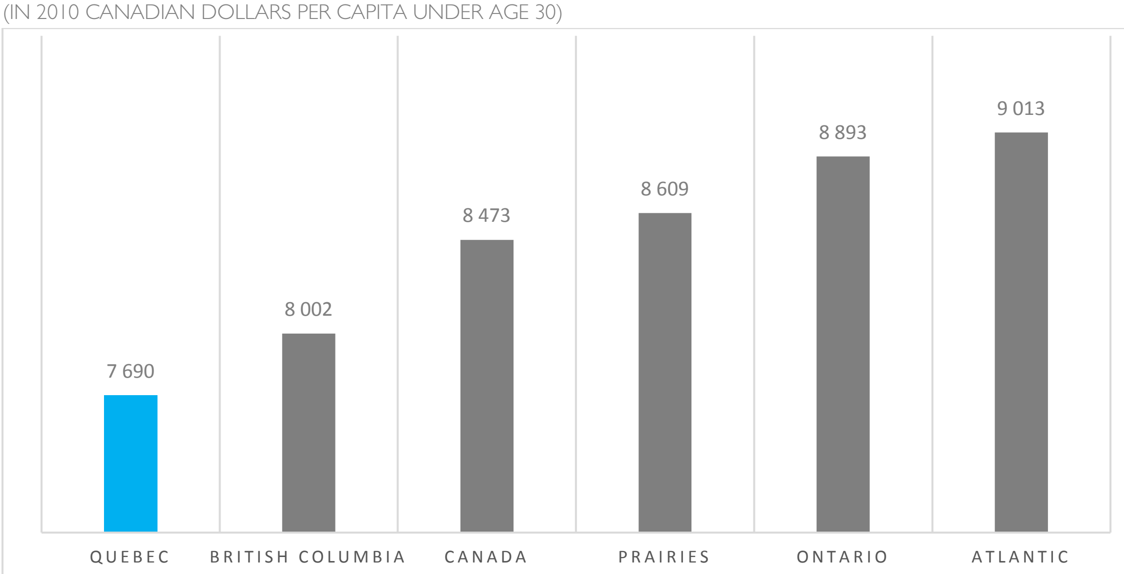
Accordingly, we must also evaluate education spending as a function of the potential school-age population, meaning people under age 30. This gives us a representative measurement of the education system's funding needs with regard to the population to be trained. It is at this point that the findings concerning Quebec become worrisome.

When we measure public and private spending on education in Canada as a function of the population under age 30, Quebec tumbles to the bottom of the ranking. With overall spending of $7,690 per person under age 30, Quebec devotes about $1,203 less than Ontario to education (Figure 13). So while the total resources devoted to education in Quebec respect the province's ability to pay, spending on education appears insufficient with regard to Quebeckers' needs.

FIGURE 13

PUBLIC AND PRIVATE SPENDING ON EDUCATION PER PERSON UNDER AGE 30, 2010

(IN 2010 CANADIAN DOLLARS PER CAPITA UNDER AGE 30)



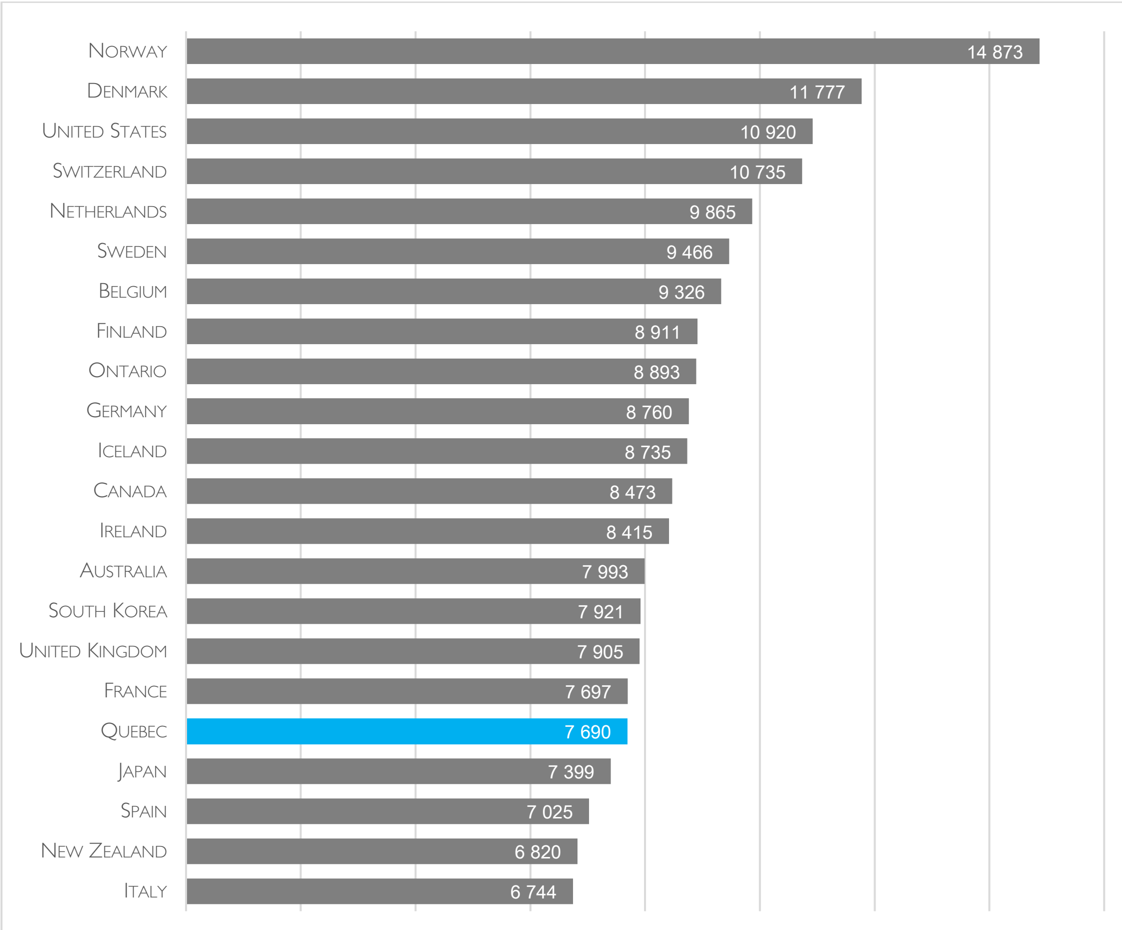
Source: http://statcpp.hec.ca/bilan2015/graphique13.xlsx

The finding is similar if we extend the comparison to several OECD countries (Figure 14). Although such comparisons must be taken with a grain of salt, given the differences between the countries in terms of their education systems, the trend shown here still tells us something about actual spending on education in Quebec: spending per person under age 30 is proportionately lower in Quebec than in most countries, all sources of funding combined.

FIGURE 14

PUBLIC AND PRIVATE SPENDING ON EDUCATIONAL INSTITUTIONS PER PERSON UNDER AGE 30 AT PURCHASING POWER PARITY, 2010[17]

(2010 CANADIAN DOLLARS PER CAPITA)



Source: http://statcpp.hec.ca/bilan2015/graphique14.xlsx

The current situation in Quebec with regard to education has much to do with efforts in recent years to support funding for the education system. For 15 years now, perhaps more, education does not seem to have been treated as a priority by the government. Rather than funding the educational system in keeping with its needs, the government has chosen to fund it in keeping with its ability to pay. As a result, since the early 2000s, real budgetary expenditure per capita[18] has grown by only 4%, for average annual growth of 0.43%. Only Alberta has done worse than Quebec in this respect.[19] Everywhere else, budgetary expenditure on education has far surpassed Quebec's (Figure 15).

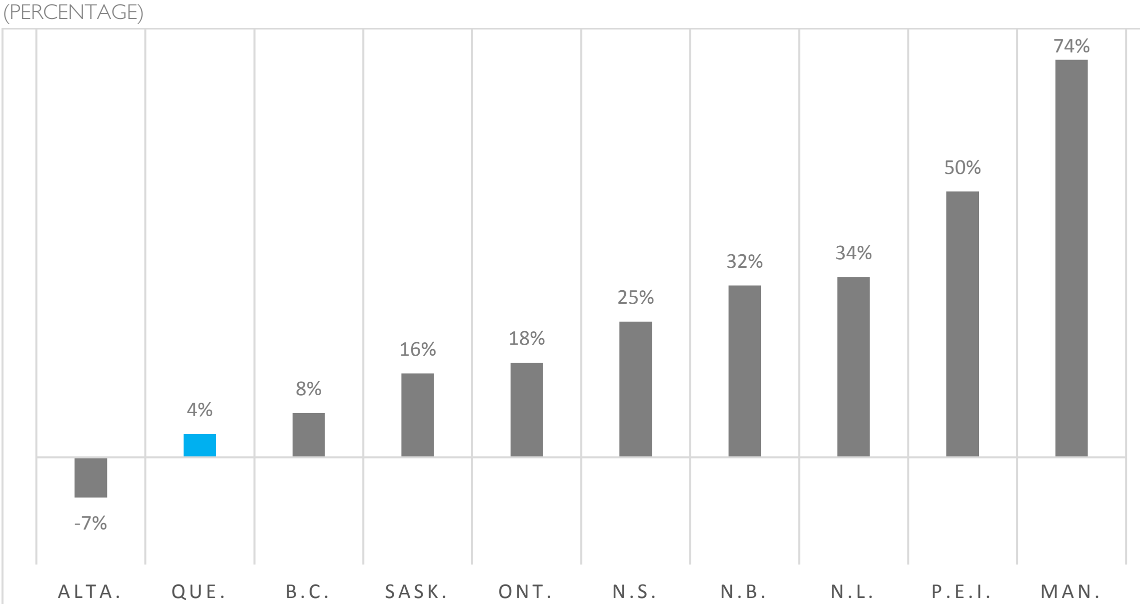
[17] The reference year is 2010 for Canada and the Canadian provinces.
[18] I.e. the data are corrected to take account of changing prices over time.
[19] Note, however, that in 2012, education spending in Alberta remained much higher than in Quebec, indicating that education spending in Alberta started off higher.

When it comes to priorities, note that budgetary expenditure on health and social services has grown 5.6 times more than spending on education[20] and in fact the Quebec government's overall budgetary expenditure has grown 1.23 times more quickly than its education spending. It is difficult to deny that low education funding in Quebec is more a question of priorities than a lack of resources.

FIGURE 15

GROWTH IN PER CAPITA BUDGETARY EXPENDITURE ON EDUCATION BY PROVINCIAL GOVERNMENTS, BETWEEN 2002–2003 AND 2012–2013

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique15.xlsx

This observation leads to our first recommendation, that education be made a priority in Quebec:

RECOMMENDATION NO. 1
RE-ESTABLISH ADEQUATE PUBLIC FUNDING FOR EDUCATION, EVEN IF IT MEANS SACRIFICING OTHER, LESS-ESSENTIAL GOVERNMENT MISSIONS

For instance, if the government raised its budgetary expenditure on education to the Canadian average ($6,255 per person under age 30), the proportion of spending on education in the province's economy would rise from 4.5% of GDP to 4.9% of GDP. While this might appear to be a small gain, it would represent $1.6 billion in additional annual funding.

[20] Average annual growth of budgetary expenditure on health and social services was 2.4% between 2002–2003 and 2012–2013. These data are from the Institut de la statistique du Québec and are taken from Volume 2 of the Quebec *Public Accounts*.

This being said, the government must not simply inject funds on an ad-hoc basis to make education a priority. In other words, money is not enough to improve the education system. Choices must also simultaneously be made to improve the way the system is organized.

DIAGNOSIS

To decide where the government should intervene if it wishes to give more support to education, we must start by identifying the issues underlying the performance of the education system. And for this purpose, we must look beyond the usual schooling statistics, for such additional funding cannot achieve its objectives if we do not correctly address the roots of the problem.

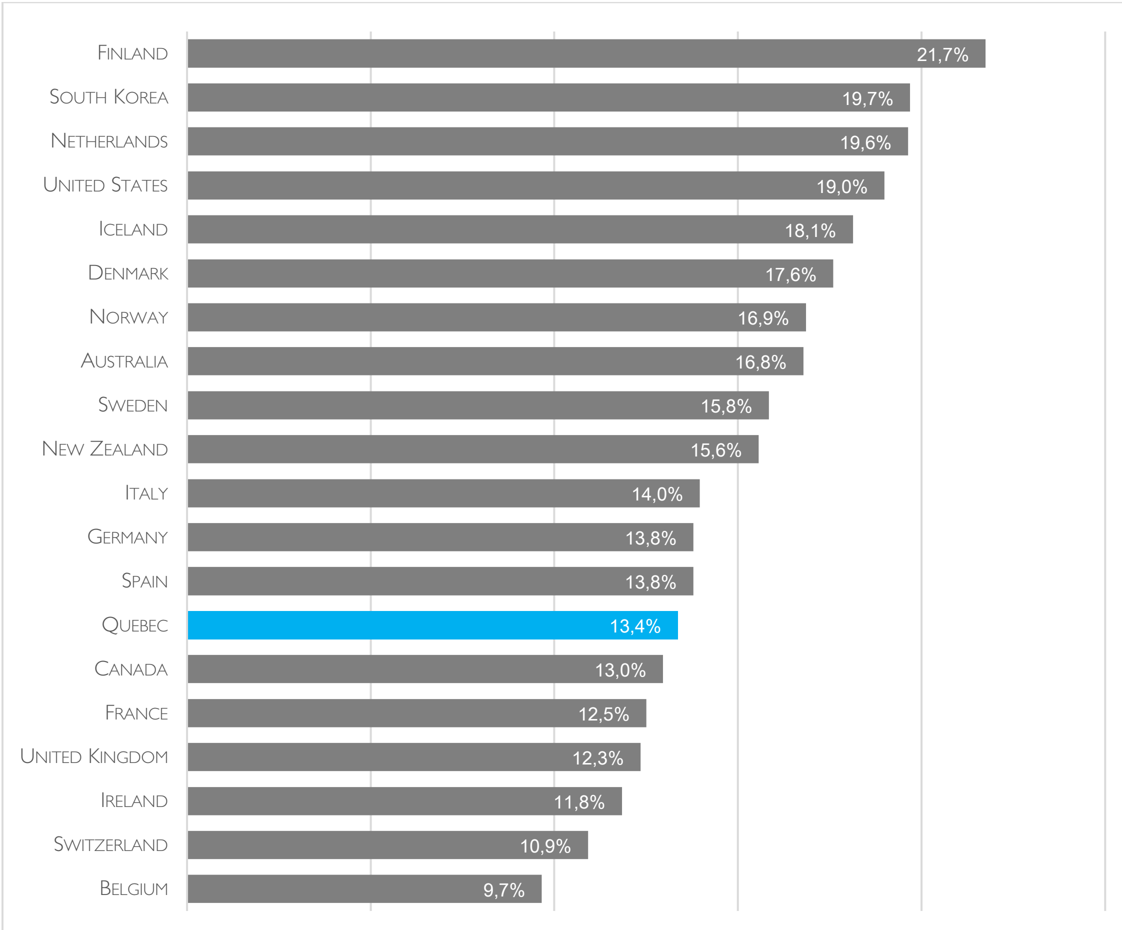
First of all, we note that universities here lag behind those in many countries; young Quebeckers are proportionally less likely to attend and graduate from university. Many countries outperform Quebec in terms of university enrolment (Figure 16). Finland and the United States, for example, have university enrolment rates[21] much higher than Quebec's despite their diametrically opposite funding models: free schooling in the former, and strong reliance on private funding in the latter.

[21] University enrolment among ages 18–34 in Quebec was calculated from data in *Statistique de l'éducation – Édition 2014*. It gives the number of students between 18 and 34 enrolled full- or part-time in the fall term at francophone and anglophone universities, in all fields and at all levels (undergraduate, master's, PhD, undergraduate certificate and diploma, graduate certificate and diploma, attestation and short graduate program, non-program students). These data include international students but not medical residents, students auditing classes, postdoctoral fellows and students in reception classes. The number of OECD students may be calculated at different times during the school year, but the enrolment rate represents the situation at a specific point in time. Populations and student enrolment may be calculated at different times during the year.

FIGURE 16

UNIVERSITY ENROLMENT, AGES 18 TO 34, 2012

(PERCENTAGE)



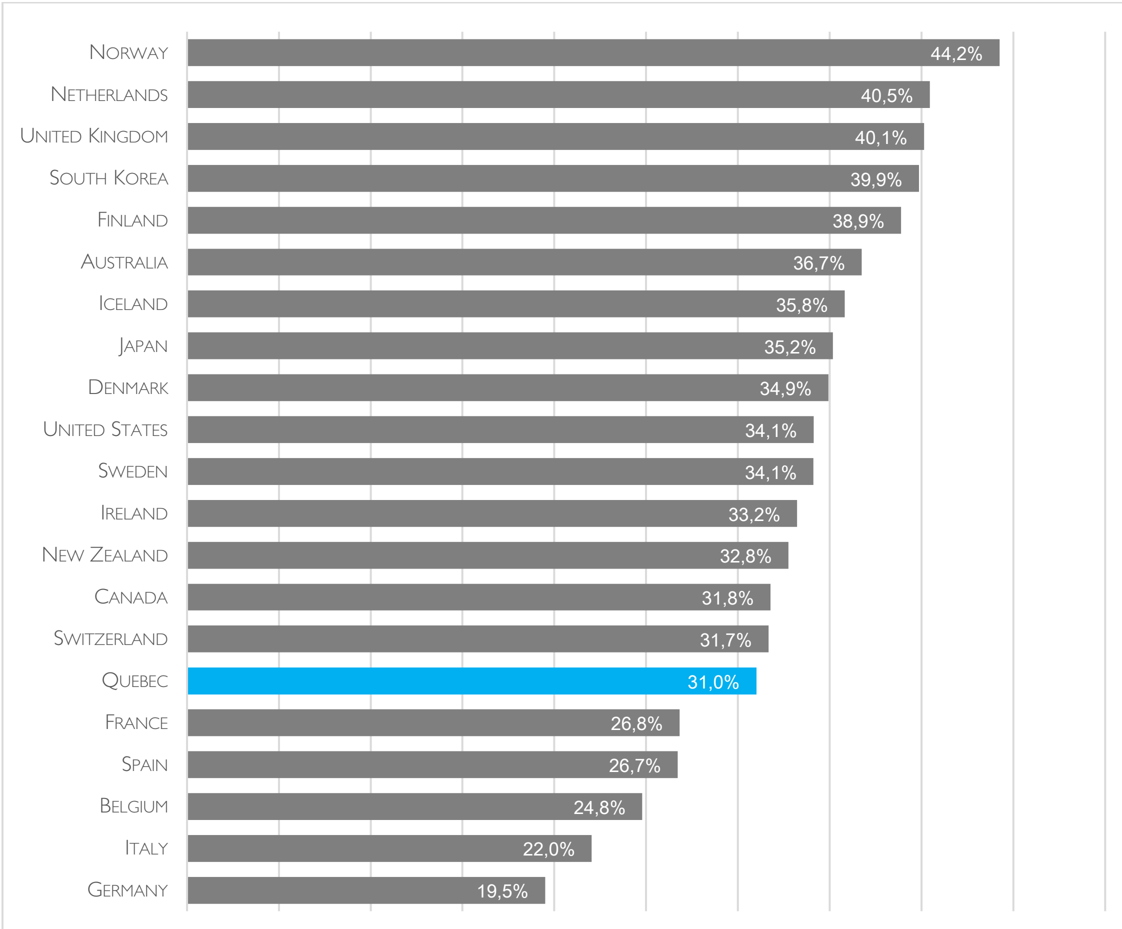
Source: http://statcpp.hec.ca/bilan2015/graphique16.xlsx

In addition, fewer young Quebeckers age 25 to 34 hold an undergraduate or higher degree (Figure 17). The province sits in the lowest third of the ranking, far behind countries like Norway, the Netherlands and Finland.

FIGURE 17

PROPORTION OF THE POPULATION AGE 25 TO 34 WITH AN UNDERGRADUATE OR HIGHER DEGREE, 2012

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique17.xlsx

While this performance is generally associated with the issue of university funding and, in particular, tuition fees,[22] we should be looking instead at the problem of high school drop-outs,[23] an upstream phenomenon with an impact on the university enrolment of young Quebeckers (Figure 18).

In the 2012–2013 school year, close to one boy in five dropped out without earning a high school diploma (DES – the general high school diploma) or a vocational diploma (DEP – diploma of vocational studies) or one of the five kinds of training designed to prepare them for the labour market.[24] For girls, it was slightly more than one in ten.

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[22] Note that enrolment in countries like Finland and the United States is much higher than in Quebec, despite their diametrically opposite funding models: free schooling in the former, and strong reliance on private funding in the latter.

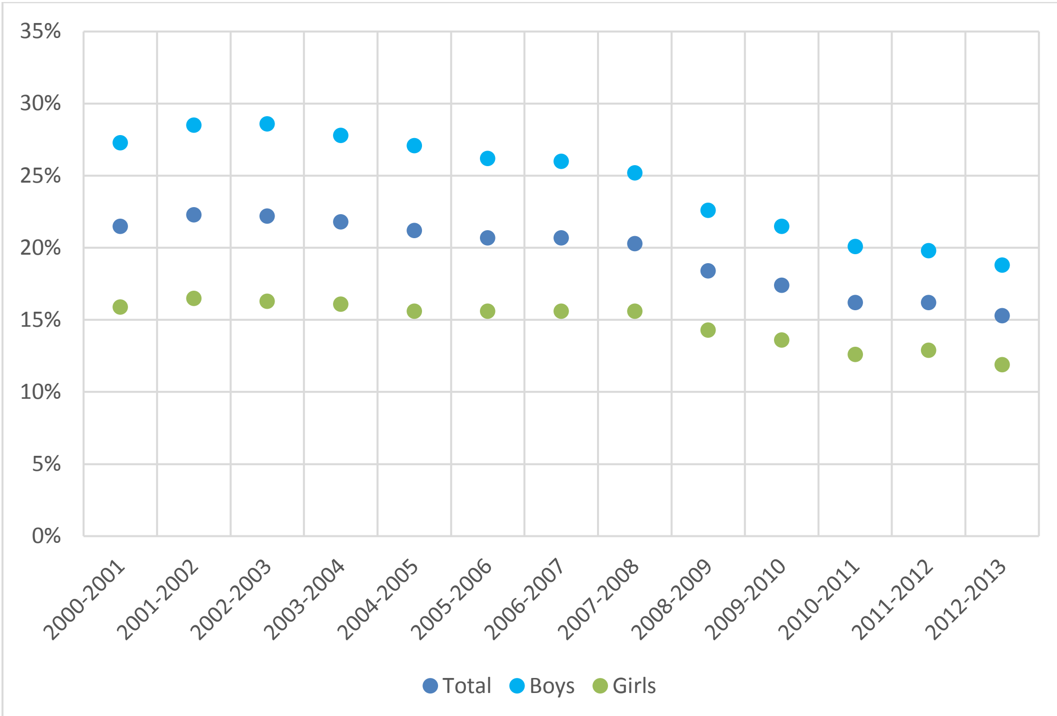
[23] According to the definition of high school drop-outs by the Ministère de l'Éducation, du Loisir et du Sport. It is obtained by estimating the proportion of young people who have not graduated and do not enrol in the following year. For more details, see *Indicateurs de l'éducation 2014*, published by the Ministère de l'Éducation, de l'Enseignement supérieur et de la Recherche (2014).

[24] Attestation of vocational training (AFP), Training certificate in the sociovocational insertion of youths (TCSIY), Training certificate for a semiskilled trade (TCST), Prework training certificate (PWTC), Certificat de formation en entreprise de récupération (CFER).

FIGURE 18

HIGH SCHOOL DROP-OUT RATE IN QUEBEC

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique18.xlsx

While the high school drop-out rate has declined since the early 2000s, the fact remains that a rate of 15% suggests that there are serious problems with high school curriculums, which inevitably have an impact on higher levels of education. So we must target earlier levels if we wish to eliminate the school-retention problem. This leads to our second recommendation:

RECOMMENDATION NO. 2
INVEST IN THE STRUCTURE AND ORGANIZATION OF EARLIER LEVELS IN THE EDUCATION SYSTEM

Two approaches should be prioritized in this respect: placing 4-year olds in a universal kindergarten system that feeds into the regular school stream; and revamping options for the high school curriculum so as to ensure that young people stay in school and graduate with a specialized diploma.

TACKLING THE SCHOOL DROP-OUT PROBLEM: THE CARROT AND THE STICK

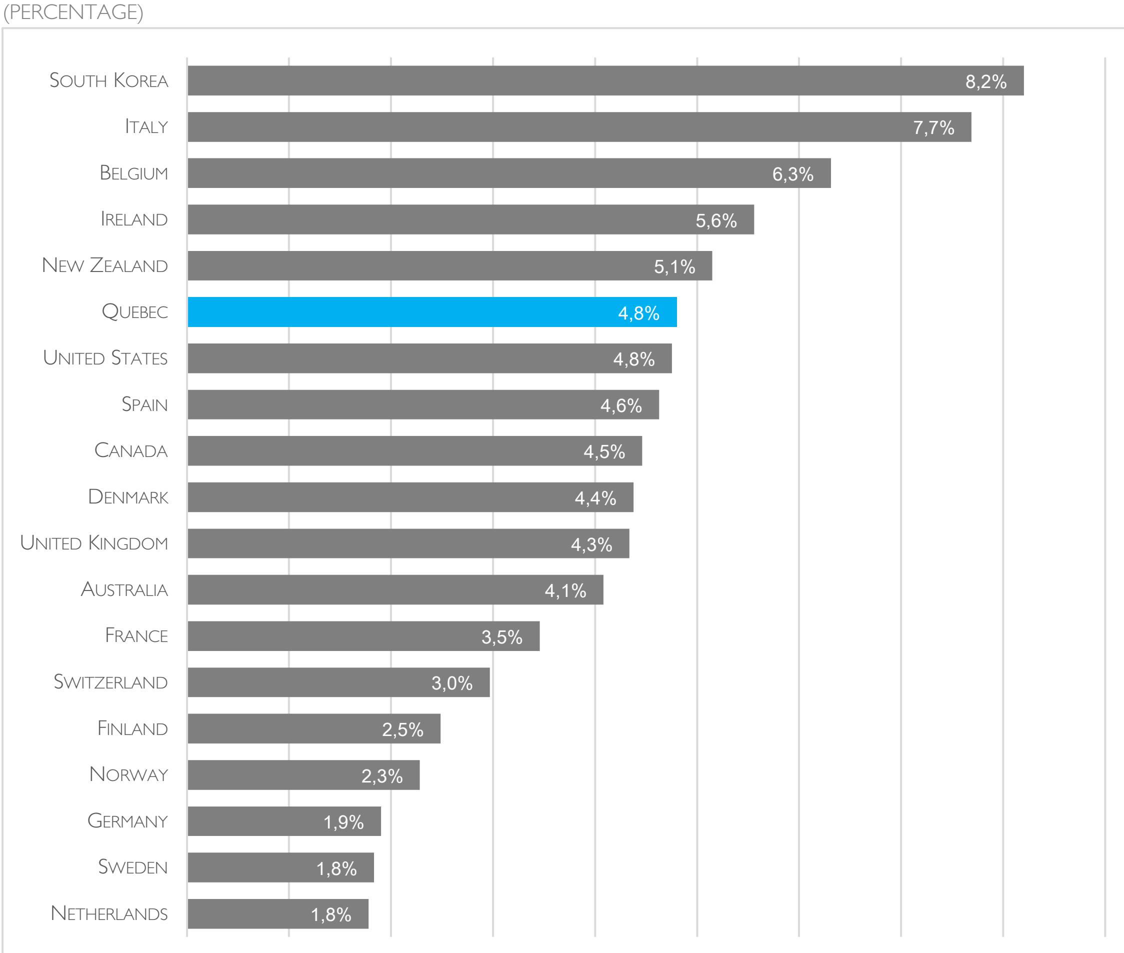
To address the school-retention problem effectively, we must look beyond the statistics. In other words, the goal of reducing the number of drop-outs must be more ambitious than simply having students complete the general high school curriculum. Without specialized vocational, technical or university training, young people are not equipped to enter the labour market, whether or not they have a DES. Earning a high school diploma must not be the ultimate goal for students. Instead, we must seek to create a stream that encourages them to earn a specialized diploma, to prepare them for the labour market.

Some statistics point to a problem of under-education among young people, in addition to the high school drop-out issue. In particular, the proportion of inactive youths age 15 to 19, meaning those who are not studying, working or drawing employment insurance, is greater in Quebec than elsewhere in the OECD. This puts the province at the higher end of the ranking, far ahead of Sweden, the Netherlands, Germany, Norway and Finland (Figure 19).

FIGURE 19

PROPORTION OF 15- TO 19-YEAR OLDS NOT IN THE EDUCATION SYSTEM OR ON THE LABOUR MARKET, 2012

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique19.xlsx

While this is only an approximation of the school drop-out phenomenon, it still eloquently illustrates the status of young Quebeckers: either the proportion of young drop-outs is higher than elsewhere, or a high proportion of young people are leaving the education system with only a general diploma.

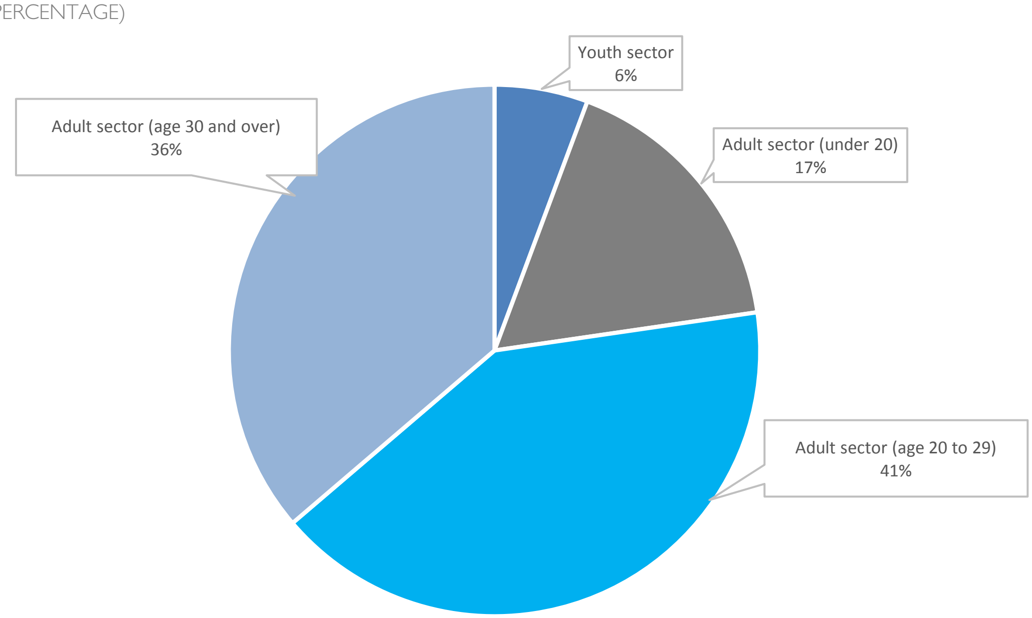
It must be understood here that, given the regular school curriculum, a large percentage of young people age 15 to 19 who are no longer in school do not have a specialized diploma. The normal age for graduating from high school with a diploma of secondary studies (DES) is 17, and this is a general diploma that does not prepare students for the labour market. The same applies to pre-university college education, where the normal age for graduating with a diploma of college studies (DEC) is 19, and technical studies, where the normal age for graduating is 20.[25] In fact, only those students age 16 to 19 who have earned a vocational diploma (diploma of vocational studies, DEP) or completed a CEGEP program (attestation of college studies) normally hold a specialized diploma giving them access to the labour market. Moreover, vocational training does not seem particularly popular with young Quebeckers. In 2012–2013, only 23% of students in vocational training programs were under age 20, or 6% in high school courses and 17% in adult education (Figure 20). There were 28,526 young people under age 20 enrolled in vocational training, and 244,455 in the second cycle of high school.

These statistics suggest that a significant proportion of young people age 15 to 19 not in the education system or the labour market have either chosen to drop out of school before earning a specialized diploma or hold only a general diploma offering no specific access to the labour market.

FIGURE 20

ENROLMENT IN VOCATIONAL TRAINING, QUEBEC, 2012–2013

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique20.xlsx

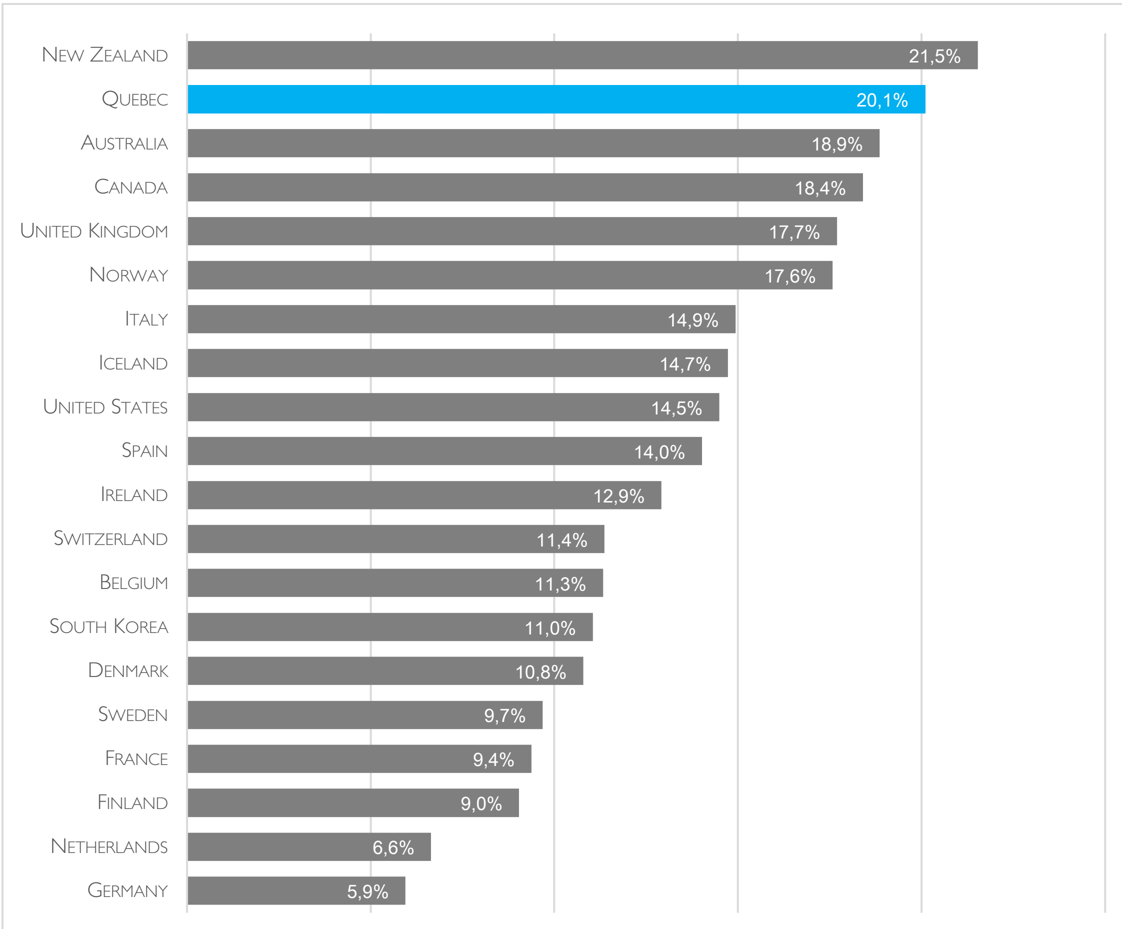
[25] Some students may obtain their pre-university college diplomas at age 18 and their CEGEP technical training diplomas at age 19, depending on their month of birth.

The problem of under-education becomes clear when we add the proportion of 15- to 19-year olds who have left the educational system but are active on the labour market (Figure 21). In this case Quebec is at the top of the ranking, confirming that a significant proportion of young people in this age group lack the required skills to enter the labour market.

FIGURE 21

PROPORTION OF 15- TO 19-YEAR OLDS ACTIVE OR NOT ON THE LABOUR MARKET AND NOT IN THE EDUCATION SYSTEM, 2012

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique21.xlsx

These statistics are worrisome in a context where we are trying to keep young people in the school system and encourage them to earn a specialized diploma or continue their studies after earning a DES. In short, there is every indication that alternatives to the general high school curriculum[26] do not appeal to young people; they prefer to quit high school and come back later, in adult education. This hypothesis appears to be confirmed when we analyze enrolment in vocational training in the second cycle (grades 10-11) of high school (Figure 22). It can be seen that young Quebeckers are much less likely to take this stream in the second cycle of high school in comparison with their

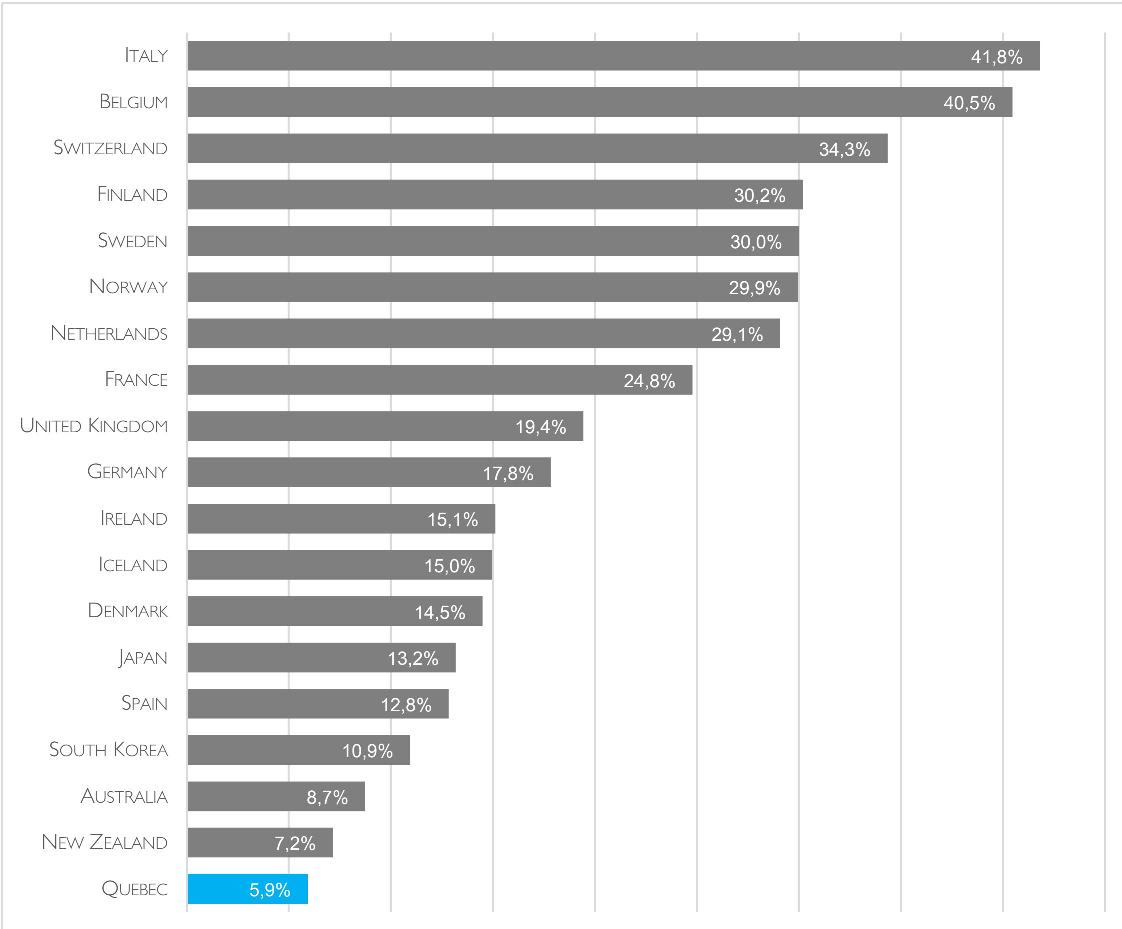
[26] The curriculum leading to a secondary school diploma (DES).

counterparts in the OECD countries analyzed. For instance, about 30% of Swedish and Dutch students take secondary cycle 2 vocational courses, while in Quebec the figure is only 6%.

FIGURE 22

FULL-TIME / PART-TIME ATTENDANCE AMONG AGES 15-19 IN SECONDARY CYCLE 2 VOCATIONAL TRAINING, 2012

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique22.xlsx

These results suggest either that vocational training at the high school level is looked down upon as "the education of last resort,"[27] or that it is simply not available to young people under age 20. In either case, the fact remains that young people for whom the general curriculum[28] does not suit their interests are not encouraged to consider vocational training.

And yet the existing system should normally make this kind of transition simple. In the past few years, students under age 16 have been admitted to vocational training if they earn the basic secondary 3 and 4 credits at the same time. They can also take vocational training along with

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[27] OECD (2010), *Off to a Good Start? Jobs for Youth*, OECD Publishing. p. 74
[28] The curriculum leading to a general high school diploma (DES).

courses in the general curriculum, and obtain both a DEP and a DES. There are also bridges that simplify the transition between vocational training (DEP) and technical training at the college level (technical DEC). Yet despite these options, enrolment statistics suggest that young people are not interested in the vocational stream. Rather than taking vocational training at the same time as general studies, which would better suit their aptitudes and better equip them for the labour market, young people seem more inclined to simply drop out or to stop after earning a general diploma.

Given that we are trying to prevent young people from dropping out of school and encourage them to earn a specialized diploma, these findings lead to our third recommendation:

RECOMMENDATION NO. 3
MAKE THE HIGH SCHOOL CURRICULUM MORE FLEXIBLE AND INCREASE THE PENALTIES FOR DROPPING OUT

This recommendation has two parts which, if implemented simultaneously, would be much more effective than if they were carried out separately.

On the one hand, if we wish to take concrete action to tackle the school-retention problem, we should go much further. To start with, the mandatory school attendance age could be increased to 18, unless students earn their diplomas earlier. Rather than being able to drop out at age 16, as is now the case, students without a diploma would have to continue with some kind of schooling until they reach age 18, long enough to increase their chances of earning a diploma. This approach is already being taken in some countries, including the United Kingdom and the Netherlands. Ontario also raised the compulsory schooling age to 18 in 2006.

Other countries go even further to help unemployed young people find work. In Denmark, unemployed workers under 25 who have not graduated from high school must enrol in an 18-month training program; otherwise their unemployment benefits may be cut. Their benefits are also reduced by half to encourage them to go back to school. In Sweden, benefits for unemployed young people are lower, and equivalent to the amounts they would receive in loans and bursaries. This strategy is intended to encourage them to return to school and to keep them employed. In Australia, school is mandatory for unemployed youths under age 21; otherwise they must perform 15 hours a week of community work. In the Netherlands, the government requires youths age 16 to 23 to attend school until they complete high school or turn 23.

Alongside these coercive measures, students should be offered a more flexible stream that would let them complete their secondary schooling, either by earning a vocational diploma leading to the labour market or through the general program, giving them access to higher education. In fact, many of these countries offer more flexibility in their high school curriculums.

In the Netherlands, high school students have a choice of seven different streams and can switch from one to another along the way. In addition to the general stream, schools offer different combinations of classroom and practical training. Some of the streams give students the option of continuing on to higher education, while others steer them toward vocational diplomas. So that they can get the most out of this system, counselling is offered when students transition from elementary to secondary school and, if applicable, from secondary to post-secondary.

Swedish students have a choice of 18 different 3-year programs in secondary cycle 2. These programs all cover nine core subjects, including math, science and Swedish. Then they split up, depending on which courses a student chooses. The vocational programs let students earn a diploma giving them access to the labour market, but also let them continue their studies at higher levels. And the general programs give students a taste of the higher education they are aiming for.

These are only a few examples of the possible carrot and stick approach, striking a balance between flexibility in the high school curriculum and coercive measures to keep students in school. But it must be understood that we can do much more to tackle the school-retention problem if these measures are part of a consistent approach that provides the flexibility needed to retain those students at greater risk of dropping out. This flexibility should also help orient a larger number of young people into the right stream, better equipping them to continue their studies, either in technical CEGEP courses or at university.

Note, finally, that proposing an alternative to the general high school curriculum has already been successful in retaining students. According to data from the Ministère de l'Éducation, the recent addition of training to prepare students for the labour market[29] has helped reduce the high school drop-out rate from its peak in 2001–2002. So there is reason to believe that Quebec could do much more to tackle the school-retention problem, in particular by creating streams with more emphasis on vocational training and where such training is integrated in the general curriculum.

[29] Training certificate in the sociovocational insertion of youths (TCSIY), Training certificate for a semiskilled trade (TCST), Prework training certificate (PWTC), Certificat de formation en entreprise de récupération (CFER). These programs are for young people with serious learning difficulties.

IMPROVING SCHOOL ENROLMENT BY INTEGRATING CHILDREN MORE QUICKLY INTO THE REGULAR STREAM

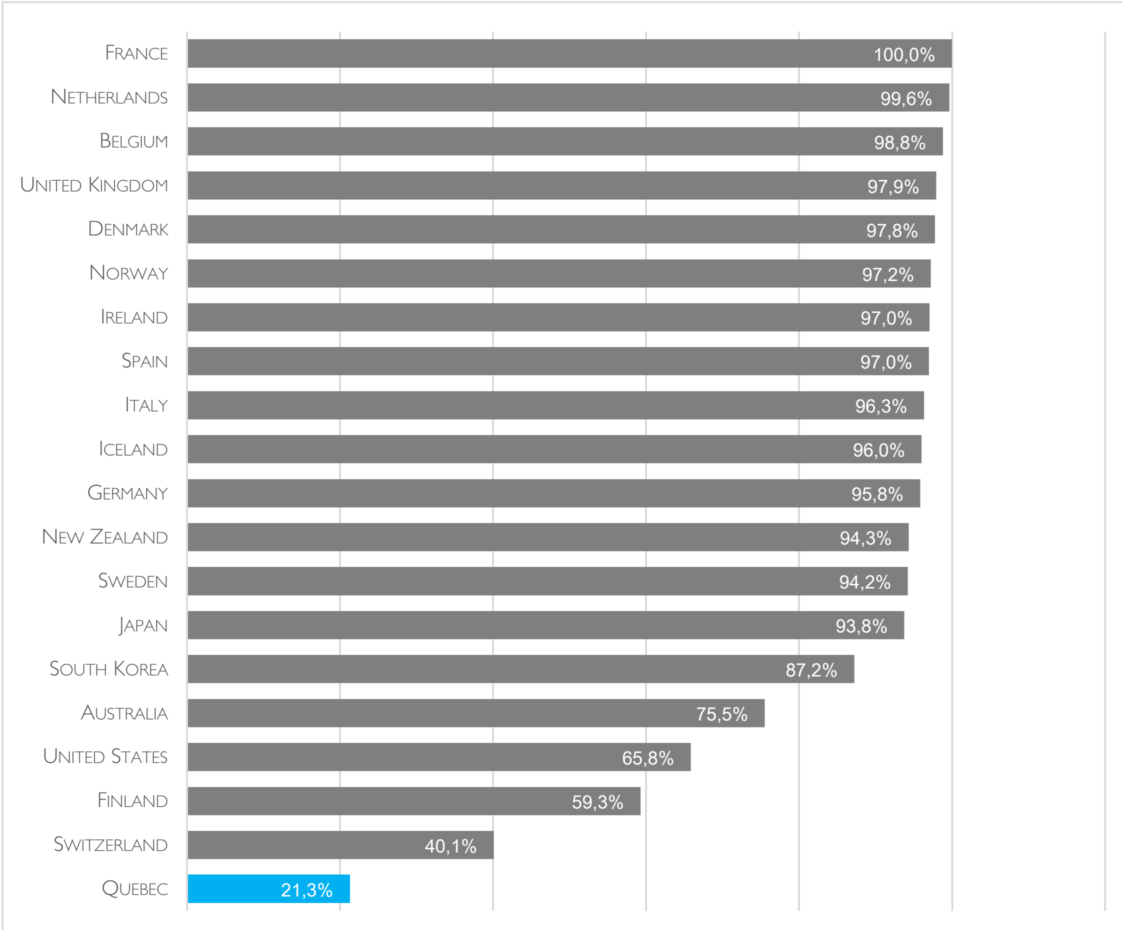
While the vast majority of the countries analyzed offer preschool education as a normal part of the schooling process (sometimes starting at age 3, as in France), it is rare in Quebec for them to start at age 4. The Ministère de l'Éducation, de l'Enseignement supérieur et de la Recherche offers only two programs: kindergarten for 4-year olds and the Passe-Partout program.

Kindergarten at age 4 is free, optional and not available everywhere. It is intended for disadvantaged and disabled children. In 2012–2013, 7% of 4-year olds were enrolled in this program, mostly on a half-day basis. The Passe-Partout program is intended to support parents in disadvantaged neighbourhoods and consists of a minimum of eight two-hour meetings with parents and 16 with children during the year. About 14% of 4-year olds were enrolled in this program in 2012–2013. Since they are intended for specific groups, the two programs reach barely more than 20% of 4-year olds in Quebec. As a result, Quebec has the lowest rate of school enrolment among 4-year olds (Figure 23).

FIGURE 23

PRESCHOOL ENROLMENT AMONG 4-YEAR OLDS, 2012[30]

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique23.xlsx

Although it is difficult to compare the type of teaching at these levels, Quebec may be disadvantaged because of the presence of childcare centres (CPEs) and other affiliated institutions. For instance, something similar to the CPE program could be counted as an integral part of traditional schooling, since it has an educational aspect and is intended to enhance children's social and cognitive development. This is the case for kindergartens in Denmark, which are included in these statistics. Accordingly, Figure 21 uses Quebec data but adds enrolment in daycares subject to the Ministère de la Famille,[31] since under their permits these centres must offer an educational component. On the other hand, enrolment in the Passe-Partout program is not included, since this schooling is not provided on an ongoing basis and children are cared for at other levels outside of

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[30] The enrolment rate for 4-year olds in the OECD countries is taken directly from *Education at a Glance*. Since it does not include Canadian data, the enrolment rate for 4-year olds in Quebec was calculated from data in *Statistiques de l'éducation : Édition 2014* and represents the number of students in kindergarten for 4-year olds and in the Passe-Partout program as at September 30 of the 2012-2013 school year, as a proportion of all 4-year old on July 30, 2012.

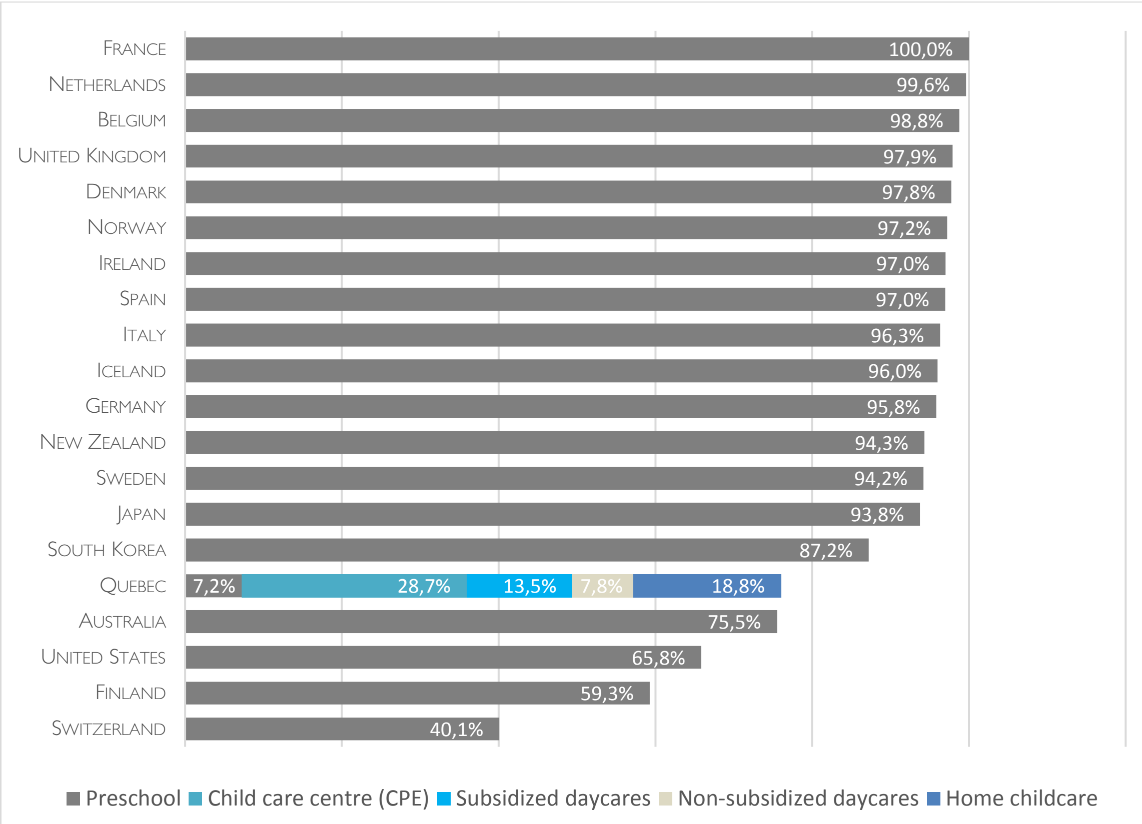
[31] The Ministère de la Famille provides statistics on the number of 4-year olds (as at September 30, 2012) in childcare centres, subsidized daycares, non-subsidized daycares and home childcare. If we add these numbers to children in kindergarten for 4-year olds, it gives us a fairly satisfactory portrait of enrolment of 4-year olds in institutions with an educational component, despite the potential double counting and unintentional omissions due to turnover of children in daycares.

the 32 (or more) hours of integration. This considerably boosts the enrolment rate, to about 76% of all 4-year olds, moving Quebec up a few positions in the ranking (Figure 24).

FIGURE 24

ENROLMENT IN PRESCHOOL AND IN THE NETWORK OF DAYCARES FOR 4-YEAR OLDS, 2012

(PERCENTAGE)



Source: http://statcpp.hec.ca/bilan2015/graphique24.xlsx

Despite this change, the province still lags behind a majority of countries, since 24% of 4-year olds were not enrolled in any of these institutions in 2012. This means that nearly one-quarter of children were not in institutions with a permit, while in many OECD countries almost all children start schooling at age 4, be it in kindergarten or other centres. Although the province spends an estimated $550 million per year[32] to support 4-year olds through the Quebec daycare system, access to this type of schooling remains difficult as compared with many countries.

In the circumstances, we have to wonder about Quebeckers' attachment to the daycare system. While 24% of 4-year olds do not attend kindergarten or one of the institutions affiliated with the daycare network, almost all of them attend kindergarten at age 5. According to data from the

[32] The proportion of allocations by the Ministère de la Famille that goes to 4-year olds out of annual subsidies for daycare centres, home childcare, childcare centres and childcare centre infrastructure (Volume 2 of the *Public Accounts*) is determined depending on enrolment in childcare centres and daycare centres by age group.

Ministère de l'Éducation, de l'Enseignement supérieur et de la Recherche, about 98% of eligible 5-year olds attend kindergarten in Quebec, a universal, free and optional system that is part of normal schooling. This finding leads to our fourth recommendation:

RECOMMANDATION NO. 4
INTRODUCE OPTIONAL, FREE AND UNIVERSAL KINDERGARTEN FOR 4-YEAR OLDS AS PART OF THE NORMAL SCHOOL SYSTEM

On the one hand, introducing universal kindergarten for 4-year olds reflects a concern for consistency and continuity in young people's schooling, so as to ensure greater uniformity in what they learn and facilitate their transition between preschool and school. It must be remembered, in this connection, that CPEs and other affiliated institutions are required to provide an educational, social and cognitive component for children. They already handle the pedagogical aspect, in other words. That being said, there are over twenty different approaches applied by CPEs and daycares to develop and implement their educational programs, and some 80% of these institutions state that they apply more than one approach.[33] Children who emerge from CPEs and daycares, not to mention those who are not even in the system, arrive in kindergarten at age 5 with unequal knowledge and are not all properly equipped to handle the transition. Consequently, introducing universal and integrated preschool for 4-year olds would allow for better control over what is taught and ensure consistency in children's schooling.

Moreover, integrating children more quickly into the regular school system through universal kindergarten for 4-year olds would speed up the process of diagnosing and addressing learning and adaptation difficulties, in addition to making it easier to monitor children's progress over time. Although most establishments have implemented procedures to facilitate children's transition to regular school,[34] the majority of these procedures do not call for any follow-up between institutions. The result is a disruption when they move into the regular school system, if parents do not intervene, jeopardizing the child's proper adaptation.

Remember that there is a variety of educational options for 4-year olds: CPEs, subsidized daycares, non-subsidized daycares, home childcare, the Passe-Partout program and kindergarten for 4-year olds, although in theory the latter two programs are for disadvantaged or handicapped children. The result is a complex system with different levels of institutions and types of funding, with uneven accessibility across the province. This makes it difficult to ensure proper follow-up in the transition to the regular school system.

Elsewhere in the OECD, many measures have been taken to facilitate children's transition between educational institutions and different levels. In Germany, Denmark, Finland, the Netherlands,

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[33] Ministère de la Famille (2015). *Situation des Centres de la petite enfance, des garderies et de la garde en milieu familial au Québec en 2013 : Analyse des rapports d'activités 2012-2013 soumis par la division des entreprises de services de garde éducatif à l'enfance.*

[34] Ibid. Transition activities are offered by 81% of childcare centres, 75% of subsidized daycare centres and 70% of non-subsidized daycare centres. However, procedures to ensure direct follow-up of children are uncommon. Only 51% of institutions prepare a portfolio for the school, 12% prepare a portrait informing the school of the child's behaviour and education received, and 3% offer co-ordination and meetings between staff at the daycare centre and the school.

Sweden and Norway, many educational services for children have been merged by local authorities to "plan more effectively and provide coherence of services for young children and their families."[35] In the Netherlands, the public administration assigns a unique identifier to children as of age 3, so as to be able to track their development starting in preschool. Children potentially in difficulty are diagnosed at a young age and monitored throughout their schooling. This system also allows the government to measure and evaluate the efficiency of the measures in place, particularly for preventing drop-outs. In Sweden, all services for children ages 1 to 6 are handled by a single administrative body, and half-day preschool is free and universal starting at age 4, and at age 3 for children with special needs. In Denmark, children are assessed at age 3 to diagnose language problems before they enter the school system. Parents are legally obliged to accept support for children, in fact.

While we are aware that these examples are taken out of context and that introducing kindergarten as of age 4 might bring only slight improvements to certain programs and practices that Quebec already shares with other countries through its daycare system, we must be aware that the current system does not comply with two fundamental values in terms of education: universality and accessibility. In this respect, Quebec does not seem to be able to compete with these countries.

In addition, we can assume that introducing schooling for 4-year olds could have a long-term effect on the drop-out problem. The OECD reports, on this subject, that "investing in early years yields high returns, since it makes it possible to reap the benefits and reinforce equity efforts made at subsequent education levels. Early acquisition of skills and knowledge makes it easier to acquire skills and knowledge later on."[36] That being said, even though efforts to retain students in school start very early on, other steps must be taken to limit this phenomenon.

This last observation leads us to underscore the importance of considering the system as a whole when looking at education, not only because decisions have repercussions throughout students' schooling, but also because the interconnections throughout the system mean that a properly targeted intervention may have substantial benefits at more than one level. Hence taking proactive steps will make it possible to bridge the gap between Quebec and these OECD countries in terms of university enrolment and especially graduation.

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[35] OECD (2013), *Education Today 2013: The OECD Perspective*, OECD Publishing. P. 22.
[36] Ibid. P. 101.

THE ECONOMIC ENVIRONMENT: FOSTERING INNOVATION

If it is to succeed in creating a culture of innovation, Quebec cannot limit its actions to the educational system. It must take steps at the same time to reshape the policies, measures and programs that define the province's economic environment and ensure that they all contribute to reaching this objective.

It must be remembered that government interventions affect businesses' economic environment in two ways. First of all, the government is seeking to encourage businesses to adopt certain behaviours and reach objectives through income tax credits, subsidies and other support. In return, it taxes the income of all businesses, and uses that revenue to support businesses and finance its other missions.

In so doing the government makes choices between the tax revenue it collects from all businesses and the aid it offers to some of them, with the goal of stimulating economic development without the aid provided costing the public purse too much. Generally speaking, a government's economic policy is the result of this sort of arbitration, aimed at striking a balance between supporting businesses without hindering their growth at the same time as it raises this revenue.

When we analyze what is considered Quebec's economic policy over the past 15 years, we can see that it consisted more of a variety of interventions than a concerted economic strategy. The lack of a real economic development policy means that the policies shaping the province's economic development have often been defined in the short term to reflect budget imperatives and altered as the political winds shifted. The result is that today, despite all the government's efforts to create an economic environment that lends itself to innovation, its interventions have had limited impact and unsatisfactory results.

It must be understood that bolstering economic development through different individual measures is not enough to create a culture of innovation. Without a long-term overall vision, these measures will never reach their full potential, in that they do not fit into a coherent strategy. And without a process for evaluating the effectiveness of government interventions, a growing proportion of the amounts allocated to economic development will have only a limited impact on the economy.

Consequently, this section consists of an overview of the tax system applying to businesses and the aid they receive from the Quebec government, in order to determine to what extent these factors shape the province's economic environment and why this aid does not reach its intended goals. We will see that the government's current measures could be much more efficient if they were more targeted and systematically subject to an open and transparent evaluation process.

AIDING BUSINESS

Through its different programs, strategies and policies, the government supports businesses in three ways: through fiscal (tax-based) aid, direct budgetary aid and indirect aid.

The goal of fiscal aid is to encourage businesses to adopt certain behaviours or strive for certain goals by reducing their tax burden when they meet eligibility criteria. In Quebec, fiscal aid takes the form of some fifty income tax credits and capitalization support measures. Most of the credits available to businesses are refundable, meaning that the business gets a refund when its tax payable is less than the credit to which it is entitled. Fiscal aid is the Quebec government's preferred tool for supporting businesses. In the 2013–2014 fiscal year, it granted $2.4 billion in fiscal aid, or 71% of all the aid provided.

Budgetary aid lets the government directly assist certain businesses it chooses. This generally takes the form of direct funding, e.g. through subsidies, loans or loan guarantees. In the 2013–2014 fiscal year, the government granted $534 million in budgetary aid, or 16% of all the aid provided.

Indirect aid refers to the transfer of the government's responsibilities to other organizations with the mandate of supporting businesses and economic development in their regions. This takes the form of subsidies to private and public organizations that offer management support services, mainly to small and medium-size businesses, through coaching or services like strategic consulting. In the 2013–2014 fiscal year, the government granted $434 million in indirect aid, or 13% of all the aid provided.

TABLE 2

SUMMARY OF AID TO BUSINESS BY THE QUEBEC GOVERNMENT, 2013–2014[37]

	Aid ($M)	Aid (%)	Description
Fiscal aid	2,416	71%	About 50 tax credits and 4 business capitalization measures
Direct budgetary aid	534	16%	84 programs, including those of Gaz Métro and Hydro-Quebec, administered by 11 ministries and organizations, including Investissement Quebec
Indirect aid	434	13%	About 500 organizations funded through 40 programs administered by 8 ministries
Total	3,384		–

Source: http://statcpp.hec.ca/bilan2015/tableau2.xlsx

During the 2013–2014 fiscal year, the Quebec government awarded $3.4 billion in aid to business through some 50 tax credits, 5 capitalization measures, 84 budgetary aid programs administered by Investissement Quebec and at least 11 ministries and organizations, in addition to over 500 organizations subsidized by 8 ministries. All in all, the aid granted represented about 20% of the tax revenue raised from these same businesses.[38]

When we compare the amount of aid granted by the Quebec and Ontario governments, we can see that Quebec firms received 1.4 times more than their Ontario counterparts during the 2013–2014 fiscal year alone (Figure 25). The Quebec government awarded 1.6 times more fiscal aid than the Ontario government, but on the other hand granted less budgetary aid ($534 million vs $673 million, according to government figures).

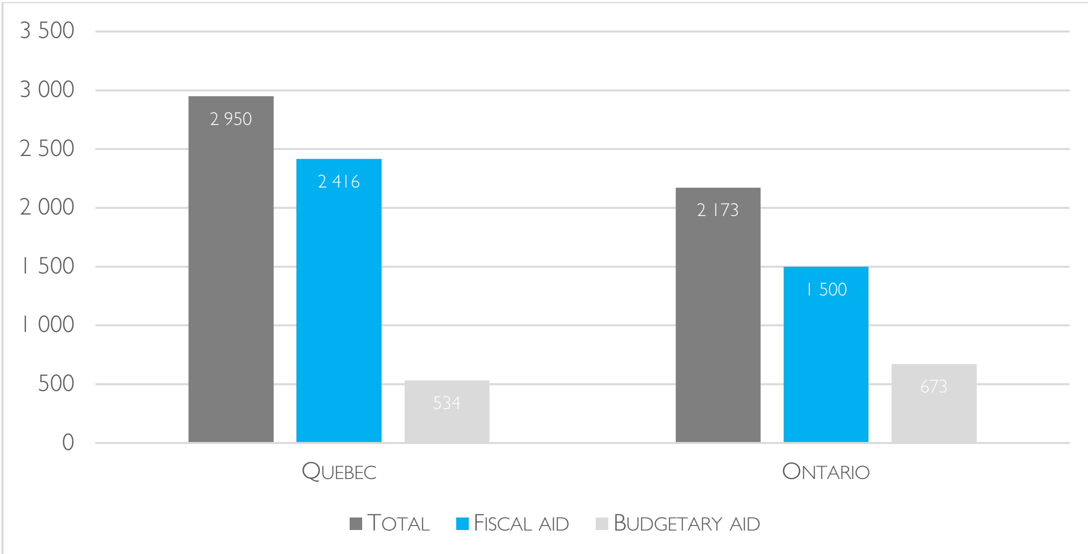
[37] The amounts of budgetary and indirect aid are drawn from a study entitled *Analyse de l'organisation et de la nature de l'intervention de l'État québécois en matière de développement économique*, by Deloitte, commissioned by the Commission de révision permanente des programmes. The Ministère des Finances evaluates these two forms of aid at $565 million in 2014. The amounts of fiscal aid are drawn from the final report of the Commission de révision permanente des programmes.

[38] For reasons related to the availability of data on indirect aid, the rest of this section will be devoted mainly to fiscal and budgetary aid.

FIGURE 25

GOVERNMENT AID TO BUSINESS BY TYPE, 2013–2014

(MILLIONS OF CANADIAN DOLLARS)



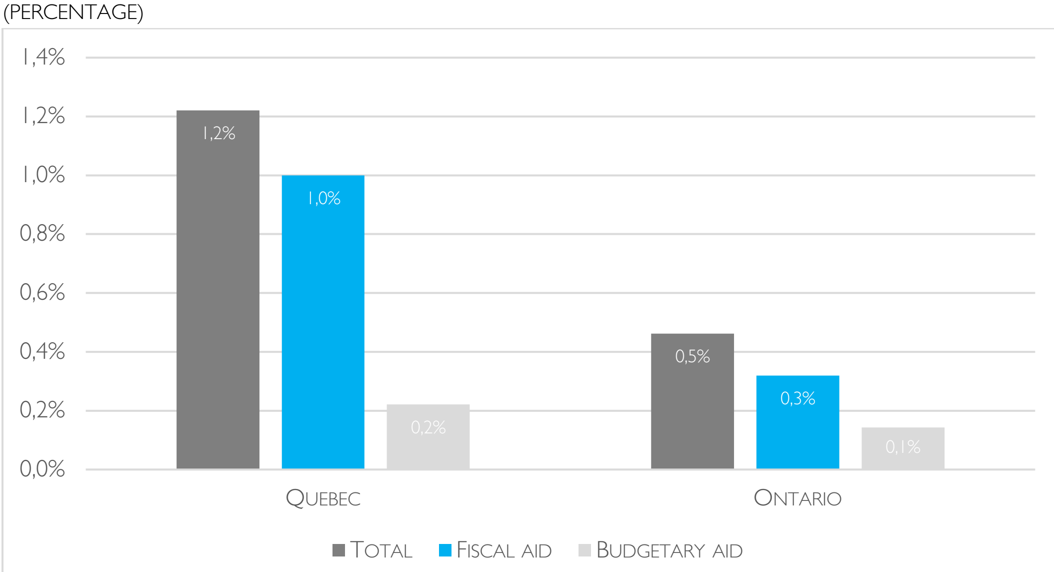
Source: http://statcpp.hec.ca/bilan2015/graphique25.xlsx

When we evaluate the amount of aid granted in terms of the size of the Quebec and Ontario economies, we can see that the Quebec government makes a particularly large effort to support businesses, given its ability to pay. For the 2013–2014 fiscal year alone, this aid represented 1.2% of the GDP of the province's business sector, a proportion almost three times greater than Ontario's (0.5%) (Figure 26).

FIGURE 26

GOVERNMENT AID TO BUSINESS, BY TYPE, AS A PERCENTAGE OF THE GDP OF THE BUSINESS SECTOR, 2013–2014

(PERCENTAGE)



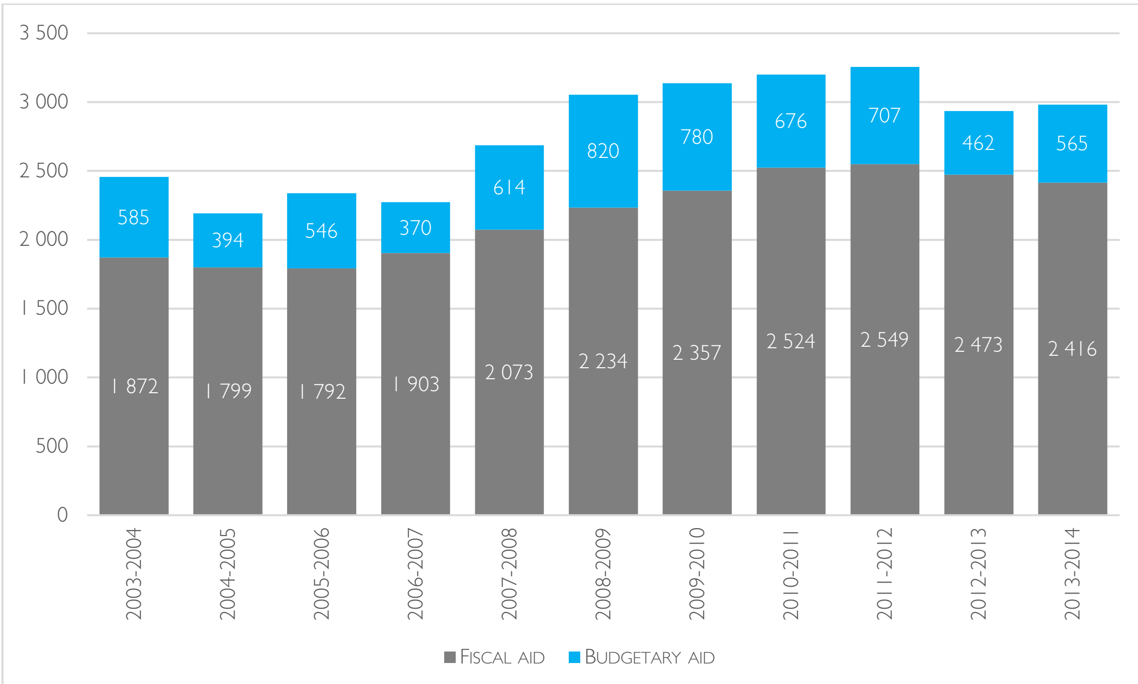
Source: http://statcpp.hec.ca/bilan2015/graphique26.xlsx

Note that the Quebec government has historically preferred fiscal aid as a means of supporting businesses, in general. If we consider all the government's interventions since the 2003–2004 fiscal year, we can see that there has been 3.8 times more fiscal aid, on average, than budgetary aid[39] (Figure 27).

FIGURE 27

QUEBEC GOVERNMENT AID TO BUSINESS

(MILLIONS OF CANADIAN DOLLARS)



Source: http://statcpp.hec.ca/bilan2015/graphique27.xlsx

In 2014, most of the fiscal aid granted by the Quebec government was in the form of income tax credits.[40] Thus 85% of the $2.2 billion in fiscal aid was in the form of income tax credits, for a total of $1.8 billion. The rest was paid as follows:

- $216 M or 10% in business capitalization, granted mainly in the form of individual income tax credits for the Fonds de travailleurs and the Desjardins Capital régional et cooperative tax credit;
- $94 M or 4% in incentives such as accelerated depreciation;
- $19 M or 1% in tax holidays.

[39] The definition of budgetary aid by the Ministère des Finances used in this Figure includes budgetary and indirect aid, but is more restrictive than in Table 2, as it is limited to government ministries' activities aimed at supporting businesses at different phases in their existence.

[40] For the description of fiscal aid, the data are drawn from *Dépenses fiscales – Édition 2014* from the Ministère des Finances and refer to 2014, which explains the difference from the previous tables and figures.

Note, in addition, that 81% of the $1.8 billion in income tax credits was in the form of 6 credits:

- Scientific research and experimental development ($686 M)
- Development of e-business ($280 M)
- Investments relating to manufacturing and processing equipment ($169 M)
- Multimedia production ($150 M)
- Quebec film or television productions ($123 M)
- Tax credit relating to resources ($76 M)

In closing, Table 3 summarizes the breakdown of the aid in the form of fiscal credits, into 6 categories. It can be seen that research and development has been the government's main target since 2009.

TABLE 3

BREAKDOWN OF INCOME TAX CREDITS OFFERED BY THE QUEBEC GOVERNMENT

	2009	2010	2011	2012	2013	2014
RESEARCH AND DEVELOPMENT	38%	35%	35%	36%	39%	38%
INVESTMENT	13%	15%	15%	14%	11%	12%
NEW ECONOMY	23%	24%	24%	25%	25%	25%
REGIONS	12%	11%	10%	9%	8%	7%
CULTURE	9%	10%	11%	11%	11%	12%
OTHER	5%	5%	5%	6%	6%	6%
TOTAL	1,847	1,941	1,976	1,936	1,903	1,825

Source: http://statcpp.hec.ca/bilan2015/tableau3.xlsx

This overview leads to two observations. First, the Quebec government clearly prefers fiscal aid in its business support approach. Second, it has made a considerable effort in this respect. During the 2013–2014 fiscal year alone, the Quebec government awarded almost three times more aid than did the Ontario government, a clearly larger effort considering the province's ability to pay.

BUSINESS TAXATION

In return for the aid it gives some businesses, the government levies income and other taxes on all businesses. It uses three types of tools for this purpose: business income tax, social contributions and payroll taxes. While most provinces use these same tools, Quebec does two things differently.

First of all, the rate at which small businesses are taxed is substantially higher than elsewhere in Canada. While the general tax rate for Quebec firms is relatively low in comparison with several other provinces, the deduction given to small businesses is also much smaller. In fact, small businesses receive a 3.9 percentage point deduction off the general rate, giving them a taxation rate of 8%.[41] Elsewhere in Canada, this deduction ranges from 7 percentage points to outright exemption[42] (Table 4). As a result, the small business taxation rate in Quebec is 1.8 to 4 times higher than anywhere else in Canada.

TABLE 4

BUSINESS INCOME TAX RATES, 2014

	General rate	*Rate after small business deduction*
Alberta	10.0%	3.0%
British Columbia	11.0%	2.5%
Ontario	11.5%	4.5%
Quebec	11.9%	8.0%
Manitoba	12.0%	0.0%
Saskatchewan	12.0%	2.0%
New Brunswick	12.0%	4.5%
Newfoundland and Labrador	14.0%	3.0%
Nova Scotia	16.0%	3.0%
Prince Edward Island	16.0%	4.5%
Federal	15.0%	11.0%

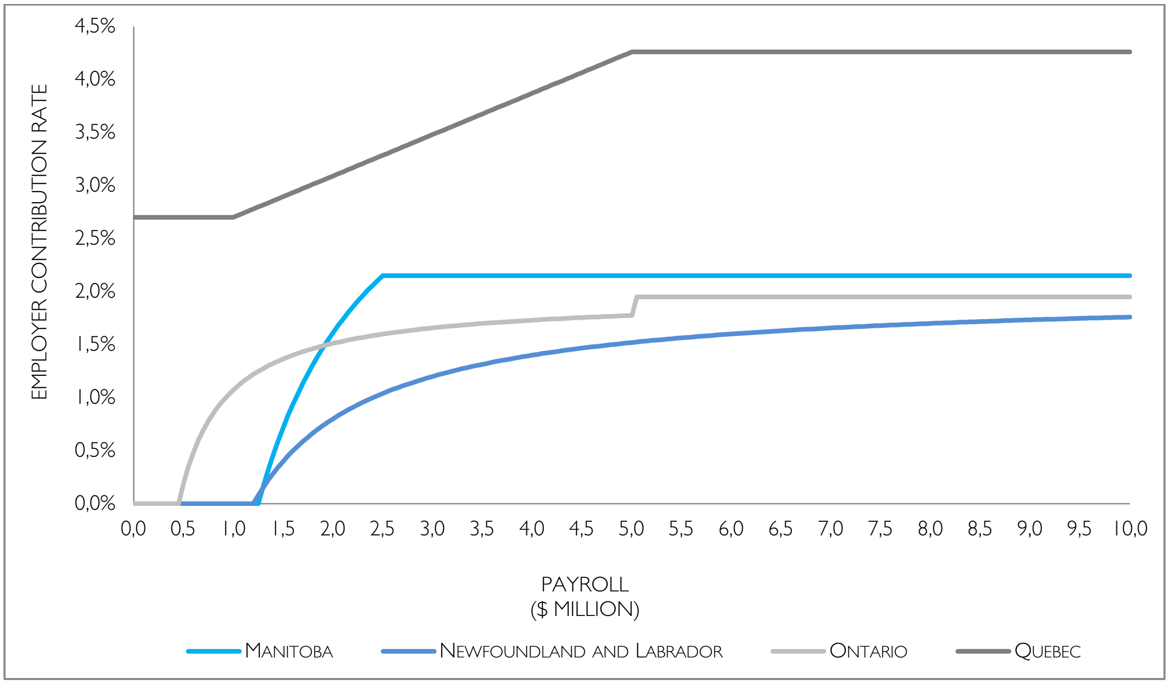
Source: http://statcpp.hec.ca/bilan2015/tableau4.xlsx

Secondly, Quebec is different in that it has high payroll taxes. While Ontario, Ontario, Manitoba and Newfoundland and Labrador also use this tax tool, Quebec rates are much higher. Not only does it not offer small-business exemptions, as do the other three provinces, but the lowest rate in effect in Quebec is higher than the maximum rate in Ontario, Manitoba and Newfoundland and Labrador (Figure 28).

[41] On the first $500,000 of taxable income. The portion of taxable income exceeding this threshold is taxed at the general rate.
[42] On the first $500,000 of taxable income, with the exception of Manitoba ($425,000) and Nova Scotia ($350,000). The portion of taxable income exceeding this threshold is taxed at the general rate.

FIGURE 28

EFFECTIVE PAYROLL TAX RATES IN CANADA, 2014



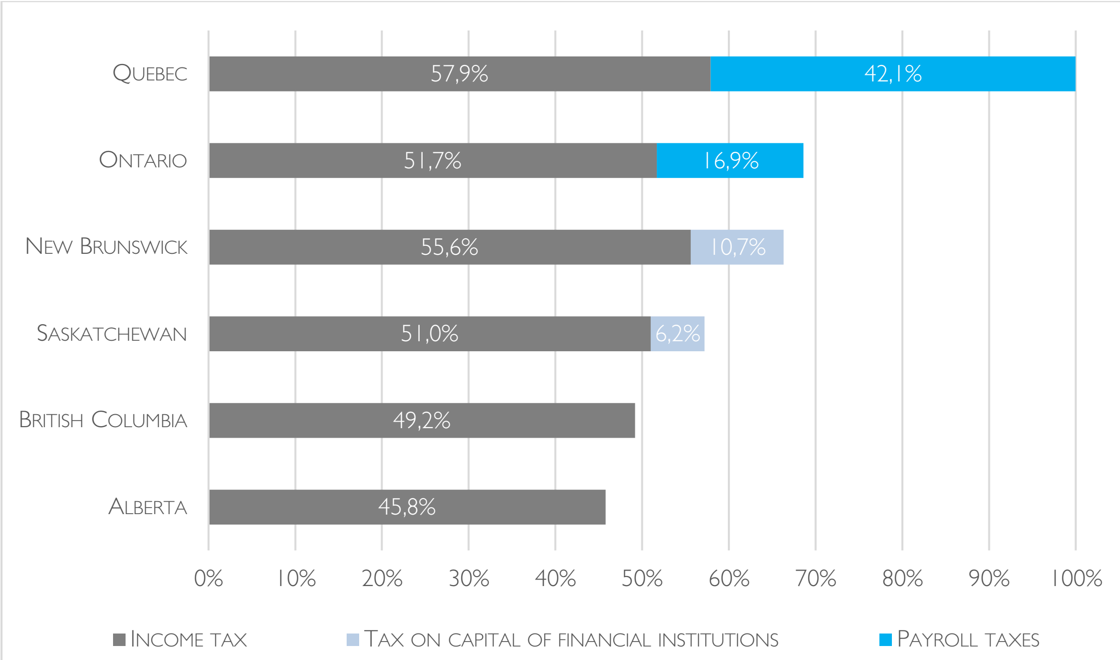
Source: http://statcpp.hec.ca/bilan2015/graphique28.xlsx

Taken together, these two factors explain most of the gap between businesses' tax burden in Quebec and in the rest of Canada (Figure 29). If we apply the income and other tax rates in each province to Quebec businesses, we can see that the tax burden in Quebec is much heavier than elsewhere in Canada, mainly because of payroll taxes. For instance, if Ontario's tax structure were applied to Quebec businesses, they would pay 30% less tax than they do today. And if we applied Alberta rates, their tax burden would be cut in half.

FIGURE 29

DIFFERENCE IN THE TAX BURDEN – ALL BUSINESSES, 2014

(QUEBEC=100)



Source: http://statcpp.hec.ca/bilan2015/graphique29.xlsx

HOW ARE PAYROLL TAXES CALCULATED?

In Quebec, businesses must contribute to the Health Services Fund (FSS), used to finance the province's healthcare system. Their contribution is based on their payroll:[43]

- The maximum contribution rate is 4.26% and applies to businesses with payrolls exceeding $5 million. There is no ceiling on the amount of the contribution.
- The minimum contribution rate is 2.7% and applies to businesses with payrolls of $1 million or less.
- The contribution rate for businesses with payrolls between $1 and $5 million is progressive, and is set somewhere between 2.7% and 4.26% according to this formula:

$$Contribution\ rate = 2.31 + (0.39 * \left(\frac{Payroll}{1{,}000{,}000}\right))$$

In the circumstances, the prescribed rate is identical to the effective rate, that is the actual tax rate paid by businesses.

In 2011, businesses subject to the minimum rate paid $318 million in the form of employer contributions to the FSS, or 5.1% of all payroll tax revenue. By way of comparison, large businesses, most of which are subject to the maximum rate, paid nearly $2 billion in FSS contributions, or about 31% of all such revenue. Note that the *Other businesses* category takes in all public-sector organizations, and self-employed individuals and partnerships. Thus we can assume that close to 40% of FSS contributions are actually transfers, i.e. amounts paid by the government to itself in the form of employer contributions.

REVENUE COLLECTED BY THE QUEBEC GOVERNMENT THROUGH EMPLOYER CONTRIBUTIONS TO THE HEALTH FUND, 2011[44]

	Small businesses	Medium-size businesses	Large businesses	Other businesses
At a rate of 2.7%	312	5	1	57
At an intermediate rate	608	217	21	16
At a rate of 4.26%	231	484	1,934	2,409
Total	1,151	707	1,956	2,481

[43] Since 2015, the rate applicable to manufacturing SMBs with a payroll of less than $1 million has been 1.6%. The rate applicable to manufacturers with a payroll between $1 and $5 million ranges from 1.6% to 4.26%.

[44] Businesses are categorized on the basis of their assets and/or sales and not their workforce.

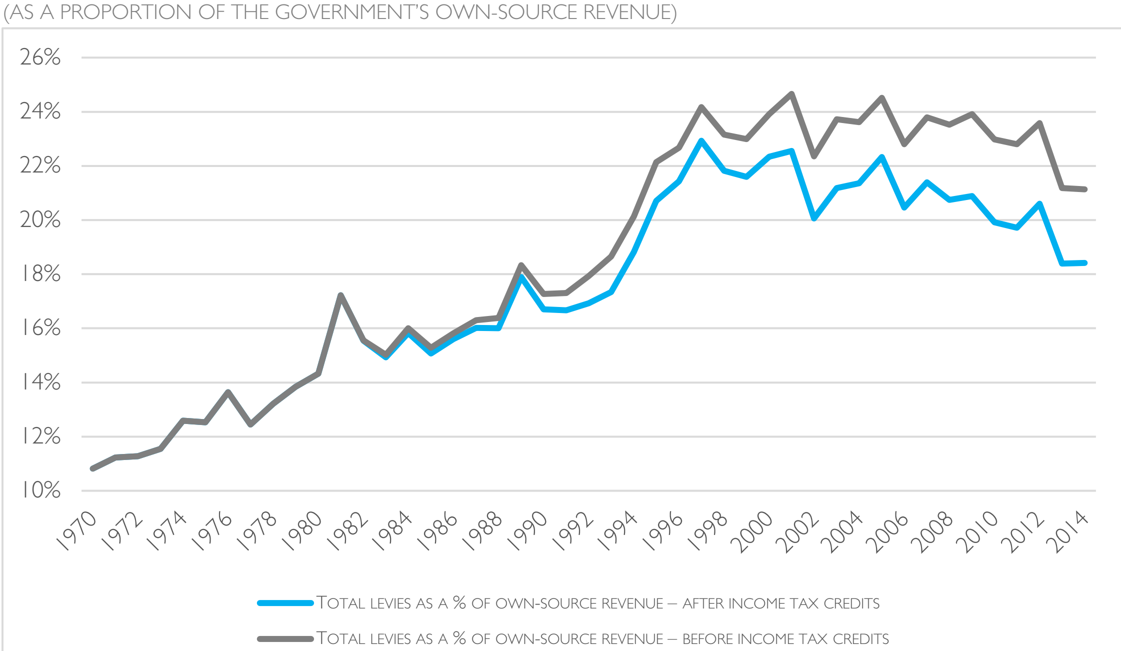
RESULTS

The government's business aid strategy, i.e. taxing all businesses more so as to be able to offer more generous aid to some of them, is relatively recent and took shape in the 1990s. As can be seen in Figure 32, the difference between fiscal levies before and after income tax credits began to widen in the early 90s, reaching current levels in the 2000s. In other words, the government began granting substantial aid to business in the early 90s, and the amount continued to grow over that decade. Over that period, the fiscal revenue collected by the government from businesses accelerated.[45] Between the early and late 90s, the proportion of tax revenue collected from businesses rose from 16% to 23% of all the government's own-source revenue, allowing it to fund its business aid strategy.

FIGURE 30

FISCAL LEVIES ON BUSINESSES BEFORE AND AFTER TAX CREDITS

(AS A PROPORTION OF THE GOVERNMENT'S OWN-SOURCE REVENUE)



Source: http://statcpp.hec.ca/bilan2015/graphique30.xlsx

While it is impossible to isolate the impact of this strategy on businesses' performance, we do know that economic growth in the 2000s was not especially more impressive despite the increase in the aid provided. Remember that although growth in the standard of living in Quebec since the early 2000s has been close to the average growth among OECD countries, that is primarily because those countries were harder hit by the 2008 crisis. In fact, the main orientations of the government's strategy have not achieved their goals. Employment has not risen faster than elsewhere in Canada (Figure 31), growth in private non-residential investment per job has not been enough to catch up to the Canadian average (Figure 32) and, generally speaking, productivity growth over the past 15 years has not allowed the province to close the major economic gap that has widened since the

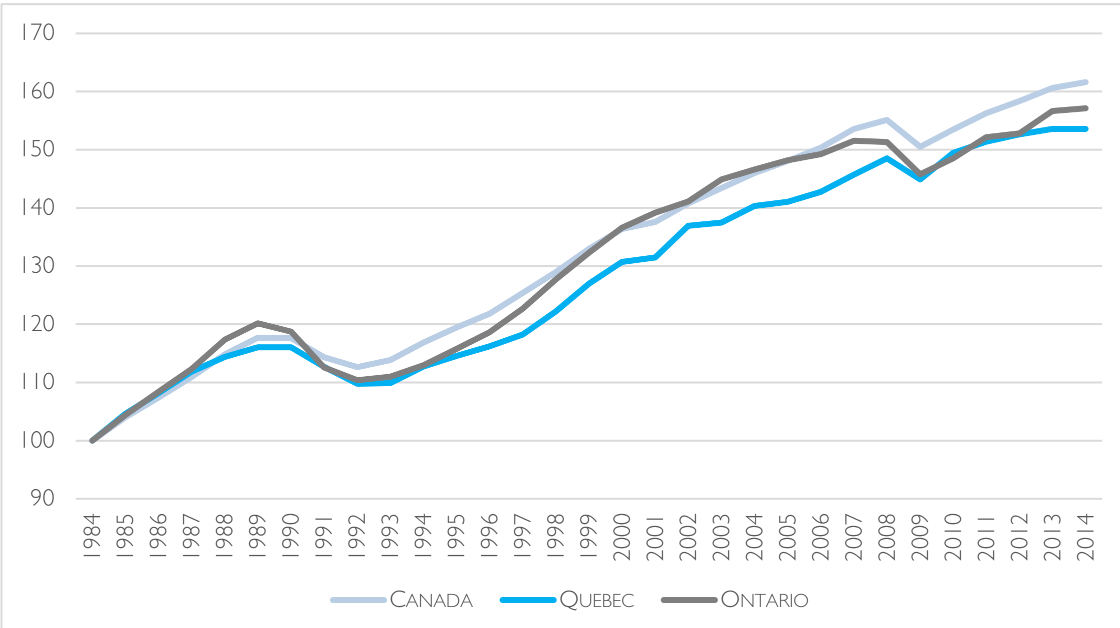
[45] Remember that these are measured as a proportion of the government's own-source revenue.

early 1980s (Figure 33). Only business R&D spending has largely exceeded that in the rest of Canada (Figure 34). In the next section, however, we will show that this is hardly reason to celebrate: Canada's performance in this respect is far from laudable in comparison with a large majority of the OECD countries analyzed.

FIGURE 31

EMPLOYMENT TRENDS IN THE BUSINESS SECTOR

(1984=100)

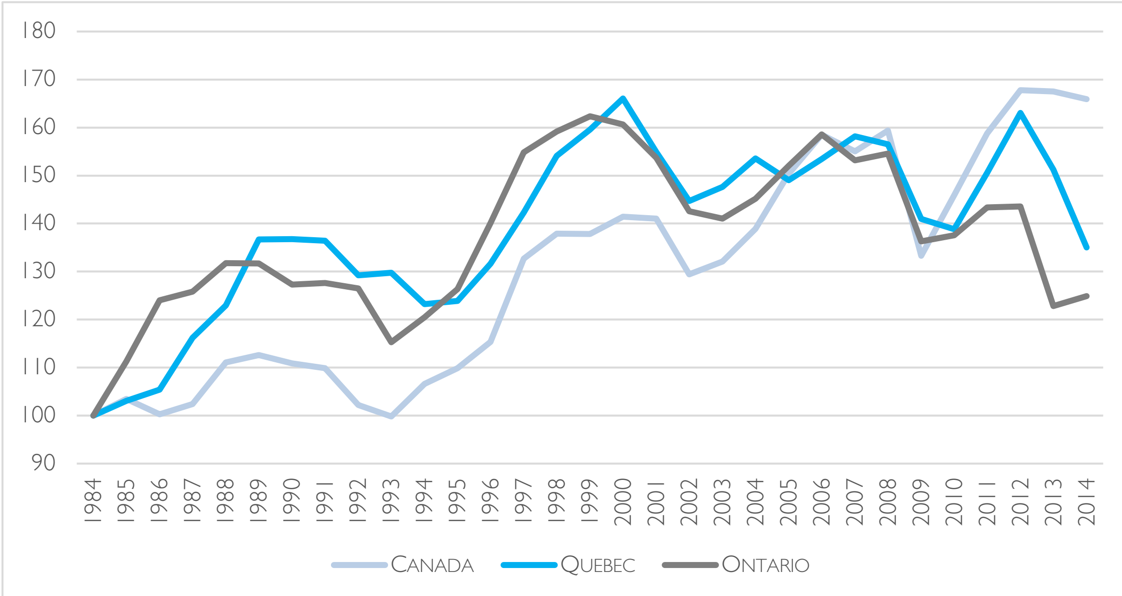


Source: http://statcpp.hec.ca/bilan2015/graphique31.xlsx

FIGURE 32

TRENDS IN PRIVATE NON-RESIDENTIAL INVESTMENT PER JOB

(1984=100)

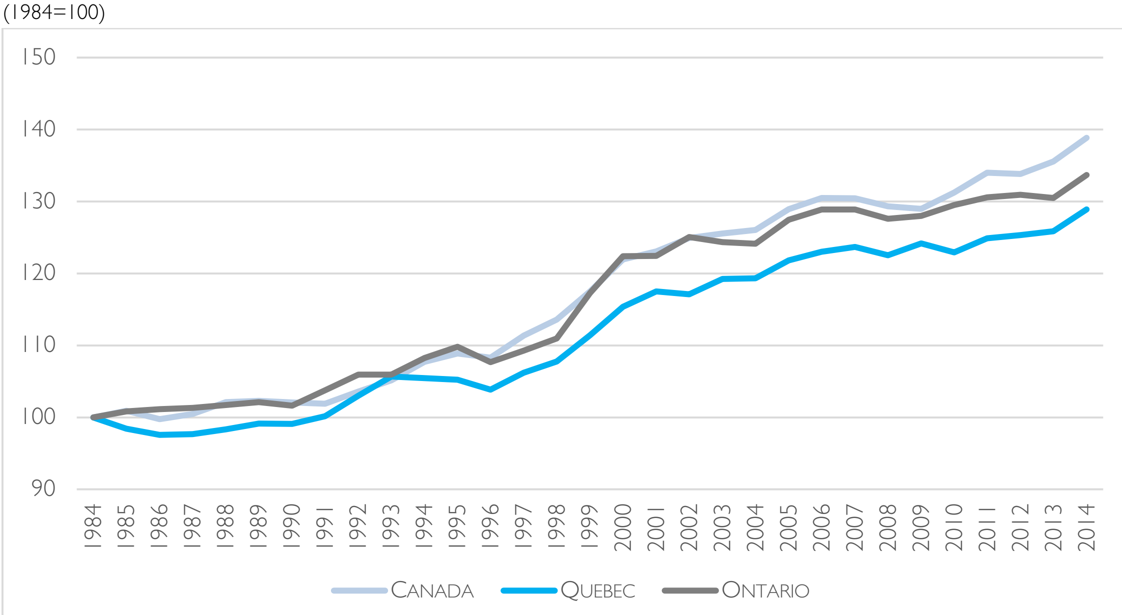


Source: http://statcpp.hec.ca/bilan2015/graphique32.xlsx

FIGURE 33

TRENDS IN LABOUR PRODUCTIVITY IN THE BUSINESS SECTOR

(1984=100)

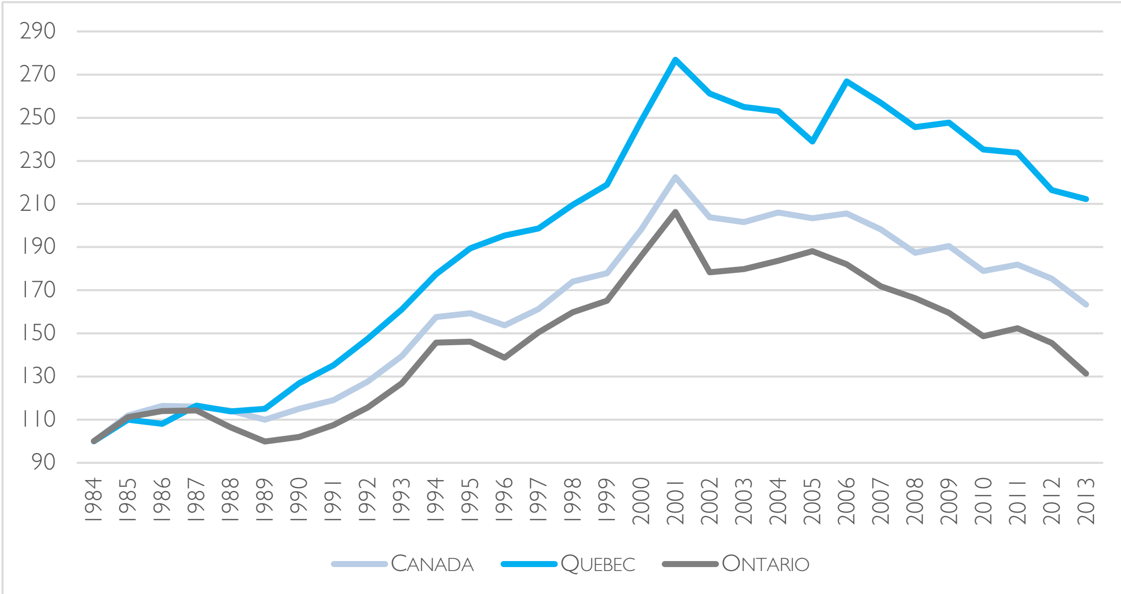


Source: http://statcpp.hec.ca/bilan2015/graphique33.xlsx

FIGURE 34

TRENDS IN BUSINESS R&D SPENDING PER JOB

(1984=100)



Source: http://statcpp.hec.ca/bilan2015/graphique34.xlsx

TOWARD A REAL ECONOMIC DEVELOPMENT POLICY FOR QUEBEC

Given the balance between the tax structure imposed on Quebec businesses and the government aid given to them, it is clear that the government's generosity is accompanied by a heavier tax burden. Firms are taxed more heavily than if they were located in Ontario, for instance, but on the other hand the Quebec government offers them much more aid.

While this type of balance between taxation and support for development is not necessarily a problem, and could contribute significantly to economic development, that is unfortunately not the case in Quebec. Despite significant support from the provincial government, Quebec firms continue to post unsatisfactory performance.

Although we cannot state that it is a complete failure, we can assume that the Quebec government could obtain better results if it reconsidered the way it provides business support. For many years now, the province's economic development strategy has consisted chiefly of a jumble of interventions, rather than a coherent economic policy. Hence its actions do not fit into an overall long-term economic development vision and never reach their full potential. And since the government rarely reviews its approaches, these measures and programs accumulate and, in the end, an ever-growing proportion of the amounts devoted to economic development has only a limited impact on the economy.

As we will see later in this section, the lack of a real economic development policy creates a number of problems, including:

- overlapping and contradictory government efforts;
- badly targeted interventions and poorly defined parameters leading to conflicts between businesses' needs and the measures in place;
- shifts in government priorities and decisions made on the basis of political and budgetary factors rather than on economic grounds.

Starting from these observations, this last section proposes a series of principles that should make it possible to structure the province's economic development more efficiently while devoting fewer resources to it.

BUSINESS AID IN THE GASPÉ: THE PERFECT STORM

Although the amounts involved are minor given the overall government aid to business, efforts to support economic development in the Gaspé, specifically, are a perfect illustration of how this aid has worked over the past 15 years.

In 2000, the government first sought to boost job creation in this region by introducing a tax credit covering a portion of workers' wages in manufacturing and several other industries. Then, after bringing in an investment credit in 2008, the government tried to stimulate local manufacturers' productivity by reducing the cost of acquiring machinery and equipment by 40%.

While both initiatives seem valid, they point to different dimensions of the issue of business aid in Quebec. First of all, the two measures offer contradictory incentives to the same pool of firms. The investment credit seeks to improve companies' productivity by substituting capital for labour, but the fiscal aid for employment reduces the cost of labour in an effort to safeguard jobs. Although these measures cannot generally be used together, companies are nonetheless faced with a choice between investment and employment, one supporting economic development in the long term and the other stabilizing often at-risk jobs in the short term.

In any case, the targets for these two credits are far from the real issues in the Gaspé region. First of all, encouraging firms to create jobs locally will not necessarily make those jobs any less precarious. For as long as regional development there is not based on a strategy emphasizing innovation and productivity, this type of initiative will always be a failure.[46] The investment credit will bear fruit only if it targets specific activities that foster regional development, rather than following a broad-spectrum approach where the same parameters are applied to the entire province.

In addition, aid in the Gaspé reflects the government's propensity to rely on fiscal aid to support companies' growth. Although fiscal aid creates fewer distortions than direct budgetary aid, in theory, and makes it possible to encourage as many businesses as possible to adopt desired behaviours or activities that the government deems relevant, it is of doubtful effectiveness in cases like the Gaspé region.

Firstly, the rules for obtaining these tax credits are heavy and complex and often overly complicated for SMBs. They must often call on external consultants to help them apply, invariably making the process more expensive and ending up diverting part of the aid to third parties. Given the size of firms in the Gaspé, the complexity of applying these two credits is an obstacle to their effectiveness, right from the start.

Secondly, there is hardly ever any follow-up on these fiscal measures, and no guarantee of their success. Granting income tax credits based on an increase in a company's payroll does not necessarily boost employment in the region, no more than an investment credit improves manufacturing efficiency. In short, although the accreditation process can be lengthy and complicated, there is no follow-up once the credit has been granted and the effectiveness of these fiscal initiatives is never really monitored.

More generally, the case of the Gaspé is an example of how the government's regional economic development policy lacks long-term vision. Despite the amounts spent on supporting the region since the early 2000s, employment in the Gaspé continues to decline and its economy is by no means strong enough to stimulate lasting job creation. It seems likely that the millions granted in the form of employment and investment credits could have had much more of an impact if these sums had been invested in a coherent approach based firstly on innovation and productivity, and with more emphasis on direct budgetary aid. In 2008, the government should have dropped the employment credit in order to provide more support for the productivity of regional businesses, while at the same time targeting specific projects with direct budgetary aid. Instead, it decided to offer these two competing credits until 2015, the year the income tax credit was due to expire. It then reversed this decision and chose instead to reduce the deduction rates for all business credits, while extending the employment credit in the Gaspé until 2020.

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[46] Note that despite a specific employment credit, the Gaspé region lost 66% of its manufacturing jobs between 2001 and 2012.

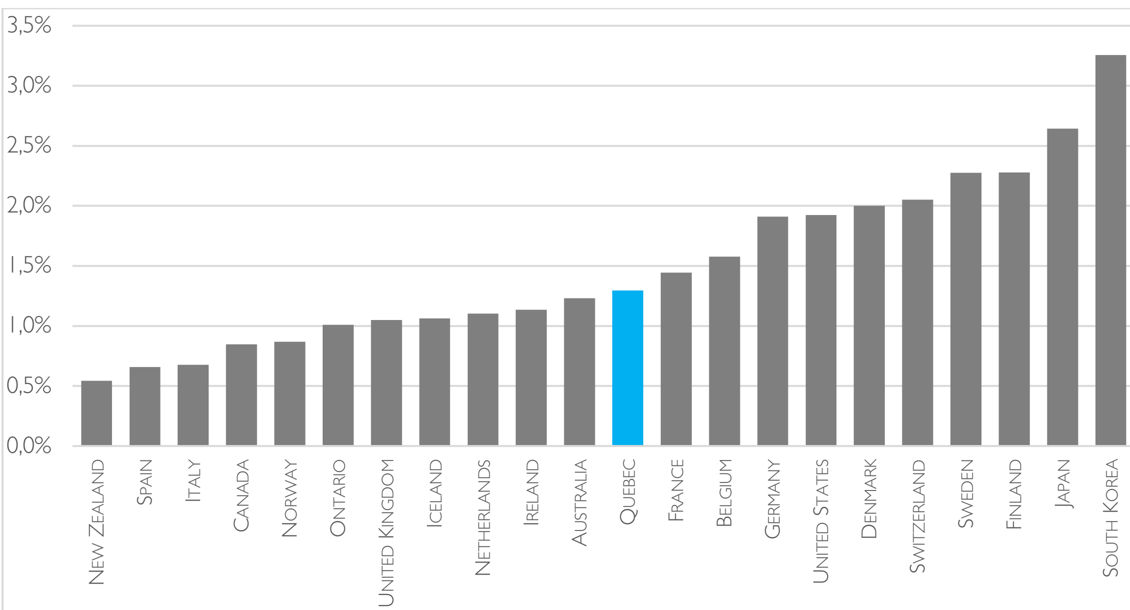
INNOVATION: A COSTLY TAX CREDIT WITH LITTLE RETURN

Without a process for evaluating government interventions, the result is a counter-productive process of layer upon layer of aid, where an ever-growing proportion of economic development funding has only a limited impact on the economy. The example of the scientific research and experimental development credit is eloquent in this regard.

While the government allocates from 20% to 25% of all its annual business aid just to the scientific R&D credit, the results do not appear to reflect this level of support. On the one hand, Quebec firms proportionally carry out less research and development (R&D) than companies in many countries. Quebec ranks better than Ontario because of its smaller economy, but Quebec firms engage in much less R&D than do those in countries like South Korea or Finland. Without drawing conclusions as to causes, it is worth noting that economic growth in these two countries has been particularly strong. Other countries, like Sweden, Denmark, Germany and the United States also outperform Quebec when it comes to R&D (Figure 35).

FIGURE 35

IN-HOUSE R&D SPENDING BY BUSINESSES AS A PERCENTAGE OF GDP, 2013

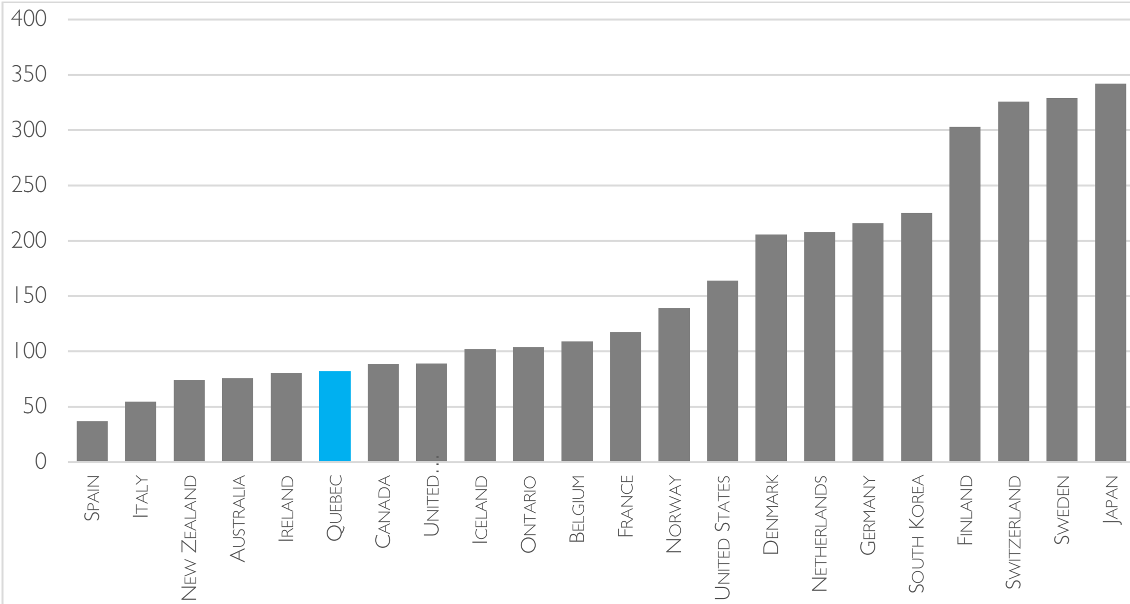


Source: http://statcpp.hec.ca/bilan2015/graphique35.xlsx

Moreover, these R&D activities seem to generate less spinoff than elsewhere in the OECD. Although it is not possible to directly measure innovation, we can see that Quebec firms file few patents as a proportion of the province's population, a sign that R&D less frequently leads to tangible results (Figure 36). Only Australia, New Zealand, Ireland, Italy and Spain lag behind Quebec.

FIGURE 36

PATENTS FILED PER MILLION INHABITANTS, 2012

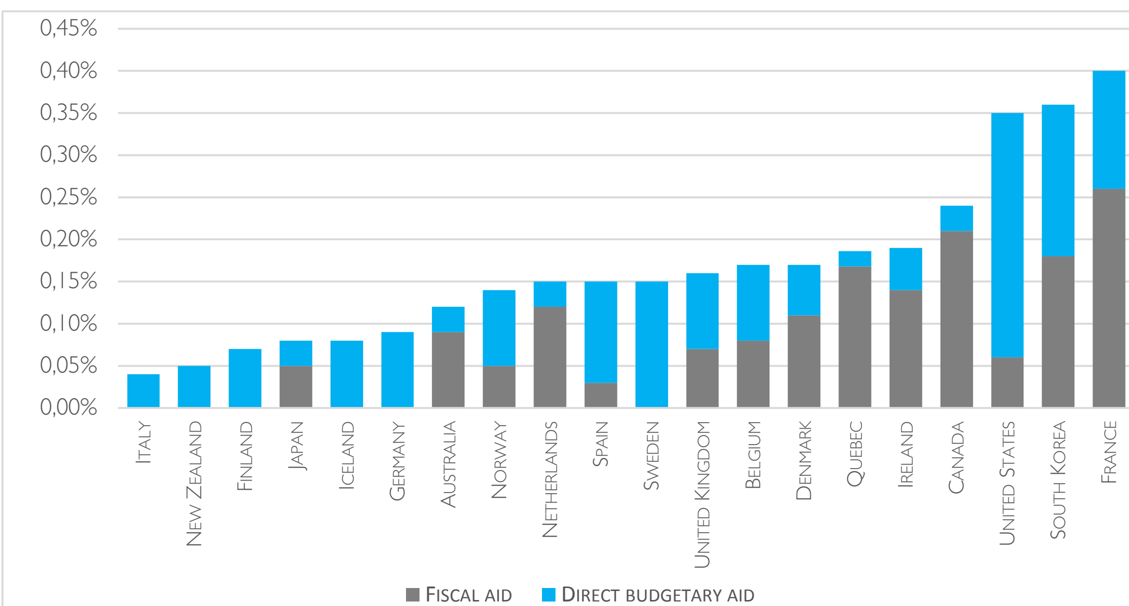


Source: http://statcpp.hec.ca/bilan2015/graphique36.xlsx

Yet Quebec ranks among the top economies for generous government R&D funding (Figure 37). Only France, South Korea, the United States and Ireland allocate a higher proportion of their GDP to R&D funding. The province outspends Sweden and Finland, although they clearly outperform Quebec.

FIGURE 37

PROPORTION OF INDUSTRIAL R&D FUNDING AS A PERCENTAGE OF GDP, 2010



Source: http://statcpp.hec.ca/bilan2015/graphique37.xlsx

The government's strong propensity to rely on fiscal aid as a means of supporting businesses could explain Quebec's R&D performance. When we compare the distribution of government R&D support, it can be seen that fiscal aid is more widespread in Quebec and in Canada as a whole than in most OECD countries. Only Ireland applies an approach similar to Quebec's, with equally disappointing results.

Given that countries like Sweden and Finland spend less than Quebec on R&D and nonetheless achieve better results by granting it all in the form of direct budgetary aid, it seems that the Quebec government would improve the effectiveness of its support if it relied more on budgetary aid and, in particular, if it targeted specific activities. Supporting particular projects could lead to savings.

It must also be said that the lack of any evaluation of the spinoff from the credit, and its poorly defined parameters, also explain why the billions spent since the credit was introduced in 1983 have not led to the anticipated results. Aid for R&D will not foster innovation or contribute to improving companies' productivity if the cheques are systematically signed with no real review of the results. One need only think of the extensive services provided by R&D consultants and slogans like "you're probably doing R&D without knowing it"[47] to understand that the R&D credit is poorly targeted and encourages companies to claim the credit even when this aid is not part of a true growth strategy.

BUDGETARY INTERFERENCE

The lack of an economic development policy means that some important economic development decisions are based on budgetary considerations, and this inevitably interferes with the effectiveness of the measures in question.

The across-the-board 20% cut in all tax credits in the 2014–2015 budget is a perfect example of a situation where budgetary considerations trumped economic development. It must be emphasized that the decision to reduce the generosity of tax credits was more a matter of budgetary imperatives than concern about their effectiveness. Given the lack of a true economic policy, the Quebec government opted to simply cut all business tax credits in an effort to balance its 2014–2015 budget. Although we cannot argue with the need to reduce the overall generosity of these credits at this point, true economic reform would instead have called for the effectiveness of these credits to be systematically analyzed so as to eliminate ineffective ones and bolster the rest, where necessary. Instead, the government chose to cut all business tax credits by 20%, regardless of their performance. Although the objective remains laudable, the result is rather questionable: many outdated and ineffective credits are still in place, while other, more useful ones are not generous enough to be effective.

It must be understood that such decisions generally result from a lack of accountability. With no precise data on its actions, and given the lack of transparency around this issue, it is generally difficult

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[47] A simple Internet search with these key words turns up a vast range of offers of service.

to assess the effectiveness of the government's interventions. And when such evaluations are done, the results are hard to obtain, and hence rarely lead to specific reforms.

POLITICAL INTERFERENCE

Quebec's economic development is also distorted by political considerations. The aid to the Port-Daniel cement factory in the Gaspé is the latest example. The government decided to invest nearly half a billion dollars – a $200 million investment and loans of up to $250 million – on the eve of the 2014 provincial election to support the creation of a few hundred jobs in the Gaspé. Without questioning the value of such projects, it is easy to see that decisions like this are inevitably open to criticism, given the context. After all, these amounts would presumably have generated substantial spinoff for the regional economy had they gone to supporting SMB growth through innovative projects, rather than just targeting job creation in one specific project. In that connection, remember that similar decisions in the early 2000s to develop the Gaspésia company produced disastrous results owing to the ineffectiveness of the aid.

Direct budgetary aid does not always lead to accusations of conflicts of interest and political interference if it is part of a coherent economic development policy. The case of the Gazelles is an excellent illustration. This was a business incubator program similar to those in many OECD countries, designed to foster companies' expansion through different support measures and preferential access to direct budgetary aid. It was introduced in 2014, with the goal of supporting 300 promising manufacturing firms. Rather than diluting the aid granted by offering one or more tax credits to all companies, the government decided to focus on the most dynamic ones as a way of quickly reinvigorating manufacturing.

The Gazelles program was suspended following the 2014 election, however, at the very end of the application process, and replaced several months later by a similar but less ambitious program called PerforME. Once again, the problem here was not the program itself but rather the shifts in direction within the same year, for reasons apparently more closely tied to political and budgetary considerations than effective economic development in the context of limited resources.

RECOMMENDATIONS

When we look at best practices around the world, we generally find a number of parallels with the ways things are done in Quebec. Only the rules and parameters of these government interventions change. In short, the problem is not so much the nature of the interventions as the context in which they are made and the way their parameters are set. The example of R&D aid speaks volumes here: all countries support companies' R&D, but the scope and make-up of this aid varies from one country to another. The result is such that some countries, like Finland, are more efficient in their support, while devoting fewer resources to R&D, while other players, like Quebec, spend heavily without seeing the desired results.

This does not mean, nevertheless, that Quebec would achieve similar results to Finland if it took the same approach to R&D support. It cannot simply copy approaches used elsewhere and hope for the same outcome. Rather, it must find a way to implement an economic development policy that corresponds to the province's needs, given its industrial structure, geography and labour force. The government must strive to create a stimulating economic environment that fosters the emergence of new businesses and allows efficient use of the trained workforce, with the ultimate goal of boosting innovation. Four principles should be applied in developing this policy:

INCREASE THE USE OF DIRECT BUDGETARY AID SO AS TO BETTER TARGET THOSE BUSINESSES WITH THE GREATEST POTENTIAL

At present, the way business aid is structured means that a limited number of firms receive a large share of the aid granted in the form of tax credits. In 2011, just over 40% of all aid went to only 100 companies,[48] a sign that large players account for the lion's share. Slightly more than 90% of all aid in the form of tax credits went to 5,000 firms. Since Quebec had 196,604 taxable corporations at that time,[49] this means that less than 3% of Quebec companies received almost all the fiscal aid, while the remaining 97% paid for this aid through their income and other taxes. These statistics fly in the face of the principles that generally justify the use of tax credits, i.e. they should be accessible to as many companies as possible.

In the circumstances, and given the apparent inefficiency of many tax credits, the government's economic policy should be to reduce its reliance on this form of aid and instead turn to direct budgetary aid. This approach not only makes it easier to monitor results, but also promises to be less costly and more effective, by allowing the government to precisely target those companies with the most potential. Accordingly, it should:

TARGET SMALL AND MEDIUM-SIZE BUSINESSES

SMBs are recognized as major drivers of innovation.[50] Yet the government's main tool for fostering innovation, the R&D credit, seems to be out of reach of the vast majority of them. In 2011, barely 4% of Quebec SMBs used this credit, as opposed to 16% of large companies.[51] By using direct aid through less costly programs like business incubators, it would be possible to improve support for SMBs' innovation and growth, by specifically targeting innovative projects.

The government needs to ensure that it gets the most out of the aid it provides, be it fiscal aid or direct budgetary aid. To do so, it must:

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[48] Ministère des Finances (2014), *Québec's Corporate Taxation System*.

[49] Ibid.

[50] In particular, see OECD (2015), *OECD Business and Finance Outlook 2015*, OECD Publishing, Paris.

[51] Ministère des Finances (2014), *Québec's Corporate Taxation System*.

ESTABLISH CLEARER PARAMETERS TO ENSURE THAT GOVERNMENT AID REACHES ITS GOALS

Remember that the current problem is not all a matter of quantity – the resources allocated are more than sufficient – but rather of effectiveness. Because it is vaguely defined, the aid provided does not always reach its objectives. For instance, when the government wants to reinvigorate the Gaspé region, it must target dynamic SMBs rather than trying to protect at-risk jobs or support a single company. When it wants to stimulate innovation, it must act as a catalyst for the most promising companies, rather than financing a vast range of activities related in some way to research and development. And when it wants to support manufacturing SMBs by means of an investment credit, the government must specifically target the modernization of equipment and prioritize information technology rather than scattering its aid widely by accepting most of the proposed investments.[52] In short, by trying too hard to support as many companies and regions as possible with a single program, the government sets eligibility criteria that are too broad, and a considerable share of the aid ends up being used for purposes that do not fit with the program objectives.

At the same time, the lack of follow-up and evaluation makes it hard to eliminate inefficient measures, and this in turn considerably reduces the overall effectiveness of the aid granted. In the circumstances, the government could very certainly offer better business aid, at a lower cost, if it tightened up eligibility criteria and aid targets, on the one hand, and evaluated the effectiveness of its actions, on the other. This is why it is necessary to:

INTRODUCE A SYSTEMATIC REVIEW PROCESS FOR GOVERNMENT AID TO BUSINESSES

If it applies these four principles in preparing a true economic policy for Quebec, the government will considerably improve the overall effectiveness of its business aid. This will make it possible to support the province's economic development with fewer resources.

The government must go even further, however, if it wishes to stimulate the province's economic activity. To foster the dynamism that companies need if they are to innovate, the government will have to reduce their tax burden. And that may well be much more difficult, given the impact on government revenue.

Ideally, the government should go a long way toward truly reducing businesses' tax burden by eliminating payroll taxes. This would cost it about $4 billion, [53] but on the other hand would take a considerable weight off the backs of private-sector businesses.

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[52] See Deslauriers, J. Gagné R. and Paré J. (2014). *Mieux outiller le secteur manufacturier : entre politique et adéquation des besoins*. Centre for Productivity and Prosperity, HEC Montréal.
[53] See the box explaining payroll taxes.

That being said, given the precarious state of public finances, the government's growing financial needs and, above all, the huge fiscal impact of such a decision, it is unrealistic to think that the government would simply abolish payroll taxes at a single stroke. Instead, it should proceed gradually, starting with small businesses:

EXEMPT THE SMALLEST BUSINESSES FROM CONTRIBUTIONS TO THE HEALTH SERVICES FUND (FSS)

The government has brought in two relief measures for SMBs since 2015, i.e.:

- A total or partial holiday from contributions on the wages of newly hired specialized employees who are specifically involved in innovation activities;[54]
- A 1.1 percentage point reduction in the minimum contribution rate for manufacturers and primary producers with payrolls under $1 million. The government plans to gradually lower the minimum rate to 0.45% for service sector businesses starting in 2017.[55]

Although these are attractive initiatives for certain SMBs, they are clearly not inclusive enough to have a significant impact on the economy. The first is much too targeted to be useful, while the second will affect a tiny portion of SMBs at best. In addition, the effect on companies' tax burden will be negligible. In the worst case, the government's forecasts put annual losses at about $94 million,[56] a negligible amount considering that the private sector paid about $4 billion in 2011 in employer contributions to the Health Services Fund alone.

By bringing in a true exemption from contributions for small businesses, the government would lose part of its revenue, it is true, but would also free the smallest businesses from a heavy tax burden. According to 2011 data,[57] the exemption for companies subject to the minimum rate (2.7%) would cost the government approximately $320 million in revenue (see the box explaining payroll taxes). If it used the same method as it does at present for calculating progressive tax rates, the government would also reduce the effective rate for businesses with payrolls of $1 to $5 million. While it is impossible to calculate the exact losses that would result, given the progressive nature of the rates, we can estimate that the government would still bring in at least 60% of the amounts collected at the progressive rate. So the estimated losses would be less than $1 billion.

Moreover, by reducing the amount of fiscal aid it offers, the government could relieve the tax burden on all small businesses:

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[54] Ministère des Finances (2014). *Budget 2014-2015.*

[55] Ministère des Finances (2014). *Québec's Economic and Financial Summary – Fall 2014.*

[56] Ministère des Finances (2014). *Budget 2014-2015* and Ministère des Finances (2014). *Québec's Economic and Financial Summary – Fall 2014.* This amount is determined using an average of the financial impact over 5 years.

[57] Ministère des Finances (2014), *Québec's Corporate Taxation System.*

REDUCE THE GENERAL TAXATION RATE ON THE FIRST $500,000 OF TAXABLE INCOME FOR all small businesses

Remember that Quebec's tax structure is the least generous when it comes to small businesses. They get a deduction of 3.9 percentage points off the general rate, leaving them with a taxation rate of 8%. Elsewhere in Canada, this deduction ranges from 7 percentage points to an outright exemption. As a result, the taxation rate for SMBs in Quebec is 1.8 to 4 times higher than elsewhere in Canada.

The government is aware of the heavy tax burden borne by small businesses, and since 2015 has offered a larger exemption for small manufacturing businesses, which are now subject to a rate of 4%.[58] The government in fact plans to extend this larger deduction to small businesses in the primary sector starting in 2017.[59] Once again, while this is a step in the right direction, these measures are not broad enough to have a real impact on Quebec's economy. Remember that the vast majority of small businesses remain subject to a taxation rate up to 4 times higher than elsewhere in Canada.

By specifically targeting small businesses, the government will limit the obstacles to their growth, without a major impact on government revenue. And since these companies are recognized as major drivers of innovation, the government will also be indirectly supporting innovation.

In closing, remember that any such ad hoc measure will never reach its full potential unless it is part of a coherent policy. This is partly what explains the failure of the economic development initiatives taken over the past 15 years. Note also that the government itself must innovate and take a bolder approach if it wishes businesses to do likewise. For too long now, the government has simply been tinkering with existing measures. If it wants to truly breathe new life into the economy, it will have to show some vision and stop merely making minor adjustments to the support it is already granting.

That is why the government must formulate a real economic development policy. This will allow it to move away from a broad, opaque system where aid is granted without any serious review, toward a transparent system in which actions are better defined and assessed, and where support is allocated for specific purposes. It must also ensure that SMBs have access to aid at a reasonable cost and that they do not need to hire consultants to help them access it. For all these reasons, the government must make greater use of direct budgetary aid.

[58] Ministère des Finances (2014). *Budget 2014-2015.*
[59] Ministère des Finances (2015). *Budget 2015-2016.*

CONCLUSION

In this seventh edition of *Productivity and Prosperity in Quebec*, we have made a number of different points. The first section underscored the important role of labour productivity in standard of living growth. We saw that over the past 35 years, productivity gains in Quebec have not been sufficient to support growth in the provincial economy. As a result, the standard of living in Quebec today is lower than in a vast majority of other provinces and OECD countries, a sharp change from 35 years ago.

To restart its economic growth, Quebec must inevitably focus on improving its productivity. Accordingly, the second section of *Productivity and Prosperity in Quebec* recommends two levers for stimulating long-term productivity in the province.

First of all, the government must make education its main priority. When we look at the growth in budgetary expenditure allocated to the government's different missions since the early 2000s, we can see that education has not been treated as a true priority. Between 2002–2003 and 2012–2013, real per capita spending on education rose by just 4%, or five times less than on health and social services. Consequently, the Quebec government would now need to inject $1.6 billion in education alone to bring its per capita spending for inhabitants under age 30 up to the Canadian average.

To make education a real priority, the government will have to do more than simply inject money on an ad-hoc basis. We have identified two target initiatives in this regard: offering optional, free and universal kindergarten for four-year olds, and improving the Secondary Cycle 2 curriculum to ensure that young people leave school with a specialized diploma.

Secondly, the government must endeavour to maintain a vibrant economic environment that encourages the emergence and growth of firms, and especially of SMBs. Since the late 90s, it has preferred to give valuable financial support to a small number of firms, while taxing all firms more heavily. The result is that the aid granted to businesses in the province is three times greater than in Ontario, but firms bear a tax burden 30% higher than in the neighbouring province.

If the government is to properly support the development of certain sectors of the provincial economy without its aid hampering the growth of all businesses, it must review its approaches. On the one hand, it must formulate a real economic development policy so as to structure its actions and ensure that they reflect a long-term vision. This policy must give priority to 4 types of actions: reducing the use of fiscal aid and relying more on budgetary aid; targeting small and medium-size businesses; establishing better-defined aid targets and parameters; and establishing a systematic review process for the aid allocated. At the same time, it must reduce businesses' tax burden, more specifically that borne by SMBs. Priority should go to two measures: first, lowering small business taxation rates – at present SMBs pay tax rates 1.8 to 4 times higher than anywhere else in Canada – and, second, pending the complete abolition of payroll taxes, offering an exemption for small businesses.

In closing, we must reiterate that the government will inevitably have to absorb a considerable loss of revenue if it truly wishes to support the growth of the Quebec economy. Without tight control over its expenditures and a systematic review of its actions, the government will have to maintain the existing taxation structure, the main impediment to economic recovery in Quebec.