

# Seminar – RRO

Long-term economic outlook for Canada and  
Quebec

**Impact of globalization and the ageing of the  
population on the economy and financial markets**

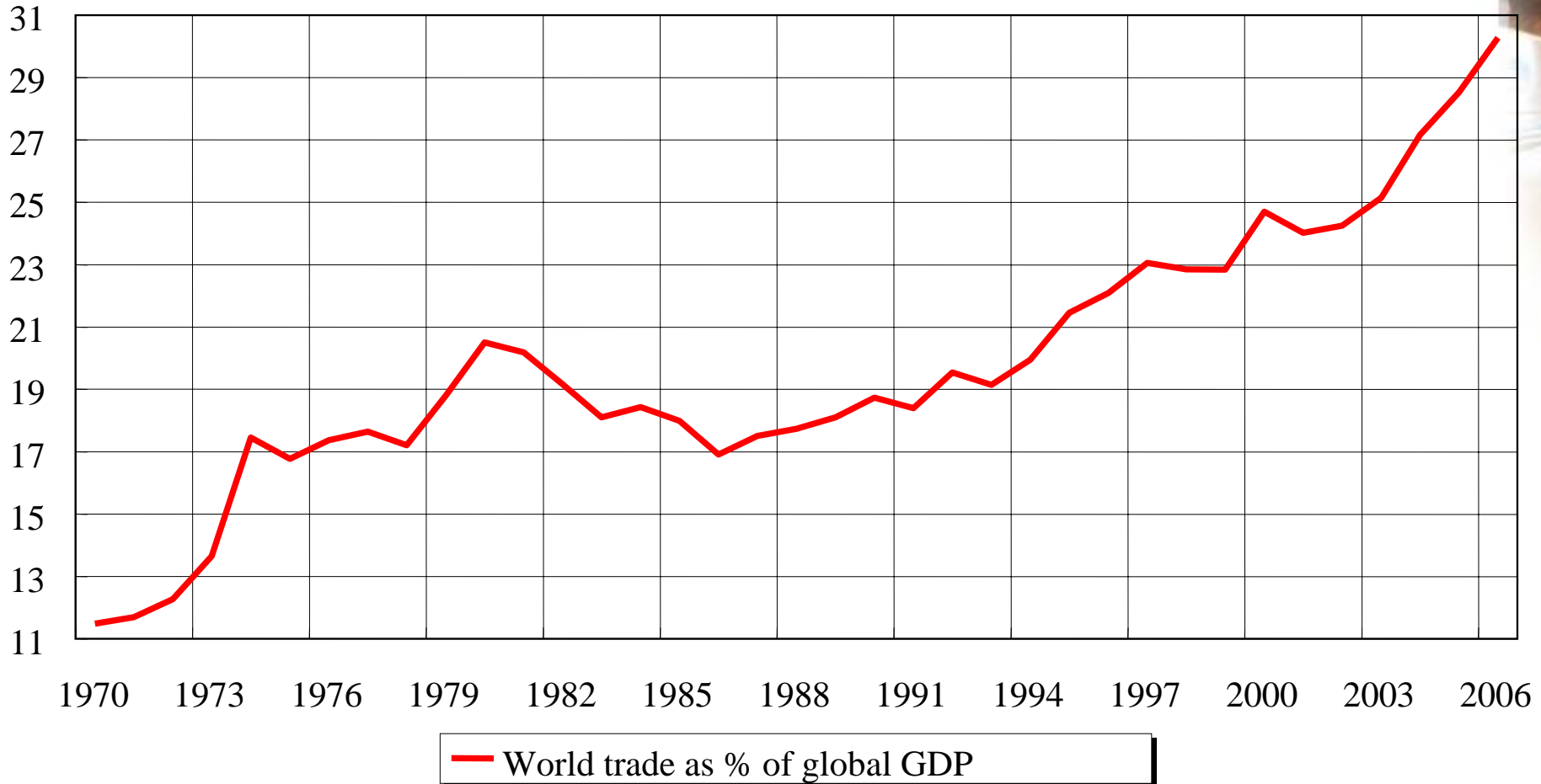
**Maurice N. Marchon**  
**Full Professor - HEC-Montréal**  
**September 22, 2006**

## Main themes of the presentation

- Impact of the BRIC (Brazil, Russia, India and China) on the global economy
- Implications for Canada and Quebec
- Outlook for real GDP and employment in Canada and Quebec
- Comments on economic assumptions
- Economic growth and stock market performance

*Graph 1*

The portion of trade in global GDP in American dollars has risen from 18.1% in 1989, to 20.4% in 1994 and to 30.3% in 2006



# Impact of BRIC on global economy

*Table 1*

**Size and rate of GDP growth in key countries**

|                               | 1993-2002                  | 2003-2006 | Nominal GDP <sup>1</sup> | % of global GDP <sup>1</sup> | % of global GDP <sup>2</sup> |
|-------------------------------|----------------------------|-----------|--------------------------|------------------------------|------------------------------|
|                               | Average annual growth rate |           | (billions \$US)          | to PPP                       | at current exchange rate     |
|                               | 10 yrs                     | 4 yrs     | 2005                     | 2005                         | 2005                         |
| Brazil                        | 2.9                        | 2.8       | 1577                     | 2.6                          | 1.8                          |
| Russia                        | -0.9                       | 6.8       | 1576                     | 2.6                          | 1.7                          |
| India                         | 5.8                        | 8.0       | 3633                     | 5.9                          | 1.7                          |
| China                         | 9.8                        | 10.1      | 9412                     | 15.4                         | 5.0                          |
| <b>Total BRIC</b>             |                            |           |                          | <b>26.5</b>                  | <b>10.3</b>                  |
| Canada                        | 3.5                        | 2.7       | 1105                     | 1.8                          | 2.5                          |
| <b>United States</b>          | 3.2                        | 3.3       | 12278                    | <b>20.1</b>                  | <b>28.1</b>                  |
| Japan                         | 0.9                        | 2.3       | 3911                     | 6.4                          | 10.3                         |
| Euro zone                     | 2.1                        | 1.7       | 8917                     | 15.0                         | 22.0                         |
| Global GDP <sup>1</sup> (PPP) | 3.6                        | 4.9       | <b>61028</b>             | 100.0                        |                              |
| Global GDP <sup>2</sup>       | 2.6                        | 3.5       | <b>44455</b>             |                              | 100.0                        |

<sup>1)</sup> GDP of countries and global GDP in \$US estimated at purchasing power parity .

<sup>2)</sup> GDP of countries and global GDP in \$US estimated at market exchange rate.

Source : WMF, World Economic Outlook Database, September 2006.

## Population included in global economy

Table 2.1

| <b>Today...</b>                                   |               |                             |
|---|---------------|-----------------------------|
|   | <b>2005</b>   |                             |
|   | (in millions) | (as % of global population) |
| <b>Global population</b>                          | <b>6451.1</b> |                             |
| Emerging countries (BRIC and others)              |               |                             |
| China   | 1306.3        | 20.2                        |
| India   | 1080.3        | 16.7                        |
| Brazil  | 186.1         | 2.9                         |
| Russia  | 143.4         | 2.2                         |
| <b>Total of BRIC</b>                              | <b>2716.1</b> | <b>42.1</b>                 |
| Vietnam   | 83.5          | 1.3                         |
| Turkey  | 69.7          | 1.1                         |
| Poland  | 38.6          | 0.6                         |
| Hungary   | 10.0          | 0.2                         |
| <b>Total of BRIC and other emerging countries</b> | <b>2917.9</b> | <b>45.2</b>                 |

## Population included in the global economy

Table 2.2

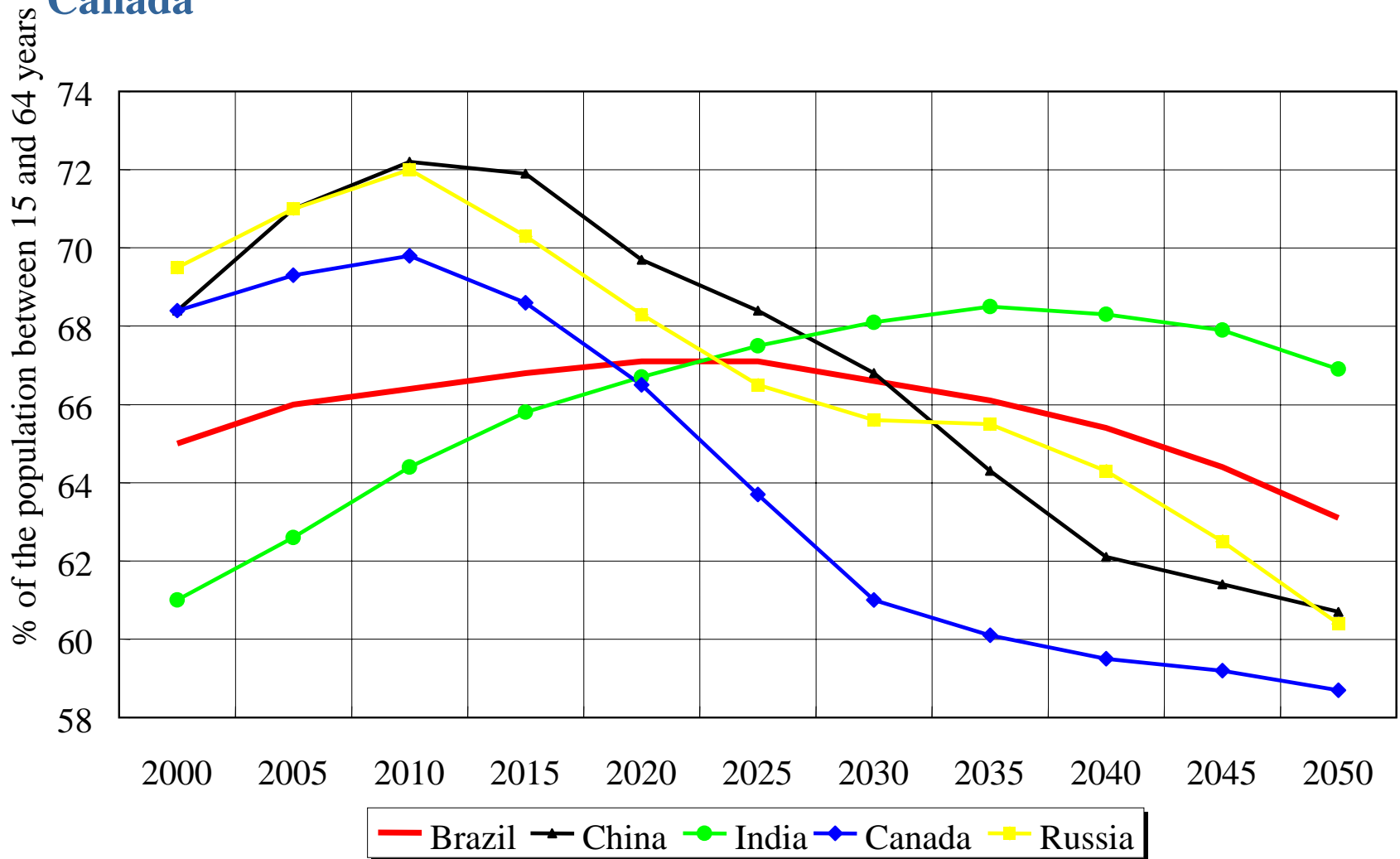
## ....in the 50s and 60s

|                                   | 1955          |                             |
|-----------------------------------|---------------|-----------------------------|
|                                   | (in millions) | (as % of global population) |
| <b>Global population</b>          | <b>2781.2</b> |                             |
| Emerging countries in 50s and 60s |               |                             |
| Japan                             | 89.8          | 3.2                         |
| South Korea                       | 21.6          | 0.8                         |
| Thailand                          | 23.5          | 0.8                         |
| Taiwan                            | 9.5           | 0.3                         |
| Malaysia                          | 7.3           | 0.3                         |
| Hong Kong                         | 2.5           | 0.1                         |
| <b>Total</b>                      | <b>154.1</b>  | <b>5.5</b>                  |



*Graph 2*

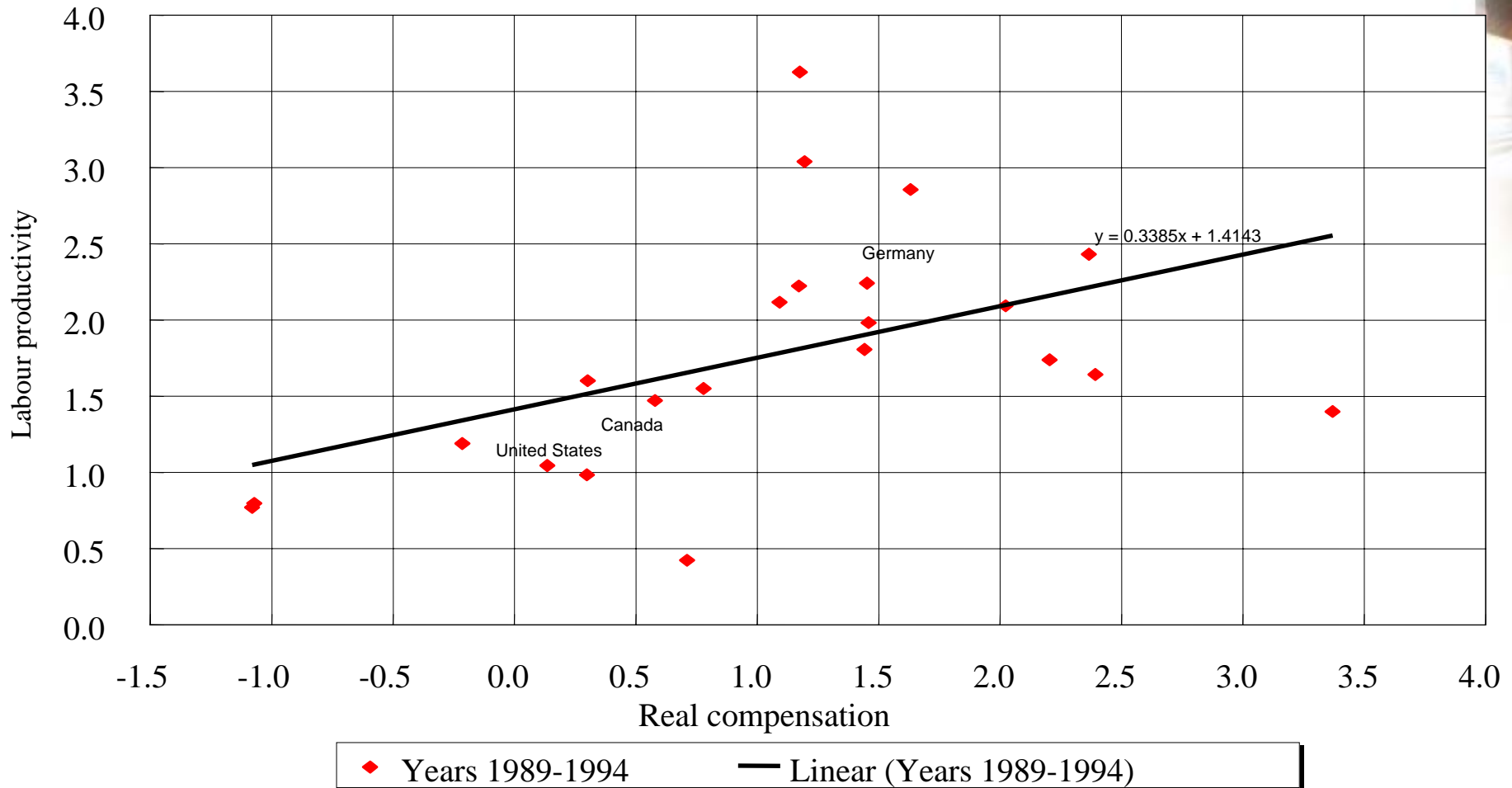
**Percentage of the population between 15 and 64 years in BRIC and Canada**



*Graph 3*

**Real compensation per employee and gains in productivity in the 22 countries of the OECD**

(average annual rate from 1989-1994)

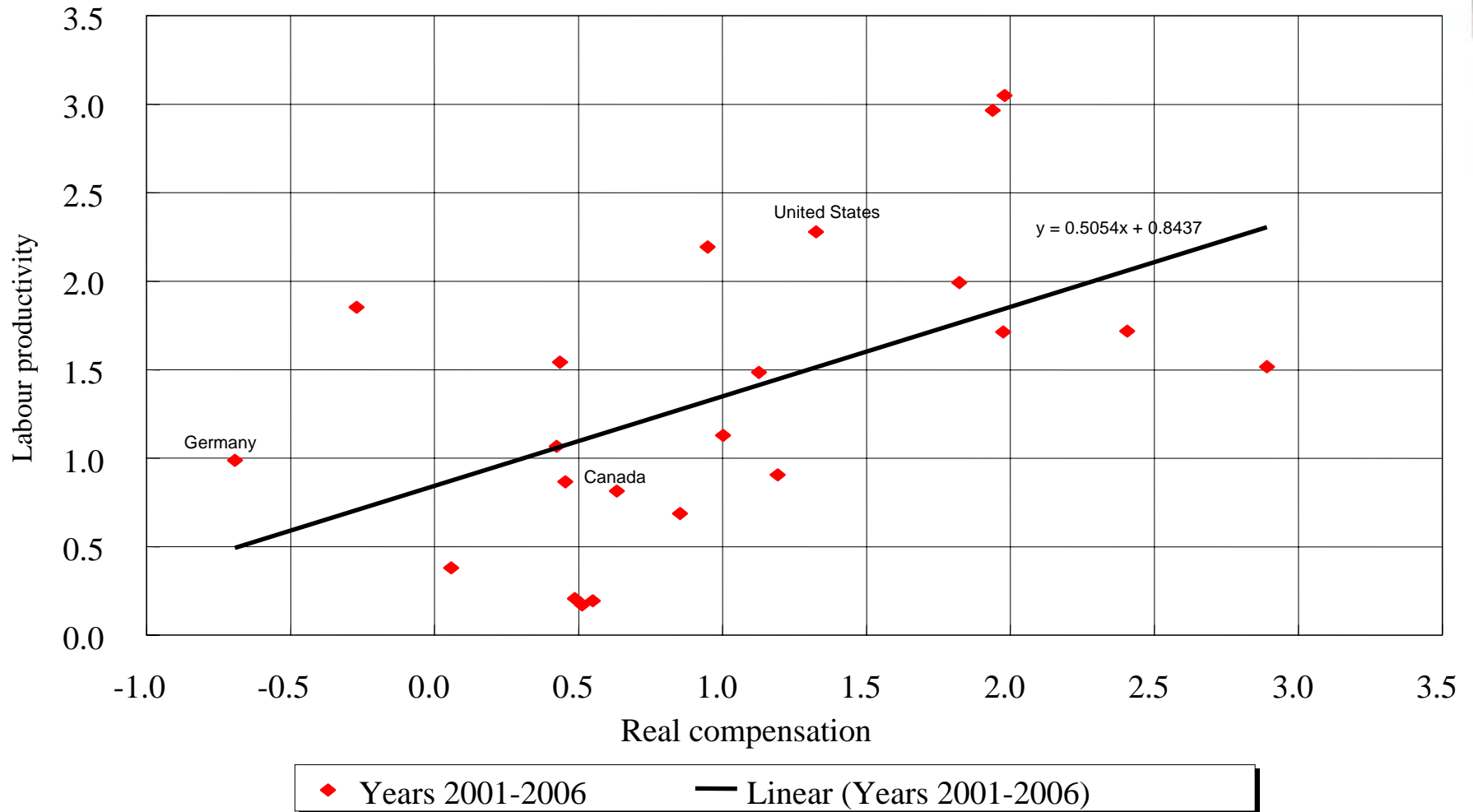




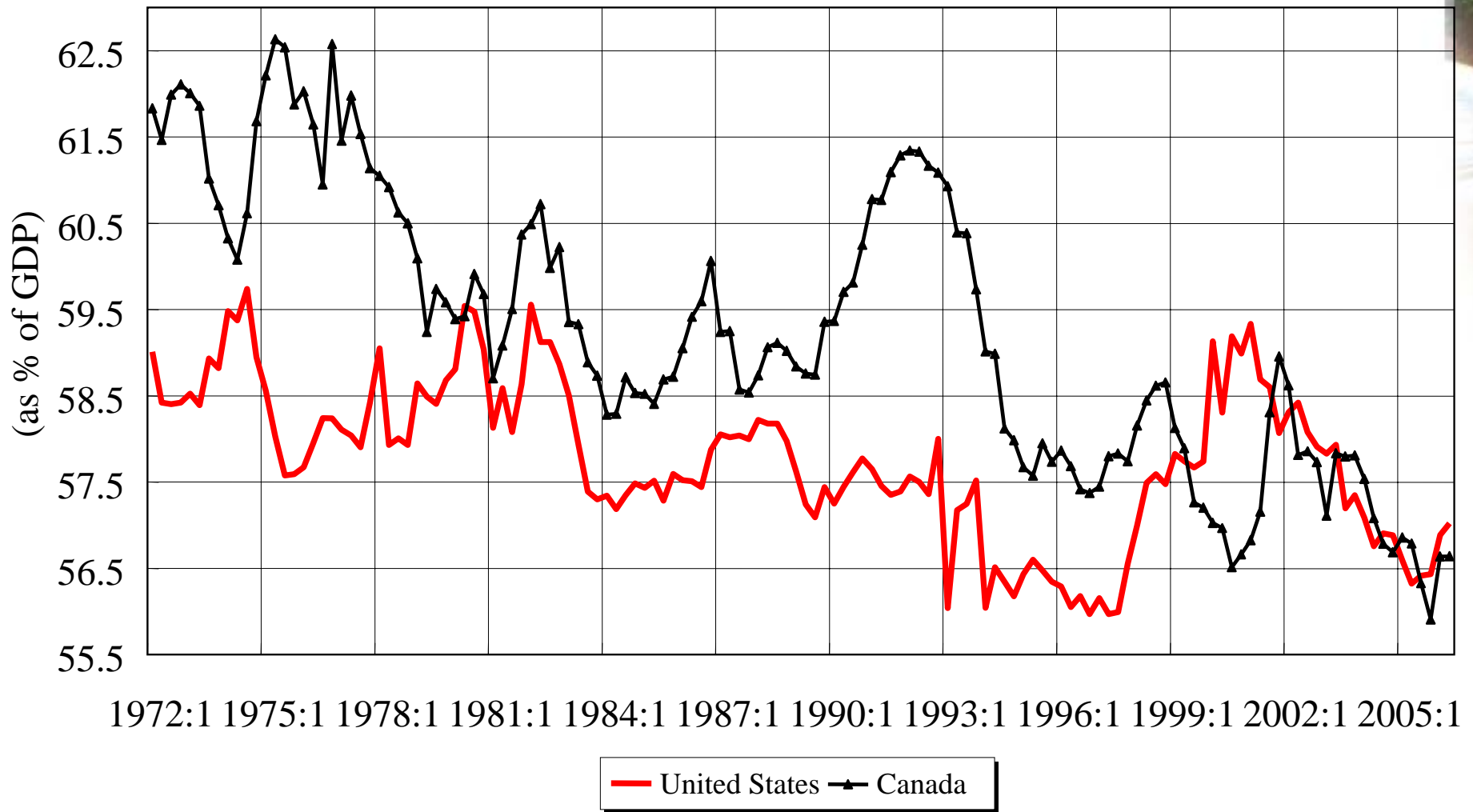
*Graph 5*

**Real compensation per employee and gains in productivity in the 22 countries of the OECD**

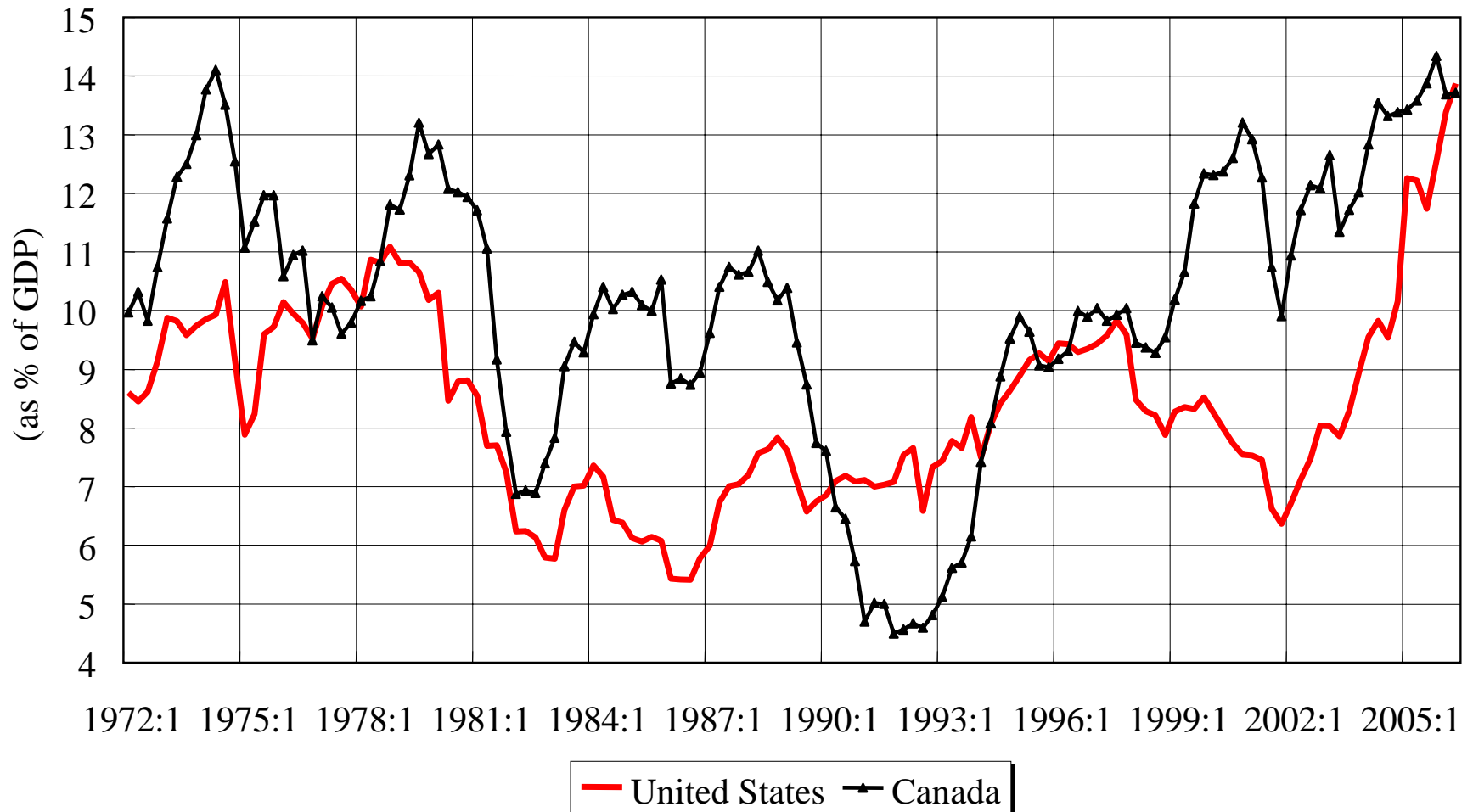
(average annual rate from 2001-2006)



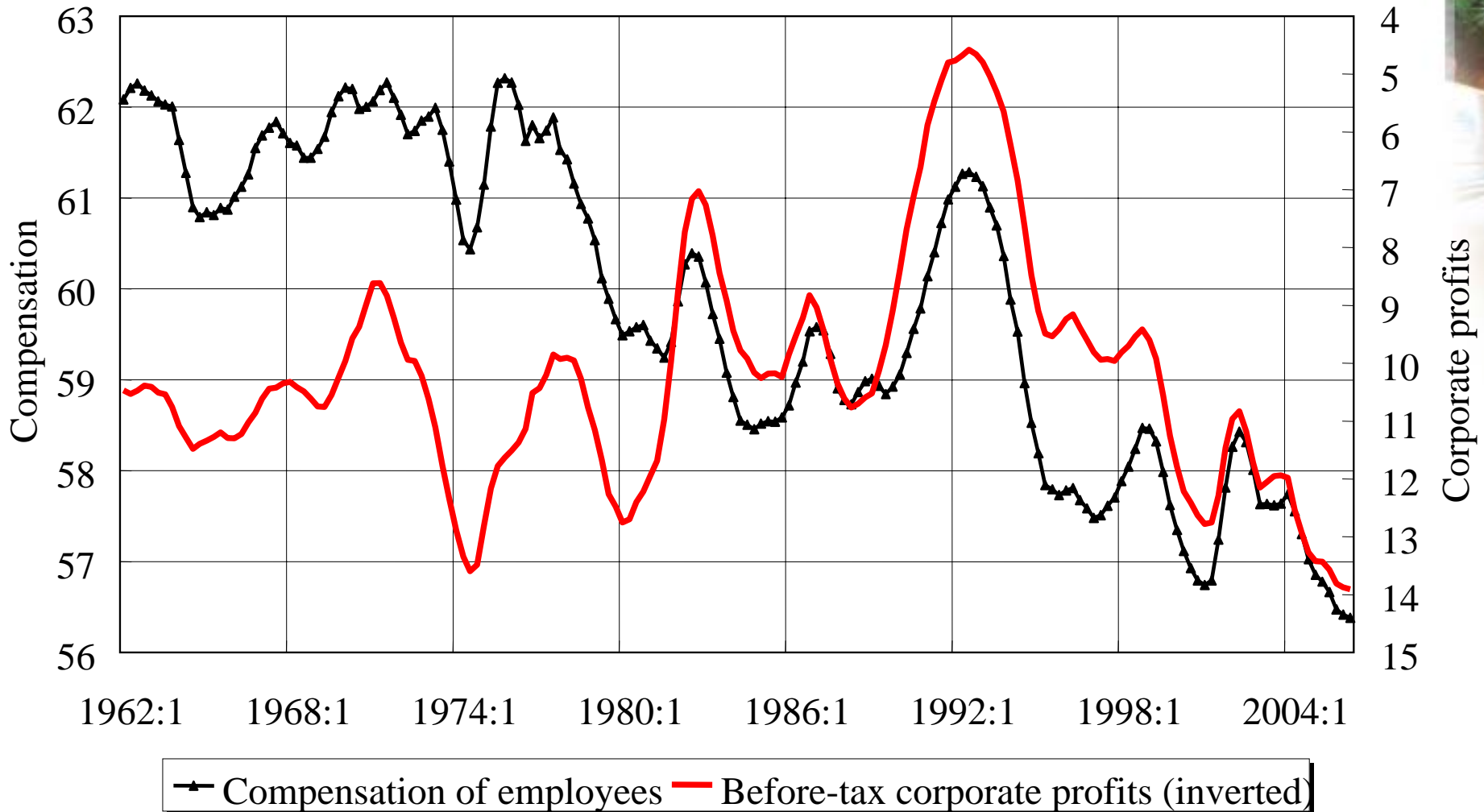
## Labour compensation as % of GDP in Canada and the United States from 1972 to 2006



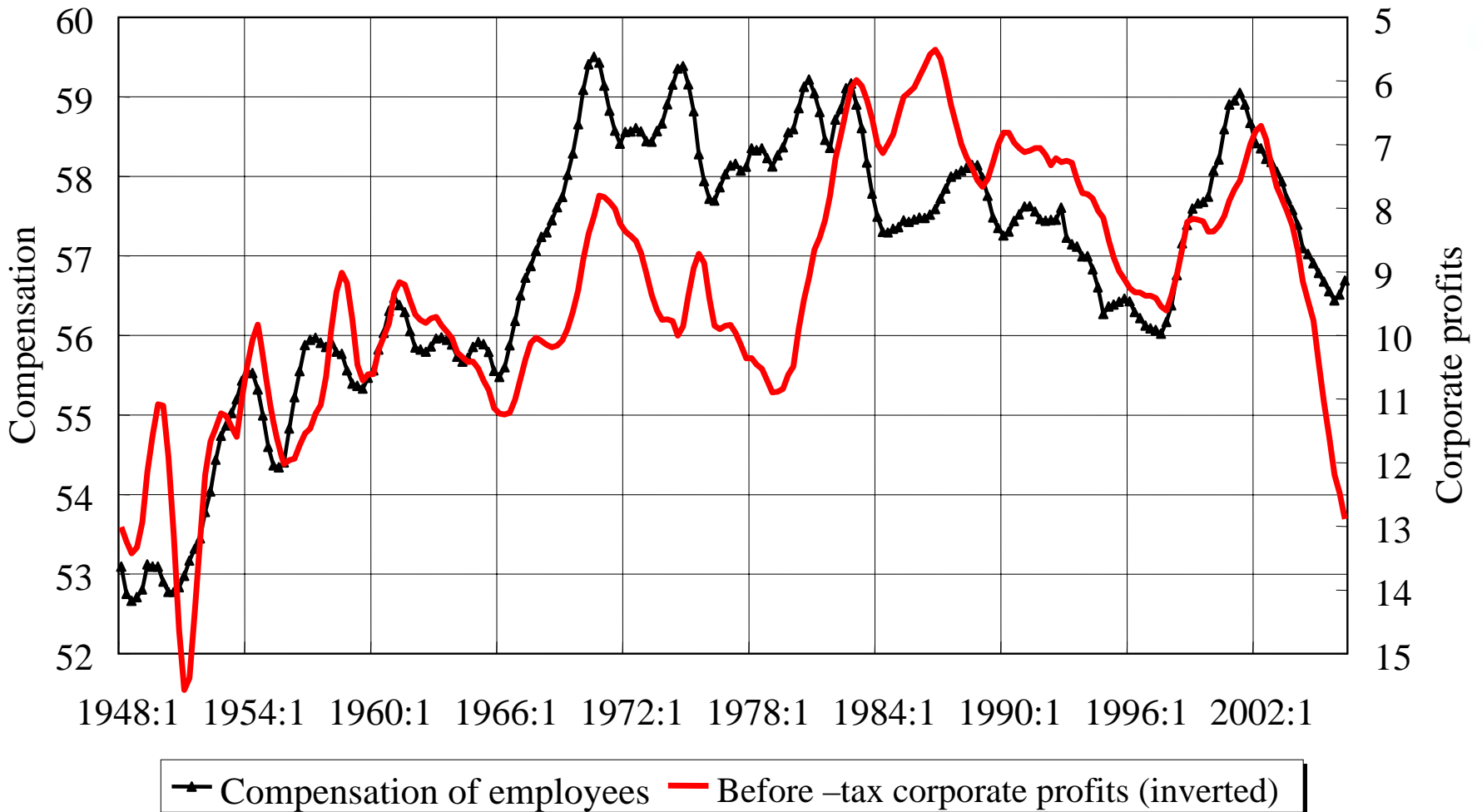
## Before-tax corporate profits as % of GDP in Canada and the United States from 1972 to 2006



## Labour compensation and corporate profits (inverted) as % of GDP in Canada from 1962 to 2006



## Labour compensation and corporate profits (inverted) as % of GDP in the United States from 1947 to 2006



## Productivity and real total compensation per hour worked in Canada in the last 9 years

(Average compound annual rate from 1998 to 2006)

|   | Labour productivity         | Real GDP   | Hours worked | Total comp. per hours worked |            |
|---|-----------------------------|------------|--------------|------------------------------|------------|
|   |                             |            |              | nominal                      | Real (CPI) |
|   | 1997.1 to 2006.2 (9.25 yrs) |            |              |                              |            |
| (Average compound annual rate of change)        |                             |            |              |                              |            |
| <b>The whole economy</b>                        | <b>1.5</b>                  | <b>3.4</b> | <b>1.9</b>   | <b>3.1</b>                   | <b>1.0</b> |
| <b>Business sector</b>                          | <b>1.6</b>                  | <b>3.7</b> | <b>2.1</b>   | <b>3.1</b>                   | <b>0.9</b> |
| <b>Business sector: Goods</b>                   | <b>1.9</b>                  | <b>2.9</b> | <b>1.0</b>   | <b>3.2</b>                   | <b>1.0</b> |
| Agriculture, forestry, fishing and hunting      | 3.4                         | 2.3        | -1.1         | 3.7                          | 1.6        |
| Construction                                    | 2.7                         | 5.3        | 2.6          | 3.7                          | 1.6        |
| Manufacturing                                   | 2.2                         | 2.9        | 0.7          | 2.3                          | 0.2        |
| <b>Business sector: Services</b>                | <b>1.7</b>                  | <b>4.3</b> | <b>2.6</b>   | <b>3.1</b>                   | <b>0.9</b> |
| Wholesale trade                                 | 3.9                         | 6.0        | 1.9          | 2.6                          | 0.5        |
| Retail trade                                    | 3.1                         | 5.0        | 1.8          | 3.5                          | 1.4        |
| Transportation and storage                      | 1.5                         | 3.2        | 1.7          | 2.8                          | 0.6        |
| Information and cultural industries             | 1.2                         | 5.4        | 4.2          | 1.8                          | -0.4       |
| Finance, property and business man. services    | 0.9                         | 3.7        | 2.8          | 3.0                          | 0.8        |
| Professional, scientific & technical services   | 1.2                         | 5.0        | 3.8          | 3.7                          | 1.5        |
| Administrative, support and waste man. services | -1.2                        | 5.4        | 6.7          | 2.3                          | 0.2        |
| Lodging and food and beverage services          | 0.2                         | 1.9        | 1.8          | 3.4                          | 1.2        |
| Other commercial services                       | 1.4                         | 3.5        | 2.1          | 3.0                          | 0.9        |

## Productivity and real total compensation per hour worked in Canada from 1998 to 2001 (5 years)

(Average compound annual rate from 1998 to 2001)

|   | Labour productivity        | Real GDP   | Hours worked | Total comp. per hour worked |            |
|---|----------------------------|------------|--------------|-----------------------------|------------|
|   |                            |            |              | nominal                     | Real (CPI) |
|   | 1997.1 to 2002.1 (5 years) |            |              |                             |            |
| (Average compound annual rate of change)        |                            |            |              |                             |            |
| <b>The whole economy</b>                        | <b>1.9</b>                 | <b>4.0</b> | <b>2.1</b>   | <b>3.1</b>                  | <b>1.3</b> |
| <b>Business sector</b>                          | <b>2.3</b>                 | <b>4.7</b> | <b>2.4</b>   | <b>3.1</b>                  | <b>1.3</b> |
| <b>Business sector: Goods</b>                   | <b>2.4</b>                 | <b>3.4</b> | <b>0.0</b>   | <b>3.1</b>                  | <b>1.4</b> |
| Agriculture, forestry, fishing and hunting      | 4.3                        | -0.1       | -4.2         | <b>8.3</b>                  | <b>6.4</b> |
| Construction                                    | 3.3                        | 5.7        | 2.3          | 3.5                         | 1.7        |
| Manufacturing                                   | 2.1                        | 4.3        | 2.1          | 1.6                         | -0.1       |
| <b>Business sector: Services</b>                | <b>2.5</b>                 | <b>5.6</b> | <b>3.0</b>   | <b>3.2</b>                  | <b>1.4</b> |
| Wholesale trade                                 | 4.4                        | 6.1        | 1.6          | 2.8                         | 1.1        |
| Retail trade                                    | 5.6                        | 6.3        | 0.7          | 4.5                         | 2.7        |
| Transportation and storage                      | 1.7                        | 3.5        | 1.8          | 3.1                         | 1.3        |
| Information and cultural industries             | 1.0                        | 8.5        | 7.4          | 1.7                         | -0.1       |
| Finance, property and business man. services    | 1.6                        | 4.7        | 3.1          | 2.3                         | 0.6        |
| Professional, scientific and technical services | 2.5                        | 8.1        | 5.4          | 4.4                         | 2.6        |
| Administrative, support and waste man. services | -2.5                       | 7.1        | 9.8          | 0.2                         | -1.5       |
| Lodging and food and beverage services          | 1.0                        | 3.4        | 2.3          | 2.8                         | 1.0        |
| Other commercial services                       | 3.0                        | 5.4        | 2.3          | 3.2                         | 1.4        |

## Productivity and real total compensation per hour worked in Canada in the last 4 years (4.25 years)

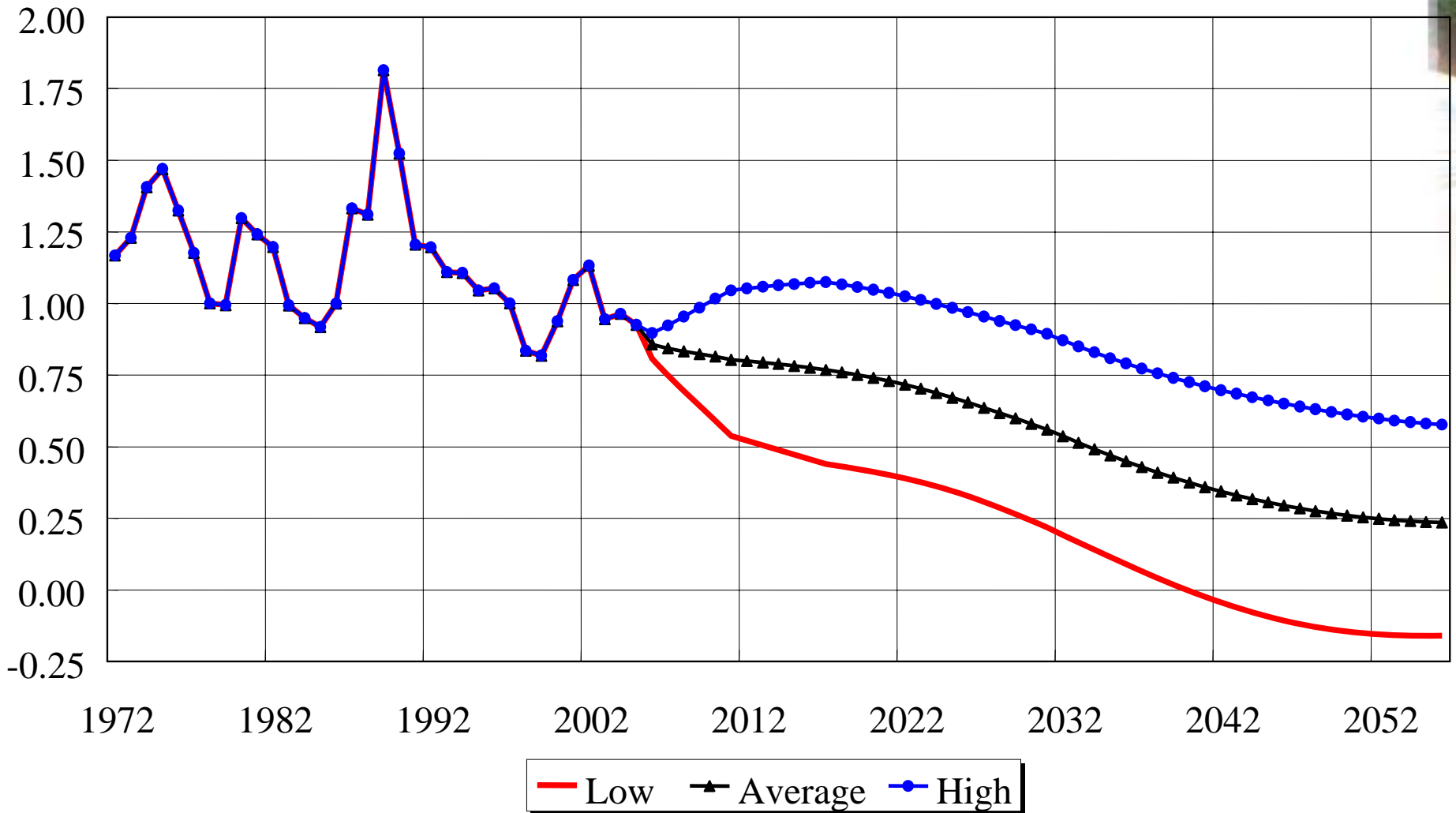
(Average compound annual rate from 2002 to 2006)

|   | Labour<br>productivity | Real<br>GDP | Hours<br>worked | Total comp. per hour worked   |            |
|---|------------------------|-------------|-----------------|-------------------------------|------------|
|   |                        |             |                 | nominal                       | Real (CPI) |
|   |                        |             |                 | 2002.1 to 2006.2 (4.25 years) |            |
| (Average compound annual rate of change)        |                        |             |                 |                               |            |
| <b>The whole economy</b>                        | <b>0.9</b>             | <b>2.7</b>  | <b>1.8</b>      | <b>3.2</b>                    | <b>0.6</b> |
| <b>Business sector</b>                          | <b>0.9</b>             | <b>2.6</b>  | <b>1.7</b>      | <b>3.0</b>                    | <b>0.4</b> |
| <b>Business sector: Goods</b>                   | <b>1.3</b>             | <b>2.3</b>  | <b>0.0</b>      | <b>3.2</b>                    | <b>0.6</b> |
| Agriculture, forestry, fishing and hunting      | 2.4                    | 5.3         | 2.8             | -1.4                          | -3.9       |
| Construction                                    | 1.9                    | 4.8         | 2.9             | 4.1                           | 1.4        |
| Manufacturing                                   | 2.3                    | 1.4         | -0.8            | 3.1                           | 0.5        |
| <b>Business sector: Services</b>                | <b>0.7</b>             | <b>2.8</b>  | <b>2.1</b>      | <b>3.0</b>                    | <b>0.4</b> |
| Wholesale trade                                 | 3.4                    | 5.9         | 2.3             | 2.4                           | -0.2       |
| Retail trade                                    | 0.3                    | 3.5         | 3.2             | 1.6                           | -0.2       |
| Transportation and storage                      | 1.2                    | 2.8         | 1.6             | 0.5                           | -0.1       |
| Information and cultural services               | 1.5                    | 2.0         | 0.5             | 2.4                           | -0.7       |
| Finance, property and business man. services    | 0.1                    | 2.5         | 2.4             | 1.9                           | 1.1        |
| Professional, scientific and technical services | -0.4                   | 1.5         | 1.9             | 3.1                           | 0.2        |
| Administrative, support and waste man. services | 0.3                    | 3.4         | 3.1             | 1.2                           | 2.2        |
| Lodging, food and beverage services             | -0.9                   | 0.3         | 1.2             | 1.8                           | 1.5        |
| Other commercial services                       | -0.4                   | 1.4         | 1.8             | 3.2                           | 0.2        |



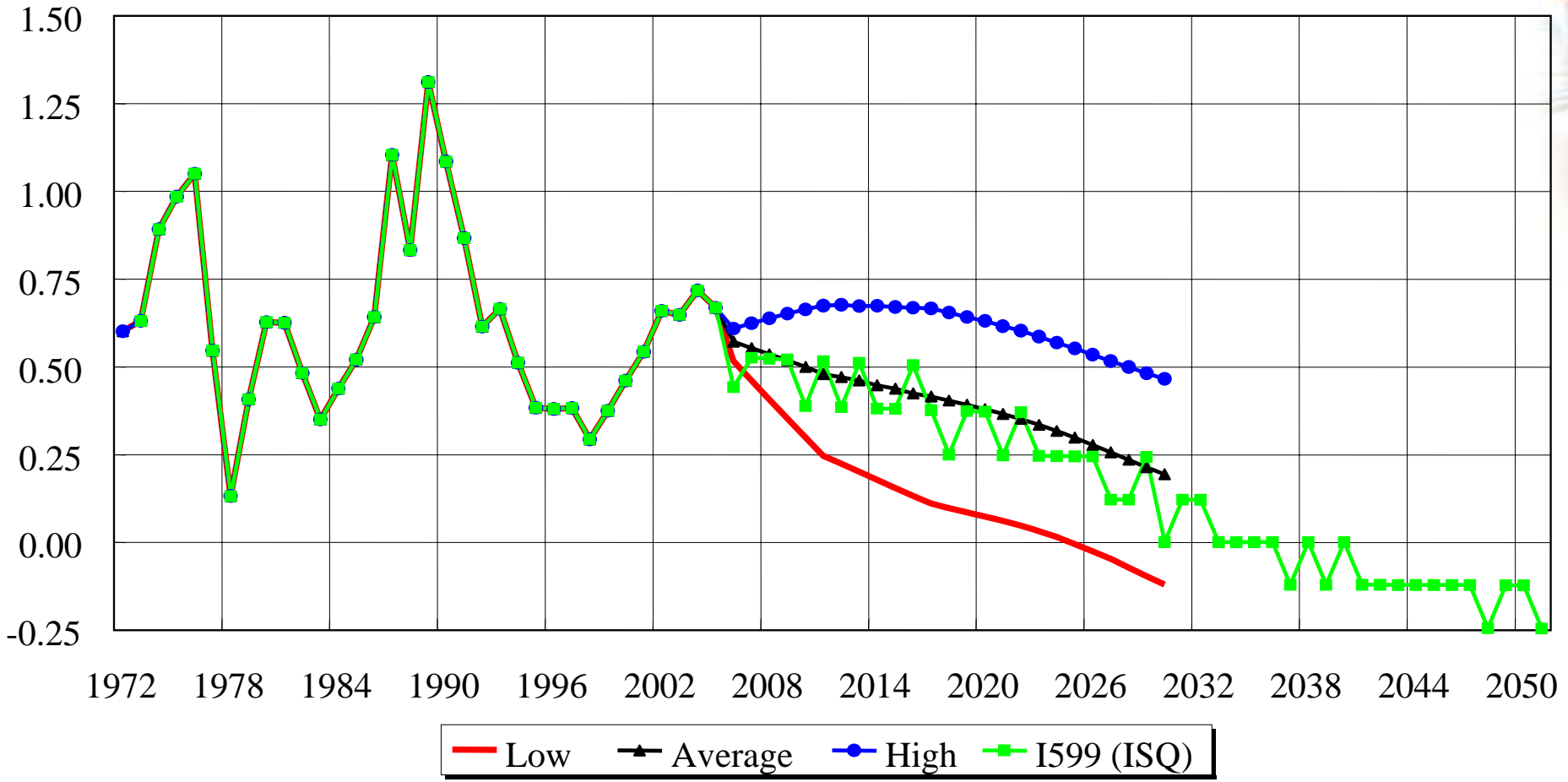
*Graph 6*

**Annual rate of growth of the population in Canada under 3 Statistics Canada projection scenarios**

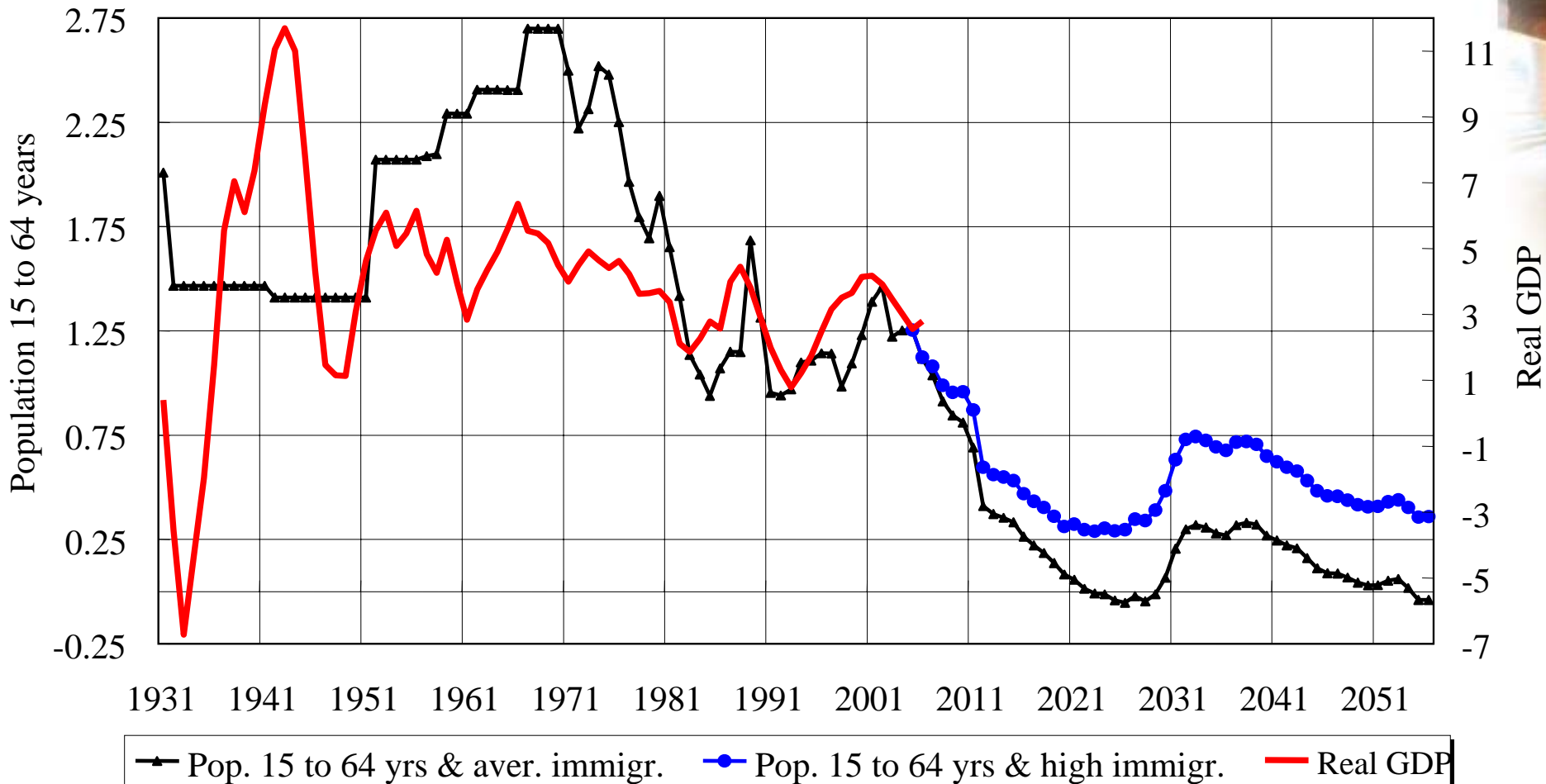


*Graph 7*

**Annual rate of growth of the population of Quebec under 3 Statistics Canada projection scenarios and the 1599 scenario of the Institut de la Statistique du Québec**

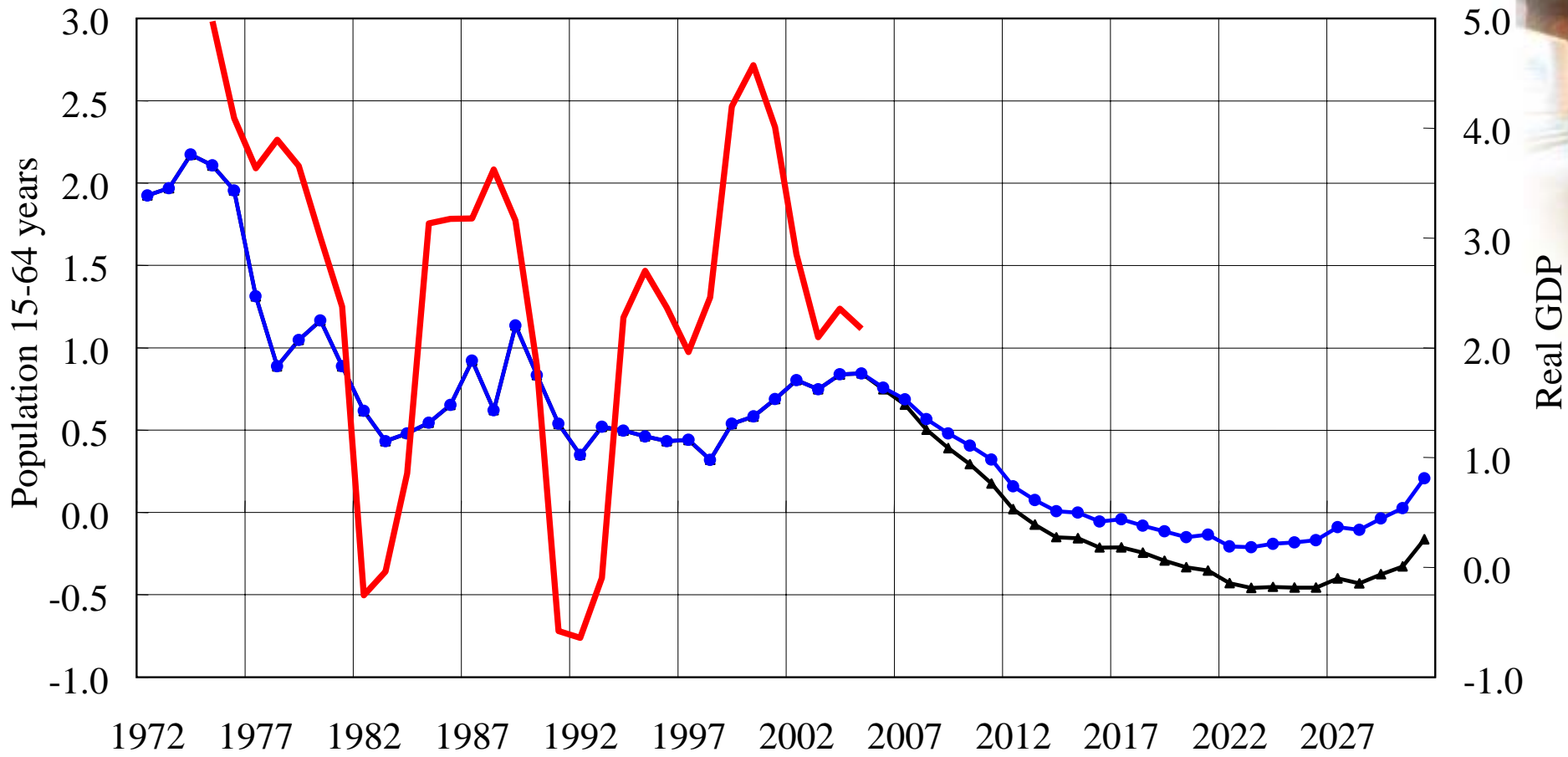


*Graph 8*  
**Real GDP and population between 15 and 64 years in Canada,**  
**including the projections for 2 Statistics Canada scenarios**  
 (in annual rates of change)



*Graph 9*

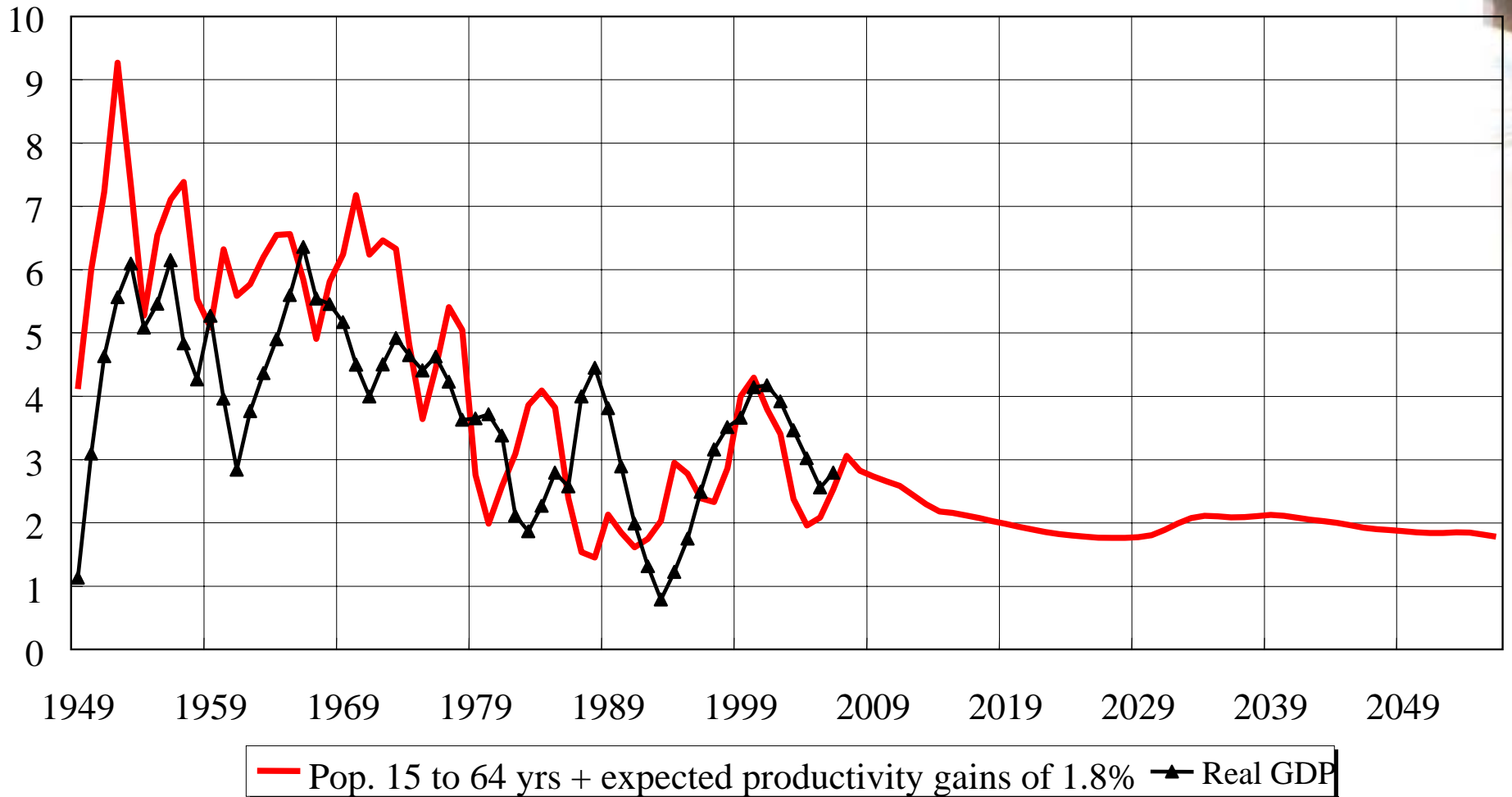
**Real GDP and population between 15 and 64 years in Quebec, including the projections for 2 Statistics Canada scenarios (in annual rates of change)**



▲ Pop.15 to 64 yrs & aver. immigr.  
 ● Pop.15 to 64 yrs & high immigr.  
 — Real GDP

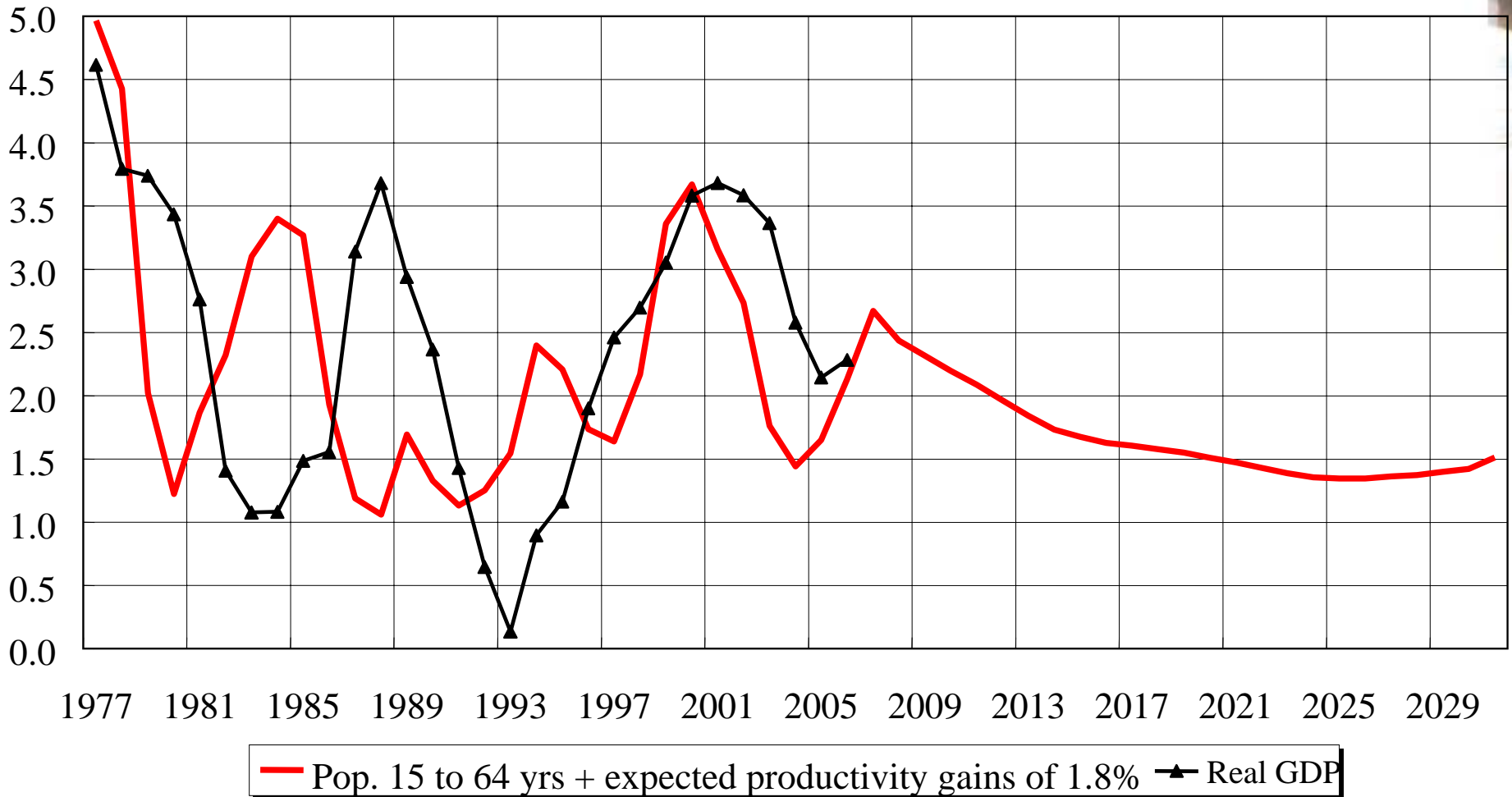
*Graph 10*

**Rate of growth of real GDP and estimated potential GDP between 1949 and 2056 using Statistics Canada's average scenario for the population 15 to 64 years - Canada**



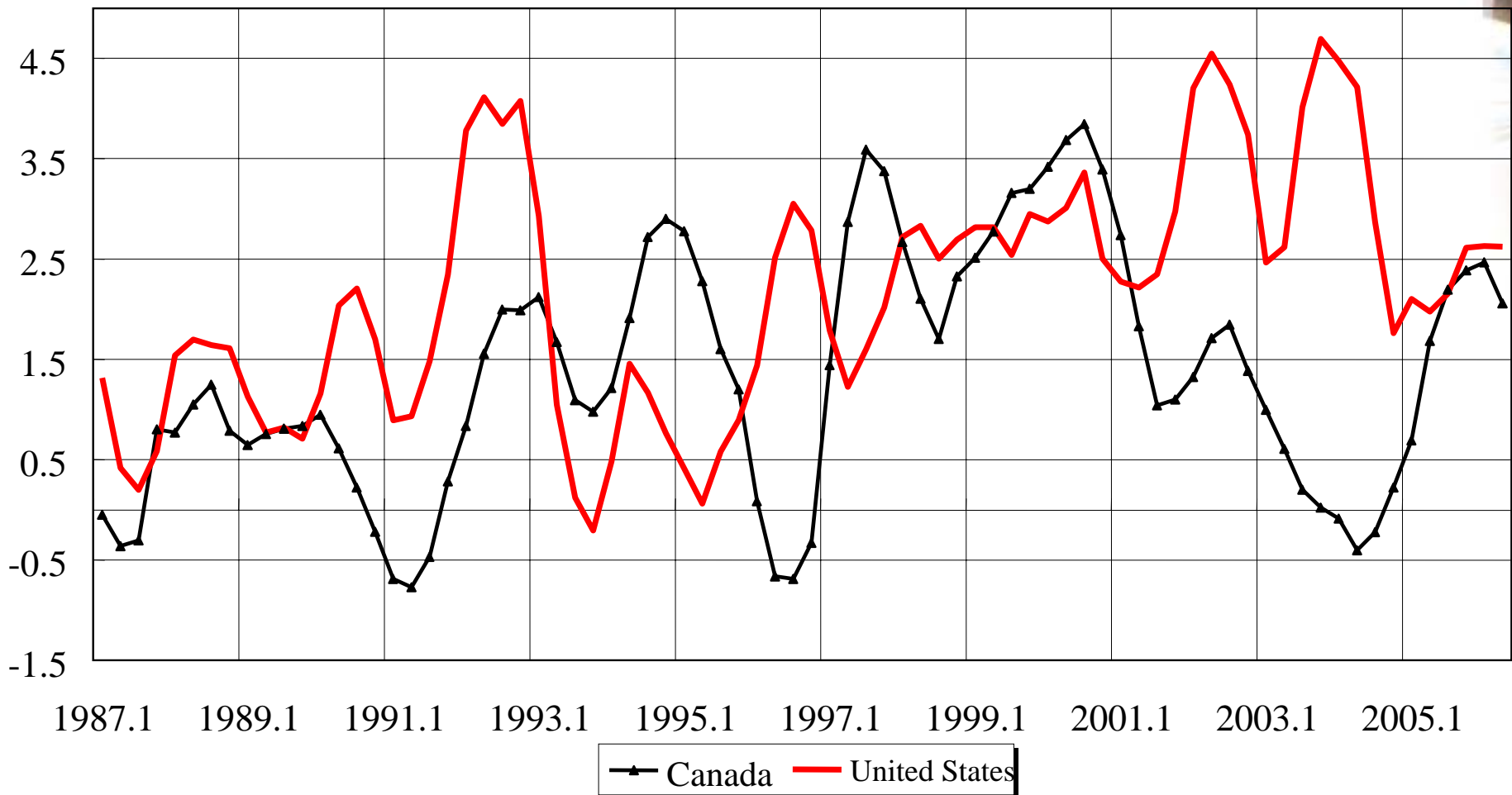
*Graph 11*

**Rate of growth of real GDP and estimated potential GDP between 1977 and 2031 using Statistics Canada's average scenario for the population 15 to 64 years – Quebec**



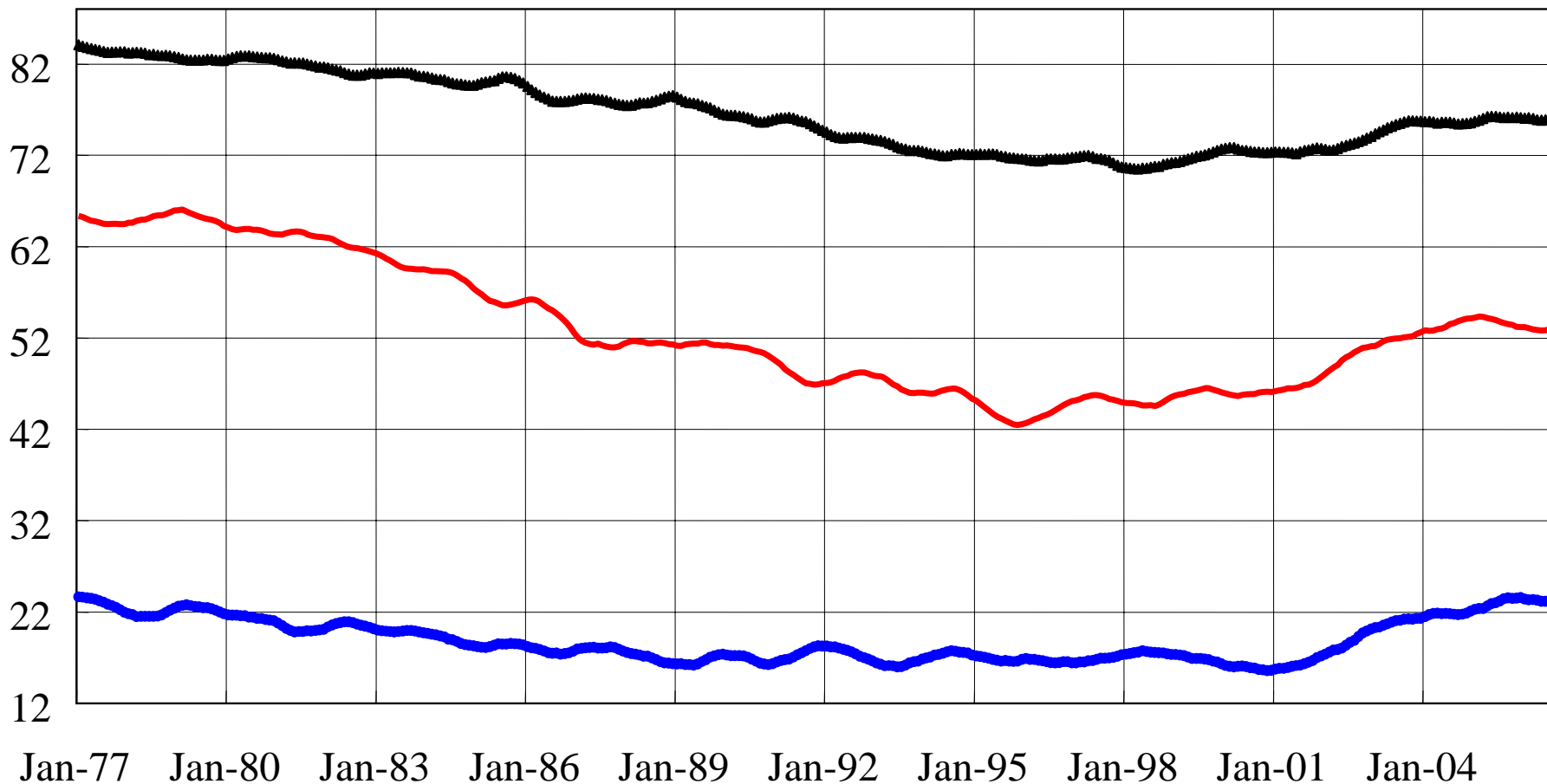
*Graph 12*  
**Productivity gains of the business sector in Canada and in the United States**

(moving one-year average of annual rates of change) – Quebec



*Graph 13*

**Participation rate of men aged 55 to 59 years, 60 to 64 years and 65 to 69 years in Canada**

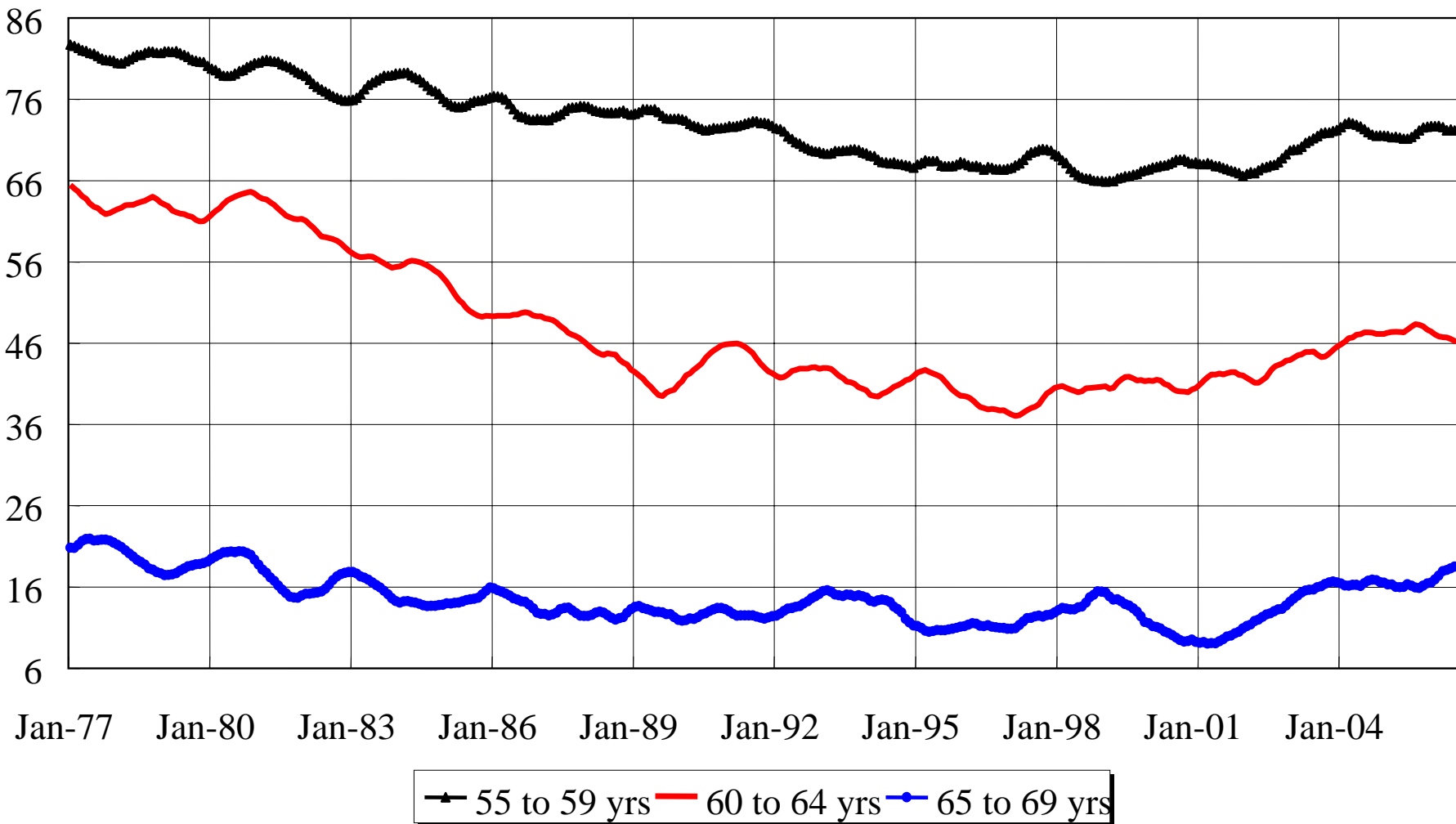


—▲— 55 to 59 yrs    —■— 60 to 64 yrs    —●— 65 to 69 yrs



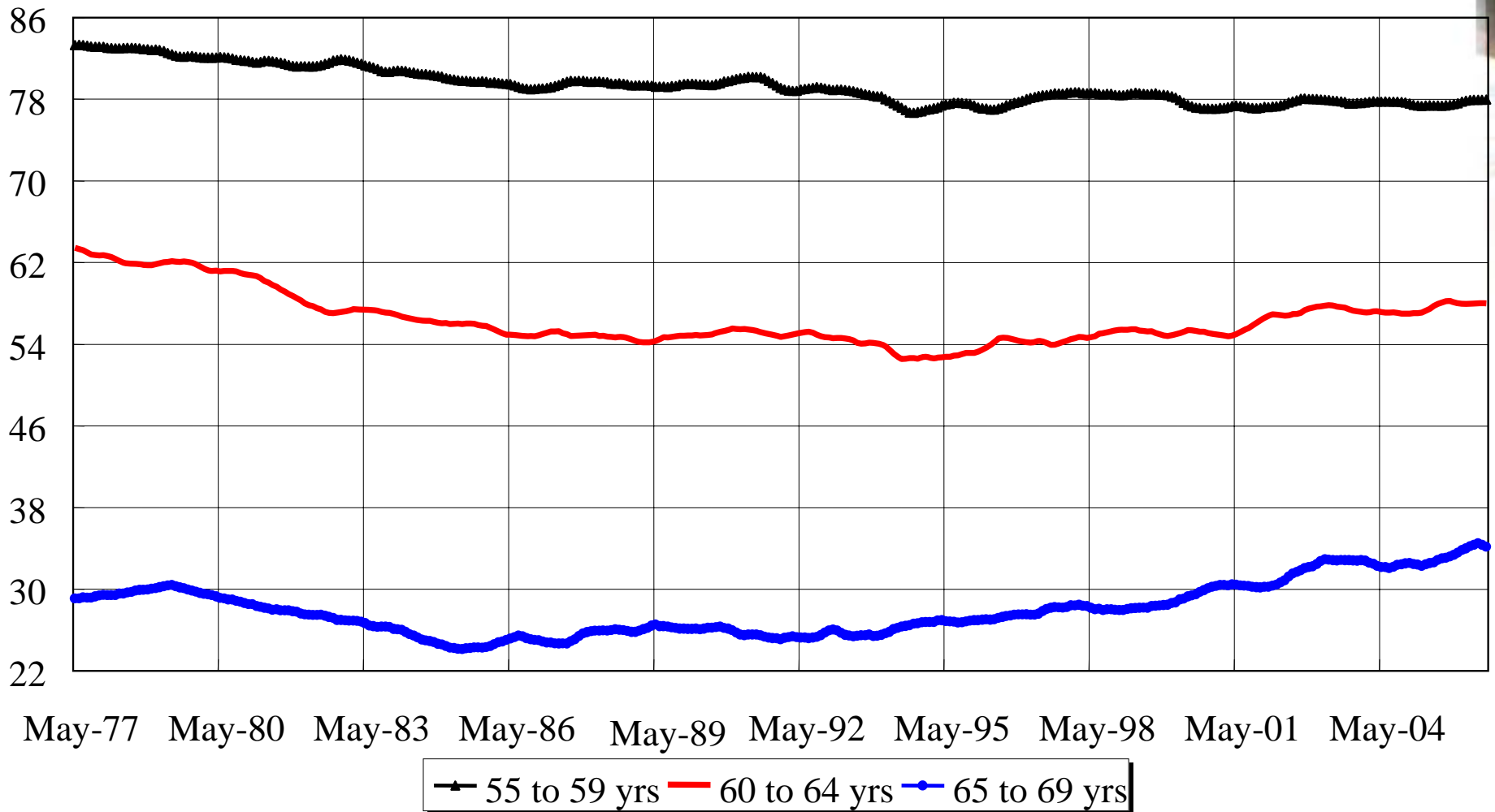
*Graph 14*

**Participation rate of men aged 55 to 59 years, 60 to 64 years and 65 to 69 years in Quebec**



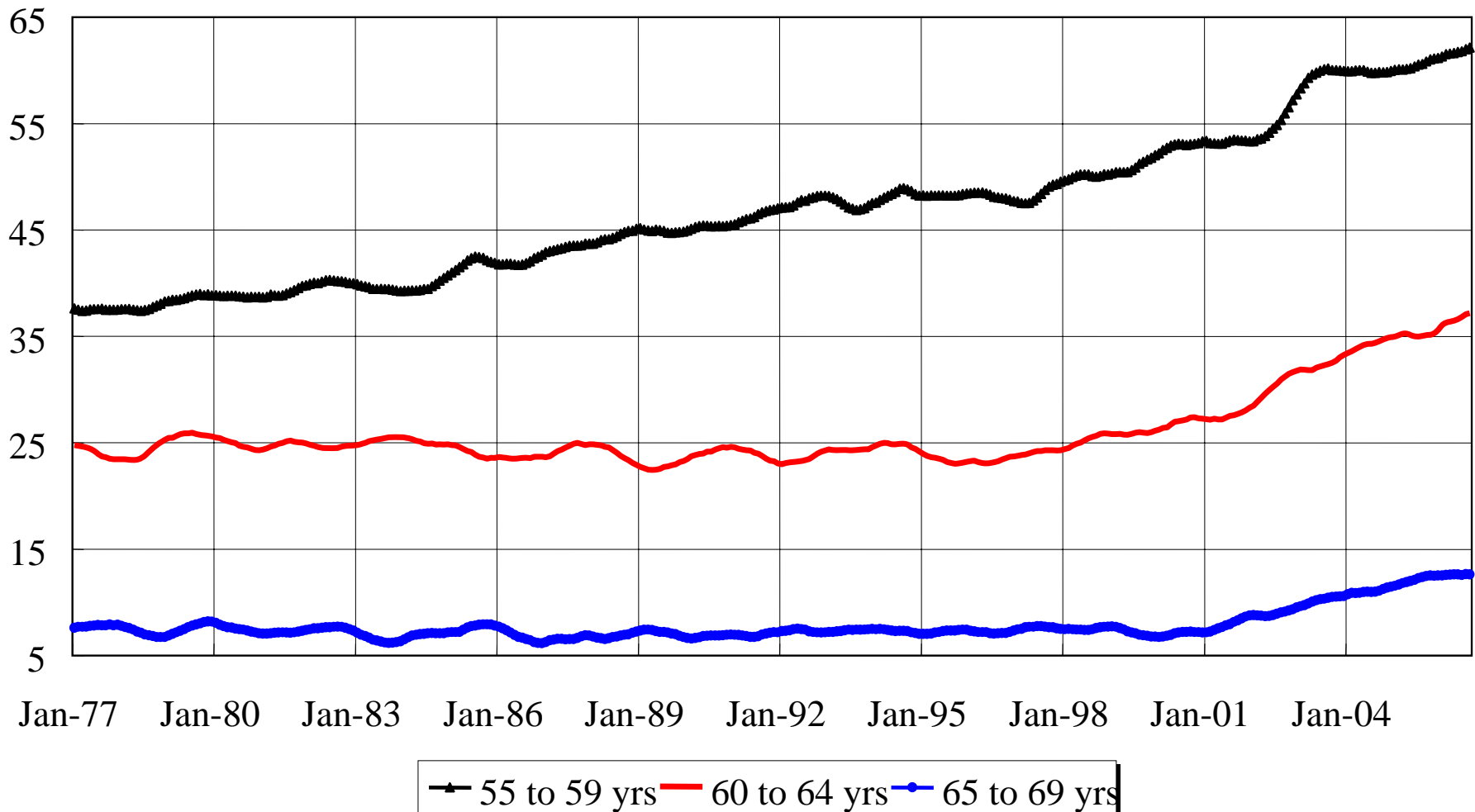
*Graph 15*

**Participation rate of men aged 55 to 59 years, 6- to 64 years and 65 to 69 years in the United States**



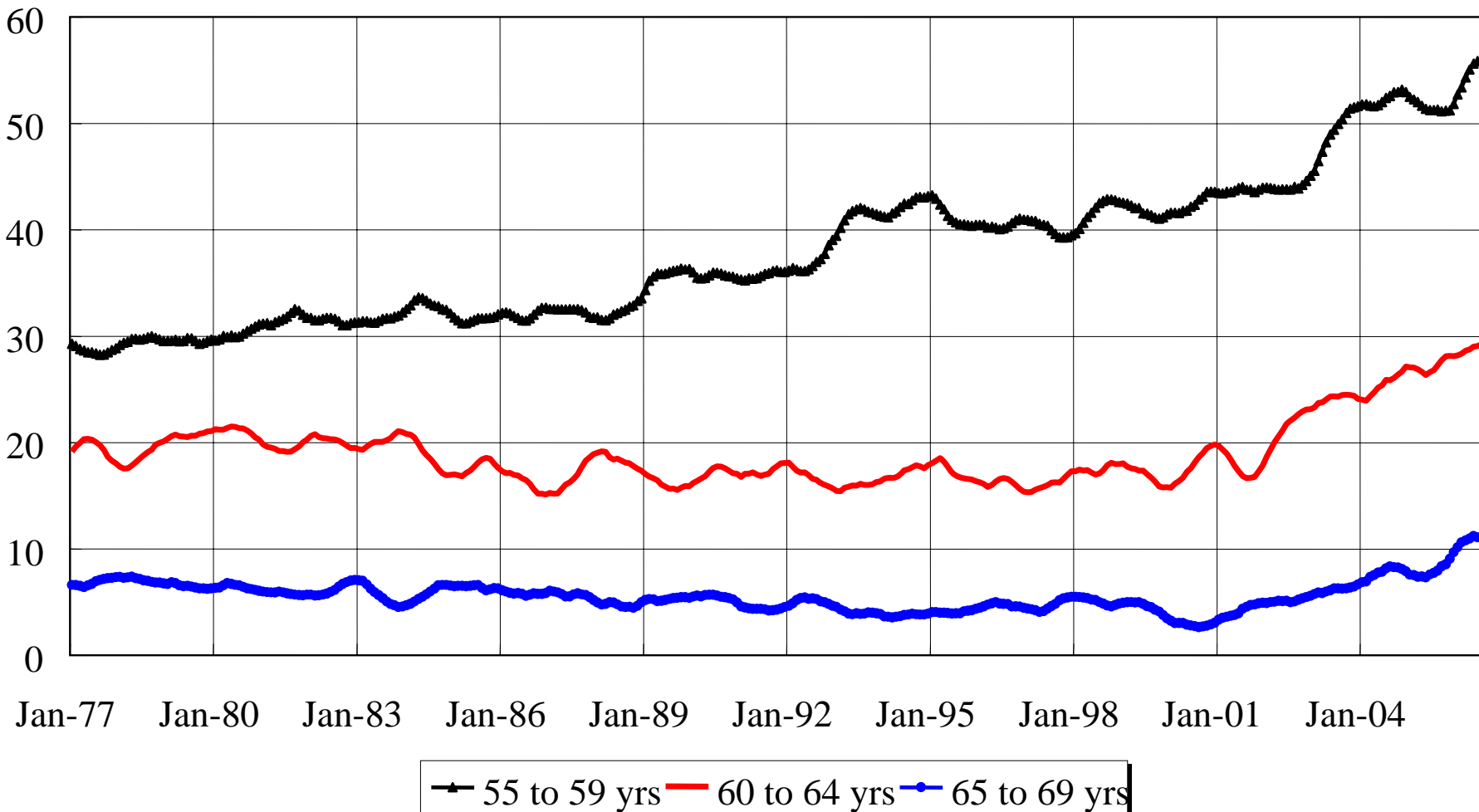
*Graph 16*

Participation rate of women aged 55 to 59 years, 60 to 64 years and 65 to 69 years in Canada



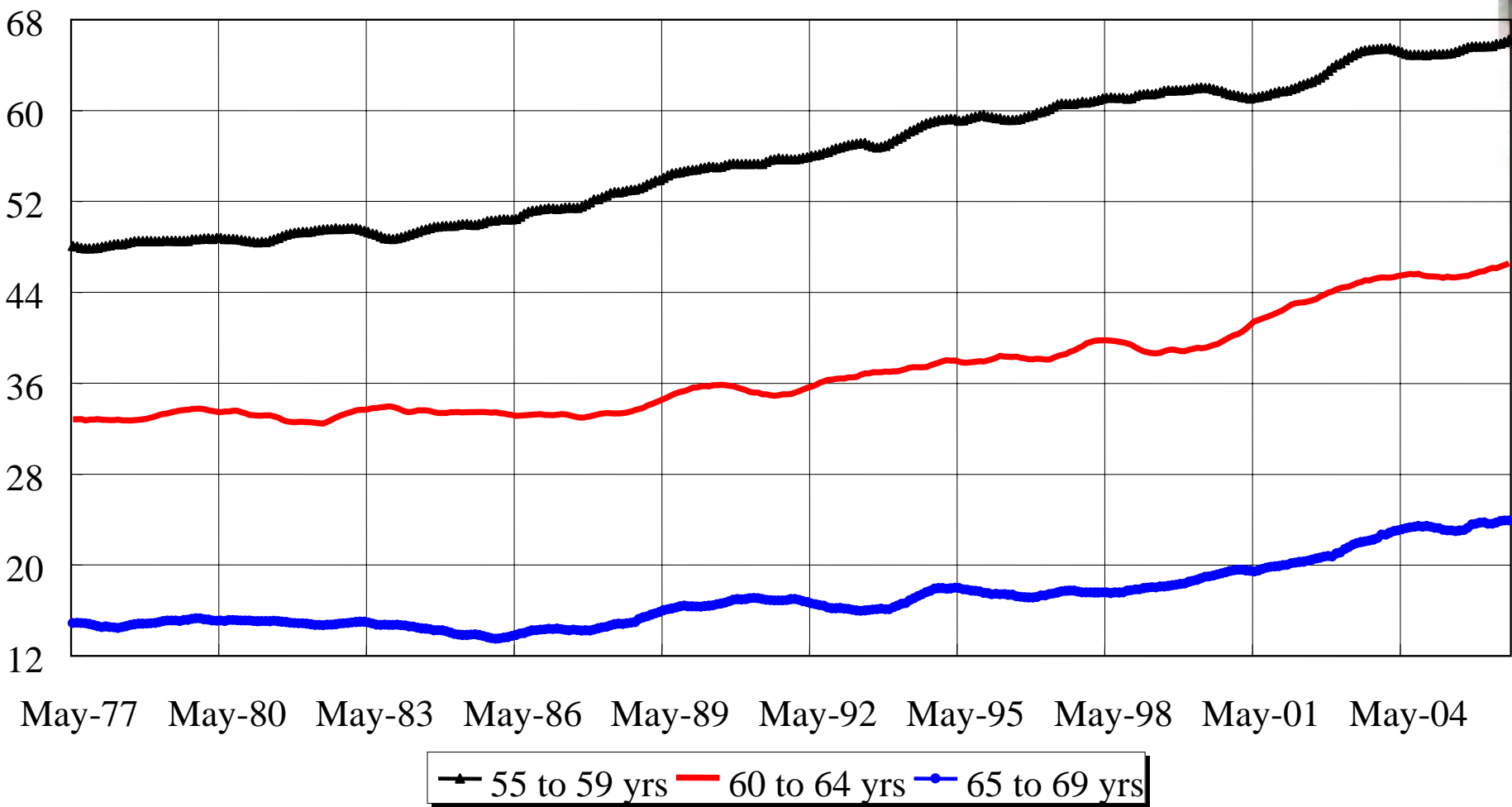
*Graph 17*

**Participation rate of women aged 55 to 59 years, 60 to 64 years and 65 to 69 years in Quebec**



*Graph 18*

**Participation rate of women aged 55 to 59 years, 60 to 64 years and 65 to 69 years in the United States**



**Table 3**  
**Nominal** compound annual rates of the main classes of Canadian and American assets and of GDP

| Canada (nominal)                | Annual rates | Standard deviation | Annual rates | Standard deviation |
|---------------------------------|--------------|--------------------|--------------|--------------------|
|                                 | 1926 to 2005 |                    | 1946 to 2005 |                    |
| Equities                        | 10.0         | 19.0               | 11.0         | 16.4               |
| Long-term bonds                 | 6.3          | 9.0                | 6.9          | 9.8                |
| Bonds (SMI Universe)            | 5.9          | 5.7                | 6.3          | 5.7                |
| Treasury bills                  | 4.6          | 4.0                | 5.6          | 4.1                |
| Balanced portfolio <sup>1</sup> | <b>8.9</b>   | 12.5               | <b>9.8</b>   | 10.7               |
| GDP                             | 7.2          | 7.0                | 8.3          | 4.4                |
| United States (nominal)         |              |                    |              |                    |
| Large capitalization shares     | 10.4         | 20.2               | 11.5         | 16.9               |
| Small capitalization shares     | 12.6         | 32.9               | 13.8         | 24.6               |
| Corporate bonds                 | 5.9          | 8.5                | 6.1          | 9.6                |
| Long-term bonds                 | 5.5          | 9.2                | 5.7          | 10.3               |
| Mid-term bonds                  | 5.3          | 5.7                | 5.8          | 6.3                |
| Balanced portfolio <sup>2</sup> | <b>9.5</b>   | 14.4               | <b>10.1</b>  | 11.9               |
| GDP                             | 6.3          | 7.1                | 7.1          | 5.0                |

<sup>1</sup> Balanced portfolio with fixed allocations in Canadian equities: 65% equities (TSE 300), 30% long-term bonds (Scotia McLeod Universe Bond Index) and 30% T-bills.

<sup>2</sup> Balanced portfolio with fixed allocation in U.S. equities: 30% large capitalization equities, 10% small capitalization equities, 30% long-term bonds and 5% T-bills.

**Table 3**  
**Real compound annual rates of the main classes of Canadian and American assets and of GDP**

| Canada (real)                   | Annual rates | Standard deviation | Annual rates | Standard deviation |
|---------------------------------|--------------|--------------------|--------------|--------------------|
|                                 | 1926 to 2005 |                    | 1946 to 2005 |                    |
| Equities                        | 6.7          | 18.6               | 6.5          | 16.2               |
| Long-term bonds                 | 3.5          | 9.8                | 2.9          | 10.6               |
| Bonds (SMI Universe)            | 3.0          | 6.3                | 2.5          | 6.4                |
| Treasury bills                  | 1.6          | 4.1                | 1.4          | 3.9                |
| Balanced portfolio <sup>1</sup> | <b>5.7</b>   | 12.4               | <b>5.4</b>   | 10.9               |
| GDP                             | 3.7          | 4.6                | 3.8          | 2.5                |
| <b>United States (real)</b>     |              |                    |              |                    |
| Large capitalization shares     | 7.2          | 20.5               | 7.2          | 17.8               |
| Small capitalization shares     | 9.4          | 32.4               | 9.5          | 24.6               |
| Corporate bonds                 | 2.9          | 10.0               | 2.1          | 10.8               |
| Long-term bonds                 | 2.4          | 10.8               | 1.7          | 11.5               |
| Mid-term bonds                  | 2.3          | 7.1                | 1.8          | 7.3                |
| Balanced portfolio <sup>2</sup> | <b>6.3</b>   | 15.0               | <b>5.9</b>   | 13.2               |
| PIB                             | 3.4          | 5.0                | 3.4          | 3.0                |

<sup>1</sup> Balanced portfolio with fixed allocations in Canadian equities: 65% equities (TSE 300), 30% long-term bonds (Scotia McLeod Universe Bond Index) and 30% T-bills

<sup>2</sup> Balanced portfolio with fixed allocation in U.S. equities: 30% large capitalization equities, 10% small capitalization equities, 30% long-term bonds and 5% T-bills.