



*Centre for the
Study of Living Standards
Centre d'étude des
niveaux de vie*

Centre for the Study of Living Standards

111 Sparks Street, Suite 500
Ottawa Ontario K1P 5B5
Tel 613-233-8891 Fax 613-233-8250

**A Comparison of Canadian and U.S.
Labour Market Performance,
1989-2000**

**Andrew Sharpe
Executive Director
Centre for the Study of Living Standards
Ottawa, Ontario
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A Comparison of Canadian and U.S. Labour Market Performance, 1989-2000¹

The gap between Canadian and U.S. living standards widened considerably in the 1990s. Americans, on average, were 16 per cent better off in terms of real personal income per capita in 2000 than in 1989, while Canadians experienced a 5 percent increase in real incomes. The thesis of this paper is that this divergence to a large degree, particularly in the first half of the 1990s, has its roots in part in the different labour market and productivity performance of the two economies and that Canada's inferior income performance reflected cyclical factors associated with poor macroeconomic policy management rather than structural factors.

The paper is divided into three main parts. The first section examines general economic and labour market developments in Canada and the United States in the 1989-2000 period, looking at trends in real income, population, labour force, employment, unemployment, output and productivity. The second section looks at the common trends in the two labour markets, including the concentration of employment growth in services and in managerial and professional occupations; growing wage inequality; and the downward trend in the non-accelerating inflation rate of unemployment. The third section examines divergent trends in the two labour markets, including the widening of the unemployment rate gap; the emergence of a participation rate gap; and greater self-employment and part-time employment growth in Canada.

Economic and Labour Market Developments in Canada and the United States, 1989-2000

Real Income Trends

The most relevant measure of income trends is personal income per capita measured in real terms (excluding inflation). In 2000, per capita personal income in Canada, expressed in 1992 Canadian dollars, was \$23,584, up 4.6 per cent from the level of \$22,557 in 1989 and 7.6 per cent higher than the \$21,915 in 1996.² During the second half of the 1990s, Canadians enjoyed a 1.9 percent average annual increase in living standards. In the United States, per capita personal income, expressed in 1992 U.S. dollars, was \$24,494 in 2000, up from \$21,042 in 1989 and \$22,055 in 1996. Americans on average enjoyed a 16.4 per cent total increase or 1.39 per cent average annual increase in living standards for the 1989-00 period and an average annual increase of 2.7 per cent during the second half of the 1990s.

¹ This paper is an updated and revised version of "A Comparison of Canadian and U.S. Labour Market Performance in the 1990s" in *Vanishing Borders: Canada Among Nations, 2000* edited by Maureen Molet and Fen Hampson (Toronto: Oxford University Press, 2000).

² Supporting Tables for the data presented in the paper are posted on the CSLS website under reports (www.csls.ca)

Table 1

Trends in Real Per Capita Income, 1989-2000
(average annual rate of change in real per capita terms)

| | Real GDP Per Capita | Personal Income | Disposable Personal Income |
|------------------|------------------------|--------------------|-------------------------------|
| 1989-2000 | | | |
| Canada | 1.35 | 0.41 | -0.02 |
| U.S. | 2.20 | 1.39 | 1.08 |
| Canada-U.S. | -0.85 | -0.98 | -1.10 |
| 1989-1996 | | | |
| Canada | 0.28 | -0.41 | -0.84 |
| U.S. | 1.43 | 0.67 | 0.58 |
| Canada-U.S. | -1.15 | -1.08 | -1.42 |
| 1996-2000 | | | |
| Canada | 3.26 | 1.85 | 1.43 |
| U.S. | 3.56 | 2.66 | 1.96 |
| Canada-U.S. | -0.30 | -0.81 | -0.53 |

Source: Statistics Canada, Bureau of Economic Analysis, and Bureau of Labor Statistics.
Data for U.S. for 2000 are obtained from the BEA, (<http://www.bea.doc.gov/bea/dn/dpga.txt>).
Personal income and personal disposable income values are deflated using the CPI.

International comparisons of real income or living standards levels are more difficult than comparisons of growth rates (which use domestic or own-country currencies) because they require the use of purchasing power parity exchange rates, which are subject to a margin of error. According to Statistics Canada, the bilateral Canada-U.S. purchasing power parity in 1992, the base year, was 1.23 Canadian dollars per U.S. dollar (\$0.813 U.S. per Canadian dollar). This means that per capita personal income in Canada in 1989 was 87.2 per cent of the U.S. level, but by 2000 it had fallen to 78.3 per cent (Chart 1).

A second definition of living standards is per capita personal disposable income, or income after taxes. According to this definition, Canada's relative standard of living fell even more in the 1990s, as real per capita disposable personal income declined at a 0.02 per cent average annual rate between 1989 and 2000, compared to a 1.08 per cent average annual increase in the United States. The decline in personal disposable income in Canada was concentrated in the first half of the 1990s, falling at a rate of 0.84 per cent per year. The gap between growth in personal income and personal disposable income is explained by the rising proportion of personal income going to taxes in the 1990s (Chart 2).

In absolute terms, personal disposable incomes in Canada fell from 79.3 per cent of the U.S. level in 1989 to 71.2 per cent in 1996 and then to 70.3 per cent in 2000. One limitation of this definition of living standards is that it only captures the private consumption possibilities, as it excludes the provision of public services such as health and education that are financed with tax revenues. Individuals are not necessarily worse

off when tax increases lower disposable income but result in a greater supply of public services.

A third definition of living standards is real GDP per capita. According to this measure, living standards in Canada advanced by 1.35 per cent per year in the 1990s, compared to 2.20 per cent in the United States. Real per capita GDP growth in Canada was thus considerably faster than personal income growth. This discrepancy is largely explained by the greater increase in the Consumer Price Index (CPI), which is used to deflate personal income, than in the GDP deflator, which is used to deflate GDP. The CPI grew at a 0.52 per cent faster pace than the GDP deflator (2.24 per cent versus 1.72 per cent) between 1989 and 2000 because of the fall in the price of investment goods, driven by very large price declines in computers. Slightly more rapid nominal GDP growth than personal income growth also accounted for some of the discrepancy between real GDP per capita and real personal income per capita.

The rate of increase in per capita real GDP is determined by the rate of change in the number of workers in relation to the total population, and the amount of output each worker produces or worker productivity. This former term can in turn be decomposed into the ratio of the working age population to the total population, and the employment rate, that is the ratio of employment to the working age population. The employment rate is a function of the labour force participation rate and the unemployment rate.

Table 2

Sources of GDP Per Capita Growth in Canada and the United States, 1989-2000
(average annual rate of change)

| | Canada | United States | Canada-U.S. |
|---|--------|---------------|-------------|
| 1989-2000 | | | |
| GDP per capita | 1.35 | 2.20 | -0.84 |
| Output per Worker | 1.20 | 1.88 | -0.67 |
| Employment/Total Population | 0.15 | 0.31 | -0.16 |
| Working Age Population/Total Population | 0.16 | 0.10 | 0.06 |
| Employment/WAP | -0.11 | 0.22 | -0.33 |
| 1989-1996 | | | |
| GDP per capita | 0.30 | 1.43 | -1.13 |
| Output per Worker | 1.00 | 1.34 | -0.34 |
| Employment/Total Population | -0.69 | 0.09 | -0.78 |
| Working Age Population/Total Population | 0.18 | 0.04 | 0.14 |
| Employment/WAP | -0.87 | 0.05 | -0.92 |
| 1996-2000 | | | |
| GDP per capita | 3.22 | 3.56 | -0.33 |
| Output per Worker | 1.56 | 2.83 | -1.27 |
| Employment/Total Population | 1.64 | 0.71 | 0.93 |
| Working Age Population/Total Population | 0.12 | 0.19 | -0.07 |
| Employment/WAP | 1.23 | 0.51 | 0.72 |

In Canada, the 1.32 per cent average annual increase in real GDP per capita in the 1989-00 period can be decomposed into a 1.16 per cent rise in output per worker and a slight increase of 0.16 per cent in the share of employment in the total population. The stability of this latter variable reflects two offsetting trends, the increasing share of the population of working age (0.27 per cent) and the decreasing employment-population ratio (-0.11 per cent) arising from the falling labour force participation rate (-0.18 per cent).

In the United States, the 2.20 per cent average annual rate of increase in real GDP per capita over the 1989-00 period can be decomposed into a 1.88 per cent increase in output per worker and a 0.31 per cent increase in the proportion of the total population at work. This latter term in turn reflects a 0.10 per cent increase in the relative importance of the working age population and a 0.22 increase in the employment rate or employment/working age population ratio. The decline in the unemployment rate and the rising labour force participation each contributed equally to the growth of the employment rate.

Canada experienced 0.88 percentage points slower real GDP per capita growth in the 1990s relative to the United States (2.20 per cent versus 1.32 per cent per year). The difference was greater in the first half of the decade with Canada experiencing a 1.13 percentage point slower real GDP per capita growth than the United States. During the 1996-00 period however, this differential fell to 0.43 percentage points. About one third of the 1989-00 real GDP per capita differential was due to the relative worsening of labour market conditions in Canada (-0.33 points) and three fourths was due to slower productivity growth (-0.72 points). More favourable trends in demographic structures in Canada offset somewhat (0.17 points) these negative developments for trends in relative living standards.

Table 3

Labour Market Developments in Canada and the United States, 1989-2000
(average annual rates of change unless otherwise indicated)

| | Canada | U.S. | Canada | U.S. | Canada | U.S. |
|--|------------------|-------|------------------|------|--------|-------|
| | 1989-2000 | | 1989-1996 | | | |
| Working Age Population | 1.37 | 1.08 | 1.40 | 1.05 | 1.33 | 1.12 |
| Participation Rate | -0.18 | 0.10 | -0.54 | 0.07 | 0.46 | 0.14 |
| Labour Force | 1.19 | 1.18 | 0.85 | 1.13 | 1.80 | 1.27 |
| Employment | 1.26 | 1.30 | 0.52 | 1.11 | 2.59 | 1.64 |
| Unemployment Rate (total percentage point change) | -0.73 | -1.26 | 2.09 | 0.13 | -2.82 | -1.39 |
| Employment-Pop Ratio | -0.11 | 0.22 | -0.87 | 0.05 | 1.23 | 0.51 |
| Real Output | 2.48 | 3.20 | 1.52 | 2.46 | 4.18 | 4.51 |
| Output Per Worker | 1.20 | 1.88 | 1.00 | 1.34 | 1.56 | 2.83 |

In the 1989-1996 period, almost all of Canada's decline (0.9 of 1.1 points) in GDP per capita growth relative to the United States can be accounted for by the relative fall in the employment-population ratio. Only 0.3 points of the relative decline in this measure of living standards are explained by lagging productivity growth.

The situation was completely reversed in the 1996-2000 period. While Canada's per capita real GDP growth continued to lag that of the United States (0.4 points), the employment-population ratio advanced at 0.7 points faster rate in Canada, making up the shortfall explained in the first half of the decade. On the other hand, Canada's productivity growth rate trailed that of the United States by 1.4 points per year because of the strong acceleration of the productivity growth south of the border.

Working Age Population³

The working age or source population is defined as the population 15 years old and over in Canada and 16 years old and over in the United States. In Canada in the 1989-2000 period, the source population advanced at a 1.4 per cent average annual rate, compared to 1.1 per cent in the United States (Chart 4). Our higher population rate growth reflected the greater relative importance of immigration in Canada than in the United States (average annual gross immigration represented 0.8 per cent of the total population over the 1990-98 period in Canada compared to 0.4 per cent in the United States).

Annual variation in source population growth in Canada was also largely due to variation in immigration levels, with population growth peaking at 1.5 per cent in 1990-92 period when immigration levels averaged 250,000 per year. With the decline in immigration levels after the early years of the decade, source population growth fell off to 1.3 per cent by 2000.

Participation Rates

The participation rate is defined as the proportion of the working age population who are in the labour force, that is either employed or unemployed and looking for work. The participation rate in Canada fell significantly in Canada in the 1990s. From a peak of 67.2 per cent at the 1989 cyclical peak, it hit a trough of 64.7 per cent in 1996 before rebounding somewhat to 65.9 per cent in 2000. The average annual rate of decline over the 1989-00 period was 0.2 per cent.

In contrast, the participation rate in the United States rose over the decade. While it initially declined from 66.5 per cent in 1989 to 66.2 in 1991, it then advanced slowly, reaching 67.2 in 2000 for an average annual growth rate of 0.1 per cent.

³ The data sources of all data used in this paper, unless otherwise specified, are the Labour Force Survey for Canada and the Current Population Survey for the United States.

Labour Force

Labour force growth is determined by the growth of the working age population and participation rate. Labour force growth in Canada (Chart 5) averaged 1.2 per cent per year in the 1990s (1.4 per cent source population growth and -0.2 per cent participation rate growth). It was much weaker in the first half of the decade when the participation rate experienced large declines. Labour force growth picked up after 1996 when the participation rate leveled out and began to regain lost ground, averaging a strong 1.8 per cent per year.

Labour force growth in the United States was nearly identical to that in Canada in the 1990s at 1.2 per cent per year, but the sources of the growth were somewhat different, with working age population contributing 1.1 per cent and participation growth 0.1 per cent.

Employment

Employment growth averaged 1.3 per cent per year in Canada in the 1990s (Chart 6), with great variation within the decade following the business cycle. In the early years of the decade (1991 and 1992), employment fell in absolute terms because of the recession. In the 1993-96 period it showed modest annual gains in the 0.8 to 2.0 per cent range. It has only been since 1996 that employment growth has been consistently strong, averaging 2.6 per cent per year.

In the United States, employment growth over the decade at 1.3 per cent per year was nearly identical to that of Canada, but the pattern of growth differed from that experienced in Canada. The decline in employment was smaller in the United States in the early 1990s reflecting the less severe nature of the recession. Equally, the pace of employment growth during the recovery and expansion of the 1993-97 period was stronger, again reflecting the more robust economic growth. Only from 1998 to 2000 has the United States been outperformed on the employment front, with the rate of increase at 1.4 per cent per year, over one percentage point slower than in Canada (2.7 per cent per year). The dwindling of the supply of unemployed workers may in part account for this deceleration of U.S. employment growth from the 1.9 per cent pace of the 1994-97 period.

Unemployment Rate

The unemployment rate in Canada in the 1990s averaged 10.0 per cent, the highest decade average since the 1930s, but there has been much cyclical variation within the decade (Chart 7). The rate rose from a low of 7.6 per cent at the peak of the last business cycle in 1989 to a high of 11.4 in 1993. It declined in 1994 and 1995 as the recovery progressed. But this downward trend stopped in 1996 when the unemployment rate actually rose, reflecting the slowdown in the pace of economic growth that year. Since then the unemployment rate has continued its downward track as the economic expansion has picked up, reaching 6.8 per cent in 2000, below the pre-recession rate of 7.6 per cent in 1989.

Changes in the unemployment rate reflect the relative rates of growth of the labour force and employment, with the rate rising when the former exceeds the latter and vice versa. The slight decline of the unemployment rate over the 1989-00 period in Canada (but not within the period) reflects the slightly faster employment and labour force growth (1.2 and 1.3 per cent per year respectively).

The unemployment rate in the United States in the 1989-00 period averaged 6.1 per cent, below that experienced in the 1980s and 1970s, but above that of the 1950s and 1960s. The U.S. rate rose from a cyclical low of 5.3 per cent in 1989 to peak at 7.5 per cent in 1992 because of the recession of the early 1990s. With strong economic growth it then started a steady and continuous decline, reaching 4.0 per cent in 2000, the lowest rate since 1969. The 1.3 percentage point decline in the unemployment rate between 1989 and 2000 was due to the slightly faster pace of employment growth over the period (1.3 versus 1.2 per cent)

Employment/Population Ratio

The employment/working age population ratio or employment rate is the proportion of the working age population that is employed. This ratio plummeted in Canada in the early 1990s, falling from 62.1 per cent in 1989 to 58.0 per cent in 1993, because of the falling labour force participation and the rising unemployment. By 2000, it had rebounded to 61.4 per cent due to the return of the unemployment rate to the pre-recession level and the rising participation rate. But it was still slightly below the 1989 level since the participation rate was still this amount below the pre-recession level.

In the United States, the employment rate fell in the early 1990s from 63.0 per cent in 1989 to 61.5 per cent in 1992 and then recovered strongly with the fall in the unemployment rate and rising labour force participation, reaching 64.5 per cent in 2000. By 2000 there was a 3.1 per cent gap in employment rates between the two countries, compared to only 0.6 points in 1989.

Output

Real GDP advanced at a 2.4 per cent average annual rate in Canada in the 1990s (Chart 8). The decade started out very poorly with 0.3 per cent growth in 1990 and a 1.6 per cent decline in 1991, and a weak recovery in 1992 and 1993. The economy picked up steam in 1994, but faltered in 1995 and 1996. Only in 1997 did sustained robust economic growth emerge with increases averaging 4.1 per cent per year over the 1996-00 period.

The United States enjoyed annual average growth of 3.2 per cent over the 1989-2000 period. It also experienced a recession in the early years of the decade, albeit more shallow than experienced in Canada. Its recovery from the recession was also slightly more robust. Since 1996 economic growth has averaged a very strong 4.5 per cent per year.

Productivity

Productivity, defined as output per person employed in the aggregate economy, rose at a 1.2 per cent average annual rate in Canada in the 1989-2000 period (Chart 9). Productivity growth was weak in the early years of the decade because of the recession, but picked up in the second half of the decade growing at a rate of 1.4 percent when stronger economic growth resumed.

In the United States, productivity advanced at a 1.9 per cent average annual rate in the 1990s. Between 1989 and 1996 it advanced at a tepid 1.3 per cent average annual rate. Since 1996, it has picked up to a strong 2.8 per cent rate. This development is seen by many observers as evidence of an upward structural shift in trend productivity associated with the information technology revolution. Canada has not yet seen this burst in productivity growth, which may in part account for the stronger employment growth.

Common Trends in the Canadian and U.S. Labour Markets

This section of the paper identifies common trends in the Canadian and U.S. labour markets in the 1990s.

Concentration of Employment Growth in Service Industries

In both Canada and the United States, employment creation has been highly concentrated in the service sector. Between 1989 and 2000, employment in services-producing industries in Canada increased 16.3 per cent and accounted for 94.0 per cent of net employment growth. Employment in goods-producing industries only rose 1.9 per cent. In the United States, employment in service-producing industries grew 25.1 per cent over the 1989-99 period accounting for 100 per cent of net employment growth.

This common pattern reflects the influence of a number of factors. First, and most important, it is due to intrinsic limits on productivity improvements in many service sector industries due to the personal nature of the services, resulting in slower productivity growth in the service sector relative to the goods sector. For a given rate of output growth, employment growth is thus greater in the service sector than the goods sector. A second factor may be the greater income elasticity of services than goods, which with real income gains leads to faster demand growth for the output of service industries. A third less important factor may be the contracting out of service-type functions (e.g. legal services) previously performed within goods industries to firms in the service sector. The concentration of employment gains in the service sector represents an employment shift comparable to the fall in the share of employment in agriculture over the 1940-70 period, a structural development that also affected both countries.

Concentration of Employment Gains in Managerial and Professional Occupations

Managerial and professional occupations have accounted for the lions's share of employment gains in the two countries. Between 1989 and 2000 in Canada, employment in managerial and professional occupations (defined as management occupations;

professional occupations in business and finance; natural and applied sciences and related occupations; professional occupations in health; and occupations in social science, education, and government service; and occupations in art culture, recreation and sport) rose 19.6 per cent and accounted for 61.8 per cent of net employment growth. Their share of total employment rose from 26.0 per cent to 29.5 per cent.

In the United States, employment in managerial and professional occupations rose 33.1 per cent over the same period, and accounted for 48.6 percent of net employment growth. Their share of total employment rose from 28.2 per cent to 31.5 per cent.

This common pattern is explained by the increasing importance in a knowledge-based economy of the skills possessed by managers and professionals and by the declining importance of blue-collar occupations made redundant by skill-biased technical change.

Increased Labour Market Inequality

The United States has experienced a marked increase in wage or earnings inequality in the 1990s particularly in the first half of the decade, and Canada has experienced the same trend to a lesser degree. This development has resulted in a significant increase in total income inequality in the United States, but not in Canada due to the offsetting influence of government transfers.

The causes behind the increase in labour market inequality in North America are still poorly understood. Explanations include skills-biased technological change; increased competition from low wage countries; deregulation; reduced value of the minimum wage; and lower unionization. Whatever their relative importance, it appears that these factors have been operating in the same direction in both countries to increase inequality.

Downward Trend in the NAIRU

The most surprising development in the U.S. economy in recent years has been the fall in the unemployment rate without a rise in inflation. In 2000 the unemployment rate had reached a 24 year low of 4.0 per cent yet the rate of increase in the CPI was still below 3 per cent. In the past, inflation has picked up at a higher rate of unemployment, a rate that economists call the non-accelerating inflation rate of unemployment (NAIRU). The conventional wisdom was that this unemployment rate was around 6 per cent.

There is a vigorous academic debate whether the current situation is temporary in nature or represents a permanent development. Those that take the first view argue that positive supply shocks, such as low commodity prices, account for the failure of low unemployment to ignite wage and price pressures; and that if the current unemployment rate persists, we will soon see a resurgence of inflation (Gordon, 1998). Others argue that the world, and more particularly, labour markets, have changed and the NAIRU estimates based on past experience are no guide to future developments. The changes that have led to a decline in the NAIRU include:

- an upward shift in trend productivity due to information technologies which has reduced the rate of increase in unit labour costs for a given increase in wages;
- the aging of the labour force, with older workers having lower unemployment rates than younger workers;
- better labour market matching and hence lower frictional or job search unemployment due to the proliferation of internet-based labour exchanges;
- the perception of increased job insecurity on the part of workers, which dampens wage expectations;
- reduction in the social safety net (e.g. the abolition of Aid to Families with Dependent Children Act [AFDC] in 1996), which has increased the supply of workers seeking employment and is keeping wage increases down;
- the continued decline of union coverage, which have tempered wage demands; and
- increased international competition due to globalization, which has limited the ability of firms to raise prices.

In Canada, there has been less debate on the NAIRU as the unemployment rate, at least until recently, has not gone below the standard NAIRU estimate of around 7.5 per cent. Now that the unemployment rate had dropped below 7 per cent, the issue of whether the NAIRU has fallen takes on a new urgency for policy makers. A case can be made that the forces outlined above which may have reduced the NAIRU in the United States have also been at play in Canada (with the possible exception of reduced union coverage and the substitution of UI/EI reform for welfare reform). Hence the current NAIRU in Canada may be 5-6 per cent range or even lower.

Divergent Trends in the Canadian and U.S. Labour Markets

Despite the similarities in trends in the Canadian and U.S. labour market noted in the previous section, there have been a number of divergent developments in the two labour markets at least up to the late 1990's, including the widening of the Canada-U.S. unemployment rate gap, the emergence of a participation rate gap, and greater non-standard employment growth in Canada.

The Widening Canada-U.S. Unemployment Gap

In 1989, the unemployment rate in Canada at 7.5 per cent was 2.2 percentage points above that in the United States (5.3 per cent). In the early part of the 1990s, this gap widened dramatically, peaking at 4.5 percentage points in 1993. It remained in the 3.8-4.2 percentage point range for the next five years, before falling to 3.4 percentage points in 1999 (Chart 7).

Labour economists have devoted considerable effort to explaining this unemployment rate gap (Riddell and Sharpe, 1998). Differences in the measurement of unemployment between Canada and the United States have been found responsible for about one fifth of the gap (Zagorsky, 1996). In Canada, the definition of the unemployed includes persons engaged in only passive job search, namely looking at help wanted ads. In the United States these persons are not counted as unemployed. The Canadian unemployment rate in 1997 was 0.9 percentage points lower when the U.S. definition of unemployment was applied to Canada (Statistics Canada, 1998).

Canada's more generous social safety net, including employment/unemployment insurance and social assistance, has been found to result in a somewhat higher structural unemployment, although the generosity gap between Canadian and U.S. social programs has been falling in the 1990s. These institutional factors are estimated to explain about one quarter of the gap.

The most important factor behind the Canada-U.S. unemployment gap in the 1990s has been found to be the cyclical weakness of the Canadian economy in the 1990s. Since 1989, aggregate demand growth has been weaker in Canada than in the United States with that the result that labour demand growth has been weaker, consequently unemployment rose more during the recession of the early 1990s. It is estimated that Canada's poorer macroeconomic performance has been responsible for about one half the gap.

Canada's relatively weak economic growth since 1989 reflects the impact of tight monetary policy associated with the pursuit of low inflation, and in mid-decade, tight fiscal policy used to eliminate government deficits. The weakness of domestic expenditure growth compared to exports testifies to the made-in-Canada nature of our macroeconomic weakness (Fortin, 1996).

The Emergence of a Participation Rate Gap

In 1989, the aggregate labour force participation rate in Canada was 67.2 per cent, 0.7 percentage points above that in the United States at 66.5 per cent. By 1999, the participation rate in Canada had fallen to 65.6 per cent, while that in the United States had risen to 67.1 per cent, creating a 1.5 percentage point gap in favour of the United States (Chart 10).

Like the widening of the unemployment rate gap, the emergence of the participation rate gap is largely a macroeconomic phenomenon (Sharpe and Grignon, 1999). When unemployment is high and employment opportunities limited, individuals, particularly youth and older men, are more likely to leave, or not enter or re-enter, the labour force. The greater rise in the unemployment rate in Canada relative to the United States in the early 1990s consequently resulted in a greater decline in the participation rate and the continuation of high unemployment until late in the decade discouraged persons from joining the labour force.

Greater Non-standard Employment Growth in Canada

Standard employment is defined as paid full-time positions, while non-standard employment includes part-time employment and self-employment. In the 1990s, growth in both part-time and self-employment have been much stronger in Canada than in the United States.

Self-employment in Canada advanced 36.6 per cent between 1989 and 1999, accounting for 42.7 per cent of net job creation. Self-employment rose from 13.9 per cent to 16.2 per cent of total employment. The unincorporated self-employed with no paid help accounted for about two thirds of this increase in self-employment. In contrast, self employment in the United States grew a meager 0.8 per cent in the 1990s, accounting for well less than 1 per cent of net employment growth, and declined from 9.3 per cent of total employment in 1989 to 7.8 per cent in 1999.

Many persons enter self-employment when paid employment opportunities are scarce. The boom in self-employment in Canada in the 1990s is in part linked to the limited paid job opportunities caused by the laggard economy. In contrast, the almost non-existent growth in self-employment in the United States in the 1990s testifies to the ample paid employment opportunities.

Part-time employment grew 24.1 per cent in Canada during the 1989-2000 period, accounting for 27.2 per cent of net employment growth. Its share of total employment increased from 16.7 per cent to 18.1 per cent between 1989 and 2000. Over one half of the increase in part-time employment was involuntary in nature as persons took part-time positions because they could not find full-time work. The rate of growth of part-time employment has been similar in the United States (up 21.8 per cent in the 1990s), but because of much stronger full-time employment growth, it has only accounted for 16.2 percent of total employment growth, close to its share of total employment (14.6 per cent in 1999, up from 14.3 per cent in 1989).

Again this divergent development in the area of non-standard employment reflects the different macroeconomic performance of the two economies. With weaker labour demand, Canadians have accepted second-best employment situations, such as precarious and poorly remunerated self-employment and part-time positions. With stronger labour demand in the United States, relatively fewer Americans have been forced into these types of positions.

Summary and Conclusion

The 1990s have been in many ways a lost decade for the Canadian economy. Economic growth has been weak by historical standards, unemployment has been very high, and real personal income growth has been nil. A key question is whether this performance reflects structural impediments to growth or rather the cyclical weakness caused by restrictive macroeconomic policies. This paper argues strongly that it is the latter factor.

An examination of the performance of the Canadian and U.S. labour markets

reveals similarities in trends in a number of structural variables, including the industry and occupational composition of unemployment, earnings inequality, and the NAIRU or the structural unemployment rate. At the same time, it reveals differences in trends in a number of variables influenced by aggregate demand conditions, namely, the unemployment rate, the participation rate, and non-standard employment. This finding supports the view that the problems in Canada's labour market in the 1990s have been largely macroeconomic in nature. Had Canada enjoyed the same pace of economic growth as the U.S. in the 1990s, it is likely that there would have no increase in the Canada-U.S. unemployment rate gap, no emergence of a labour force participation rate gap, and slower growth in non-standard employment.

The precipitous decline in Canada's standard of living in the 1990s relative to that in the United States has its roots in both our poorer labour market performance and our weaker productivity growth. In terms of the decline in relative level of real GDP per capita, about three quarters is directly attributable to the relative decline in the employment/working age population ratio and one half to weaker productivity growth. These contributions sum to more than 100 per cent because of the positive contribution of trends in Canada's demographic structure to real GDP per capita. Both the falling employment rate and lagging productivity growth are a reflection of the high level of underutilized capacity that has characterized the Canadian economy through out the 1990s.

Over long-periods economies have certain equilibrating tendencies, with the poor performance in one period setting up conditions for strong rebound in the following period. For this reason there may be a possible silver lining in the dark clouds of poor economic performance in the 1990s and the conditions may now be ripe for a solid and sustained economic growth. For example, weak labour market conditions in the 1990s resulted in many younger Canadians enrolling in postsecondary education, giving Canada the highest enrollment rate in the OECD. This increased supply of human capital may serve Canada well in the future and contribute greatly to economic growth. Such positive developments do not of course justify policy decisions that contributed to poor economic performance in the 1990s, but they do illustrate the complex nature of the long-term economic growth process.

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Table A1: Main Labour Market Variables, Canada

| | Population '000 | WAP Population, '000 | LF PR, % | Empl / WAP ratio. % | Labour Force '000 | Employ- ment '000 | Unemp- loyment '000 | UR, % |
|------|--------------------|----------------------------|-------------|---------------------------|----------------------|----------------------|---------------------------|-------|
| 1976 | 23,414.2 | 17,095.8 | 61.50 | 57.18 | 10,514.4 | 9,776.2 | 738.2 | 7.02 |
| 1977 | 23,694.4 | 17,435.4 | 61.80 | 56.87 | 10,774.4 | 9,914.7 | 859.7 | 7.98 |
| 1978 | 23,936.3 | 17,778.9 | 62.65 | 57.44 | 11,138.4 | 10,212.2 | 926.2 | 8.32 |
| 1979 | 24,170.8 | 18,119.5 | 63.58 | 58.82 | 11,521.0 | 10,657.7 | 863.3 | 7.49 |
| 1980 | 24,471.4 | 18,483.6 | 64.17 | 59.35 | 11,860.2 | 10,970.1 | 890.1 | 7.50 |
| 1981 | 24,785.1 | 18,814.2 | 64.96 | 60.04 | 12,222.3 | 11,296.8 | 925.5 | 7.57 |
| 1982 | 25,083.5 | 19,103.1 | 64.37 | 57.30 | 12,295.8 | 10,947.0 | 1,348.8 | 10.97 |
| 1983 | 25,336.5 | 19,354.8 | 64.70 | 56.97 | 12,522.6 | 11,027.0 | 1,495.6 | 11.94 |
| 1984 | 25,577.3 | 19,598.0 | 65.00 | 57.66 | 12,739.4 | 11,300.0 | 1,439.4 | 11.30 |
| 1985 | 25,813.7 | 19,842.5 | 65.53 | 58.55 | 13,002.1 | 11,617.3 | 1,384.8 | 10.65 |
| 1986 | 26,068.6 | 20,092.8 | 65.98 | 59.62 | 13,257.1 | 11,979.0 | 1,278.1 | 9.64 |
| 1987 | 26,402.3 | 20,349.0 | 66.40 | 60.55 | 13,511.7 | 12,320.7 | 1,191.0 | 8.81 |
| 1988 | 26,758.9 | 20,614.6 | 66.84 | 61.66 | 13,778.5 | 12,710.3 | 1,068.2 | 7.75 |
| 1989 | 27,224.8 | 20,901.9 | 67.20 | 62.13 | 14,046.6 | 12,986.4 | 1,060.2 | 7.55 |
| 1990 | 27,642.9 | 21,217.0 | 67.12 | 61.67 | 14,240.9 | 13,084.0 | 1,156.9 | 8.12 |
| 1991 | 27,989.7 | 21,540.6 | 66.53 | 59.66 | 14,330.1 | 12,850.7 | 1,479.4 | 10.32 |
| 1992 | 28,329.7 | 21,867.3 | 65.68 | 58.35 | 14,362.2 | 12,760.0 | 1,602.2 | 11.16 |
| 1993 | 28,670.2 | 22,179.7 | 65.40 | 57.97 | 14,504.5 | 12,857.5 | 1,647.0 | 11.36 |
| 1994 | 28,995.4 | 22,440.0 | 65.18 | 58.43 | 14,626.7 | 13,111.7 | 1,515.0 | 10.36 |
| 1995 | 29,315.3 | 22,726.5 | 64.90 | 58.77 | 14,750.1 | 13,356.9 | 1,393.2 | 9.45 |
| 1996 | 29,632.6 | 23,030.7 | 64.69 | 58.46 | 14,899.5 | 13,462.6 | 1,436.9 | 9.64 |
| 1997 | 29,943.7 | 23,359.3 | 64.87 | 58.97 | 15,153.0 | 13,774.4 | 1,378.6 | 9.10 |
| 1998 | 30,211.7 | 23,671.1 | 65.13 | 59.74 | 15,417.7 | 14,140.4 | 1,277.3 | 8.28 |
| 1999 | 30,454.1 | 23,969.0 | 65.59 | 60.62 | 15,721.2 | 14,531.2 | 1,190.0 | 7.57 |
| 2000 | 30,750.1 | 24,284.9 | 65.90 | 61.39 | 15,999.2 | 14,909.7 | 1,089.6 | 6.81 |

Average annual rates of growth

| | | | | | | | | |
|---------|------|------|-------|-------|------|------|-------|-------|
| 81-89 | 1.18 | 1.32 | 0.42 | 0.43 | 1.75 | 1.76 | 1.71 | -0.04 |
| 89-2000 | 1.11 | 1.37 | -0.18 | -0.11 | 1.19 | 1.26 | 0.25 | -0.93 |
| 89-96 | 1.22 | 1.40 | -0.54 | -0.87 | 0.85 | 0.52 | 4.44 | 3.56 |
| 96-2000 | 0.93 | 1.33 | 0.46 | 1.23 | 1.80 | 2.59 | -6.68 | -8.33 |

Source: Statistics Canada, CANSIM data base (<http://www.statcan.ca/english/CANSIM/>).

Table A1 (Cont'd): Main Labour Market Variables, Annual Rate of Change, Canada

| | Population | WAP Population | LF PR | Empl / WAP ratio | Labour Force | Employ- ment | Unemp- loyment | UR |
|------|------------|-------------------|--------|------------------------|-----------------|-----------------|-------------------|---------|
| 1977 | 1.196 | 1.986 | 0.477 | -0.559 | 2.473 | 1.417 | 16.459 | 13.649 |
| 1978 | 1.021 | 1.970 | 1.381 | 1.011 | 3.378 | 3.001 | 7.735 | 4.214 |
| 1979 | 0.980 | 1.916 | 1.491 | 2.401 | 3.435 | 4.362 | -6.791 | -9.887 |
| 1980 | 1.243 | 2.009 | 0.916 | 0.904 | 2.944 | 2.931 | 3.104 | 0.156 |
| 1981 | 1.282 | 1.789 | 1.242 | 1.169 | 3.053 | 2.978 | 3.977 | 0.897 |
| 1982 | 1.204 | 1.536 | -0.920 | -4.562 | 0.601 | -3.096 | 45.737 | 44.866 |
| 1983 | 1.009 | 1.318 | 0.520 | -0.579 | 1.845 | 0.731 | 10.884 | 8.876 |
| 1984 | 0.950 | 1.257 | 0.469 | 1.204 | 1.731 | 2.476 | -3.758 | -5.396 |
| 1985 | 0.924 | 1.248 | 0.804 | 1.541 | 2.062 | 2.808 | -3.793 | -5.737 |
| 1986 | 0.987 | 1.261 | 0.691 | 1.829 | 1.961 | 3.113 | -7.705 | -9.480 |
| 1987 | 1.280 | 1.275 | 0.637 | 1.558 | 1.920 | 2.852 | -6.815 | -8.571 |
| 1988 | 1.351 | 1.305 | 0.661 | 1.833 | 1.975 | 3.162 | -10.311 | -12.047 |
| 1989 | 1.741 | 1.394 | 0.545 | 0.768 | 1.946 | 2.172 | -0.749 | -2.643 |
| 1990 | 1.536 | 1.508 | -0.122 | -0.745 | 1.383 | 0.752 | 9.121 | 7.632 |
| 1991 | 1.255 | 1.525 | -0.885 | -3.259 | 0.626 | -1.783 | 27.876 | 27.080 |
| 1992 | 1.215 | 1.517 | -1.273 | -2.189 | 0.224 | -0.706 | 8.301 | 8.059 |
| 1993 | 1.202 | 1.429 | -0.432 | -0.655 | 0.991 | 0.764 | 2.796 | 1.788 |
| 1994 | 1.134 | 1.174 | -0.327 | 0.794 | 0.842 | 1.977 | -8.015 | -8.783 |
| 1995 | 1.103 | 1.277 | -0.428 | 0.586 | 0.844 | 1.870 | -8.040 | -8.809 |
| 1996 | 1.083 | 1.339 | -0.321 | -0.540 | 1.013 | 0.791 | 3.137 | 2.102 |
| 1997 | 1.050 | 1.427 | 0.271 | 0.877 | 1.701 | 2.316 | -4.057 | -5.662 |
| 1998 | 0.895 | 1.335 | 0.407 | 1.305 | 1.747 | 2.657 | -7.348 | -8.939 |
| 1999 | 0.802 | 1.258 | 0.701 | 1.487 | 1.969 | 2.764 | -6.835 | -8.633 |
| 2000 | 0.972 | 1.318 | 0.473 | 1.270 | 1.768 | 2.605 | -8.437 | -10.028 |

Table A2: Main Labour Market Variables, US

| | Population '000 | WAP Population, '000 (LFU80000 0000) | LF PR, % | Empl / WAP ratio, % | Labour Force '000 (LFS40000 000) | Employ- ment '000 (LFS110000 00) | Unemp- loyment '000 (LFS22000 000) | UR, % |
|--------------------------------|--------------------|--|-------------|---------------------------|---|---|--|-------|
| 1976 | 218,035 | 156,150 | 61.58 | 56.84 | 96,151 | 88,753 | 7,398.2 | 7.69 |
| 1977 | 220,239 | 159,033 | 62.24 | 57.86 | 98,984 | 92,017 | 6,966.9 | 7.04 |
| 1978 | 222,585 | 161,910 | 63.14 | 59.32 | 102,233 | 96,046 | 6,187.1 | 6.05 |
| 1979 | 225,055 | 164,863 | 63.67 | 59.94 | 104,961 | 98,825 | 6,135.3 | 5.85 |
| 1980 | 227,726 | 167,745 | 63.77 | 59.20 | 106,974 | 99,303 | 7,670.7 | 7.17 |
| 1981 | 229,966 | 170,130 | 63.88 | 59.01 | 108,676 | 100,400 | 8,276.3 | 7.62 |
| 1982 | 232,188 | 172,271 | 63.99 | 57.77 | 110,244 | 99,529 | 10,714.9 | 9.72 |
| 1983 | 234,307 | 174,215 | 64.01 | 57.87 | 111,515 | 100,822 | 10,693.8 | 9.59 |
| 1984 | 236,348 | 176,383 | 64.37 | 59.53 | 113,532 | 105,003 | 8,529.1 | 7.51 |
| 1985 | 238,466 | 178,206 | 64.79 | 60.13 | 115,467 | 107,154 | 8,313.4 | 7.20 |
| 1986 | 240,651 | 180,587 | 65.26 | 60.69 | 117,846 | 109,601 | 8,245.0 | 7.00 |
| 1987 | 242,804 | 182,753 | 65.58 | 61.53 | 119,853 | 112,439 | 7,413.5 | 6.19 |
| 1988 | 245,021 | 184,613 | 65.91 | 62.28 | 121,671 | 114,974 | 6,696.6 | 5.50 |
| 1989 | 247,342 | 186,393 | 66.45 | 62.95 | 123,851 | 117,327 | 6,523.7 | 5.27 |
| 1990 | 249,949 | 189,164 | 66.53 | 62.80 | 125,857 | 118,796 | 7,061.0 | 5.61 |
| 1991 | 252,636 | 190,925 | 66.18 | 61.65 | 126,352 | 117,713 | 8,639.8 | 6.84 |
| 1992 | 255,382 | 192,805 | 66.44 | 61.45 | 128,099 | 118,488 | 9,611.2 | 7.50 |
| 1993 | 258,089 | 194,838 | 66.30 | 61.72 | 129,185 | 120,259 | 8,926.7 | 6.91 |
| 1994 | 260,602 | 196,814 | 66.58 | 62.53 | 131,047 | 123,071 | 7,975.5 | 6.09 |
| 1995 | 263,039 | 198,584 | 66.63 | 62.90 | 132,315 | 124,908 | 7,406.9 | 5.60 |
| 1996 | 265,453 | 200,591 | 66.77 | 63.17 | 133,945 | 126,715 | 7,229.4 | 5.40 |
| 1997 | 267,901 | 203,133 | 67.09 | 63.78 | 136,290 | 129,565 | 6,725.3 | 4.93 |
| 1998 | 270,595 | 205,220 | 67.09 | 64.06 | 137,665 | 131,463 | 6,202.1 | 4.51 |
| 1999 | 273,160 | 207,753 | 67.09 | 64.26 | 139,369 | 133,492 | 5,876.4 | 4.22 |
| 2000 | 275,372 | 209,699 | 67.16 | 64.48 | 140,866 | 135,208 | 5,651.6 | 4.01 |
| Average annual rates of growth | | | | | | | | |
| 81-89 | 0.91 | 1.15 | 0.49 | 0.81 | 1.65 | 1.97 | -2.93 | -4.50 |
| 89-2000 | 0.98 | 1.08 | 0.10 | 0.22 | 1.18 | 1.30 | -1.30 | -2.44 |
| 89-96 | 1.01 | 1.05 | 0.07 | 0.05 | 1.13 | 1.11 | 1.48 | 0.35 |
| 96-2000 | 0.92 | 1.12 | 0.14 | 0.51 | 1.27 | 1.64 | -5.97 | -7.15 |

Source: Economic Report of the President, 1999. <http://ssdc.ucsd.edu/gpogate/erp99/>

Data for 1999 are from BLS (<http://www.bls.gov/>). Population for 1999: Personal Income and Outlays news release <http://www.bea.doc.gov/bea/newsrel/pi1299.htm>

Data for 2000 are from the Economic Report of the President 2001, and the BLS and BEA.

Table A2 (Cont'd): Main Labour Market Variables, Annual Rate of Change, US

| | Population | WAP Population | LF PR | Empl / WAP ratio | Labour Force | Employ- ment | Unemp- loyment | UR |
|------|------------|-------------------|--------|------------------------|-----------------|-----------------|-------------------|---------|
| 1977 | 1.011 | 1.846 | 1.081 | 1.799 | 2.947 | 3.678 | -5.829 | -8.525 |
| 1978 | 1.065 | 1.809 | 1.447 | 2.524 | 3.282 | 4.378 | -11.193 | -14.016 |
| 1979 | 1.110 | 1.824 | 0.829 | 1.050 | 2.668 | 2.893 | -0.836 | -3.413 |
| 1980 | 1.187 | 1.748 | 0.167 | -1.243 | 1.918 | 0.484 | 25.024 | 22.671 |
| 1981 | 0.984 | 1.422 | 0.167 | -0.313 | 1.591 | 1.104 | 7.896 | 6.206 |
| 1982 | 0.966 | 1.258 | 0.182 | -2.099 | 1.443 | -0.867 | 29.465 | 27.623 |
| 1983 | 0.913 | 1.128 | 0.024 | 0.168 | 1.153 | 1.299 | -0.198 | -1.335 |
| 1984 | 0.871 | 1.244 | 0.557 | 2.867 | 1.808 | 4.147 | -20.242 | -21.659 |
| 1985 | 0.896 | 1.034 | 0.664 | 1.005 | 1.705 | 2.049 | -2.529 | -4.163 |
| 1986 | 0.916 | 1.336 | 0.714 | 0.935 | 2.060 | 2.283 | -0.823 | -2.824 |
| 1987 | 0.895 | 1.199 | 0.498 | 1.374 | 1.703 | 2.590 | -10.085 | -11.591 |
| 1988 | 0.913 | 1.018 | 0.494 | 1.224 | 1.517 | 2.254 | -9.670 | -11.020 |
| 1989 | 0.947 | 0.964 | 0.820 | 1.072 | 1.792 | 2.046 | -2.582 | -4.297 |
| 1990 | 1.054 | 1.487 | 0.131 | -0.231 | 1.620 | 1.252 | 8.237 | 6.512 |
| 1991 | 1.075 | 0.931 | -0.532 | -1.826 | 0.394 | -0.912 | 22.360 | 21.880 |
| 1992 | 1.087 | 0.985 | 0.394 | -0.323 | 1.382 | 0.659 | 11.243 | 9.726 |
| 1993 | 1.060 | 1.054 | -0.204 | 0.435 | 0.848 | 1.494 | -7.122 | -7.903 |
| 1994 | 0.974 | 1.014 | 0.422 | 1.311 | 1.441 | 2.339 | -10.655 | -11.924 |
| 1995 | 0.935 | 0.899 | 0.068 | 0.588 | 0.968 | 1.493 | -7.129 | -8.019 |
| 1996 | 0.918 | 1.011 | 0.219 | 0.432 | 1.231 | 1.447 | -2.396 | -3.584 |
| 1997 | 0.922 | 1.267 | 0.478 | 0.969 | 1.751 | 2.249 | -6.973 | -8.574 |
| 1998 | 1.006 | 1.027 | -0.012 | 0.433 | 1.009 | 1.465 | -7.780 | -8.701 |
| 1999 | 0.948 | 1.234 | 0.000 | 0.306 | 1.238 | 1.544 | -5.251 | -6.409 |
| 2000 | 0.810 | 0.937 | 0.111 | 0.345 | 1.074 | 1.285 | -3.826 | -4.848 |

Table A3: Relative Aggregate Income Trends in Canada and US

| Year | Canada | | | | United States | | | | Canada as % of US | | |
|-----------------------------------|---------------------------|--------------------------|---------------------------|-----------------|---------------------------|--------------------------|---------------------------|-----------------|-------------------|---------------|----------------|
| | GDP per capita, 1992 US\$ | PI per capita, 1992 US\$ | PDI per capita, 1992 US\$ | PDI/PI ratio, % | GDP per capita, 1992 US\$ | PI per capita, 1992 US\$ | PDI per capita, 1992 US\$ | PDI/PI ratio, % | GDP per capita | PI per capita | PDI per capita |
| 1961 | 9,851 | 7,293 | 6,599 | 90.47 | 12,140 | 10,992 | 9,768 | 88.87 | 81.14 | 66.35 | 67.55 |
| 1962 | 10,327 | 7,699 | 6,971 | 90.54 | 12,677 | 11,404 | 10,101 | 88.58 | 81.47 | 67.51 | 69.01 |
| 1963 | 10,655 | 7,940 | 7,189 | 90.55 | 13,036 | 11,654 | 10,316 | 88.52 | 81.73 | 68.13 | 69.69 |
| 1964 | 11,141 | 8,208 | 7,369 | 89.78 | 13,602 | 12,165 | 10,920 | 89.76 | 81.91 | 67.47 | 67.48 |
| 1965 | 11,646 | 8,676 | 7,762 | 89.47 | 14,292 | 12,777 | 11,436 | 89.50 | 81.49 | 67.90 | 67.87 |
| 1966 | 12,184 | 9,206 | 8,080 | 87.77 | 15,057 | 13,359 | 11,876 | 88.90 | 80.92 | 68.91 | 68.03 |
| 1967 | 12,322 | 9,546 | 8,256 | 86.49 | 15,266 | 13,749 | 12,180 | 88.59 | 80.71 | 69.43 | 67.78 |
| 1968 | 12,775 | 9,867 | 8,420 | 85.33 | 15,836 | 14,352 | 12,579 | 87.64 | 80.67 | 68.75 | 66.94 |
| 1969 | 13,262 | 10,368 | 8,675 | 83.67 | 16,158 | 14,727 | 12,732 | 86.45 | 82.08 | 70.40 | 68.14 |
| 1970 | 13,422 | 10,721 | 8,844 | 82.50 | 16,000 | 14,832 | 12,988 | 87.56 | 83.89 | 72.28 | 68.10 |
| 1971 | 13,864 | 11,208 | 9,200 | 82.08 | 16,328 | 15,099 | 13,374 | 88.58 | 84.91 | 74.23 | 68.79 |
| 1972 | 14,316 | 11,868 | 9,789 | 82.49 | 17,031 | 15,900 | 13,890 | 87.36 | 84.06 | 74.64 | 70.48 |
| 1973 | 15,163 | 12,717 | 10,492 | 82.51 | 17,843 | 16,603 | 14,598 | 87.93 | 84.98 | 76.59 | 71.87 |
| 1974 | 15,571 | 13,561 | 11,102 | 81.87 | 17,576 | 16,310 | 14,270 | 87.49 | 88.59 | 83.15 | 77.80 |
| 1975 | 15,689 | 13,999 | 11,525 | 82.33 | 17,341 | 16,080 | 14,265 | 88.71 | 90.47 | 87.06 | 80.79 |
| 1976 | 16,330 | 14,666 | 11,989 | 81.74 | 18,133 | 16,685 | 14,700 | 88.10 | 90.05 | 87.90 | 81.55 |
| 1977 | 16,695 | 14,898 | 12,188 | 81.81 | 18,785 | 17,209 | 15,095 | 87.72 | 88.88 | 86.57 | 80.74 |
| 1978 | 17,201 | 15,109 | 12,505 | 82.77 | 19,612 | 17,868 | 15,611 | 87.37 | 87.70 | 84.56 | 80.10 |
| 1979 | 17,750 | 15,432 | 12,807 | 82.99 | 20,014 | 17,873 | 15,527 | 86.87 | 88.69 | 86.34 | 82.48 |
| 1980 | 17,774 | 15,772 | 13,078 | 82.92 | 19,734 | 17,375 | 15,102 | 86.91 | 90.07 | 90.77 | 86.60 |
| 1981 | 18,084 | 16,201 | 13,326 | 82.26 | 20,021 | 17,446 | 15,087 | 86.48 | 90.33 | 92.86 | 88.33 |
| 1982 | 17,344 | 15,978 | 13,112 | 82.07 | 19,427 | 17,335 | 15,071 | 86.94 | 89.28 | 92.17 | 87.01 |
| 1983 | 17,644 | 15,751 | 12,832 | 81.47 | 20,085 | 17,717 | 15,547 | 87.75 | 87.84 | 88.90 | 82.54 |
| 1984 | 18,469 | 16,202 | 13,229 | 81.65 | 21,359 | 18,710 | 16,498 | 88.18 | 86.47 | 86.60 | 80.19 |
| 1985 | 19,288 | 16,715 | 13,601 | 81.37 | 21,984 | 19,220 | 16,877 | 87.81 | 87.74 | 86.97 | 80.59 |
| 1986 | 19,604 | 17,011 | 13,633 | 80.14 | 22,528 | 19,748 | 17,354 | 87.88 | 87.02 | 86.14 | 78.55 |
| 1987 | 20,150 | 17,306 | 13,729 | 79.33 | 23,087 | 20,155 | 17,597 | 87.31 | 87.28 | 85.86 | 78.02 |
| 1988 | 20,848 | 18,014 | 14,203 | 78.84 | 23,833 | 20,678 | 18,163 | 87.84 | 87.47 | 87.12 | 78.20 |
| 1989 | 21,011 | 18,339 | 14,565 | 79.42 | 24,438 | 21,042 | 18,372 | 87.31 | 85.98 | 87.16 | 79.28 |
| 1990 | 20,749 | 18,500 | 14,466 | 78.20 | 24,609 | 21,058 | 18,440 | 87.57 | 84.31 | 87.85 | 78.45 |
| 1991 | 20,107 | 17,854 | 13,975 | 78.28 | 24,232 | 20,735 | 18,245 | 87.99 | 82.98 | 86.10 | 76.60 |
| 1992 | 20,047 | 17,822 | 13,923 | 78.12 | 24,704 | 21,108 | 18,618 | 88.20 | 81.15 | 84.43 | 74.78 |
| 1993 | 20,264 | 17,654 | 13,850 | 78.45 | 25,093 | 21,105 | 18,567 | 87.97 | 80.75 | 83.65 | 74.60 |
| 1994 | 20,983 | 17,777 | 13,840 | 77.85 | 25,854 | 21,390 | 18,765 | 87.73 | 81.16 | 83.11 | 73.76 |
| 1995 | 21,329 | 17,897 | 13,878 | 77.54 | 26,298 | 21,702 | 18,978 | 87.45 | 81.11 | 82.47 | 73.12 |
| 1996 | 21,425 | 17,817 | 13,726 | 77.04 | 26,988 | 22,055 | 19,125 | 86.72 | 79.39 | 80.79 | 71.77 |
| 1997 | 22,129 | 18,033 | 13,797 | 76.51 | 27,917 | 22,626 | 19,466 | 86.03 | 79.27 | 79.70 | 70.88 |
| 1998 | 22,659 | 18,483 | 14,074 | 76.14 | 28,861 | 23,513 | 20,106 | 85.51 | 78.51 | 78.61 | 70.00 |
| 1999 | 23,499 | 18,751 | 14,269 | 76.10 | 29,798 | 24,017 | 20,466 | 85.21 | 78.86 | 78.07 | 69.72 |
| 2000 | 24,363 | 19,174 | 14,529 | 75.78 | 31,036 | 24,494 | 20,673 | 84.40 | 78.50 | 78.28 | 70.28 |
| Average annual rates of growth, % | | | | | | | | | | | |
| 61-73 | 3.66 | 4.74 | 3.94 | -0.77 | 3.26 | 3.50 | 3.40 | -0.09 | 0.39 | 1.20 | 0.52 |
| 73-81 | 2.23 | 3.07 | 3.03 | -0.04 | 1.45 | 0.62 | 0.41 | -0.21 | 0.77 | 2.44 | 2.61 |
| 81-89 | 1.89 | 1.56 | 1.12 | -0.44 | 2.52 | 2.37 | 2.49 | 0.12 | -0.62 | -0.79 | -1.34 |
| 89-00 | 1.35 | 0.41 | -0.02 | -0.43 | 2.20 | 1.39 | 1.08 | -0.31 | -0.82 | -0.97 | -1.09 |
| 89-96 | 0.28 | -0.41 | -0.84 | -0.43 | 1.43 | 0.67 | 0.58 | -0.10 | -1.13 | -1.08 | -1.41 |
| 96-2000 | 3.26 | 1.85 | 1.43 | -0.41 | 3.56 | 2.66 | 1.96 | -0.67 | -0.28 | -0.78 | -0.52 |

Source: Statistics Canada, Bureau of Economic Analysis and Bureau of Labor Statistics.

Data for U.S. for 2000 are obtained from the BEA, (<http://www.bea.doc.gov/bea/dn/dpqa.txt>).

Personal income and personal disposable income values are deflated using the CPI.

Note: data for GDP per capita for US recalculated from 1996\$ into 1992\$ with GDP price deflator ratio 1992/1996=0.917

Data for PI and PDI per capita for US recalculated from 1996\$ into 1992\$ with CPI ratio 1992/1996=0.8942

Table A4: GDP per capita decomposition into Productivity and Labour Market Components, Canada

| | GDP / Population 1992 \$ | GDP / Employment 1992 \$ | Employment / Population % | WAP / Population % | Employment / WAP % | LF / WAP % | Unemployment / WAP % |
|--------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------|--------------------------|---------------|----------------------------|
| | A=B*C | B | C=D*E | D | E=F-G | F | G |
| 1976 | 20,086 | 48,106 | 41.75 | 73.01 | 57.18 | 61.50 | 4.32 |
| 1977 | 20,535 | 49,075 | 41.84 | 73.58 | 56.87 | 61.80 | 4.93 |
| 1978 | 21,157 | 49,589 | 42.66 | 74.28 | 57.44 | 62.65 | 5.21 |
| 1979 | 21,832 | 49,514 | 44.09 | 74.96 | 58.82 | 63.58 | 4.76 |
| 1980 | 21,863 | 48,770 | 44.83 | 75.53 | 59.35 | 64.17 | 4.82 |
| 1981 | 22,243 | 48,802 | 45.58 | 75.91 | 60.04 | 64.96 | 4.92 |
| 1982 | 21,333 | 48,882 | 43.64 | 76.16 | 57.30 | 64.37 | 7.06 |
| 1983 | 21,702 | 49,863 | 43.52 | 76.39 | 56.97 | 64.70 | 7.73 |
| 1984 | 22,717 | 51,419 | 44.18 | 76.62 | 57.66 | 65.00 | 7.34 |
| 1985 | 23,724 | 52,716 | 45.00 | 76.87 | 58.55 | 65.53 | 6.98 |
| 1986 | 24,112 | 52,473 | 45.95 | 77.08 | 59.62 | 65.98 | 6.36 |
| 1987 | 24,784 | 53,111 | 46.67 | 77.07 | 60.55 | 66.40 | 5.85 |
| 1988 | 25,643 | 53,986 | 47.50 | 77.04 | 61.66 | 66.84 | 5.18 |
| 1989 | 25,843 | 54,178 | 47.70 | 76.78 | 62.13 | 67.20 | 5.07 |
| 1990 | 25,521 | 53,918 | 47.33 | 76.75 | 61.67 | 67.12 | 5.45 |
| 1991 | 24,732 | 53,868 | 45.91 | 76.96 | 59.66 | 66.53 | 6.87 |
| 1992 | 24,658 | 54,745 | 45.04 | 77.19 | 58.35 | 65.68 | 7.33 |
| 1993 | 24,924 | 55,577 | 44.85 | 77.36 | 57.97 | 65.40 | 7.43 |
| 1994 | 25,809 | 57,075 | 45.22 | 77.39 | 58.43 | 65.18 | 6.75 |
| 1995 | 26,235 | 57,579 | 45.56 | 77.52 | 58.77 | 64.90 | 6.13 |
| 1996 | 26,353 | 58,006 | 45.43 | 77.72 | 58.46 | 64.69 | 6.24 |
| 1997 | 27,218 | 59,169 | 46.00 | 78.01 | 58.97 | 64.87 | 5.90 |
| 1998 | 27,870 | 59,546 | 46.80 | 78.35 | 59.74 | 65.13 | 5.40 |
| 1999 | 28,904 | 60,577 | 47.72 | 78.71 | 60.62 | 65.59 | 4.97 |
| 2000 | 29,967 | 61,807 | 48.48 | 78.98 | 61.39 | 65.89 | 4.50 |
| Average annual rates of growth | | | | | | | |
| 81-89 | 1.89 | 1.31 | 0.57 | 0.14 | 0.43 | 0.42 | 0.38 |
| 89-00 | 1.35 | 1.20 | 0.15 | 0.26 | -0.11 | -0.18 | -1.09 |
| 89-96 | 0.28 | 0.98 | -0.69 | 0.18 | -0.87 | -0.54 | 3.00 |
| 96-2000 | 3.26 | 1.60 | 1.64 | 0.40 | 1.23 | 0.46 | -7.86 |

Source: Calculated from Statistics Canada, Labour Force Survey 2000.

1. $(\text{GDP} / \text{Population}) = (\text{GDP} / \text{Employment}) * (\text{Employment} / \text{Population})$
2. $(\text{Employment} / \text{Population}) = (\text{WAP} / \text{Population}) * (\text{Employment} / \text{WAP})$
3. $(\text{Employment} / \text{WAP}) = (\text{Labour Force} / \text{WAP}) - (\text{Unemployment} / \text{WAP})$

Table A5: GDP per capita decomposition into Productivity and Labour Market Components, US

| | GDP / Population 1996 \$ | GDP / Employment 1996 \$ | Employment / Population % | WAP / Population % | Employment / WAP % | LF / WAP % | Unemployment / WAP % |
|---------------------------------------|--------------------------------|--------------------------------|---------------------------------|--------------------------|--------------------------|---------------|----------------------------|
| | A=B*C | B | C=D*E | D | E=F-G | F | G |
| 1976 | 19,775 | 48,581 | 40.71 | 71.62 | 56.84 | 61.58 | 4.74 |
| 1977 | 20,486 | 49,032 | 41.78 | 72.21 | 57.86 | 62.24 | 4.38 |
| 1978 | 21,388 | 49,565 | 43.15 | 72.74 | 59.32 | 63.14 | 3.82 |
| 1979 | 21,826 | 49,706 | 43.91 | 73.25 | 59.94 | 63.67 | 3.72 |
| 1980 | 21,521 | 49,353 | 43.61 | 73.66 | 59.20 | 63.77 | 4.57 |
| 1981 | 21,834 | 50,011 | 43.66 | 73.98 | 59.01 | 63.88 | 4.86 |
| 1982 | 21,187 | 49,427 | 42.86 | 74.19 | 57.77 | 63.99 | 6.22 |
| 1983 | 21,904 | 50,899 | 43.03 | 74.35 | 57.88 | 64.01 | 6.14 |
| 1984 | 23,293 | 52,428 | 44.43 | 74.63 | 59.53 | 64.37 | 4.84 |
| 1985 | 23,974 | 53,356 | 44.93 | 74.73 | 60.13 | 64.79 | 4.67 |
| 1986 | 24,568 | 53,947 | 45.54 | 75.04 | 60.69 | 65.26 | 4.57 |
| 1987 | 25,178 | 54,369 | 46.31 | 75.27 | 61.53 | 65.58 | 4.06 |
| 1988 | 25,991 | 55,393 | 46.92 | 75.35 | 62.28 | 65.91 | 3.63 |
| 1989 | 26,651 | 56,176 | 47.44 | 75.36 | 62.95 | 66.45 | 3.50 |
| 1990 | 26,837 | 56,467 | 47.53 | 75.68 | 62.80 | 66.53 | 3.73 |
| 1991 | 26,427 | 56,715 | 46.60 | 75.57 | 61.66 | 66.18 | 4.53 |
| 1992 | 26,941 | 58,063 | 46.40 | 75.50 | 61.46 | 66.44 | 4.98 |
| 1993 | 27,366 | 58,728 | 46.60 | 75.49 | 61.72 | 66.30 | 4.58 |
| 1994 | 28,195 | 59,708 | 47.22 | 75.52 | 62.53 | 66.58 | 4.05 |
| 1995 | 28,679 | 60,399 | 47.48 | 75.49 | 62.90 | 66.63 | 3.73 |
| 1996 | 29,432 | 61,663 | 47.73 | 75.56 | 63.17 | 66.77 | 3.60 |
| 1997 | 30,445 | 62,980 | 48.34 | 75.79 | 63.78 | 67.09 | 3.31 |
| 1998 | 31,474 | 64,776 | 48.59 | 75.85 | 64.06 | 67.08 | 3.02 |
| 1999 | 32,496 | 66,501 | 48.87 | 76.06 | 64.24 | 67.08 | 2.83 |
| 2000 | 33,847 | 68,934 | 49.10 | 76.15 | 64.48 | 67.18 | 2.70 |
| Average annual rates of growth | | | | | | | |
| 81-89 | 2.52 | 1.46 | 1.04 | 0.23 | 0.81 | 0.49 | -4.03 |
| 89-00 | 2.20 | 1.88 | 0.31 | 0.10 | 0.22 | 0.10 | -2.35 |
| 89-96 | 1.43 | 1.34 | 0.09 | 0.04 | 0.05 | 0.07 | 0.42 |
| 96-2000 | 3.56 | 2.83 | 0.71 | 0.19 | 0.51 | 0.15 | -7.01 |

Source: Calculated from the Economic Report of the President, 1999.

Data for 2000 are from the BLS and BEA

<http://ssdc.ucsd.edu/gpogate/erp99/> and BEA.

1. (GDP / Population) = (GDP / Employment) * (Employment / Population)

2. (Employment / Population) = (WAP / Population) * (Employment / WAP)

Chart 1: Relative Aggregate Income Trends in Canada (Canada as % of US)

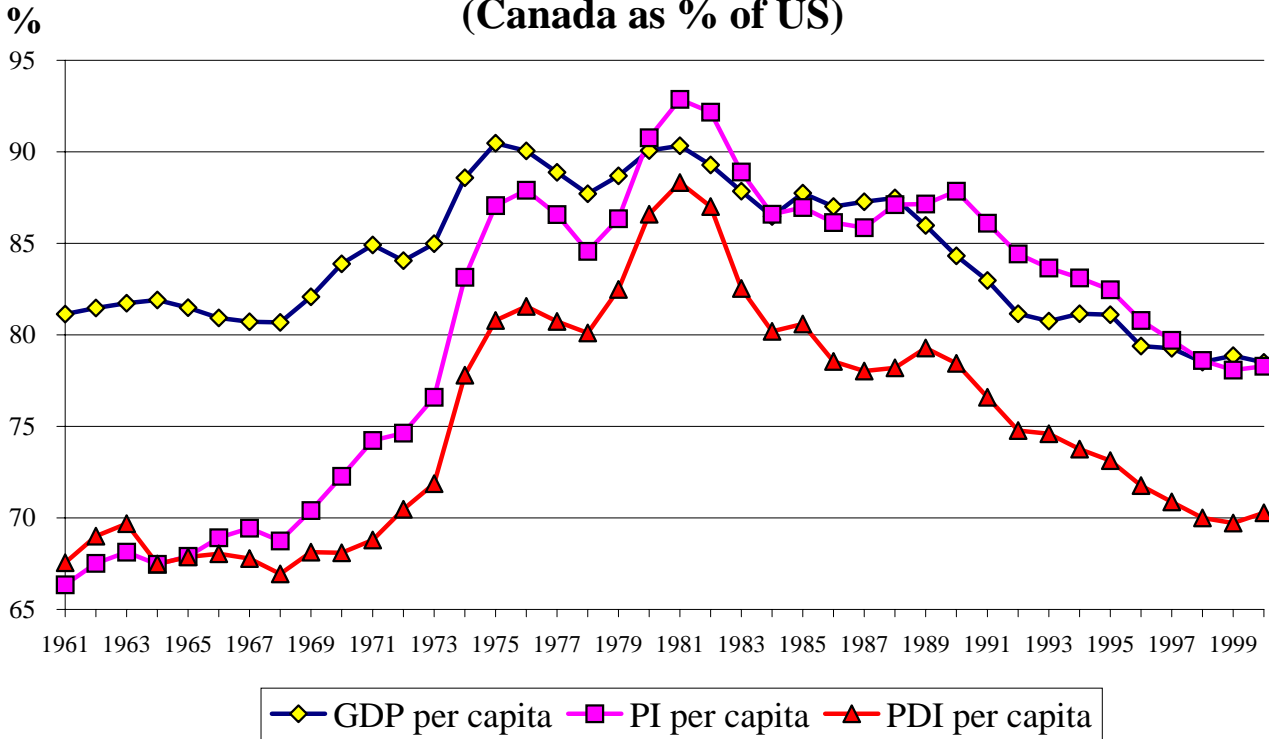


Chart 2: Personal Disposable Income as Share of Personal Income in Canada and US

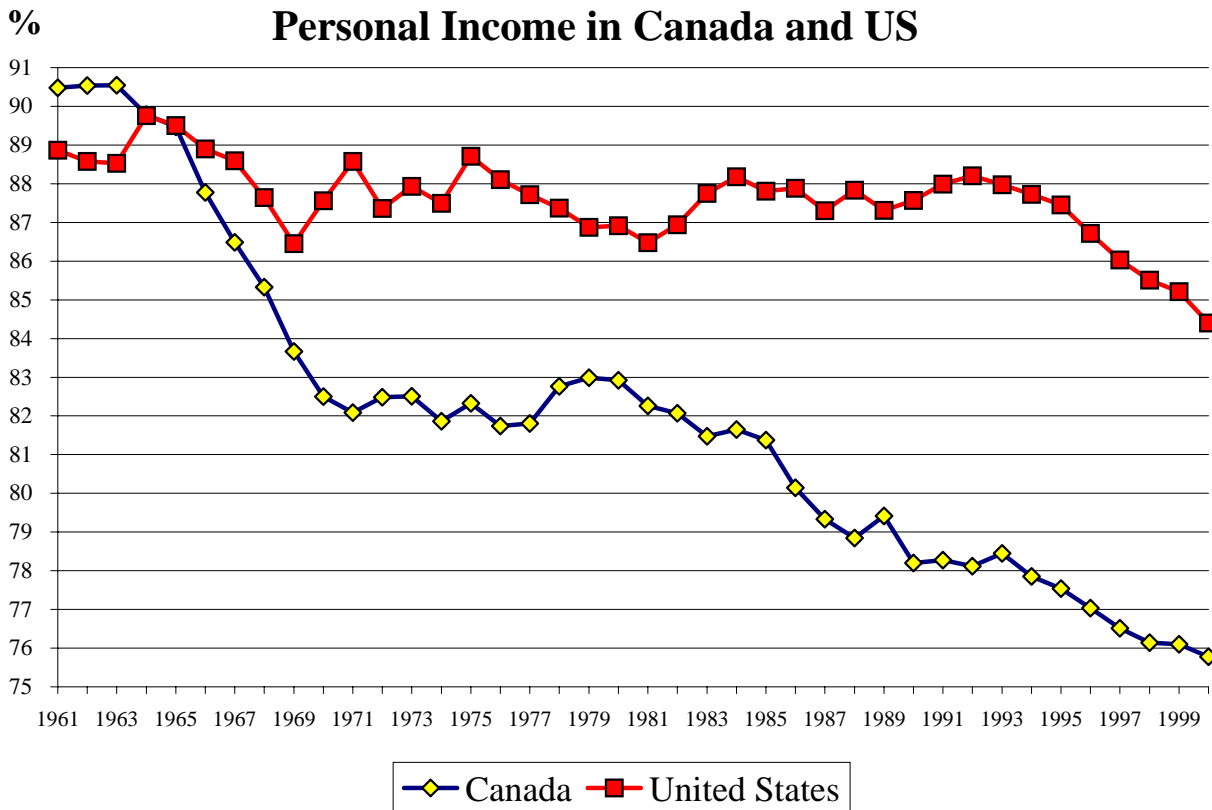


Chart 3: Relative Labour Productivity Trends in Canada (Canada as % of US)

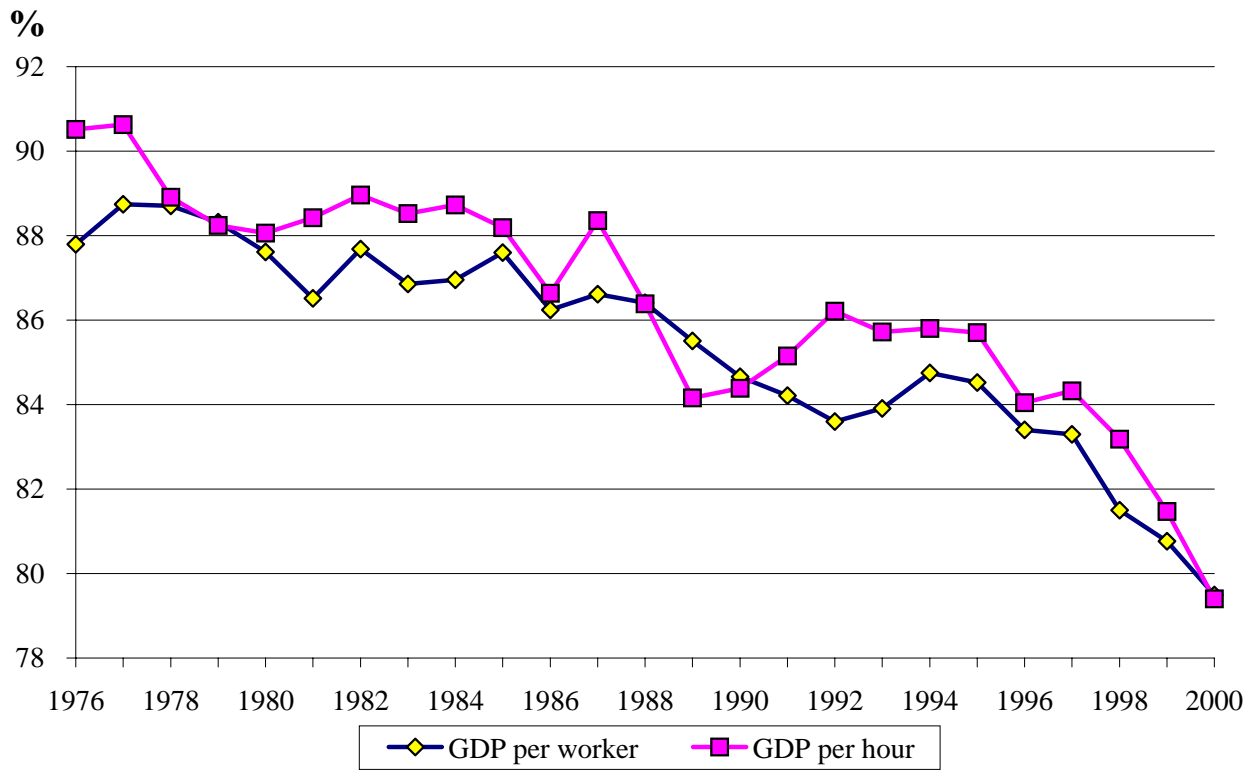


Chart 4: Working Age Population in Canada and the United States, 1989-1999

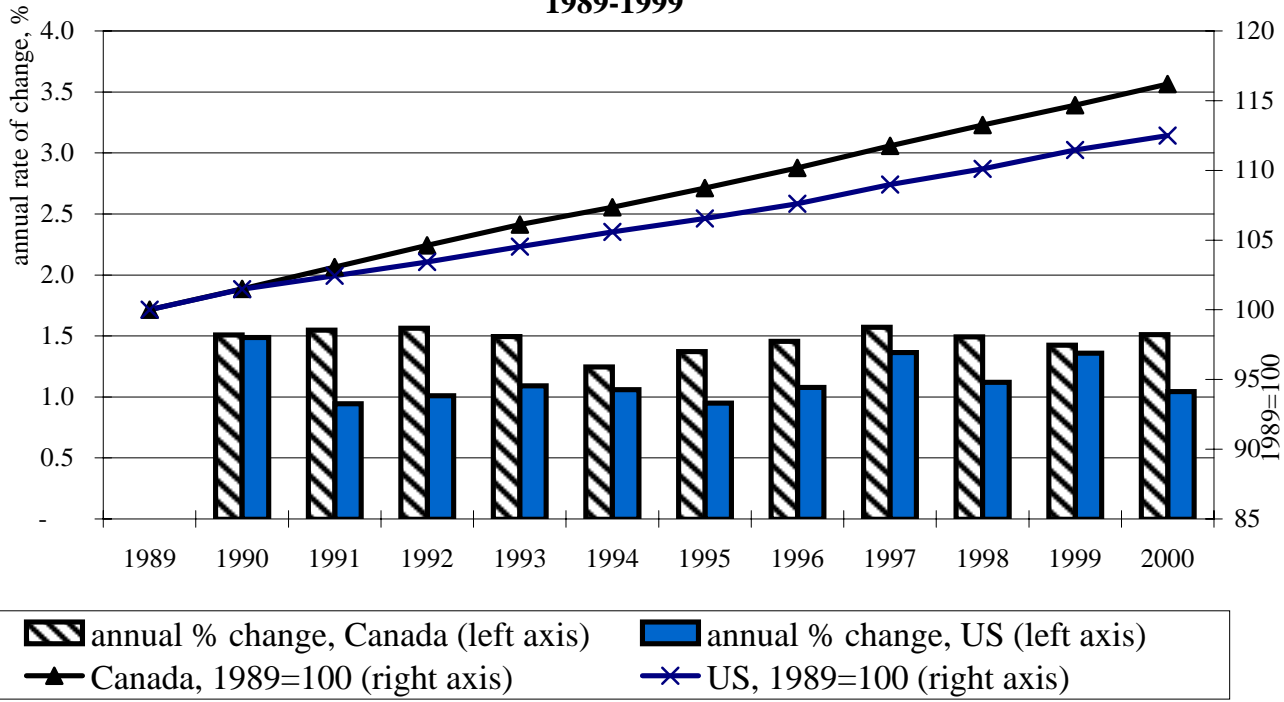


Chart 5: Labour Force in Canada and the United States, 1989-1999

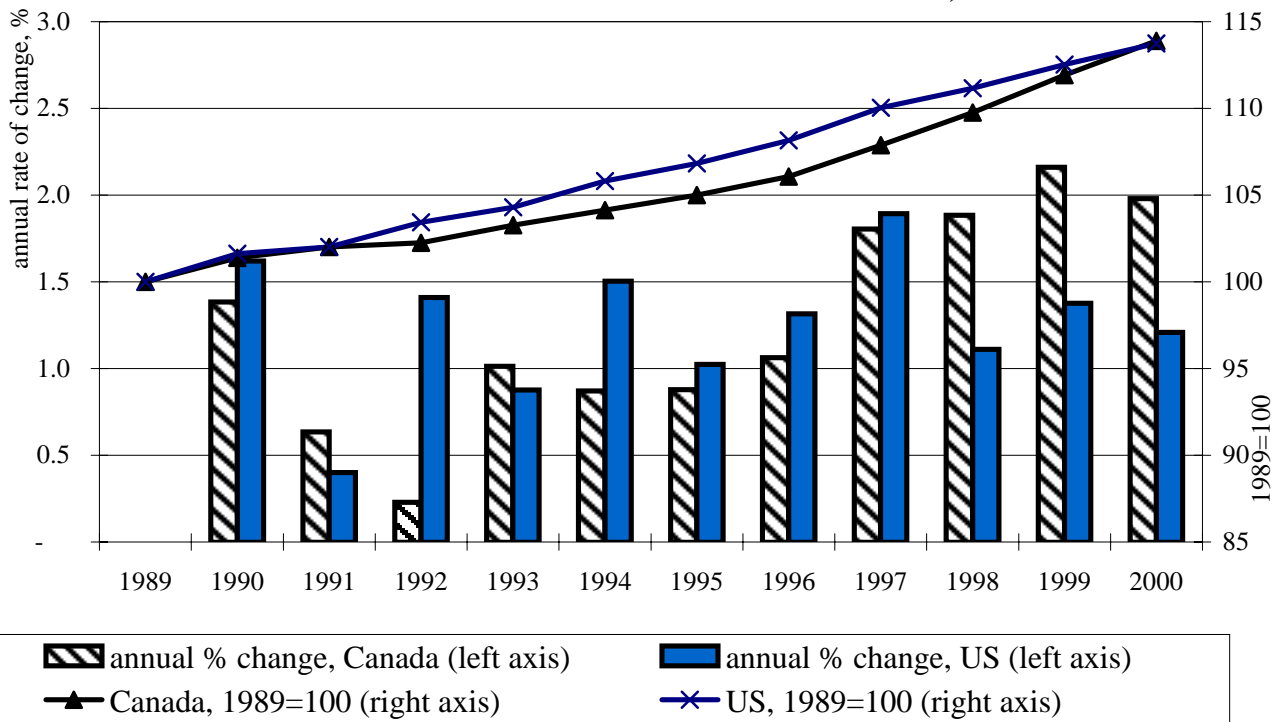


Chart 6: Employment in Canada and the United States, 1989-1999

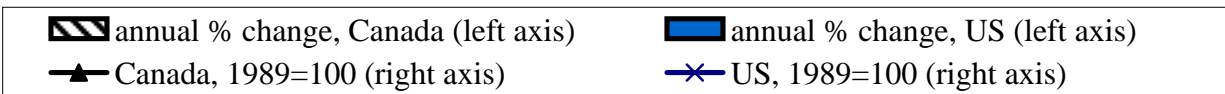
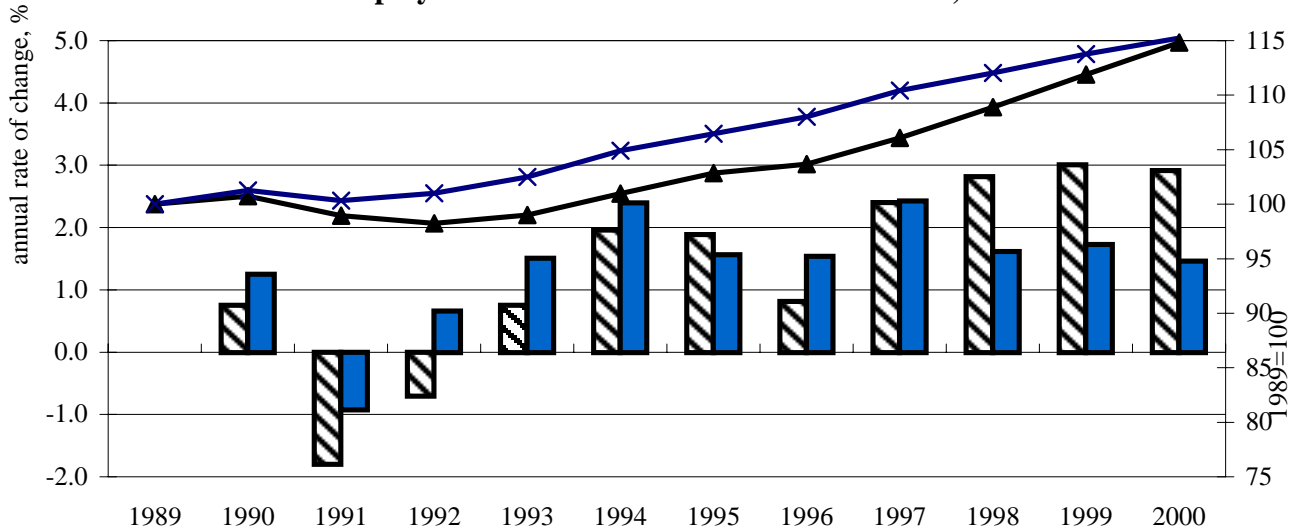


Chart 7: Unemployment in Canada and the United States, 1989-1999

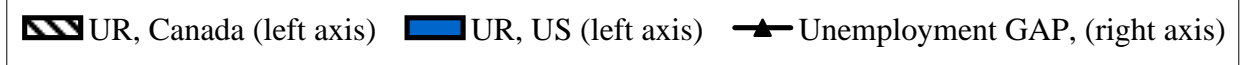
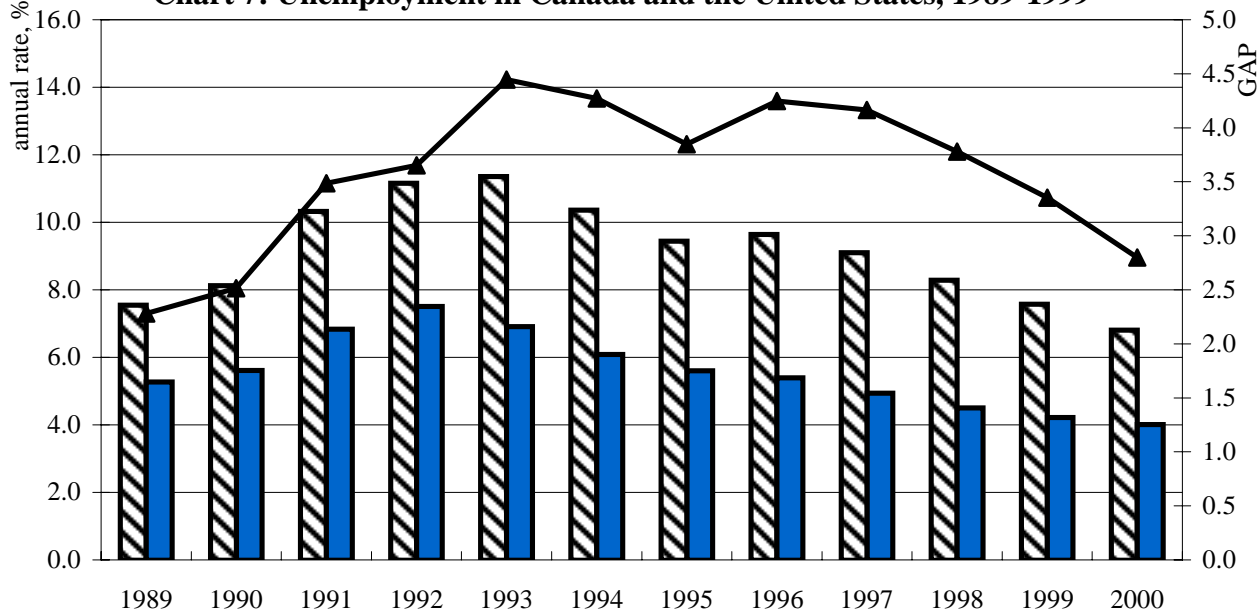


Chart 8: Real GDP in Canada and the United States, 1989-1999

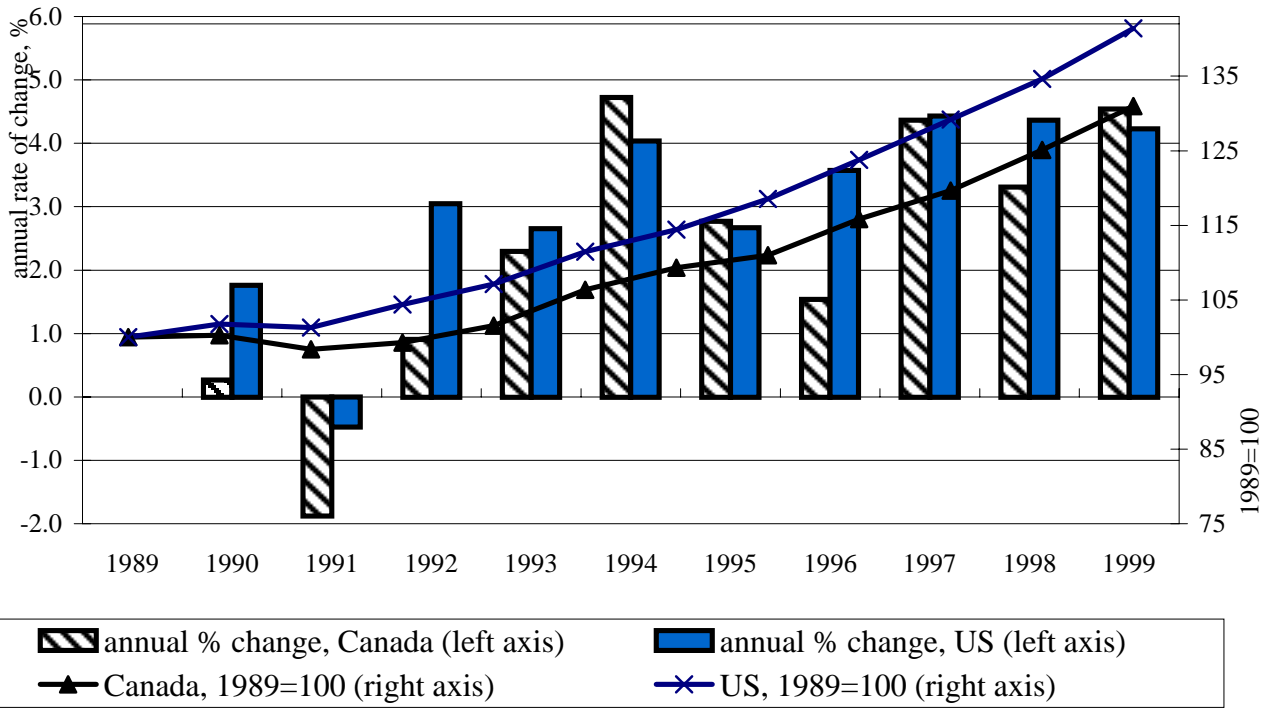


Chart 9: Real GDP per worker in Canada and the United States, 1989-1999

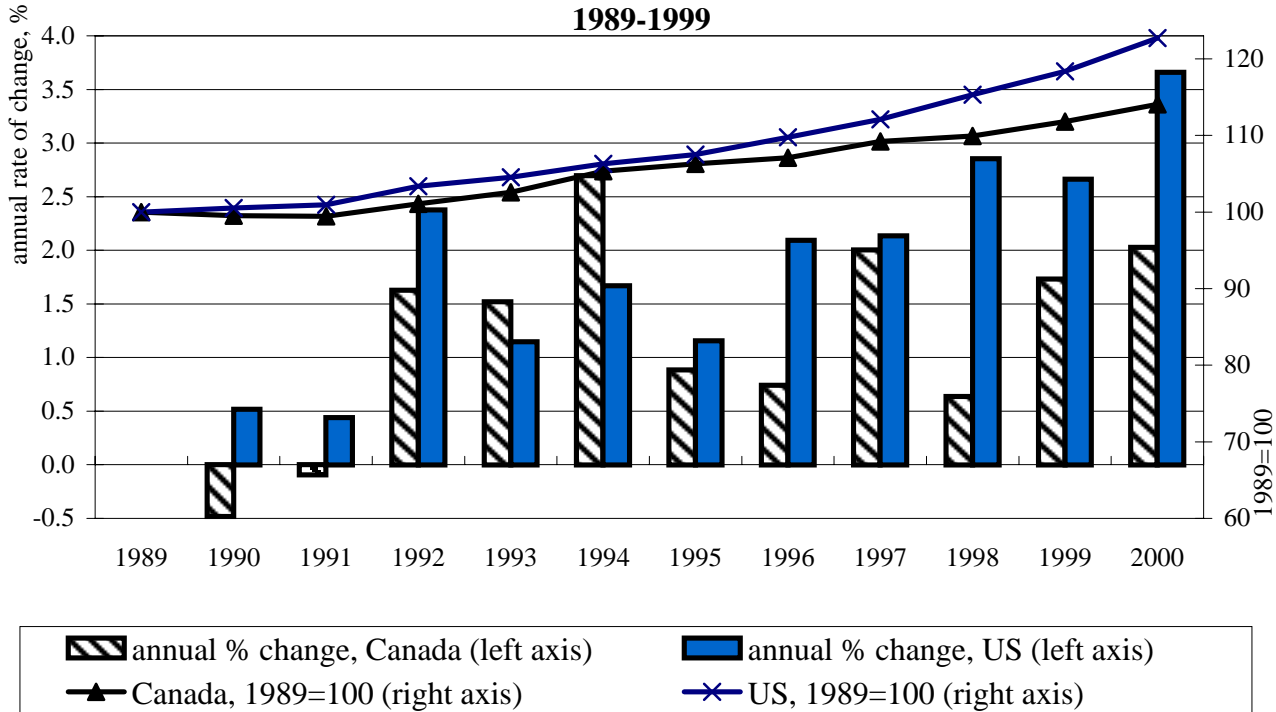


Chart 10: Labour Force Participation Rate in Canada and the United States, 1989-1999

