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# Has Quebec's Standard of Living Been Catching Up?

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## Introduction

David Slater has always been a great inspiration for me. His concern has been that economists should strive to connect deep theoretical thinking with practical affairs and public policy. This is an old view of the role of the economist in society, one that Maynard Keynes, in particular, carried to its highest accomplishment in the twentieth century. It is an old view not in the sense of being passé, but of being a firmly established and ever relevant view of what our profession is about. I get comfort in seeing the best and brightest among our colleagues still advise governments, work for governments and even engage in politics. In my generation, Olivier Blanchard, Willem Buiter, Stan Fischer, Pedro Malan, John McCallum and Larry Summers are good examples to watch.

Speaking of Keynes, David remained inspiringly Keynesian through the 1970s and 1980s, when conservative ideology came to dominate thinking in economic theory and policy and Keynes was repeatedly pronounced dead. I am referring to Friedman's monetarism, to Lucas' equilibrium business cycles based on price misperceptions and to Prescott's real business cycles based on productivity shocks. Conservative macroeconomics eventually petered out both on empirical grounds and against the counterattacks of New Keynesians such as Akerlof, Blanchard, Grandmont and Stiglitz. As Paul Krugman (1994, p. 197) nicely put it, Keynes has proved to be the "Energizer Bunny" of

economics. Greenspan's brand of success at the helm of the U.S. Federal Reserve owes almost everything to Keynes, and almost nothing to the conservative icons of those two dark decades. David had it right all along. His common sense helped many of us weather the passing storm.

David has also been helpful in a more personal way by inviting me to be a member of the Economic Council of Canada in 1985, and a member of the Board of Directors of the Centre for the Study of Living Standards in 1995. He has even guided my judgement in the preparation of this short paper. My understanding of the regional implications of Canadian military expenditures during the Second World War, which I explain below, owes much to his deep knowledge of wartime public finance (Slater, 1995).

## **Unsolved Mysteries**

My subject is Quebec's relative growth performance since World War II. In his seminal 1971 contribution to the study of Canadian regional growth from Confederation to 1956, Alan Green stated: "In spite of its high degree of industrialization coupled with its locational advantages, Quebec has remained consistently below the national average and below that of its neighbour, Ontario. Why this divergence in Quebec and why its persistence are still largely unsolved mysteries" (Green, 1971, p. 44). He ended his study by emphasizing again: "A search for answers to this problem would seem imperative" (Green, 1971, p. 68).

The question raised by Green about Quebec is the primary motivation for this paper. While, mainly due to paucity of data, I will not answer his question about the province's lack of economic convergence towards Ontario before the 1960s, I will nevertheless show that a solid convergence process was at long last underway at the very moment Green's book appeared in the early 1970s. There is also another motivation behind this paper. In the last three years, two popular books by Jean-Luc Migué (1998) and Gilles Paquet (1999) and a widely-quoted policy paper by Marcel Boyer (2001) have produced very negative assessments of Quebec's post-Quiet Revolution economic performance. All three essays are motivated by various political agendas. I will not discuss them in detail, but essentially "do my thing". It will be clear from the empirical results I report that I am more sanguine about Quebec's economic performance and prospects than those authors are. The key difference between my view and theirs is that, where they see an empty glass, I see it as already half-full and still filling.

## The Bottom Line

It is an easy matter to show that the Quiet Revolution (QR) has been accompanied by faster per capita economic growth in Quebec than in Ontario. The summary evidence is presented in Figure 1. The figure provides a “difference in differences” picture of the trend in Quebec’s real domestic income per capita *as a percentage* of Ontario’s back to 1926.<sup>1</sup> The long-term picture is clear. From the late 1920s to the late 1950s, there was decline and stagnation in Quebec’s relative standard of living — exactly as observed by Green. Beginning at 78 per cent of Ontario under Taschereau in the late 1920s, Quebec’s relative position ended the 1950s at 74 per cent of its neighbour under the Duplessis regime. Conversely, in the last 40 years the standard-of-living gap between Quebec and Ontario has shrunk. It fell to 14 per cent in 1999 from 26 per cent in 1960. This translates into an average gap-narrowing rate of 1.8 per cent per year over the last four decades. By international historical standards, this is neither slow nor rapid convergence, but just average speed (see Barro and Sala-i-Martin, 1999). Migué (1998) has recently stated that Quebec did relatively well in the pre-QR period, and characterizes the post-QR period as one of relative economic decline and stagnation for the province.<sup>2</sup> Figure 1 shows that the exact opposite is true:

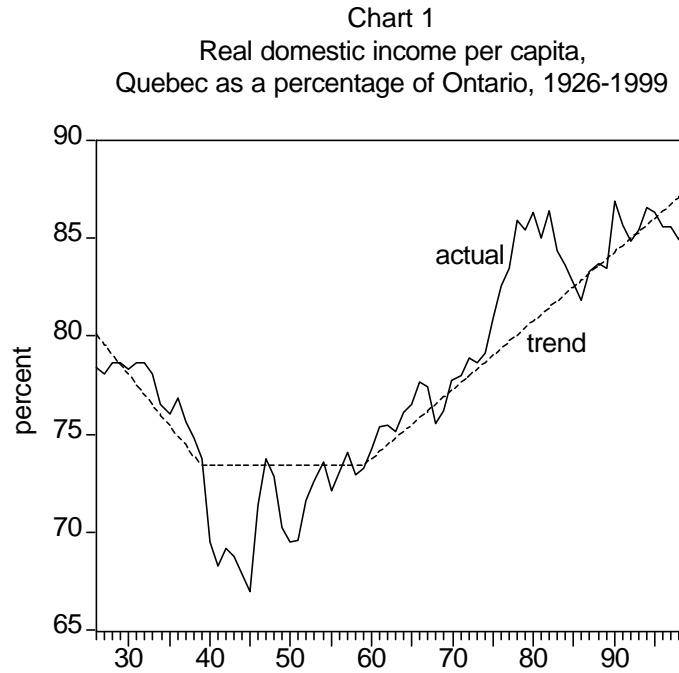
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<sup>1</sup>Real domestic income per capita is calculated as the linked series for provincial personal income less government transfer payments to persons (for 1926–1961) and gross domestic product (for 1961–2000) divided by the total population and the consumer price index (CPI) for Montreal or Toronto. The CPI ratio between Quebec and Ontario is multiplied by the factor 0.972, reflecting estimated purchasing power parity in the base year 1992.

<sup>2</sup>Migué states that pre-QR per capita growth in Quebec was “parallel” to Ontario growth. He does not realize that this defines exactly the nature of the pre-QR problem raised by Green: lack of convergence before 1960. He omits looking at the entire 1926–60 and 1960–99 periods, but instead selects sample periods, such as 1946–58 or 1994–98, that (perhaps inadvertently) suit his argument. In making interprovincial comparisons, he sometimes neglects deflating aggregate activity by population. He compares investment, productivity and employment trends across provinces without paying attention to widely different population growth rates. He often emphasizes remaining gaps between Quebec and Ontario, but does not report whether those gaps have been widening or narrowing.

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**Figure 1: Real Domestic Income Per Capita,  
Quebec as a percentage of Ontario, 1926–1999**



Source: Statistics Canada and author's calculations.

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it is the earlier period that was one of decline and stagnation, and the more recent period that has been one of relative growth and catch-up. QED.

This does not end the discussion, however. First, two important anomalies must be recognized and explained: the sharp drop between 1939 and 1945, and the big bubble of 1975–85. Second, the sources of the long-term convergence since the late 1950s must be identified and understood. And third, the prospects for a continuation of convergence in the future must be assessed.

## **First Anomaly: The Second World War**

The first of the two anomalies is the big drop in the standard-of-living ratio between Quebec and Ontario during the Second World War, which can be seen in Figure 1. The ratio dropped sharply from 74 per cent in 1939 to 67 per cent in 1945, and then suddenly climbed back to 74 per cent in 1947. The likely explanation is the regional pattern of military expenditures during the war, which turned out to be highly skewed against Quebec. Military pay was about \$3 million each in Quebec, Ontario and the rest of the country in 1938. By 1945, it had increased to around \$100 million in Quebec and \$500 million each in Ontario and the rest of Canada. Compared to a proportional sharing of military pay according to regional population, this constituted a major redistributive shock amounting to 10 per cent of Quebec's personal income. This is more than enough to explain the relative drop of the Quebec economy during the war. Quebec men paid very dearly for their reluctance to enrol in the armed forces. The lack of data by province makes it difficult to say anything about the regional distribution of other war expenditures and the regional concentration of the military-industrial complex.

Another temporary drop in Quebec's relative economic performance occurred from 1948 to 1951. This remains a puzzle. Confirming the picture in Figure 1 at the manufacturing level, Raynauld (1961, Table 26) reports that the ratio of manufacturing value-added per employee between Quebec and Ontario fell sharply from an average of 92 per cent in 1943–46 to 85 per cent in 1948–51. This was clearly not caused by a similar regional distortion of military pay during the Korean War. Such a distortion simply did not occur. Another candidate for an explanation would be some regional unbalance resulting from C.D. Howe's postwar reconstruction policies. It is not known whether these factors can account for the 1948–51 drop, or the persistent lack of convergence of Quebec's productivity towards Ontario's for the rest of the 1950s.

## **Second Anomaly: The Big Bubble of 1975–85**

The second anomaly that stands out in Figure 1 is the big bubble in Quebec's relative performance that took place between 1975 and 1985. Over the four years, 1975–78, Quebec's real income per capita shot up from 79 per cent to 86 per cent of Ontario's. It stayed at about this level over the next four years

until 1982, and then receded to around 83 per cent by 1985. Understanding what happened in this period is key to interpreting the long-term trend correctly. Does the fact that in 1999 Quebec's income, at 86 per cent of Ontario's, was no higher than in 1978 imply that the 20-year period, 1979–99, was one of relative stagnation for the province, as argued by Boyer (2001), for example? Or should the entire period 1975–85 be, for some reason, considered as an outlier, and the 1986–99 period seen as a return to the pre-existing, long-term trend established before 1975?

The big push of 1975–78 was first underlined by Gérard Bélanger (1980) and further analyzed by Paul Davenport (1981). Both authors pointed out that faster labour productivity growth in Quebec than in Ontario was the main factor behind Quebec's startling relative income performance in that four-year period. It then looked as if Quebec had escaped the worldwide slowdown in productivity that had begun around 1973. This is supported by Figure 2, which shows that Quebec's labour productivity increased from 89 per cent of Ontario's in 1974 to 98 per cent in 1978. The Quebec-Ontario ratio stayed around this level over the next three years, and then peaked at 101 per cent in 1982. Then, over the next 17 years, Quebec's relative productivity trended down, reaching 93 per cent in 1999.<sup>3</sup>

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<sup>3</sup>Labour productivity is calculated as real gross domestic product (GDP) divided by employment from the *Labour Force Survey*. The Quebec-Ontario real GDP ratio is obtained through division of the Quebec-Ontario nominal GDP ratio by the Quebec-Ontario CPI ratio adjusted for purchasing power parity. To the extent that the interprovincial CPI ratio differs from the interprovincial ratio of implicit GDP deflators, the resulting statistic is not *true* relative labour productivity, but the product of true relative labour productivity and relative terms of trade (where, by a slight abuse of language, “terms of trade” is taken to mean the ratio between the implicit GDP deflator and the CPI). In 1954–60, GDP is replaced by personal income.

Bélanger and Davenport had two opposite conjectures to interpret the 1975–78 development. Bélanger thought relative productivity was high because relative real wages were high. Davenport thought relative real wages were high because relative productivity was high. We all know, of course, that labour productivity and real wages are closely connected endogenous variables that reflect interactive firm and employee behaviour. This is borne out by a comparison of Figure 2 with Figure 3, which traces relative wage trends back to 1961.<sup>4</sup> Relative labour productivity and relative real wages tend to follow broadly similar time paths through much short-term wandering.<sup>5</sup>

With the benefit of hindsight, it seems that Bélanger's conjecture was the correct one. The supporting evidence is both qualitative and quantitative. The qualitative evidence is historical. The mid- to late 1970s were years of extreme tension in Quebec's labour markets and labour relations. A large number of major construction projects were proceeding simultaneously (the James Bay Project, the Montreal Olympics, the Mirabel Airport, the Montreal Metro, etc.). Very generous wage settlements were granted in the provincial public sector in 1975 and 1979. There was civil disobedience, union leaders were thrown in prison, the La Grande Dam construction site was sacked, a provincial task force was commissioned to investigate corruption and violence in the construction industry, and the province by far led the country — if not the world — for the annual number of days lost per worker due to labour conflicts. Labour reforms were very favourable to the union side, social policy was expanding rapidly, and the provincial minimum wage reached almost 60 per cent of the average wage. These developments are entirely consistent with the wage explosion that occurred in 1975–78, was sustained until 1982, and momentarily brought average weekly earnings in Quebec to *exceed* those in Ontario in both nominal and real terms (Figure 3).

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<sup>4</sup>Average real weekly earnings are calculated as average weekly earnings divided by the CPI adjusted for purchasing power parity. Deflation by the CPI instead of the implicit GDP deflator justifies the same note of caution as for the definition of relative labour productivity. There is a break in the average weekly earnings series in 1983, when coverage was broadened to cover the public sector and firms of smaller sizes. The old and the new series are linked in that year.

<sup>5</sup>The two curves should not be expected to coincide in any given region. There is much short-term wandering, measurement error could be significant, and the degree of competition in product and labour markets as well as the technological-organizational connection between labour and output can differ significantly across regions.

**Figure 2: Labour Productivity (real GDP per worker)  
Quebec as a percentage of Ontario, 1946–1999**

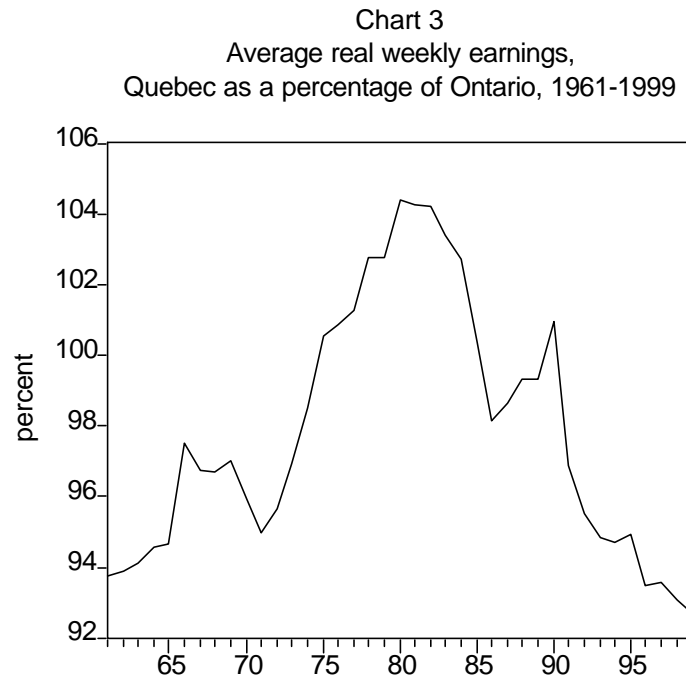


Source: Statistics Canada and author's

Source: Statistics Canada and author's calculations.



**Figure 3: Average Real Weekly Earnings,  
Quebec as a percentage of Ontario, 1961–1999**



Source: Statistics Canada and author's calculations.

Source: Statistics Canada and author's calculations.

The quantitative evidence is based on the identifying behaviour of the employment rate, the profit share and the capital-labour ratio. First, Quebec's employment rate dropped sharply from 90 per cent of Ontario's in 1975 to 85 per cent in 1982 (see Figure 4).<sup>6</sup> Second, the corporate profit share in Quebec plummeted from 93 per cent of its Ontario counterpart in 1961–73 to 72 per cent in 1981–86, once the effects of the wage explosion could no longer be

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<sup>6</sup>The employment rate of the working-age population is the fraction of that population who are employed. For 1946–66, the working-age population is defined as the population aged 14 and over. For 1966–2000, it is the population aged 15 and over. The two series are linked in 1966.

masked by the pre-1981 cyclical expansion (see Figure 5).<sup>7</sup> Third, consistent with the slump in relative profits, Quebec's capital-labour ratio stopped rising as a percentage of Ontario's and began to decline after reaching its peak in 1982 (see Figure 6).<sup>8</sup> The crucial point is that in each case the medium-term trend is consistent with the occurrence of a relative wage push, and just the opposite of what one would expect from a favourable relative productivity shock. The latter would have been accompanied by *increases* in relative employment, profit share and capital-labour intensity (see Blanchard, 2000, among others). The focus on the *medium-term* trend is crucial here. Owing to the large ongoing investment projects, the cyclical expansion was much stronger in Quebec than in Ontario in the second half of the 1970s. The extent of disequilibrium introduced by the wage explosion was therefore hidden for a while.

The Bélanger hypothesis on the role played by exogenous institutional and policy developments can be extended to interpret post-1982 trends in productivity and wages, which both headed downward. Again, the evidence is historical-qualitative and quantitative. Historically, it can be argued that the 1982 recession, which was much more devastating in Quebec than in Ontario, became a sort of “day of reckoning” for the union movement and the

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<sup>7</sup>The corporate profit share is equal to corporate profits before taxes as a share of net domestic income.

<sup>8</sup>The capital-labour ratio is the capital stock per person employed. It is defined as net non-residential private and public capital stock in constant 1992 dollars divided by total employment. The capital stock is depreciated through the (infinite) geometric depreciation method. No adjustment for purchasing power parity is made.

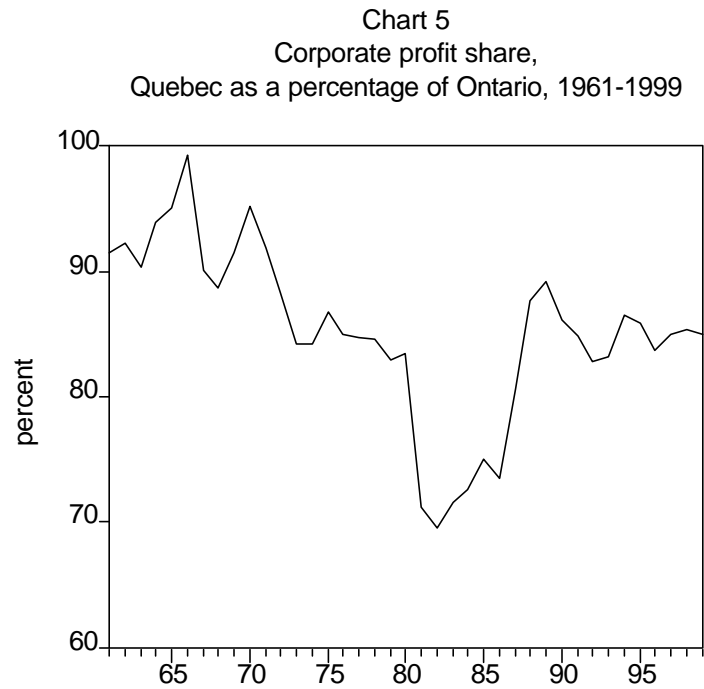
**Figure 4: Employment Rate of the Working-age Population, Quebec as a percentage of Ontario, 1946–2000**



Source: Statistics Canada and author's

Source: Statistics Canada and author's calculations.

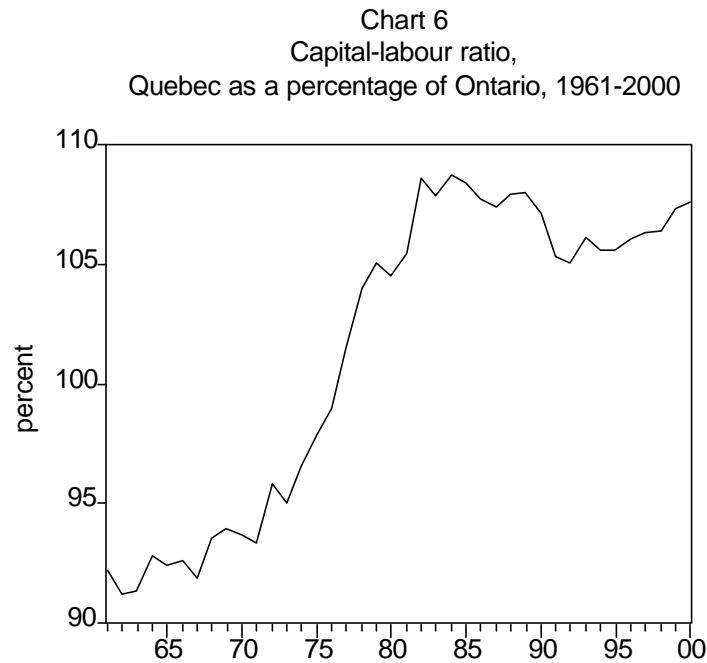
**Figure 5: Corporate Profit Share,  
Quebec as a percentage of Ontario, 1961–1999**



Source: Statistics Canada and author's calculations.

Source: Statistics Canada and author's calculations.

**Figure 6: Capital-Labour Ratio,  
Quebec as a percentage of Ontario, 1961–2000**



Source: Statistics Canada and author's calculations.

Source: Statistics Canada and author's calculations.

provincial government. The right to strike was severely restricted by the *Essential Services Act*, the 1983 public sector bargaining round brought a stinging defeat for unions with spillovers to the private sector, rank-and-file members began to require unions to focus less on wage increases and more on job security, labour conflicts suddenly became less frequent and shorter in Quebec than in Ontario, the Solidarity Fund of the Quebec Federation of Labour became an important supplier of venture capital, social policy became more prudent, and the provincial minimum wage was frozen for an extended period. Somewhat like the Netherlands after 1982 and Ireland after 1987, Quebec after 1982 entered a prolonged period of wage moderation and peaceful labour relations. Simultaneously, it seems that wages and labour relations in Ontario came under stress under the Peterson and Rae govern-

ments, which reinforced the downward trend in the Quebec-Ontario real wage ratio.

The quantitative evidence is also consistent with the hypothesis that declining relative wages caused declining relative productivity after 1982, instead of the reverse. Again, the identifying variables are the employment rate, the profit share and the capital-labour ratio. There were favourable turnarounds in all three variables. First, Quebec's relative employment rate stopped declining and began to increase right after 1982. From 85 per cent in that year, the Quebec-Ontario employment-rate ratio rose to 92 per cent in the second half of the 1990s (Figure 4). This is two points higher than the 1961–74 pre-wage explosion average of 90 per cent. Figure 7 brings additional supporting evidence from unemployment behaviour. The average unemployment-rate gap between the two provinces rose from 2.2 points in 1965–76 to four points in 1977–90. It then declined again to 2.7 points in 1991–2000.<sup>9</sup> Second, beginning in the second half of the 1980s, the Quebec income share of corporate profits regained much of the ground lost previously against Ontario. Starting from 74 per cent in 1986, the ratio of profit shares eventually came to exceed 85 per cent in 1989. It has hovered around that level through the 1990s (Figure 5). Third, Quebec's relative capital-labour ratio finally stopped declining in 1992. Since then, it has trended upward slightly (Figure 6).

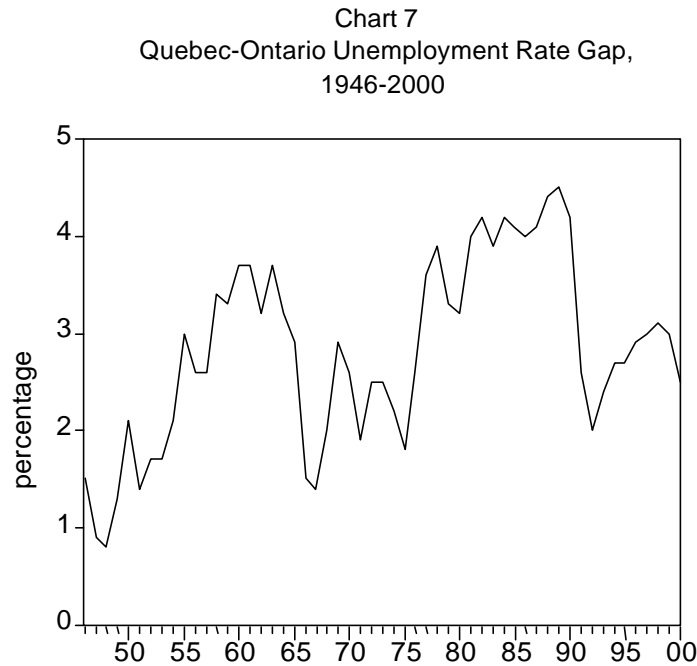
Let me summarize the argument. The “second anomaly” in Quebec's global economic performance since 1926 took the form of a temporary bubble above trend for relative income per capita around 1975–85 (see Figure 1). The proposed story is one of strong cyclical expansion accompanied by a wage explosion in the second half of the 1970s, and followed by a return to wage moderation after the 1982 recession. The wage explosion was a major economic disturbance, but its deleterious effects on employment, profits and capital formation were temporarily hidden by the short-term expansion until the recession struck in 1982. The depth of the recession forced the union movement and the provincial government to finally acknowledge the damage. At that point, they realized that a return to wage moderation and improved labour relations was essential for a recovery of employment, profitability and capital formation. Winding down the wage excesses of the 1970s was a long process. It took until the 1990s before employment, profits and capital intensity were really back on track, relatively speaking. The Quebec economy was much better prepared to weather the 1991 recession than the 1982

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<sup>9</sup>The unemployment rate of the labour force is the number of persons who want to work but are without jobs expressed as a fraction of all those who want to work.

recession. In fact, contrary to much of what could be read at the time in the national press (including horrifying tales of Sainte-Catherine Street being literally shut down), employment took a much

**Figure 7: Quebec-Ontario Unemployment Rate Gap, 1946–2000**



Source: Statistics Canada and author's

Source: Statistics Canada and author's calculations.

smaller hit in Quebec than Ontario during the 1991 recession and its aftermath.

A blind focus on the 20 years of observations, 1979–1999, in Figure 1 would seem to imply that this entire period was one of relative stagnation for Quebec. This is a mistaken view. The key implication of the discussion has been that there was a major wage explosion in the second half of the 1970s, which was later repaired by persistent wage moderation in the 1980s and 1990s. This means that the entire period, 1975–85, should be, for this reason,

considered as an outlier involving a major, but temporary bubble in relative performance. In this interpretation, the Quebec economy after 1985 should be seen as reverting to its pre-1975 rising long-term relative trend, shown as a dotted line in Figure 1.

## Accounting for Convergence Since 1960

Let us now return to the bottom line. Quebec's real domestic income per capita increased from 74 per cent of Ontario's in 1960 to 86 per cent in 1999. In log points, this means exactly half of the initial Quebec-Ontario gap was closed in four decades.<sup>10</sup> To better understand this development, it is instructive to decompose real income per capita into its three sources: productivity, employment and demographics. There are indeed three ways for a population to get richer: producing more per worker, putting more adults to work, and making less babies. In pure accounting terms, this follows from the canonical decomposition:

$$Y/N = (Y/E)(E/A)(A/N) ,$$

where  $Y$  = real GDP,  $E$  = employment,  $A$  = working-age population,  $N$  = total population. The three ratios are:  $Y/E$  = labour productivity,  $E/A$  = employment rate, and  $A/N$  = working-age ratio (the percentage of the total population who are of working age). Let us examine, in reverse order, how each ratio has contributed to the gap-narrowing process.

First, beginning in the early 1960s, the baby-boomers began to enter the working-age population in large numbers. They also made a lot less babies than their parents. The baby boom was followed by a baby bust. With more persons of working age and fewer children to feed, the working-age ratio  $A/N$  increased. This gave an automatic upward lift to income per capita  $Y/N$ . The demographic windfall was more pronounced in Quebec than in Ontario because Quebec's fertility rate started at a higher level and landed at a lower level than Ontario's. Figure 8 shows that Quebec's working-age ratio rose swiftly from 92 per cent of Ontario's in the mid-1950s to 101 per cent in the late 1970s.<sup>11</sup> It has stayed around this level ever since. A not-insignificant 35

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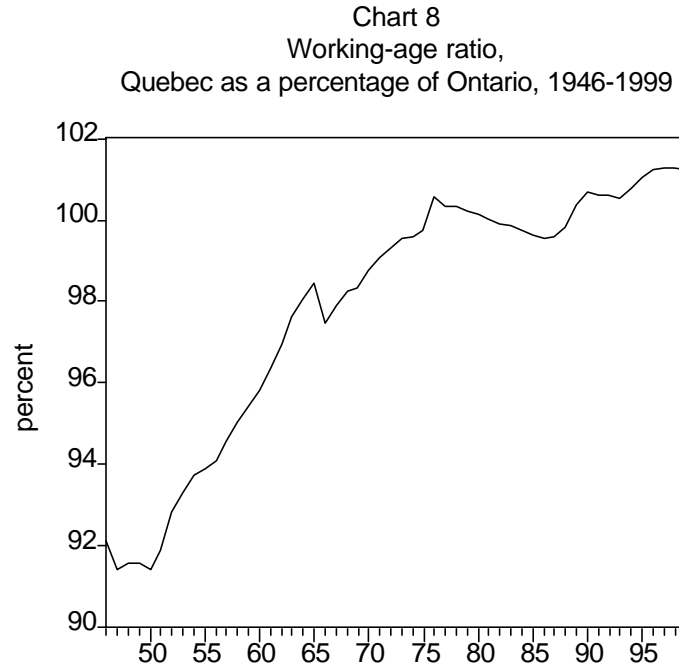
<sup>10</sup>Since  $[\log(.74)]/[\log(.86)] = 0.501$ .

<sup>11</sup>The working-age ratio expresses the population aged 14 and over (in 1946–65) or 15 and over (1966–99) as a percentage of the total population.



per cent of the 1960–99 increase in Quebec’s relative income per capita can be attributed to this demographic shift.

**Figure 8: Working-Age Ratio,  
Quebec as a percentage of Ontario, 1946–1999**



Source: Statistics Canada and author's calculations.

Source: Statistics Canada and author's calculations.

Making fewer babies is not the most glorious way to increase a region's standard of living, but it is an inevitable mathematical consequence. It is also a temporary one. The phenomenon will reverse itself when the baby-boomers begin to retire in large numbers around 2010. Less adults to work will tend to slow down Quebec's income growth. Moreover, the province will be harder hit by this reversal because it will age more rapidly than other regions.

Second, the trend in Quebec's relative employment rate (the E/N ratio), already reported in Figure 4, initially deteriorated from 1953 to 1960. This development owes much to the fact that women's labour force participation

began to increase much later in Quebec than Ontario, but is also due to the better performance of the job market in Ontario, as underlined by the rise in the unemployment-rate gap between the two provinces in that period. Except for the spike around Expo 67, the next 15 years until 1974 witnessed some stability in the Quebec-Ontario employment-rate ratio, at around 90 per cent. Then came the big drop to 85 per cent in 1982, followed by the recovery to 92 per cent up to the second half of the 1990s, which I have already linked to the wage explosion of 1975–78 and the post-1982 climate of wage moderation.<sup>12</sup> Rising educational standards and the concomitant catch-up in the labour force participation rate of Quebec women were also important movers of the relative employment rate in the last two decades.

On net between 1960 and 1999, the increase in Quebec's relative employment rate was less than two points — from 90 per cent to 91.5 per cent. The four-decade contribution of the rise in relative employment to narrowing the income gap with Ontario is therefore small — about 10 per cent. However, that contribution has been of major significance in the more recent, post-1982 period. It has been strong enough to more than offset the downward adjustment in relative labour productivity (Figure 2) and allow relative real income per capita to continue to rise on trend after 1985 (Figure 1).

Relative labour productivity is the third factor that has contributed to the narrowing of the income gap. It has been responsible for the remaining 55 per cent of the process. It can be seen in Figure 2 that the Quebec-Ontario productivity ratio (which may also include a relative terms-of-trade element) increased from 86 per cent in 1960 to 93 per cent in 1999. This means the Quebec-Ontario productivity gap declined at the average rate of 2 per cent per year over the 39-year period, 1960–99. Again, this is neither slow nor fast by international historical standards (Barro and Sala-i-Martin, 1999). The growth in relative productivity has not always been smooth. Relative productivity increased rather smoothly from 83 per cent in 1954 to 89 per cent in 1974, then spiked at 101 per cent in 1982, and has since adjusted downward to 93 per cent in 1999. Just as in the case of relative employment, movements in relative productivity after 1974 can be related to the peculiar sequence of wage explosion and wage moderation observed in Quebec over the last quarter-century. One factor that has retarded the increase in relative

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<sup>12</sup>Due to its slow population growth, Quebec can see its employment rate increase faster than in other regions even if its share of national employment growth is smaller than its share of the Canadian population. This continues to cause much confusion about Quebec's relative employment situation in public and media discussions.

productivity is the emigration of hundreds of thousands of highly-skilled anglophones between 1960 and 1980. Since many of them settled in Ontario, this had the effect of both reducing productivity in Quebec and increasing it in Ontario.

## **Future Outlook**

What are the prospects for a continuation of convergence in the future? The demographic outlook is for stability in Quebec's working-age ratio relative to Ontario's. Further, there are no indications that the current social peace and good industrial relations are about to end. Hence, the future behaviour of productivity and employment will be the key determinant of relative economic convergence. In turn, this will depend on Quebec's relative propensity to save and to invest in education, infrastructures and equipment, and research and development. I now survey Quebec's performance in each of these three areas.

First, concerning education, Table 1 uses data from the Canadian census and the U.S. *Current Population Survey* compiled by Lemieux (1999) to compare schooling trends in Quebec, Ontario and the United States in 1991 for three cohorts of men born in 1926, 1946 and 1966. Quebec men born in 1926 spent almost two years less in school than Ontario men of the same generation. In fact, their level of schooling was *less* than black American men of the same age. The Quebec-Ontario schooling gap began to shrink with the cohort of men born in 1946. In this cohort, Quebec men averaged

**Table 1: Average Number of Years of Schooling in 1991 of Men Born in 1926, 1946 and 1966, Quebec, Ontario and the United States**

<i>Birth year</i>	<i>Region</i>			
	<i>Quebec</i>	<i>Ontario</i>	<i>United States</i>	
			<i>White Population</i>	<i>Black Population</i>
1926	9.0	10.9	12.1	9.4
1946	11.7	12.8	13.5	12.2
1966	14.0	13.9	12.9	12.7

Source: Lemieux (1999, p. 53).

about a year of schooling less than Ontario men. Incidentally, this constitutes evidence that the winds of change had already been blowing for a while in Quebec when the Quiet Revolution began “officially” in 1960. Eventually, the Quebec-Ontario gap was closed entirely with the generation born in 1966. Overall, from the 1926 cohort to the 1966 cohort, the average level of schooling increased by five years in Quebec and by three years in Ontario. In both provinces, years of schooling for the 1966 generation exceed the corresponding U.S. level by one year. Updates from Statistics Canada’s *Labour Force Survey* indicate that in the fall of 2000 school attendance among the 15–19 population was 85 per cent in Quebec and 86 per cent in Ontario. Among the 20–24 population, the figures were 40 per cent in Quebec and 42 per cent in Ontario. There seems to be already near-complete educational convergence among the younger generations of the two provinces.

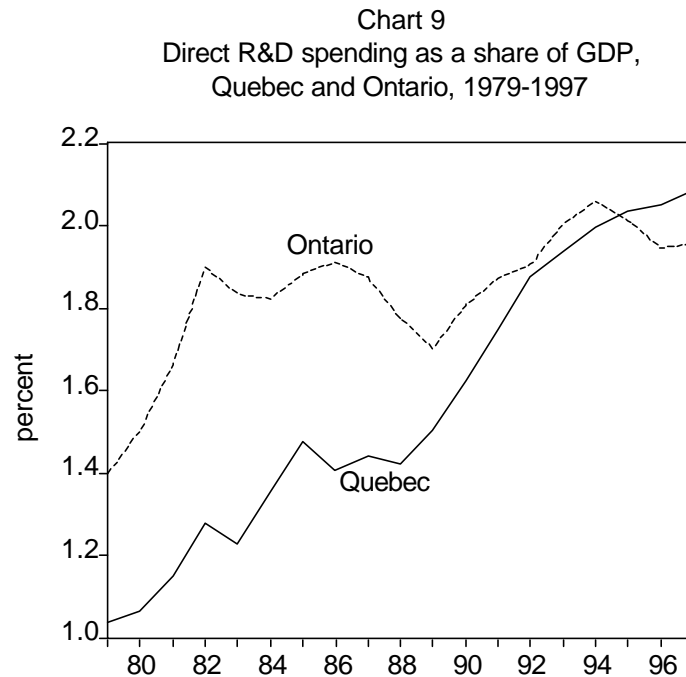
Given the close connection between education levels and the employment rate, the closing of the schooling gap between Quebec and Ontario since the 1950s must have played a major role in the turnaround of Quebec’s relative employment rate begun in the 1980s. Further, there should be more to come. As older, less educated generations are progressively replaced by younger, more educated generations, we should see the Quebec-Ontario employment-rate gap continue to shrink over the medium to long term. In 2000, for example, the employment rate for men aged 50 to 64 in Quebec was only 89 per cent of that in Ontario. But for men aged 30 to 49, the Quebec-Ontario ratio was 95 per cent. The same kind of cohort-based evidence is available

for the unemployment rate. In this case, the Quebec-Ontario gap was 3.8 percentage points for the 50–64 age group, and 2.5 points for the 30–49 group. This is indicative of future decreases in the interregional unemployment-rate gap. Of course, these are “other-things-equal” projections. The future should never be taken for granted. Much will depend on success in reducing illiteracy and dropout rates further and in improving the general quality of education.

The second area to look at is investment in infrastructures and equipment. Figure 6 can be interpreted as broad evidence that Quebec does not lag behind Ontario in equipping its labour force with non-residential productive capital. Quebec’s capital-labour ratio is relatively high, in particular due to heavy investment in hydro-electric dam sites in the 1960s and 1970s. The most worrisome trend here is that the investment-to-GDP ratio has trended down both provincially and nationally since the 1950s. The main challenge for the future is to redress the situation by adopting policies supportive of saving and investment, such as raising RRSP limits, incurring fiscal surpluses, shifting public expenditures towards infrastructure development, and making the tax and general economic environment more competitive.

The third and final sensitive area for growth is investment in reasearch and development. Regional data on direct R&D spending begin only in 1979. The available time series for Quebec and Ontario are graphed in Figure 9 as percentages of GDP. The evidence they provide is that direct spending on R&D as a percentage of GDP grew faster in Quebec than Ontario between 1979 and 1997. Quebec’s R&D spending-to-GDP ratio overtook Ontario’s beginning in 1995. This is rather impressive, given that all federal R&D spending made in Ottawa are included in the Ontario total. There is, in particular, a strong concentration of high-tech industries in the Montreal area, supported by favourable federal and provincial tax and grant policies. This bodes well for the future, although one wonders whether enough attention has been paid so far to encouraging the *diffusion* of domestic and foreign new technology across firms and industries, as opposed to generating new technological *innovations* domestically.

**Figure 9: Direct R&D Spending as a Share of GDP,  
Quebec and Ontario, 1979–1997**



Source: Statistics Canada and author's calculations.

Source: Statistics Canada and author's calculations.

If Quebec has already caught up with Ontario in education, infrastructures and equipment, and R&D spending, one must wonder why its real GDP per capita is still less than 90 per cent of Ontario's. Part of the answer lies in the very long gestation period required before the educational revolution filters through all age groups. Part also probably lies in in-complete technology diffusion. And, as suggested by the trend in Figure 5, business profitability in Quebec could still be insufficient. Little can be done about the first problem — only waiting for time to go by — but the last two need to be investigated and addressed.

## Conclusion

Thirty years ago, Alan Green (1971) wondered why Quebec had not been able to narrow the gap with Ontario's standard of living between Confederation and the mid-1950s. We still do not have a definitive answer to this question. But in this paper, I have reported evidence showing that the process of narrowing the gap did at long last begin to take place at the end of the 1950s, and was already making good progress at the time Green was writing.

In contrast, the pessimistic view has recently circulated that the Quebec economy was doing rather well before the Quiet Revolution, and has since gone through a period of stagnation and decline (Migué, 1998; Paquet, 1999; Boyer, 2001). I report evidence that shows the exact opposite is true. In terms of real income per capita, the Quebec economy was in relative decline from the late 1920s to the late 1950s, and has grown comparatively faster than the Ontario economy on average since the Quiet Revolution. Quebec's real income per capita increased from 74 per cent of Ontario's in 1960 to 86 per cent in 1999. Therefore, half of the standard-of-living gap between Quebec and Ontario observed by Green was closed over those 40 years.

By international historical standards, this is neither slow nor rapid convergence — just average speed. A standard decomposition of real income per capita into its canonical sources indicates that demographics, employment and productivity have all contributed on net to the narrowing of the Quebec-Ontario gap over the last four decades — for 35 per cent, 10 per cent and 55 per cent, respectively.

There have been major ups and down in the catch-up process. One anomaly is that Quebec's standard of living dropped sharply during the Second World War. This can be attributed to a major redistributive shock amounting to 10 per cent of Quebec's personal income. There was a huge distortion in the regional sharing of military pay, due to the reluctance of Quebec men to enrol in the armed forces.

Another anomaly is the big bubble in Quebec's relative performance that took place between 1975 and 1985. I have taken some time to show that both the qualitative and quantitative evidence point to a major wage explosion occurring in the second half of the 1970s. Its deleterious effects were initially masked by a strong cyclical expansion, but revealed clearly during the 1982 recession. After that recession, a prolonged period of wage moderation and more peaceful labour relations began, which has lasted up to this day. The 1986–99 period saw a return of Quebec's relative performance to the pre-existing, long-term trend established before 1975. This recent period has been

marked by a important recovery of employment, following the trough of 1982.

Prospects for a continuation of Quebec-Ontario convergence in the future are good, but nothing should be taken for granted. Quebec's investment performance in education, infrastructures and equipment, and research and development is not very different from Ontario's. Much will depend on success in reducing illiteracy and dropout rates further and improving the general quality of education. There is also progress to be made in the area of technology diffusion. Finally, business profitability in Quebec is still comparatively low. The province would benefit from various policies that would support saving and investment, such as raising RRSP limits, incurring fiscal surpluses, shifting public expenditures towards infrastructure development, and making the tax and general economic environment more competitive.

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