

Impact of the demographic shock on Québec's economy Slowdown in GDP growth will have far-reaching consequences

Québec is about to experience two simultaneous shockwaves in its demographic evolution: the aging of the labour pool that is set to accelerate and a decline in the labour force in the coming years. Besides the consequences on the labour market, already analyzed in an earlier *Economic Viewpoint*¹, the overall dynamics of economic growth will be affected. And since the real GDP's cruising speed depends on labour force growth and productivity gains, the potential for Québec's economy to grow will undoubtedly slow down. No increase in productivity will be sufficient to single-handedly narrow the gap that is growing in Québec's demographics. However, Québec is not alone in dealing with this situation: other industrialized nations like Japan and some European countries have already started to feel the effects of their aging populations. Advances in the economy have started to slow down which only confirms that Québec—without being relegated to a decline—will have to deal with a less sustained pace with respect to economic growth.

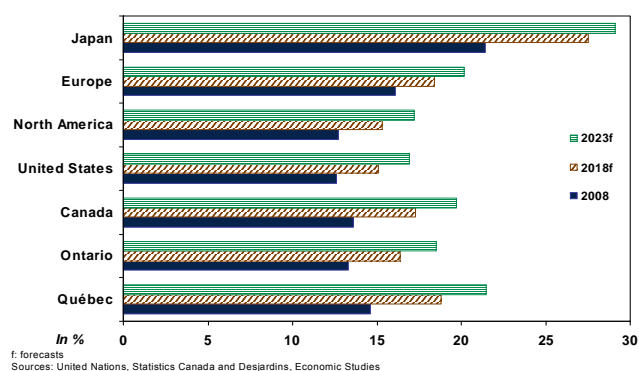
This analysis will allow us to better assess the scope of the adjustments Québec's economy will have to make, outline the main implications and try to come up with solutions to lessen the expected impact of slower economic activity in just a few short years. We have to make sure the current recession does not blind us to this medium-term issue. The next cycle of economic expansion, likely to start some time next year, will soon be compromised by unfavourable demographic trends. This period of economic contraction gives us a glimpse of the difficult choices that Québec's society will have to make. The already precarious state of our public finances will have trouble gaining the upper hand in a context where slower economic growth is limiting increases in the tax inflows. Can Québec avoid this type of impasse?

AGING OF POPULATION TO BE MORE PRONOUNCED IN QUÉBEC

Québec's current population is relatively young. The percentage of people aged 65 and over hovers around 15%, one of the lowest rates among major industrialized countries. However, Québec is on the verge of an abrupt sea of change in terms of aging population. As of 2011, the first baby-boomers born between 1946 and 1966² will be turning 65. And since the baby boom was relatively stronger in Québec than in the rest of North America, the net effect of an aging population will be felt that much more sharply. In 15 years or so, about a quarter of Québec's population will be 65 years of age or older. This proportion is closer to what we are already seeing in some European countries and Japan (graph 1). Québec is set to experience a fate similar to that of other industrialized countries, which have already started to feel the effects of their aging populations. Japan's experience is a fine example

in this respect: it provides us with a glimpse of what lies ahead for the province in terms of economic growth (see box on page 2).

Graph 1 – Portion of the population aged 65+ in the following industrialized economies



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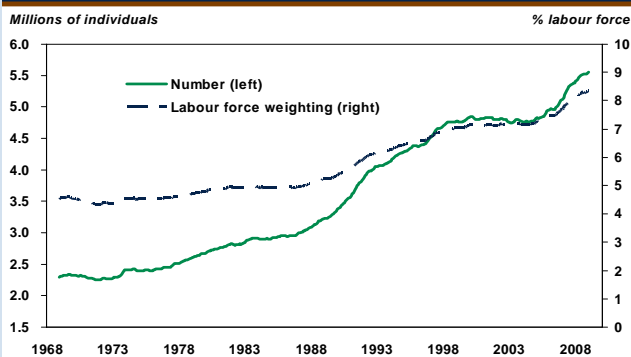
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DECLINE IN POTENTIAL GDP: JAPAN'S EXAMPLE

For most industrialized countries, demographic change is a distinct threat that will have a significant impact on production's potential growth in the next 10 years. Some emerging countries, especially Russia and several Eastern Europe countries, will also feel this impact with the mass exodus of young people. Some countries, like Japan, have already started to feel the effect of unfavourable demographics on economic growth.

In Japan, the change in labour force has been slightly negative, on average, in the past 10 years. In contrast, the annual growth of Japan's labour force was 1.2% on average in the 1980s. Part of the decline in the number of young workers was offset by an increase in workers aged 65 or older, but this was insufficient to prevent a general decline in Japan's overall workforce (graph 2).

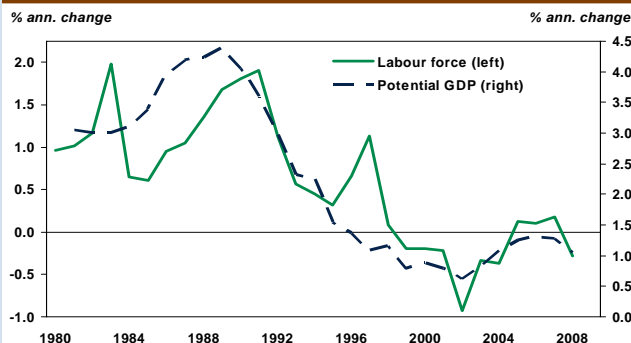
Graph 2 – Number of workers aged 65+ rising in Japan



Sources: Statistics Bureau of MIC and Desjardins, Economic Studies

The demographic changes in Japan made a significant contribution to the decline in potential GDP growth, which fluctuated between 0.5% and 1.5% over the past 15 years or so (graph 3). In contrast, the average pace of growth was greater than 3% on average in the 1980s. Another reason for this economic decline was the deep crisis in Japan's banking sector in the

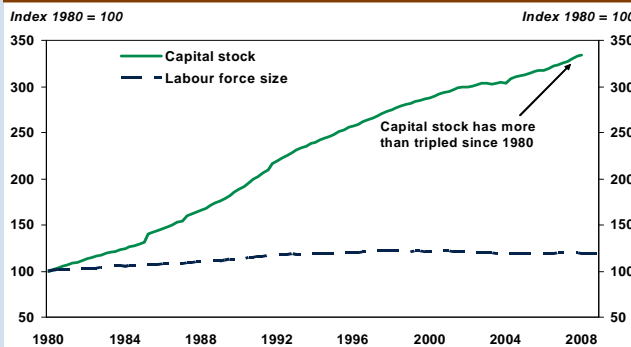
Graph 3 – Decline in labour force affected potential GDP growth in Japan



Sources: Japan Cabinet Office, Statistics Bureau of MIC and Desjardins, Economic Studies

1990s which resulted from the stock market and real estate crash. Moreover, even though Japan's economy can no longer count on the growth of its workforce to increase its potential, it can still count on increasing its bulk of capital stock (equipment, buildings and infrastructures) which has more than tripled since 1980 (graph 4), and on technological development that is more difficult to measure.

Graph 4 – Due to labour scarcity, increased capital ensured long-term economic growth in Japan

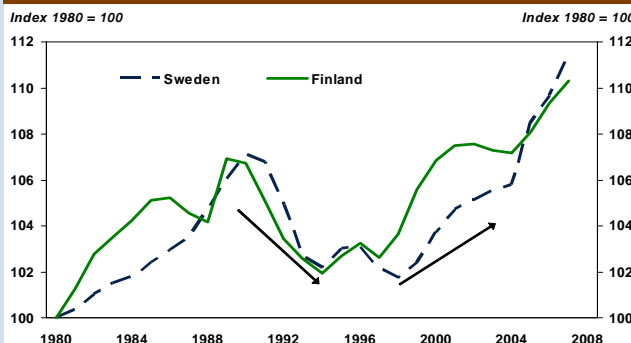


Sources: Statistics Bureau of MIC and Desjardins, Economic Studies

The decline in the labour force, due to the aging of the population, has nevertheless reduced economic advances by more than half in the last 15 years, shedding light on several economic problems that are directly related to aging. Among other things, the weight of the gross public debt, at close to 200% of the nominal GDP, will soon be more burdensome for the Japanese to carry. Budgetary pressures will only intensify just when the cost of many public services, especially those related to healthcare and pension plans, are rising due to the greying of the population.

Sweden and Finland³ are fine examples of countries whose labour force has declined (graph 5). The drop in the number of workers occurred in the 1990s and was only temporary as their demographic deficit was corrected a few years later, mainly due to immigration. It is, however, difficult to determine how

Graph 5 – Sweden and Finland saw their labour force decline temporarily in the 1990s



Sources: OECD and Desjardins, Economic Studies

the demographic shock genuinely impacted the economic potential of these countries since both Sweden and Finland were grappling with a major banking crisis during this same and relatively short period. Major social reforms helped provide some financial leeway nevertheless. Sweden opted for a bigger piece of the private sector pie to reduce pressure on public finances and instituted user fees for health services⁴. University studies are financed by the government—one aspect of the Swedish model that encourages education.

The Scandinavian countries, the Netherlands and Ireland also had to implement radical changes once the financial positions of their respective governments had reached an

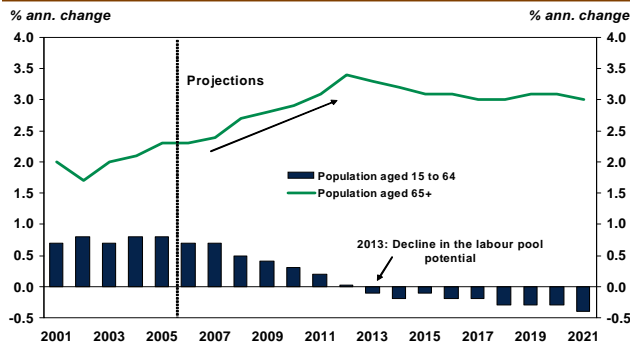
impasse. Major increases in public debt were simply unsustainable in a context of aging populations. Some countries, for example, gradually raised the retirement age, revamped their public pension plans and reduced the size of the State by making way for more private services. The standard of living for the middle class appears to have deteriorated since these reforms were implemented, however, especially in Sweden. It would be in Québec's best interests, therefore, to examine the different reforms put forth in these European countries in the past few years. While some measures proved unsuccessful—even undesirable—they nevertheless paved the way for these countries to redress their public finances.

The consequences of the aging population on the job market—and by extension, the economy—will be more severe in Québec than elsewhere in Canada. The anticipated massive retirement of workers will lead to a drop in the labour pool potential (graph 6). The younger generation's arrival will not be enough to replace these workers. According to Statistics Canada projections, the population aged 15 to 64 will start to drop off as of 2013 while it will continue to grow in Canada and Ontario (graph 7). The effect of aging will be felt to a

lesser extent in the rest of Canada. The population that is old enough to join the workforce will continue to advance, but at a much slower pace than in the past.

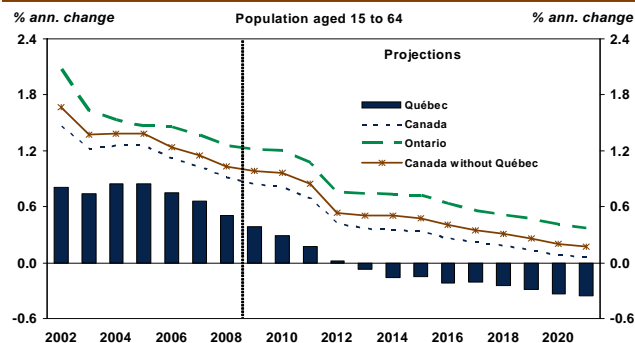
And yet demographic evolution in Canada and Ontario has outpaced Québec's for decades now, supporting a higher real GDP growth rate (graph 8). In the last 10 years, the labour force has grown 1.7% on average in Québec vs. 1.9% in Canada and 2.4% in Ontario. This discrepancy mainly explains the gap in potential GDP in each of these economies (see box on page 6).

Graph 6 – Growth of population aged 65+ to accelerate in Québec whereas population aged 15 to 64 set to decline



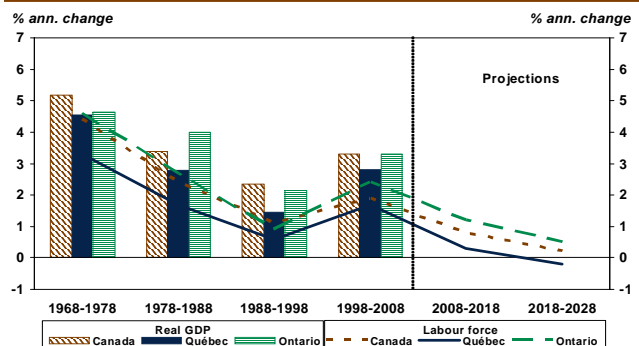
Sources: Statistics Canada and Desjardins, Economic Studies

Graph 7 – Shrinking labour pool will prove troublesome for Québec



Sources: Statistics Canada and Desjardins, Economic Studies

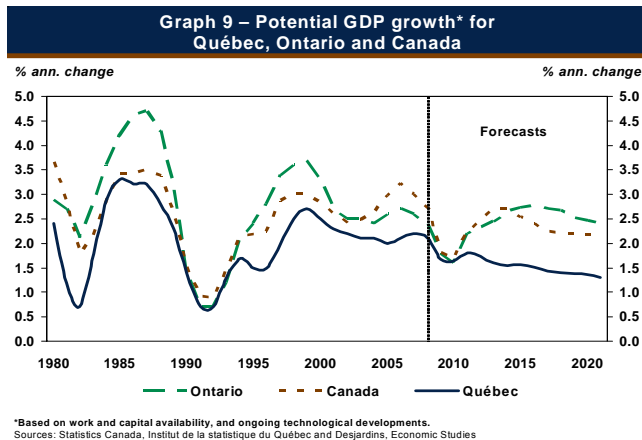
Graph 8 – Economic growth has traditionally been weaker in Québec due to demographic evolution



Sources: Conference Board, Statistics Canada and Desjardins, Economic Studies

In some years, other structural and cyclical factors temporarily have the upper hand, with one region of the country posting superior economic activity despite that region's less favourable demographics. In the last five years, the average growth of potential GDP in Québec was estimated at 2.1%, with 2.5% for Ontario and 2.8% for Canada overall. The economic boom in the western provinces explains why Ontario and Québec, with close to 60% of Canada's entire population, fell below the Canadian average in terms of potential GDP growth during this period. The spread between Québec and the rest of the country is expected to widen significantly in the years to come

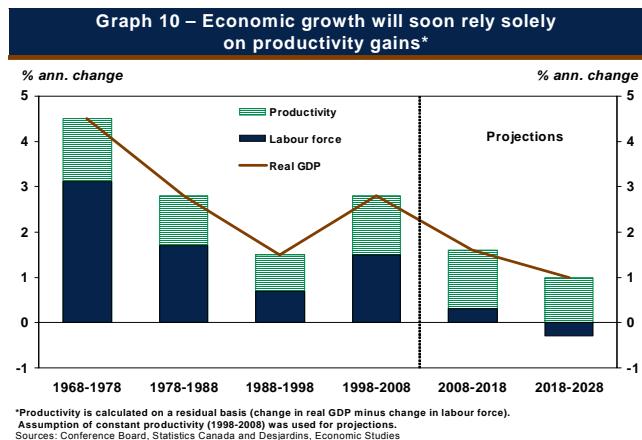
due to the less favourable demographic outlook (graph 9). Québec's economic and political weighting within Canada's economic landscape will continue to crumble, but the erosion will soon be felt, and with great impact.



IMPACTS OF THE ECONOMY

A look back in time gives us an idea of what the future holds for the province. In the past few decades, economic growth was closely tied to growth in the labour force. Real GDP, which rose more than 4% per year in the 1960s, was supported by the massive influx of the first wave of baby-boomers on the job market (graph 10). Born in Québec between 1946 and 1966, these boomers shook things up on the home front especially in Québec's health and education systems. The positive impact boomers had on economic growth in the 60s and 70s deserves however to be highlighted, since the opposite effect is about to take place in Québec.

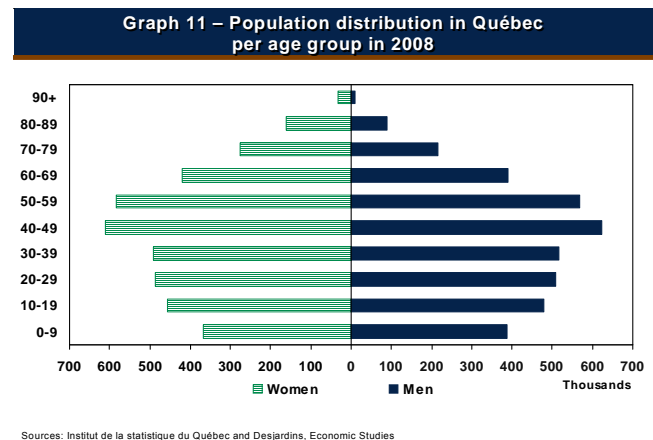
As increase in the labour force will slowly diminish under the weight of demographics, before it starts to decline, economic growth will gradually lose one of its two pillars. Based on the scenario put forth by Statistics Canada, even if we assume an increase in the population aged 15 to 64 on the job market (in other words, a rise in the activity rate), the drop-off in the



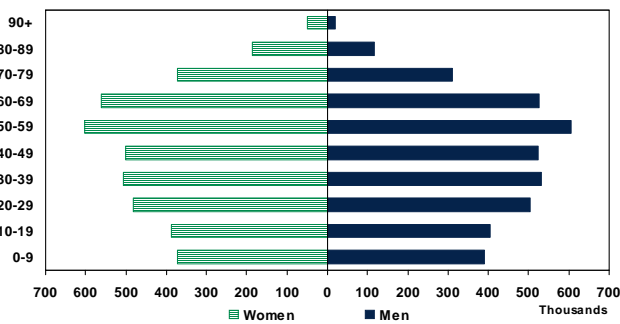
labour force will be deferred from 2013 to 2016. Any advances in real GDP will therefore stem solely from productivity gains, i.e. improved production processes, technological innovation and the combined effect of substituting work for capital (fewer available workers will demand greater investment). It is unavoidable: the drop in the labour force means that economic activity will grow at a much slower pace than what we have seen for the past 10 years.

POSSIBLE SOLUTIONS

In terms of demographics, the possibilities for changing the situation are limited and in most cases are not enough to change course. As shown in a recent *Economic Viewpoint*, neither massive immigration nor an increase in the birth rate would be sufficient to counter the current demographic trends. The significant jump in the number of births recorded in Québec in the past few years will broaden the labour pool in the long term, but we will have to wait at least 15 years. In the short term, part of the solution lies in immigration and factors that will likely soften the anticipated decline of the labour pool. In fact, the biggest challenge consists in getting a greater portion of the labour force to join the labour market to delay any decrease in labour supply for as long as possible. That said, its decline is however unavoidable: the age pyramid cannot be reversed (graphs 11 to 13). Some measures to soften the blow have been identified, however: integrating the maximum number of people who are apt and available to work into the workforce, making the job market more flexible to welcome atypical workers, increasing labour mobility between the provinces, greater recognition for diplomas held by immigrants and their qualifications, and incentives for putting off retirement. The Québec government has already put forth several of these measures and others will soon come into effect. For example, the agreement between France and Québec on recognizing trade and professional qualifications should soon make it easier for French workers to obtain work permits. This measure, along with others in effect, should help curb the unfavourable demographic trends but it will not stop the labour pool from shrinking in the near future.

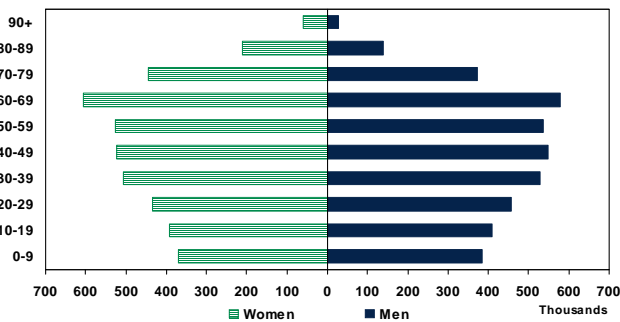


Graph 12 – Population distribution in Québec per age group in 2018



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

Graph 13 – Population distribution in Québec per age group in 2023



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

The Institut de la statistique du Québec is slated to publish its demographic projections this summer while Statistics Canada will release its new scenario for Canada and the provinces in the fall, based on the 2006 census. Should the trends prove to be more favourable than those published previously, it will only extend the deadline by a few years, giving Québec more time to try to stem the harmful effects of the demographic shock on our economy. We are already in the eleventh hour and any additional delay will give Québec a little more breathing room to prepare for the demographic shock that will be felt more deeply here than elsewhere.

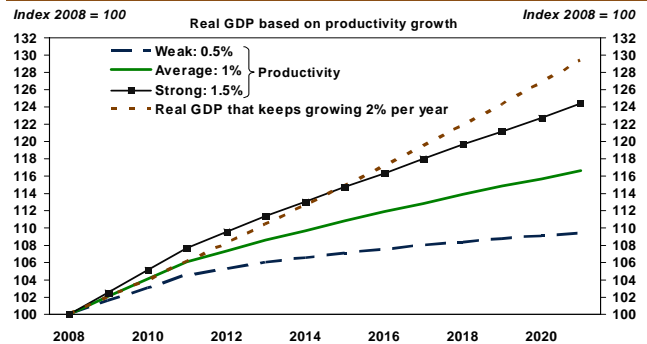
CAN PRODUCTIVITY GAINS SAVE THE DAY?

Of the three main drivers of potential growth, i.e. demographics, the population’s participation in the labour market and productivity, a ramp-up in productivity is the only thing that could make a genuine difference. In this context, can we really rely on increased productivity to prevent any future weakening of potential GDP? A significant jump in productivity usually follows a major technological change, like the implementation of IT systems during the second half of the 1980s. Some economists agree that an aging society is less productive.

This argument is supported, among other things, by the fact that entrepreneurship usually falls off, fewer new graduates are flooding the job market with new ideas, and the health of aging workers is starting to decline. Other economists disagree, arguing that a more limited labour pool would lead to increased productivity. The scarcity of workers would prompt companies to improve their procedures in each step of their production process and up their investments. The most cautious assumption: posting steady productivity gains for the next few years.

But even the most optimistic scenario on productivity does not see potential GDP maintaining its current pace (graph 14). If we assume productivity gains similar to the pace we have seen in the past 10 years, or about 1.0% on average annually, the real GDP’s advance will deteriorate to around 0.8% by 2020. This assumption is our basic scenario, a neutral position in terms of productivity gains. Should productivity gains slow down as a consequence of the aging population, the situation will become even more critical. Based on this pessimistic scenario, gains of only 0.5% per year will lower Québec’s potential GDP to 0.3% by 2020. Lastly, even if progress is made on the productivity front and gains of 1.5% are posted each year, the growth potential of Québec’s economy would not drop as much, but it would still be limited to 1.3% by 2020.

Graph 14 – Even optimistic productivity growth scenario do not view current pace as sustainable



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

Our estimates had set the potential GDP at 2.1% on average between 2003 and 2008. Based on a scenario of constant productivity growth (1% on average annually), the economy’s cruising speed will fall to 0.8% in about 10 years. In the best case scenario, if our future productivity gains exceed past gains, reaching 1.5% on average per year, the potential growth of Québec’s economy will sag to 1.3%. This decline is oddly similar to what we have seen in Japan, whose potential has shifted between 0.5% and 1.5% for the past 15 years.

ESTIMATING POTENTIAL GDP

Potential GDP is a measure of what an economy can produce, based on the reasonable full use of the workforce and capital, for a given level of technological development. It is not a variable that can be observed directly. Depending on economic situations, real GDP can fluctuate above or below potential. Some methods rely on economic theory to estimate potential GDP which is how we calculated our estimates for Québec. Other approaches are based on purely statistical techniques, which are usually easier to use since they require less data, but the risk of getting incorrect results is greater. Below is a brief description of the methods generally used to assess potential GDP.

Estimates based on economic theory

According to economic theory, the level of production (Y) of a given economy depends on the quantity of work (L), the capital (K) available, and the degree of technological advances (A). Assuming a Cobb Douglas functional form with constant scale returns, production is defined as follows:

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

This equation can be linearized in order to express growth in production as a result of growth in technological advances, the workforce and available capital. Coefficient α corresponds to the relative portion of work within overall production, which varies between 65% and 75% on average, based on OECD countries. The lower limit of this range was used to calculate the potential for production in Canada, Québec and Ontario. To estimate production potential, that of each component must first be determined before the results are added.

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

The Congressional Budget Office (CBO) methodology used to calculate potential GDP in the United States⁵ and in other OECD⁶ countries is based on this equation. The main difficulties lie in obtaining the data needed to reach the most accurate estimate possible for each component in the equation. As such, the accuracy of potential GDP is not as precise for Québec as it is for the U.S., but the results are still fairly reliable. This calculation method was used to formulate our estimates.

Estimates based on a linear trend

This basic statistical technique consists in tracing a linear line between the effective real GDP data. This approach nevertheless assumes constant growth in potential, which is not very realistic. In fact, the production potential determinants (capital, availability of the workforce and technological advances) are ongoing and bear a direct impact on the genuine trends at the core of fluctuations in the real GDP. We can bypass this problem to an extent by estimating a different trend for each of the economic cycles (from peak to trough). This does not provide the same degree of accuracy as the previous method however, and the risk of error should not be overlooked.

Use of Hodrick-Prescott filter

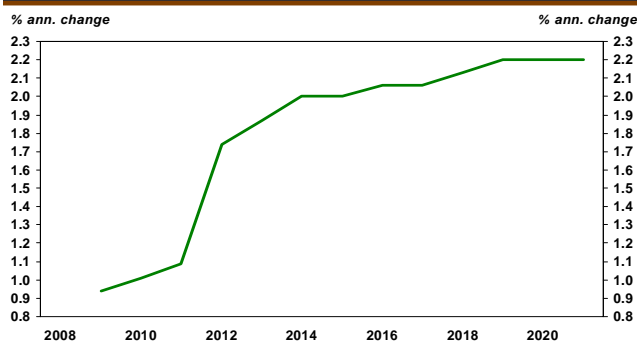
To counter the inflexibility of linear trending, non-linear smoothing techniques are often preferred. One popular method for smoothing series is to use the Hodrick-Prescott filter (HP filter), which calculates the smoothed series “ s ” of a “ y ” series by minimizing, on one hand, the variance of “ y ” around “ s ” and, on the other hand, by limiting the acceleration of “ s ” (i.e. the double difference of variable “ s ”). Parameter λ measures the weight given to the second constraint. The larger λ is, the more the smoothed series “ s ” will look like a linear line. It is usually recommended to take $\lambda = 100$ for annual data, 1,600 for quarterly data and 14,400 for monthly data.

$$\sum_{t=1}^T (y_t - s_t)^2 + \lambda \sum_{t=2}^{T-1} ((s_{t+1} - s_t) - (s_t - s_{t-1}))^2$$

This approach is far from perfect in that it leads to greater errors in end sample estimates. It is nevertheless possible to improve the quality of estimates by adding forecasts to the smoothed series. Another weakness, more specific to potential GDP calculation, is the inflexibility of the HP filter in determining the magnitude of shocks (asymmetry is impossible) and their nature (supply shocks vs. demand shocks). To remedy this, more advanced techniques— that are more complicated to calculate— recommend including other variables in the analysis, such as movements in the unemployment rate vs. its neutral level, or the inflation rate⁷. This type of approach can easily be applied to Québec, but it was not retained. We opted instead for a method that runs closer to economic theory.

For Québec's economy to maintain its current cruising speed of about 2% per year, productivity gains would have to post steady advances in upcoming years to reach an annual pace of 2.2% (graph 15). And yet this pace seems almost impossible to reach given that it has struggled to exceed 1% in each decade since the end of the 1960s.

Graph 15 – Rise in labour productivity required to sustain annual real GDP growth of 2%



Sources: Statistics Canada and Desjardins, Economic Studies

DECREASING POTENTIAL SEEMS INEVITABLE

In short, economic growth in Québec is poised to slow down since productivity gains alone will be unable to bridge the gap created by demographics, and this trend is impervious to efforts to turn it around. At best, a sharp rise in immigration will only defer the expected decline in the labour force by a few years—the age pyramid is firmly rooted. Fertility is essentially what determines the age structure of a population. The sharp rise in Québec's birth rate in the past few years will no doubt have a positive impact on the labour pool, but we will have to wait at least 15 years before these newborns enter the job market. The decline in Québec's potential for economic growth will mirror the current situation in Japan, which is grappling with the same demographic trends that are forecast for our province. The Japanese economy's potential GDP has fallen sharply since the beginning of the 1990s, once the advances made in the labour force ground to a halt. Québec's economy will inevitably suffer the same fate in the next few years.

Québec will be at a disadvantage compared to its main trade partners in North America who will also be reeling from the effects of the demographic shock, but to a lesser extent. In the United States, the population aged 15 to 64 will continue to grow due to strong immigration and a fertility rate of 2.1 children per woman, enough to ensure the replacement of generations. The current age structure in Canada and

Ontario, combined with strong immigration, is such that growth in the population aged 15 to 64 will show a much softer pullback than in Québec and will even avoid a long-term decline. Our neighbours can therefore depend on a rise in their labour force and on productivity gains to support their economic growth, slowly distancing Québec from the rest of North America.

IS CORPORATE EXPANSION COMPROMISED?

Since the demographic shock will deal a significant blow to domestic demand, the only way to make sure companies can expand will be to turn our attention to foreign markets⁸. If Québec manages to sufficiently broaden its economic landscape, this could partially offset weaknesses in the domestic economy, which will limit opportunities for companies. More openness to international markets will however require our exporters to work harder, as it will prove increasingly difficult for them to recruit labour once this recession is behind us. Only highly competitive companies that offer targeted, even exclusive products will be in a position to raise their wages to attract and retain qualified workers.

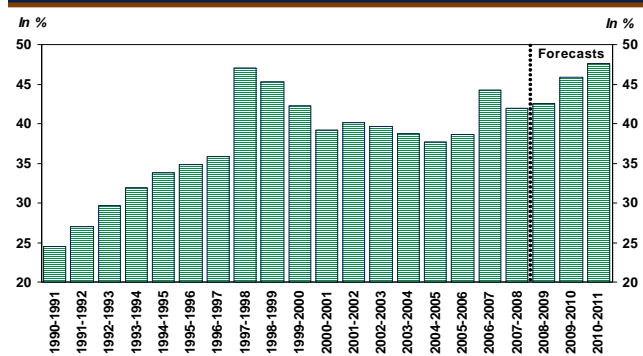
In an environment where global competition is becoming increasingly intense, Québec's economy faces a formidable challenge. With manufacturers now looking to foreign markets, where production is no different than that of foreign competitors, they will have trouble increasing their wages to recruit workers. With the scarcity of labour shortage, production could increasingly be moved to foreign shores to ensure corporate expansion. The weakening of economic growth in Québec could bring about a further decline in the manufacturing sector, which continues to lose ground in terms of its economic heft. The only way out for companies that wish to continue to manufacture their goods in Québec will be to adjust wages to attract workers while increasing productivity to remain competitive in international markets. The importance of improving productivity will be analyzed in an upcoming *Economic Viewpoint*.

For the service sector—which has less exposure to foreign competition—the limited supply of workers will exert upward pressure on wages. Salary increases will be higher than what we are seeing today, but gains will be limited by weaker growth in the domestic economy, an outcome of unfavourable demographics.

THE MAIN ISSUE: PUBLIC FINANCES

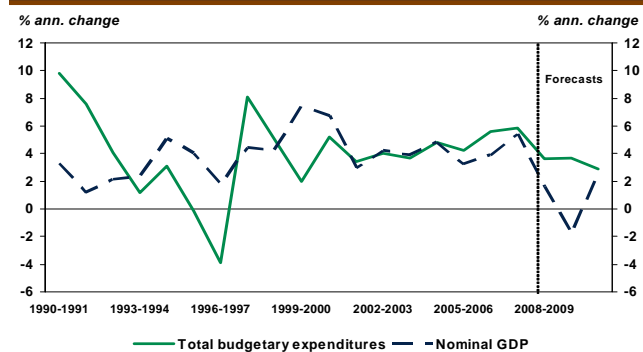
The current recession has already thrust the problem of balanced budgets to the forefront. The recent boom did not allow the Québec government to build up enough leeway to weather lean times, or even prepare for the demographic shock that lies just around the corner. The weight of the debt, which reached more than 45% of the nominal GDP 10 years ago (graph 16), was reduced to less than 40% in the first half of this decade. Efforts to rein in the budget during this period proved insufficient, now that we expect to top to the 45% ratio for this budget year. Mounting debt and the recession will drag down the nominal GDP, prompting a worrisome deterioration in public finances. Fiscal 2009-2010 will close with a significant deficit, estimated at \$4B at least, and the return to a balanced budget for 2013-2014 is far from certain. Québec is heading toward a major financial impasse that seems inescapable, especially since increases in government expenditures have outpaced advances in nominal GDP for the past few years (graph 17).

Graph 16 – Relative size of the net debt vs. nominal GDP set to increase in Québec



Sources: Ministère des finances du Québec and Desjardins, Economic Studies

Graph 17 – Growth in budgetary expenditures will continue to outpace that of Québec's economy



Sources: Ministère des finances du Québec, Statistics Canada and Desjardins, Economic Studies

Yet 2016 has been pegged as the year when the decline in the labour force will start to severely limit tax inflows from individuals. And the demographic trends will only exert more pressure on public finances. In its current form, the tax base, which depends heavily on income taxes paid by workers, will have more and more trouble maintaining sufficient revenue growth to offset increasing expenses. Personal income taxes collected from work revenues account for almost 40% of the Québec government's total revenues. On the expense side, \$25.4 billion has been allocated to Ministry of Health and Social Services in 2008-2009, an increase of 5.7% over last year. And so the burden of this trend begins. In these circumstances, the government will either have to find other revenue streams to balance its finances or cut expenses; it will even have to achieve productivity gains in the sectors it dominates.

In terms of revenues, charging higher fees for services rendered by the government should aim for more than just filling government coffers. Higher pricing would send the right signals to consumers. Poor pricing usually encourages waste while over-pricing leads to under consumption, which upsets economic and social well-being. Increased pricing cannot be seen as the miracle cure-all.

It is also hard to address the issue of fiscal pressures without talking about the debt load. For the past few years, governments placed their bets on GDP increases to bring down the debt. And yet weaker potential for growth means it will take that much longer for us to put a dent in our public debt. Sooner or later Québec will have to step up and do more than make interest payments only; we will have to start paying down the principal, like any good borrower! That is precisely the goal of the Generations Fund, but the returns on this investment will have to outpace the interest paid on the debt. And there's always the risk the government decides to use these funds to go shopping or to balance the budget instead of paying down the debt.

CONCLUSION

In conclusion, Québec is on the verge of a demographic shift of seismic proportions. The aging of the population will lead to a drop in the number of those old enough to work in 2013. The labour force will start to decline a few years later, in 2016, based on the assumption of a greater participation in the labour market. The aging of the population will lead to a decline in the labour force as of 2016. While certain factors—an increase in immigration or an influx of job seekers onto the market—could defer the decline by a few years, it is nevertheless unavoidable. The age pyramid, which takes decades to take

shape, is almost impossible to reverse once it is entrenched, at least in the short term. The pace of Québec economy's growth, which relies on increases in the labour force and output gains, is destined to weaken.

In the best case scenario, meaning highly accelerated productivity, the growth potential for Québec's economy will be less than 1.5% in the next 10 years, compared with about 2% today. If productivity gains keep the same steady pace they had over the past 10 years, the potential for our economy could weaken to under the 1% mark. And since we used a prudent assumption of a constant increase in productivity, we have to conclude that the growth potential for Québec's economy will be cut by half in the next 10 years. This decline seems strangely similar to what took place in Japan, a country whose economic potential has hovered between 0.5% and 1.5% for the past 15 years after posting gains in excess of 3% during the 1980s. Japan, which is already grappling with the impacts of an aging population, is a clear example of what lies in store for Québec's economy and the devastating effects that will no doubt plague our public finances.

The aging of the population will of course have many consequences on Québec's economy, and the repercussions will be felt on many levels. The huge efforts companies will have to make to adapt—with expansion threatened by a slumping domestic market and a scarcity of qualified workers—are bound to have a profound impact on Québec's economy. But the main challenge will be the state of Québec's public finances.

The Scandinavian countries that reached a financial impasse had to revise their social and economic policies to pull themselves out of a slump. Québec will have to do as much, sooner or later. It bears noting that previous major deficits forced the Québec government to make drastic budget cuts in the second half of the 1990s, following the adoption of the

anti-deficit act. This time, the after-effects of this recession and growing increases in government spending, especially on health and education, are already compromising the balanced budget expected in fiscal 2013-2014. Health and education take up about two-thirds of all program spending. With the greying of the population set to exert pressure on health and education expenses, which could rise even further due to the mini baby boom seen in Québec these past few years, the government could quickly find itself backed into a corner. If no change in direction occurs, the budgets allocated to other government departments will have to be cut, at least in real terms.

And since the province was unable to build up sufficient budgetary leeway during the last expansion period, the demographic shock on our public finances will be brutal and the social benefits Québécois currently enjoy will feel the impact. An inescapable wave of reforms is on the horizon, more painful than the changes enacted in the last decade by the Bouchard government in Québec and by Martin as the Finance Minister in Ottawa. In the context of an aging population, fiscal reforms to cut income taxes while increasing consumption taxes could be tabled. A lighter tax burden for workers would help halt the brain drain, as we will need our best and brightest in the years to come. It would also be timely to redefine the role of the State, which would allow Québécois to preserve certain social benefits and help them live more within their means. That said, some sacred cows will have to be sacrificed to reduce the size of the debt and especially lighten the load for the younger generations.

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¹ See the *Economic Viewpoint* "Québec's economy: The adverse effects of demographic shock are looming. It is important to act now to soften the impact on the labour market," August 13, 2008.

² According to the Institut de la statistique du Québec, baby-boomers represent those born between 1946 and 1966.

³ Desjardins Entreprises "Pénurie de main-d'oeuvre : crie-t-on au loup?", Spring 2007.

⁴ Trudel, Jonathan. *L'actualité*, October 15, 2007, "La Suède : un modèle pour le Québec?."

⁵ The Congress of the United States, CBO's Method for Estimating Potential Output: An Update, August 2001, available online at <http://www.cbo.gov/ftpdocs/30xx/doc3020/PotentialOutput.pdf>.

⁶ Giorno, Claude et al. *OECD Journal: Economic Studies* No. 24, "Potential output, output gaps and structural budget balances," 1995, p. 179-204.

⁷ St-Amant, Pierre and Van Norden, Simon. Measurement of the Output Gap: A Discussion of Recent Research at the Bank of Canada, Technical Report No. 79, Bank of Canada, August 1997.

⁸ Québec government, "Impacts des changements démographiques sur l'économie, le marché du travail et les finances publiques," February 2005.