




# **OBSERVATIONS ON PROJECTED LONG- TERM REAL GAINS IN QUEBEC**

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"Real Earnings (RE) QPP"  $\subset$  Total Payroll  $\equiv$   
 "Salaries and Wages" portion of  
 aggregate of Total  
 Compensation (TC)  
 +  
 Self-Employment Income (SEI)  
 $\equiv$   
 portion treated as salaries and  
 wages in the aggregate of  
 unincorporated Individual  
 (farming and non-farming)  
 Business Income (IBI)

	TC	IBI	RE	AG	COT
Year 2001:	122.2	13.7	116.4	84.9	6.0

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- This presentation focuses mainly on the projection of the components of total compensation.
  - It is more difficult to project self-employment income, which is partly linked to unemployment and the underground economy.
  - Attention is focused on method.

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- Breakdown:  $RG \equiv S \cdot H$  ,

where  $S$  = average hourly wage

$H$  = annual hours worked

- The standard strategy is to predict  $S$  and  $H$  separately.
- This is a somewhat exaggerated simplification.

Predicting S:

$W \equiv \sigma^*(Y/H)*P$  , where

Y = "real" GDP (constant \$)

P = GDP price index

$\sigma \equiv (W.H)/(P.Y) \equiv RG/GDP$

Estimating H:

$H \equiv (H/E)*(E/N15+)*N15+$  , where

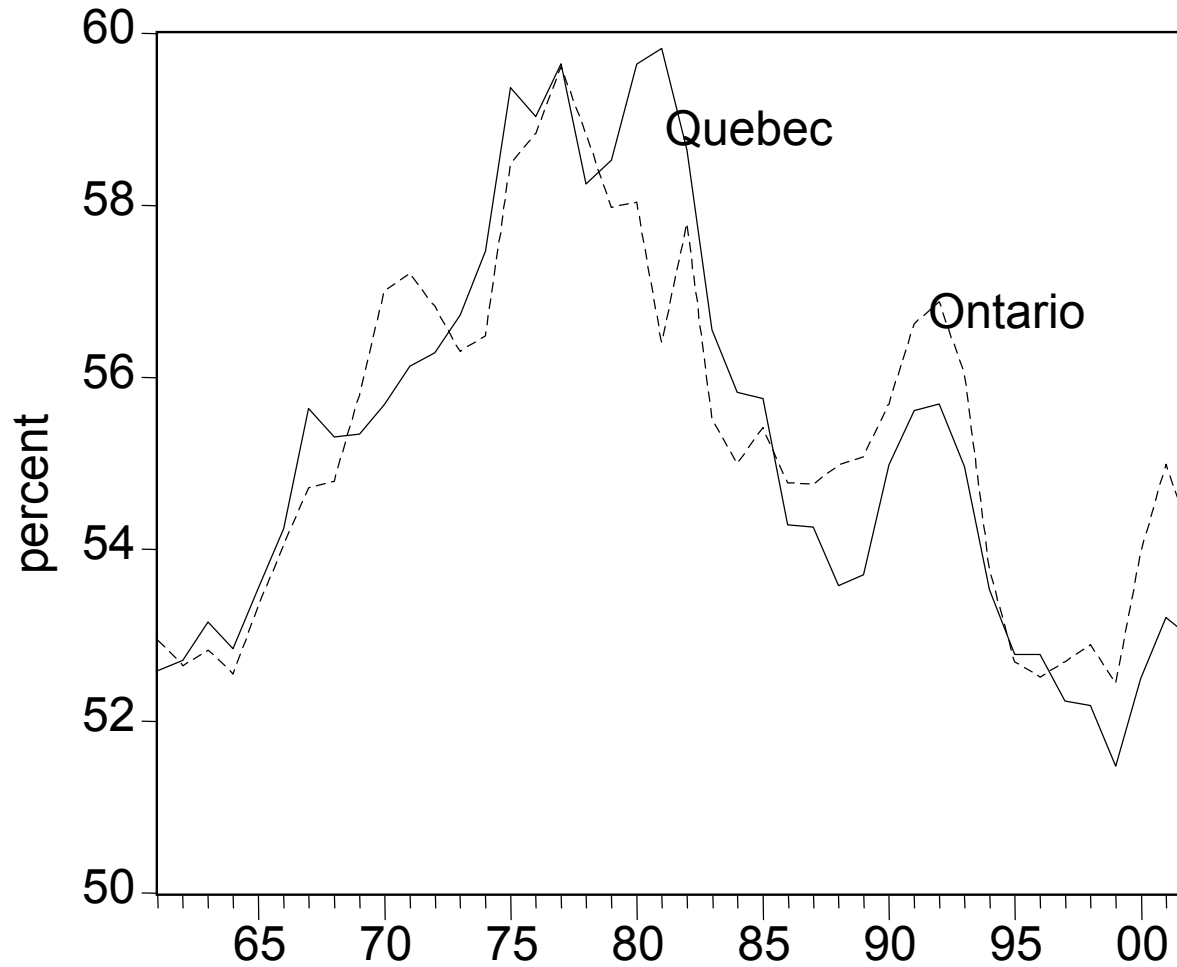
E = employment

N15+ = population aged 15 and over

There are therefore 6 variables to predict.


Take possible interactions into account.

Figure 1  
Employee Compensation/GDP  
Quebec and Ontario, 1961-2002



Source: Statistics Canada.

- The ratio  $\sigma = RG/GDP$  derives from technology, degree of monopoly, union power, indirect taxes, economic circumstances and other factors.
- In Quebec, that ratio increased from 53% in 1961-65 to a peak of 60% in 1975-81, and has fallen back to 53% since 1995. There has been an increase in gross benefits, self-employment and indirect taxes since 1981. The same is true in Ontario.
- Future: more stable around 53%-55% ?

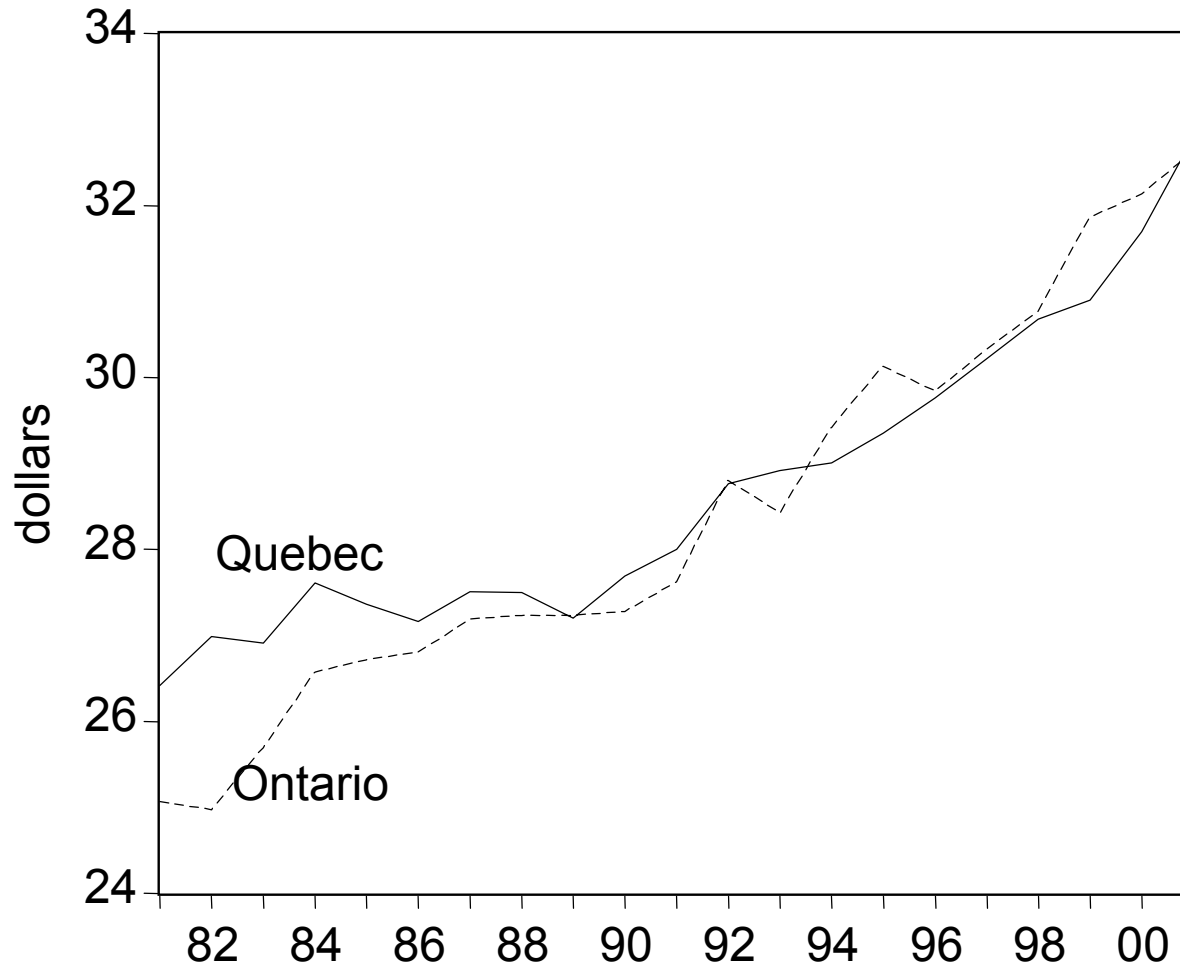
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- "Productivity of labour", or production per hour of work ( $Y/H$ ), is the product of two underlying factors: multifactor productivity ( $A$ ) and productive capital intensity ( $K/H$ ). In other words:

$$Y/H = A * F(K/H)$$

- The level of technology and labour organization have followed.
- $K/H$  follows profitability of investment in physical and human capital and the relative price of labour.



Figure 2  
Real GDP/hours of work (productivity)  
Quebec and Ontario, 1981-2001



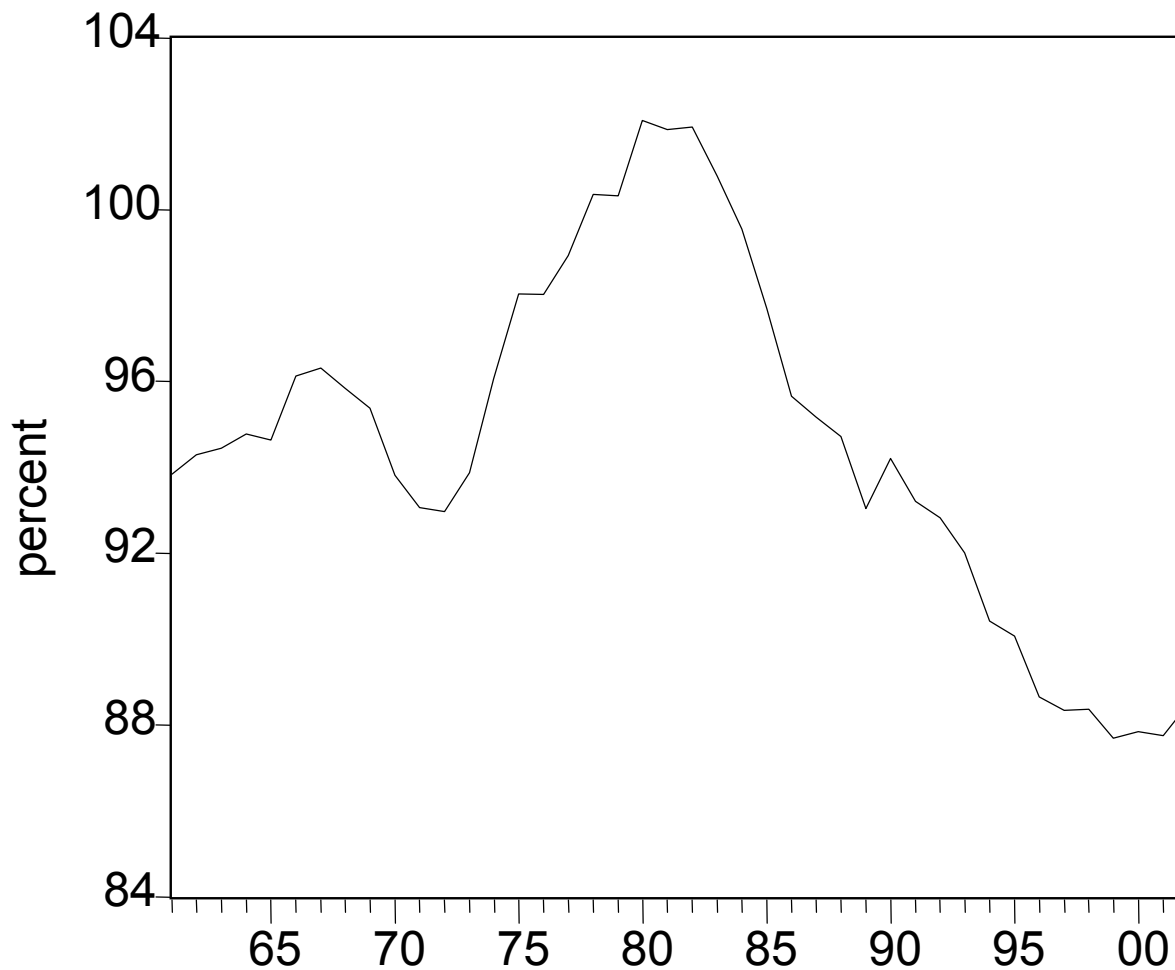
Source: Statistics Canada.

## Average annual rate of productivity growth (in %):

Period	Quebec	Ontario
1981-1989	1.09	1.33
1989-2001	1.58	1.52
Level in 2001	\$32.80	\$32.64

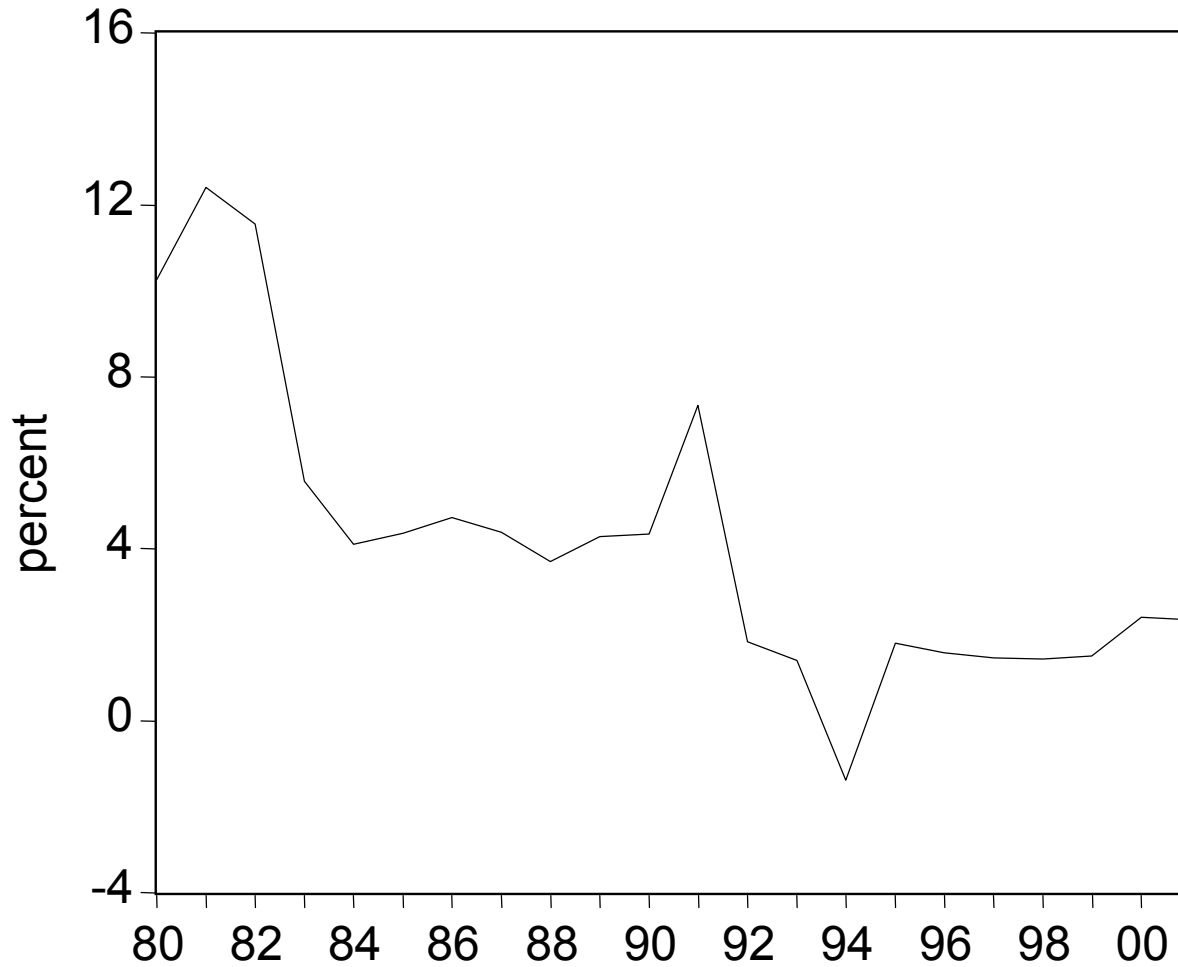
- 1) In Quebec, there was a drop in K/H relative to Ontario (as well as a decline in S; see Figure 3 below) in the 1980s as a result of a major change in direction of union policies.
- 2) There has been a notable increase in productivity in North America since the mid-1990s as a result of the revolution in information and communications technologies. Canada is in a phase of catching up to the United States.
- 3) The technological outlook is for a continuation of the higher productivity growth rates of recent years (see *International Productivity Observer*, spring 2003)
- 4) The main sources of technological progress are international, not local; as a result, local demographic changes should have little effect on productivity.

Figure 3  
Average weekly compensation,  
Quebec as a percentage of Ontario, 1961-2002



Source: Statistics Canada.

Figure 4  
CPI inflation rate  
Quebec, 1980-2001



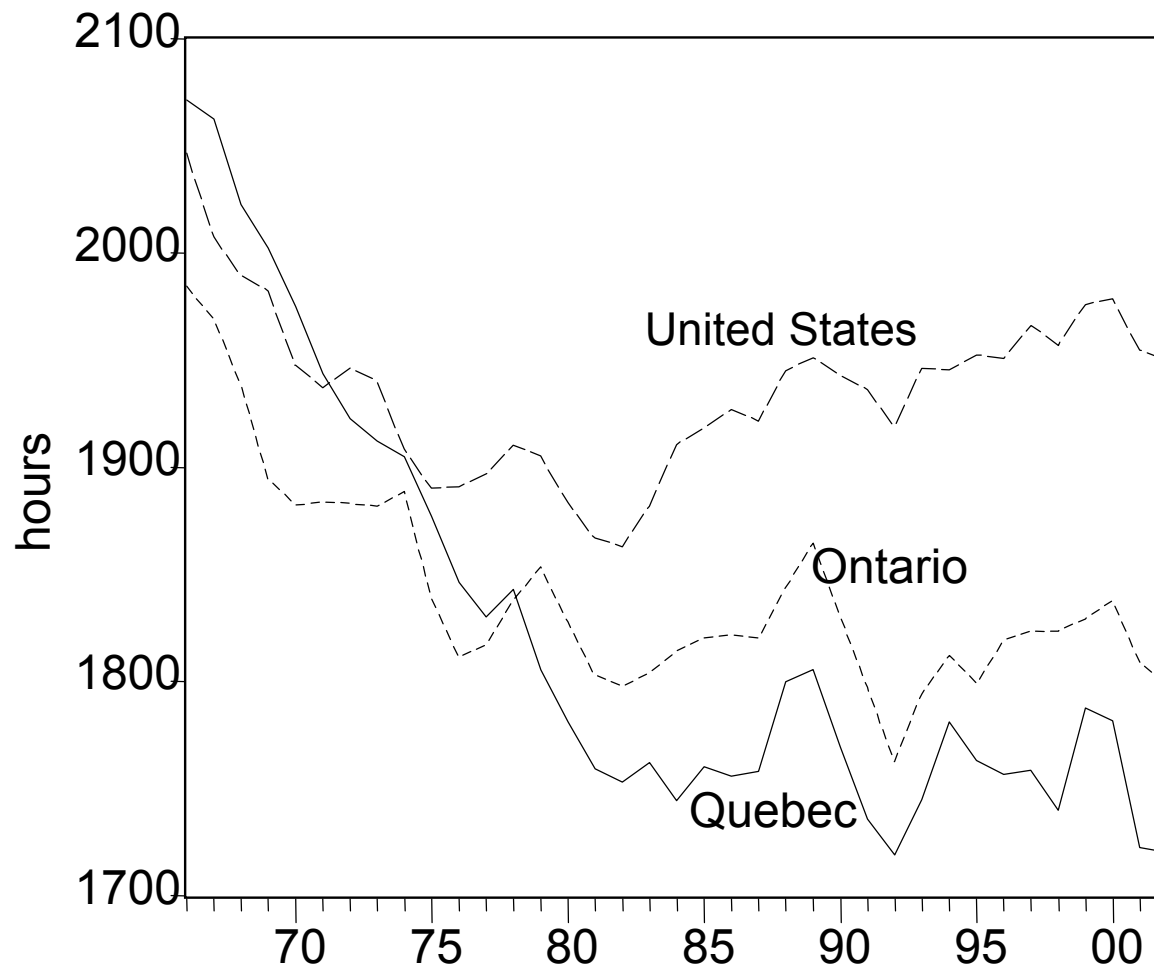
Source: Statistics Canada.

- 1) Since 1991, the official inflation control policy in Canada has been to maintain the inflation rate at 2%.
- 2) From 1991 to 2001, the average annual inflation rate in Quebec, based on the CPI, was 1.4%.
- 3) In May 2001, the Bank of Canada promised to act in a symmetrical fashion and to aim at 2%.

## Conclusion on S:

- 1) Over the long term, S/P could increase by 1.5% to 2% a year.
- 2) S should increase by 3.5% to 4% a year.

Figure 5  
Annual hours actually worked per employee  
United States, Ontario and Quebec, 1966-2002



Sources: Statistics Canada; US Bureau of Labor Statistics.




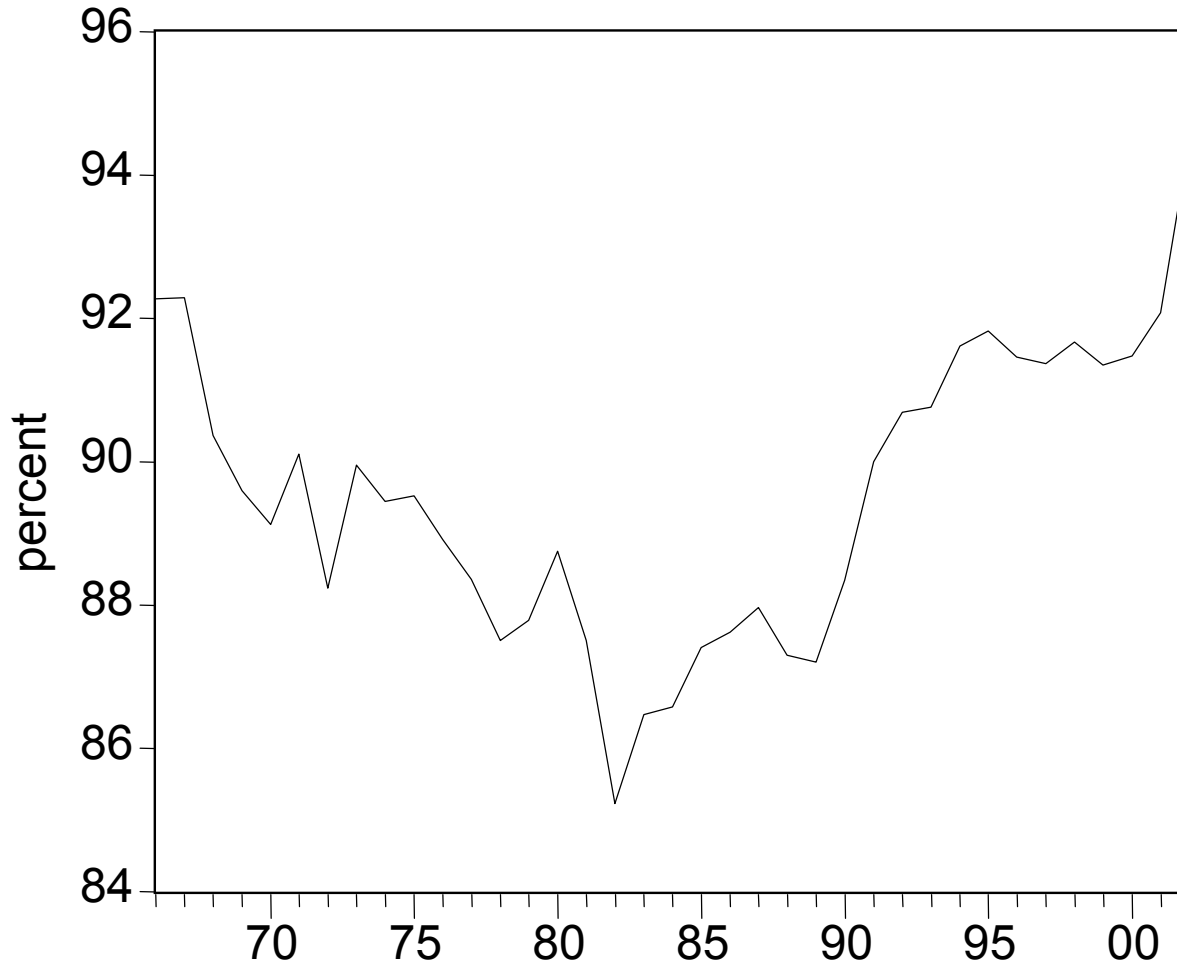


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- 1) From 1966 to 2002, the number of annual hours actually worked per employee in Quebec fell from the highest to the lowest in North America.
  - 2) Quebec has the most vacation and sick leave, the shortest normal work week and the earliest retirement in North America.
  - 3) The number of annual hours actually worked per employee in Quebec has been slightly more than 1,700 over the past decade. A gradual decline to 1,600 hours is possible, a rise to 1,800 unlikely.

Figure 6  
Employment rate for the population aged 15 and over  
Quebec as a percentage of Ontario, 1966-2002



Source: Statistics Canada.

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- 1) The sustained trend toward a narrowing gap between Quebec and Ontario since 1982 must be taken into account in projecting the employment rate for the population aged 15 and over. Quebec has been catching up in both labour force participation rate and unemployment rate.
  - 2) Quebec's employment rate (59.5% in 2002) has exceeded its previous 1989 peak. However, Ontario's employment rate (63% in 2002) is still far below its 1989 high.
  - 3) The female participation rate will continue to rise automatically as younger, more active cohorts replace those older and less active. However, the rise will slow down because the participation rate of young women will soon stop increasing.
  - 4) Increases in education levels will raise the employment rate.

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- 5) If the "average" demographic structure projected for 2025 is applied to Quebec's 2002 employment rates by age, the employment rate of the population aged 15 and over automatically falls by 13%.
  - 6) However, this decline in the supply of labour will be accompanied by a concomitant drop in labour demand.
  - 7) There will not be a general increase in wages because the central bank will keep inflation in check.
  - 8) That aging will result in higher relative wages for young people, skilled workers and others is a bold prediction.

## Conclusion on H/N15+:

- 1) H/E could decline slightly over the long term (for example, by 5% in 20 years).
- 2) E/N15+ will increase as a result of rising female participation, Quebec's catch-up and higher educational levels, but will be dragged down by aging. There could be a zero-sum result over the long term, but attention must be paid to the specific way in which these various factors are spread over time.