# Structural Influences on Participation Rates: A Canada-U.S. Comparison

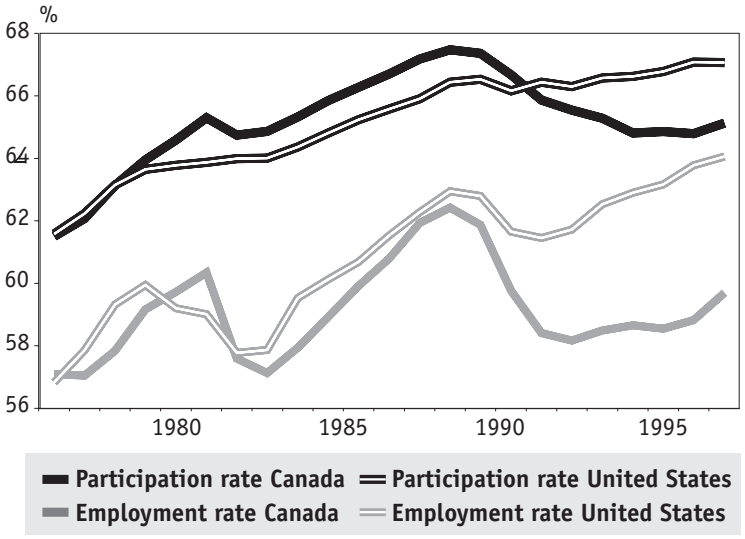
*Irene Ip, Sheryl King and Geneviève Verdier**

An understanding of what drives the participation rate is necessary for the projection of labour force growth, a key input into the determination of the economy's production potential.[1] The sharp drop in the participation rate in Canada in the 1990s has given rise to considerable debate about its cause and if it was reasonable to have expected it to have returned to its pre-recession peak. If that peak is the appropriate reference point, then the implications are that labour market slack is considerably larger than the present unemployment rate suggests.

While the severity of the 1990-91 recession in Canada and the subsequent underachievement of real GDP relative to potential caused much of the decline and subsequent stagnation of the aggregate participation rate, structural developments and compositional shifts among various subgroups of the population of labour force age, which were under way before 1989, also exerted downward pressure. The purpose of this article is to identify those supply side developments that could have accounted for part of the decline in the participation rate since 1989.[2] Although this approach does not include an analysis of demand side factors, cyclical effects are noted. The much worse performance of the Canadian participation rate than its U.S. counterpart in the 1990s, after the similarities of the preceding 15 years, suggests that using the U.S. labour market experience as a benchmark for Canada may shed some light on the situation, especially since the United States has been operating at full capacity for some time.

Econometric estimation of participation rates is hampered by the presence of many influences that are difficult to measure, such as changes in the availability of private and public pension plans, family relationships and structures, and the costs of and subsidies to education.[3] If these influences cannot be specifically modelled, projections based on such estimations will be unreliable. Fortin and Fortin (1999) estimated the aggregate participation rate, using a quadratic time trend to capture the effects of such influences, but they noted the problems of this technique in "appraising future non-policy structural developments in labour force participation." Thus, predictions based on econometric estimation must often be supplemented by judgment. In this paper, judgment about the effect of the various supply side factors on the participation rates of the major sub-groups, leads to projections of these rates, given a moderately expanding economy.

**Chart 1 Participation rates and employment rates, Canada and the United States**




From the mid-1970s to the end of the 1980s, the behaviour in the aggregate participation rates of both Canada and the United States were broadly similar (Chart 1), rising to record highs by the end of the 1980s with only one significant interruption in the early 1980s.[4] The dominant influence on the aggregate participation rates of both countries was the strong upward trend in women's participation rates that had begun in the 1950s (Chart 2).

**Chart 2 Female participation rates in Canada and the United States**

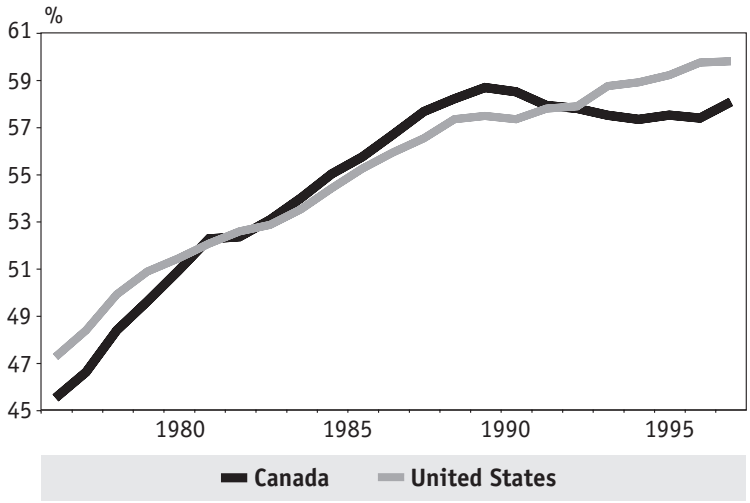
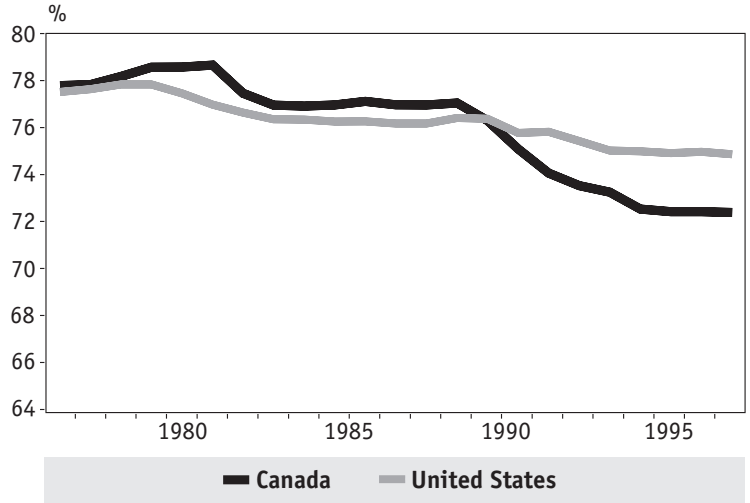



**Chart 3 Male participation rates in Canada and the United States**




Male participation rates fell slightly over the 1980s (Chart 3).

The 1990s, however, appear to have initiated a radical departure in the evolution of the participation and employment rates in the two countries. Both these rates fell more in Canada than in the United States during the 1990-91 recession, partly because economic growth was relatively stronger in Canada than in the United States before 1990 and the recession of 1990-91 was more severe. However, while the U.S. participation rate had begun to recover by 1994 and has since risen to a new high, the Canadian rate continued to fall until 1995 and showed no sign of recovery until 1998. In the United States, female rates are once again responsible for the rise in the total participation rate as those for male rates have drifted down since 1992. The rate of increase of the female participation rate has, however, been considerably lower than in the 1980s. In Canada, female rates were almost one percentage point higher in 1998 than in 1995 but the further slippage in male rates offset much of this uptick.

Cyclical influences can account for short-run changes in the both male and female participation rates in the two countries. For example, over the past two decades or so, the rates either fell or stalled in the recessions. The response to recoveries is, however, less clear. In the United States, the rate of increase in female rates slowed in each of the expansions of the 1980s and the 1990s, while at the same time male rates continued to decline. In Canada, female rate increases also moderated during the vigorous expansion of the 1980s, while male rates stalled and both have been fairly flat since 1994. Structural factors are more likely to have been behind such longer term developments.

We examine first some of the demographic factors that may have influenced the aggregate participation rate. We then undertake a disaggregrated analysis of some of the possible structural influences on major age and gender groupings for both Canada and the United States. The groups considered are the core labour force (ages 25-54), youth (ages 15-19 and 20-24) and older people (age 55 and over). Our main conclusion is that an increase in the aggregate participation rate should be expected over the medium term, but it is unlikely to return to its 1989 peak level or to track the U.S. rate as closely. The greatest uncertainty surrounds the direction of the participation rate for adult men in general and of those aged 55 and over in particular.

# Demographic and Compositional Effects

The participation rate fell by 2.7 percentage points from 1989 to 1997 in Canada compared with an increase of 0.5 percentage points in the United States. Although much of this difference is because of Canada's worse cyclical performance, some of it may be explained by demographic developments and shifts in the composition of the population of labour force age.

**TABLE 1 The American and Canadian labour market**

Per cent change

| | United States | | | Canada | | |
|---|---|---|---|---|---|---|
| | Population of working age | Labour force | Employment | Population of working age | Labour force | Employment |
| 1976-79 | 5.6 | 9.2 | 11.4 | 6.2 | 10.4 | 10.1 |
| 1979-89 | 13.1 | 18.0 | 18.7 | 15.3 | 21.7 | 21.6 |
| 1989-97 | 9.0 | 11.4 | 10.4 | 13.0 | 8.5 | 6.5 |

## Demographic Effects

Since 1976, the population of working age has grown at a faster pace in Canada than in the United States primarily because of our higher rate of immigration (Table 1). Until 1989, however, the labour force (and employment) grew faster in both countries because of an increase in the participation rates. In the 1990s population growth accelerated in Canada, exceeding the increase in the labour force, which had slowed markedly but less than employment. By contrast, population growth decelerated in the United States and even though labour force growth also slowed it continued to outstrip population growth. Even if employment and the labour force had posted the same increase as they had in the United States, the participation rate would still have fallen by about one percentage point, assuming the population growth remained as it was.

In order to have matched the performance of the U.S. participation rate for 1989 to 1997, Canada's labour force would have had to increase by almost 14 per cent, implying a similar growth in employment, assuming the previous relationship between the labour force and employment growth was maintained. While, faster population growth can be expected to give rise to faster economic growth and, therefore, higher employment and participation rates, the acceleration in the rate of new entrants to the labour market may have been more than the economy could immediately absorb, in an era of record downsizing in both the private and public sector.

## Compositional Effects

At any point in time, the aggregate participation rate, which is a ratio of the labour force to the population of working age, is the current weighted average of the widely varying participation rates of the different age/sex groups. Each of these groups may be subject to different sociological and economic influences, which may change over time. For example, the decisions of college students to work may be influenced by the availability of grants, loans and subsidies to education. Many older people's decisions about permanent withdrawal from the labour market may be affected by the existence of public or private pension plans. The ages for peak participation in the labour force are 25 to 44 years (a rate of more than 80 per cent since the beginning of the 1980s). Rates for the 20-24 age group were fairly similar until 1989. Teenagers' rates are considerably lower than any of the groups aged 20-54. Rates drop dramatically after age 54 but particularly after 64, when they are less than 10 per cent.

Because there have been major swings in birth rates since the 1920s, the population shares of these various age groups have changed significantly since 1976. Such changes have the potential to affect the aggregate participation rate even if the specific age group participation rates were to remain unchanged. The major development has been the replacement of the aging baby boomers (those born from 1946 to 1965) by the baby bust generation over the past two decades. The first baby boomers passed age 44 in 1991 and were replaced in the 25-44 age group by the first of the baby bust generation (those born after 1965). But other cohorts are also having an impact. For example, people born in the low birth rate Depression years entered the 65 and over group in 1995. It is the combination of the shifts in movements of relatively small age groups that may have an effect on the aggregate participation rate but for simplicity we focus here on three broad groups.

The core group, which is aged 25 to 54, rose from about 50 per cent to 51 per cent of the work-

**Chart 4 Participation rates and the effect of changes in the age composition of the Canadian population**

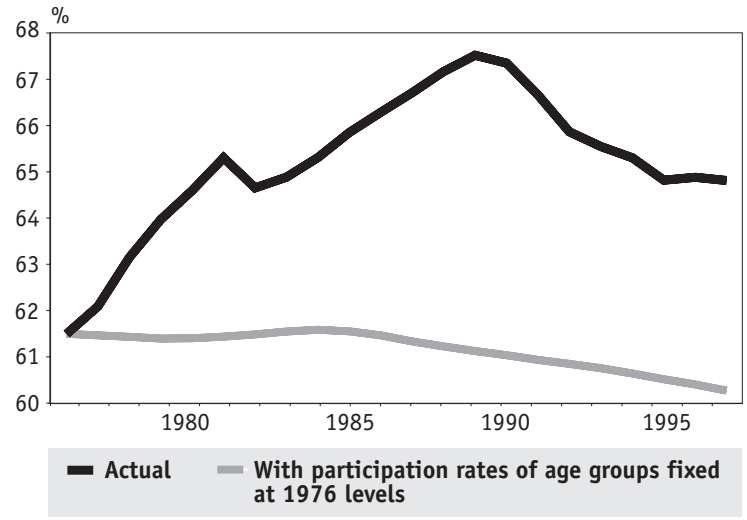
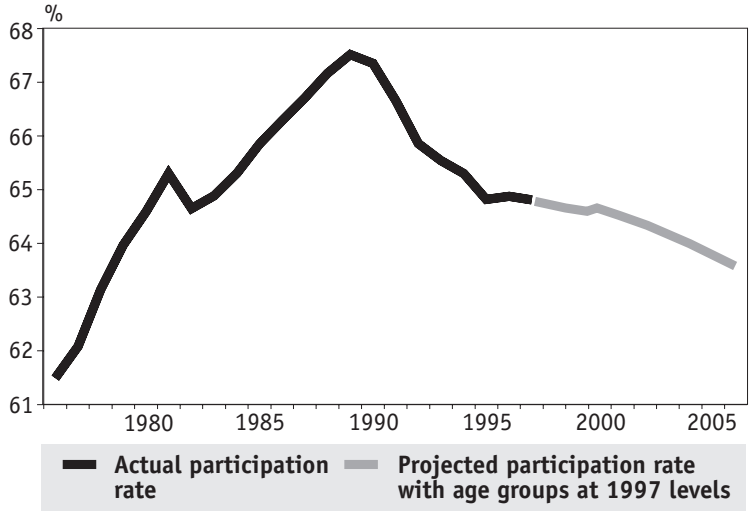



**Chart 5 Projected Canadian participation rate**




ing age population in the mid-1970s to about 58 per cent in 1996 in both Canada and the United States, with most of the growth having occurred in the 1980s.[5] Since the participation rate of this age group is higher than that of youth and of people aged 55 and over, it plays a major role in determining the level of the aggregate participation rate. However, the drop of about half a percentage point in its participation rate from 1989 to 1997 accounted for less than 10 per cent of the drop in the aggregate rate over that period.

In contrast, the youth share (ages 15-24 in Canada and 16-24 in the United States) fell dramatically in the 1980s as the baby boomers completed their passage through this age group. In Canada the share dropped from more than 26 per cent in the 1970s to 19 per cent by the end of the 1980s and to under 17 per cent by the mid-1990s. In spite of being only about a third of the size of the population aged 25-54 in 1989 and a decline of about 2.5 percentage points in its population weight in the 1990s, the drop in the youth participation rate in Canada after the 1990-91 recession accounted for almost 60 per cent of the fall in the aggregate participation rate from 1989 to 1997.[6]

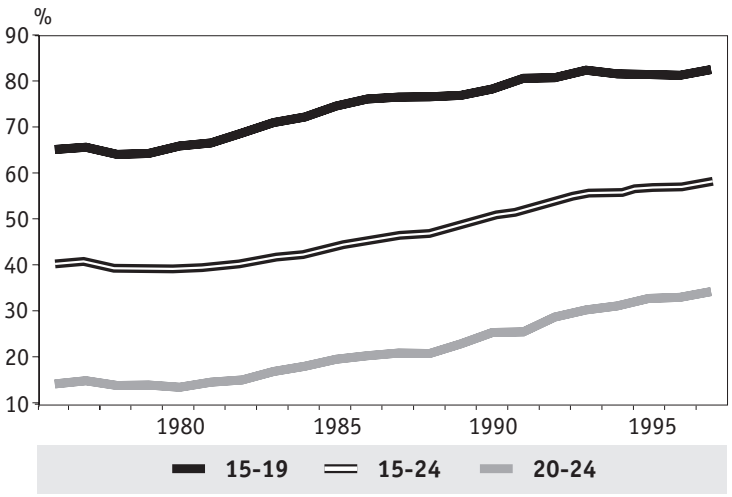
The participation rates for the 55 and over age group, are very low relative to younger age groups, particularly in the case of females. The rate of permanent departure from the labour force picks up after age 55 and accelerates rapidly after age 65. Currently in Canada the participation rates for men fall from 73 per cent in the 55 to 59 age group to only 16 per cent for ages 65 to 69. A similar pattern is observed for women, whose participation rates are considerably lower. The share in the population of working age of the 55 and over group has risen from 22 per cent in 1976 to about 25 per cent in the mid-1990s. Because of their longer life expectancy, the share of older women is significantly higher than that of older men.

An estimation of the compositional effects can be made by keeping the participation rates constant for a base year. Chart 4 illustrates the effect of weighting the 1976 participation rates of major age groups by each year's population shares. From 1976 to 1984, the effects of compositional changes in the labour force population on the aggregate participation rate were roughly neutral, but since then the effect has been increasingly negative. Compositional changes are estimated to have accounted for about one percentage point, or about one third, of the overall decline in the aggregate participation rate from 1989 to 1997.[7] Dugan and Robidoux (1999) make a similar estimate for the United States and find the effect of compositional changes was almost neutral from 1989 to 1996.[8] The move of the baby boomers into the 55-plus group in the next decade is projected to raise the share of this age group in the population of working age to almost 30 per cent by 2006 and its compositional effect on the aggregate participation rate will become much larger after 2000 (Chart 5).

## Changes in the mix of students and non-students

The youth population comprises students and non-students with very different participation rates. Although many full-time students work or search for work during the school year, they are less likely than non-students to be participating in the labour force. Even at the peak of economic activity in the 1980s, the participation rate for students in Canada was only half that of non-students.[9] Thus, a rise in attendance rates will produce a lower overall youth participation rate, other things being equal.[10] In Canada the full-time school attendance rate rose to more than 58 per cent in 1997 from 50 per cent in 1989 (Chart 6), which, according to one estimate, accounted for about 50 per cent of the decline in the youth participation rate from 1989 to 1997.[11]

**Chart 6 Full-time students as a proportion of population of same age in Canada**




The rise from 1989 to 1997 in the full-time school attendance rate in Canada for teens was only about half the increase experienced by young adults. It therefore had a much smaller effect on the teens' than on the young adults' participation rate, accounting for only about 20 per cent of the decline in the participation rate of teens compared with 90 per cent of the decline in the rate of young adults (Jennings, 1998).

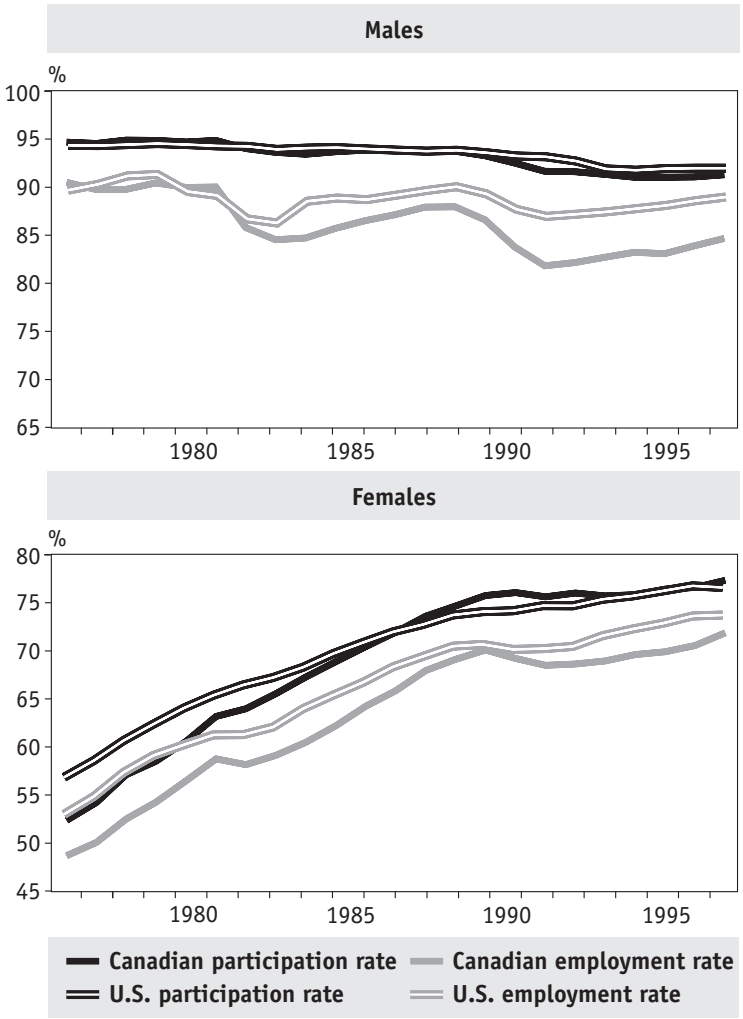
For both the 16-19 and the 20-24 age groups the rise in attendance rates was larger in Canada than in the United States in 1989-97 according to a measure that includes part-time students.[12] From being roughly equal in 1989, the teen rate rose seven percentage points for Canada compared with 4.9 percentage points for the United States. The attendance rate for those aged 20-24 was one percentage point higher in Canada than in the United States in 1989 and rose 10.9 percentage points compared with 7.2 percentage points in the United States. If most of the rise in the United States were structural, then using it as a benchmark, the extra growth in Canada may be interpreted as a cyclical response. These assumptions, however, imply that the rise in youth school attendance rates do not account for any of the difference between the falls in the participation rates of the two countries.

Faster growth in the attendance rates as the employment rate fell between 1989 and 1992 indicates that, particularly for teens, they do respond to cyclical developments. The incentive to stay in school is likely stronger when there are fewer low-skill job opportunities, and these opportunities tend to be sensitive to the business cycle. The 1990-91 recession had a disproportionate effect on teenagers encouraging many to stay in school. Data on school attendance in the United States are available from the late 1940s, whereas in Canada, they go back only to 1976. From an examination of the U.S. data cyclical effects appear to be small relative to longer-term trends.

The recent growth in U.S. male attendance rates was a continuation of an upward movement dating back to the beginning of the 1980s, after a fall related to the Vietnam War had petered out. By the mid-1990s, rates were in the region of the previous peaks and appear to be still holding. Female rates, on the other hand, have been rising very steadily in the United States for 50 years and have now virtually converged with their male counterparts. Strong gains were posted by all but 16- and 17 year olds. These developments suggest that the rise in the school attendance rate is largely structural. The Canadian experience has been similar to that of the United States since the early 1980s. Women's rates grew more strongly than men's. Teen rates have begun to flatten out in recent years but young adults' rates have continued to rise. It therefore seems reasonable to assume that some of the longer-term characteristics of the U.S. experience, especially for women, are present also in Canada and that a large share of the increase in the attendance rate in the 1990s was likely structural.

Further evidence of the structural nature of the increase in school attendance rates is the fact that

**Chart 7 Participation and employment rates 25-54**




they rose in the 1980s in both countries, even as employment rates increased, perhaps responding to factors such as the continuing shift in demand from low- to higher-skilled jobs.

The premium paid to workers with higher levels of education is one incentive to spend more years in school. Since, in Canada, there is little evidence these premiums have increased since the 1970s, they do not account for the rising trend in attendance rates (Bar-Or et. al., 1995, Beaudry and Green, 1997). The failure for these premiums to rise may be because the supply of educated youth has been growing faster than the demand for such workers. Nevertheless, the lower unemployment rate for those with higher levels of education[13] may be a sufficiently strong incentive for relatively more young people to choose to stay in school and thus improve their employment prospects.[14]

Interpreting the differences between Canadian and U.S. school attendance rate increases from 1989 to 1997 as the cyclical component of the Canadian increase implies that for teens the structural increase in the attendance rate accounted for about 1.75 percentage points, or 15 per cent, of the 12 percentage point fall in their participation rate. For young adults the structural component would account for 3.4 percentage points, or 60 per cent, of the drop of 5.7 percentage points in their participation rate. These two effects combined appear to account for about 0.4 percentage points of the decline in the aggregate participation rate.[15]

# Possible Structural Influences on Participation Rates of Major Age/Gender Groups

The disaggregrated data for the three age groups considered here show that the similarity before 1990 between the aggregate Canadian and U.S. participation rate levels and trends extended to most sub-groups. Even beyond 1990 there were remarkable similarities in some groups though the aggregate rates were so different.

## The core labour force: ages 25-54

For the core labour force group as a whole (aged 25-54), the steeply rising trend in the female participation rates in the 1970s and 1980s outweighed the declining trend in the rates for men. In the 1990s, however, the rate for women flattened out in Canada and slowed considerably in the United States, while the decline in the rate for men picked up (Chart 7). Because this group has a strong attachment to the labour force, its participation rate is relatively insensitive to changes in the business cycle.

Since the 1981-82 recession, Canadians have stayed in the labour force almost to the same degree that Americans have — both men and women — while employment rates have generally been much lower in Canada. This indicates that Canadian adults have a stronger attachment to the labour force. The similarity in participation rates in the 1990s is particularly remarkable, tak-

ing into account the more severe recession in Canada in 1990-91 and the subsequent weaker expansion. This stronger attachment may have been because of the higher probability that an unemployed worker in Canada will be receiving Unemployment Insurance (now called Employment Insurance). Apart from the incentive to remain active in the labour market in order to qualify for benefits, recipients of EI have to be searching for work and are, therefore, likely to report in the Labour Force Survey that they are seeking work when they are not employed.[16] Changes to EI since 1989 have helped to more than halve the probability that a non-working individual will receive benefits and to almost eliminate the difference between the two countries' probabilities. There may, however, be some inertia in the participation rate response to these changes in Canada but eventually the tighter eligibility rules, especially as they apply to seasonal workers, may bring the relationship between employment and participation rates in Canada closer to that of the United States. Another factor that tends to raise the participation rate in Canada relative to that of the United States is that, in Canada, just looking at job ads qualifies an individual for inclusion in the labour force. If the U.S. definition were used, the participation rate in Canada would be about 0.5 per cent lower.[17]

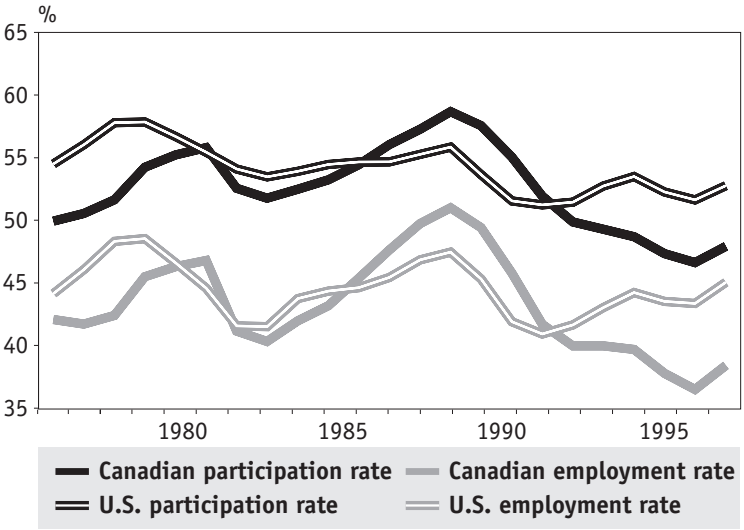
In the case of male participation rates, the continuation of the long-term downward trend after 1976 appears to be the result of a permanent negative reaction to recessions. Although not easily apparent from Chart 7, a closer examination of the data reveals that the shift to a lower level in the early 1980s was permanent in the United States, while there was a partial recovery in Canada. After 1989, the decline lasted until 1995 followed by a marginal increase in both countries. Although U.S. employment rates are now at about the same level as they were in 1984-87, the participation rate is two percentage points lower and 2.5 percentage points below its 1979 level, in spite of the sustained strong expansion. This inertia in the U.S. participation rate suggests structural factors at work, which may also be present in Canada.

Nevertheless, it is unclear why the male participation rate has been on a declining trend for so long in Canada and the United States as well as other industrial countries.[18] Accordingly, there is a great deal of uncertainty about the future direction and size of movement for this group.

One possible explanation for the downward trend in the male participation rate is rooted in the rising skill levels required for workers in many sectors. When men with limited skills are laid off from traditional, well-paid jobs in goods-producing industries, they may take a long time to adjust their wage rate expectations to the level their experience and skill level can command in an environment where technological change has made many skills obsolete. Many of these men, unable to find "suitable" jobs, drop out of the labour force. Those who can take advantage of early retirement options may opt for permanent withdrawal. Others may switch roles with spouses, frequently moving in and out of the labour force. In Canada, declines in the participation rate for workers with fewer than eight years of education have been greater than those for groups with higher levels of education. Although some of this difference can be attributed to the harsher impact of a weak economy on the least skilled, the U.S. experience suggests a longer-term effect may be operating. The rise since the early 1980s of school attendance rates of young men in both countries may eventually outweigh the negative effect of layoffs and early retirements and lead to a reversal of the long-term downward trend in the rate for adult men.

The rising trend in the participation rates of women in 1976-89, continued a trend that began in the early 1950s. Strong demand for occupations that women were able to fill interacted with various sociological and economic factors that were evident in both the United States and Canada, as well as many other industrial countries: changes in societal attitudes toward working women, particularly those with family responsibilities; the larger percentage of women with post-secondary education; and the more ambitious career aspirations of many women. As a result of these factors, each generation of women has spent more time in the labour force than the preceding one, pushing up the core participation rate. The marked slowdown in the rate of growth of the U.S. participation rate over the 1990s, in the face of continuing robust expansion, raises the question as to whether this ratcheting-up process is nearing a limit and that the flattening out of the Canadian female participation rate was partly the result of structural factors, which will restrain further growth in the future.[19]

**Chart 8 Participation and employment rates, both sexes, in Canada and the United States**




Note: Canadian data for 15-19 year olds; U.S. data for 16-19 year olds.

Further disaggregation of this group strengthens the case that, while this process is not yet over, additional ratcheting upward will be much smaller. In the United States, participation rates for women with children under 18 have been rising faster than those of other women, with the result there has been a considerable shrinking of the difference between the rates of these two groups.[20] The other source of growth in the rate for U.S. core-age women since the mid-1980s has been in the group aged 45-54 without children. The degree of convergence of the rates for these sub-groups, as well as the rates for men and women, has already been considerable. In addition, the proportion of the year that women have been spending in the workforce on average has now reached 11 months compared with 11.5 months for men.[21] These developments indicate there is less room for growth in the participation rate for women aged 25-54. Similar movements appear to have been taking place in Canada. In fact, the rate for women aged 25-44 is now higher in Canada than in the United States. However, the rate for the 45-54 age group in Canada, which rose significantly in the 1990s, is still below that for U.S. women of the same age and below that for Canadian women aged 25-44. There may, thus, be more room for the participation rate of Canadian women to rise than for women in the United States, despite the fact that the rates for Canadian and U.S. core-age women were virtually identical in 1997.

One explanation for the tendency for women's participation rates to increase while men's stagnate or decline may be that women are more flexible over the kind of jobs they will fill. For example, there is some evidence women's greater willingness to take low-paying jobs, for which they are overqualified, while they are juggling work and domestic duties.[22] The relatively greater rise in full-time school attendance rate for young women than for young men, may also be responsible for a stronger influence on the participation rate for women in the core group.

In Canada, changes to EI may eventually weaken labour force attachment with the result that a cyclical increase in the overall employment rate for those in the core group may not be accompanied by as much of a rise in the participation rate. By 2006 the participation rate of the core-age group appears to have room to move to about three percentage points above the 1996 level but only if male rates rise slightly (say by one percentage point). The U.S. Bureau of Labor Statistics assumes the male rate in the United States will decline over the next decade, and projects a 1.7 percentage point increase in the total core-age rate from 1996 to 2006 (Fullerton, 1997: Table 4).

## Youth: Ages 24 and under

Participation rates are more cyclical for youths than for adults but, if a large part of the increase in school attendance rate is structural, the participation rates may not return to the peak level of the late 1980s any time soon. For the United States, that development would be a continuation of a pattern that was evident in the 1980s for teens and men aged 20-24.

### Teens: 19 years and under

The labour market experiences of teens (15-19 in Canada, 16-19 in the United States) and young adults (20-24) are sufficiently different to warrant separate treatment here.[23]

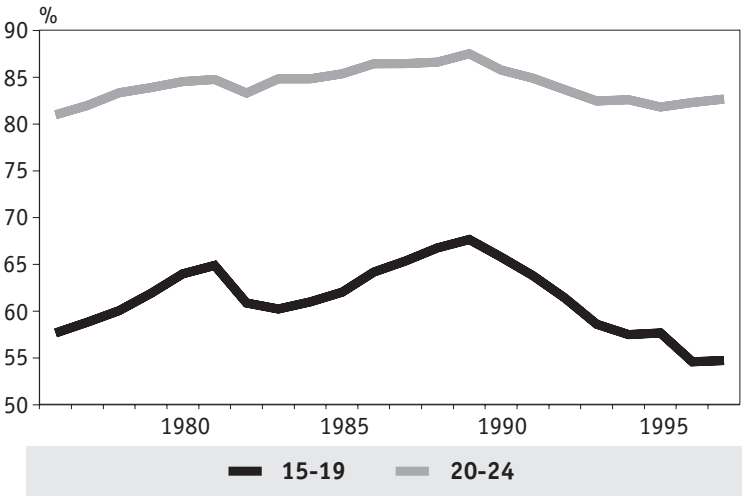
In both Canada and the United States, the attachment of teenagers to the labour force is relatively weak, driven largely by job opportunities. Their participation rates are, therefore, very cyclical, tracking their employment rate very closely for some time (Charts 8 and 9). This is not surprising since, during the school year, most teens are in school full-time and thus available for few hours of work each week.[25]

Although the participation rate for the teenaged group was lower in Canada than in the United States in the 1970s, it had caught up by the beginning of the 1980s and overtaken the U.S. rate by the end of the decade. The relatively stronger expansion in Canada was a significant factor in the latter occurrence. The drop in participation rates in the 1990-91 recession, though significant in both countries, was much more severe in Canada and, while the rates began to recover somewhat in the United States after 1992, they continued to fall in Canada. Nevertheless, the U.S. rates have not returned to their pre-recession levels, suggesting structural factors may be playing a role.

As the increase in full-time school attendance in Canada can account for only a small part of the decline in the participation rate, most of the decline stemmed from falling participation rates for students and non-students. The participation rate for teenage students in Canada fell about 12 percentage points between 1989 and 1997, reflecting a particularly difficult job market for these young people, one that was much more severe for both students and non-students than for older youths (Statistics Canada, 1997). The performance of teen participation rates in the summer months enforces this view (Chart 9). In addition to the weakness of the economy, Canadian students may also have been affected by the restructuring in sectors that traditionally provided the kind of part-time or summer jobs filled by teenagers, such as retail, which accounts for about 25 per cent of student employment.

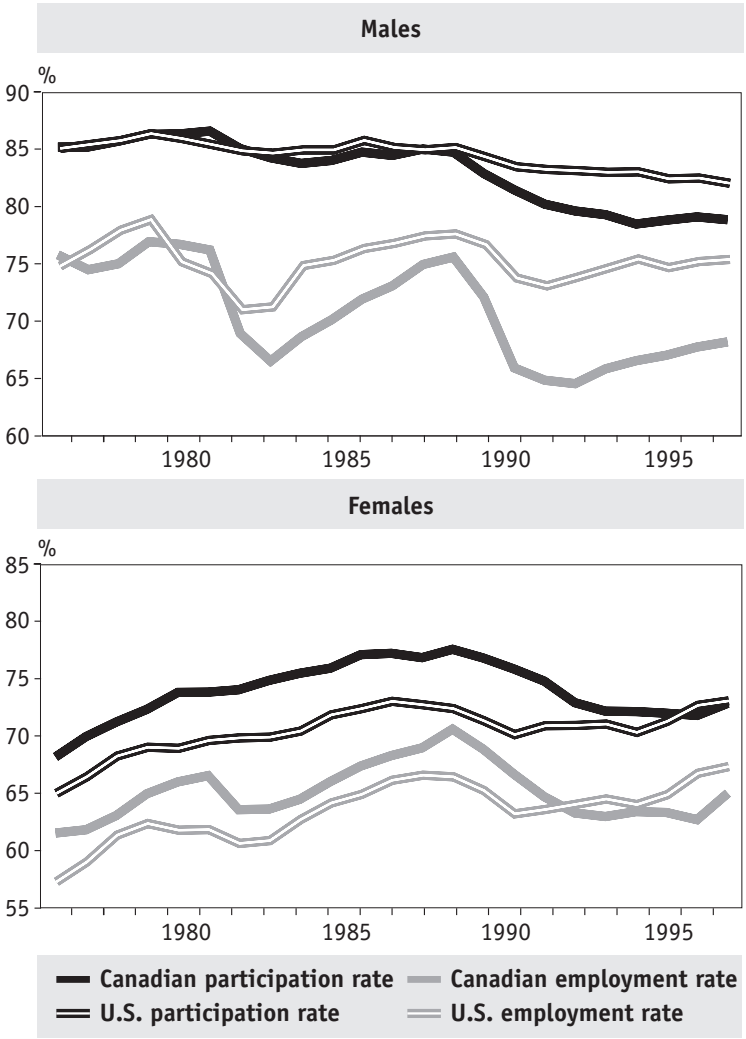
Canadian teenagers who are not in school have also had difficulty finding jobs in the 1990s.[25] Their participation rate fell by almost seven percentage points during the recession, and by 1997 it had recovered by only two percentage points. Apart from the cyclical effect, the shrinking percentage of jobs that now require more than a basic level of literacy may have negatively affected the search intensity of both United States and Canadian teens.[26] The increases in payroll taxes, including the extension of EI premiums to all hours worked, may also have discouraged job search among Canadian teens. The rise in the minimum wage in Canada relative to the average wage in the 1990s, in contrast to its decline from the mid-1970s until the mid-1980s, may have had a negative effect on the demand side of the labour market, which in turn dampened the supply side. The

**Chart 9 Summer participation rates, Canada**




Note: Data not seasonally adjusted.

**Chart 10 Participation and employment rates, 20-24 age group**



evidence on the impact of minimum wages is, however, mixed.[27]

As in the past, the business cycle and labour costs will heavily influence the demand side of the teen labour market. On the other hand, the structural changes that have taken place in some sectors in Canada, such as retail, and the increases in payroll taxes may permanently depress both the demand and supply in the teen labour market. While part of the rise in the school attendance rate was cyclical, the structural increase will still have a small permanent impact on the overall participation rate. A recapture of at least 75 per cent of the drop in the teen participation rate since 1989 should be possible as the economy moves to full capacity. The BLS, on the other hand, is projecting a decline of over 3 percentage points for the 16-19 age group by 2006 in the United States (Fullerton, 1997: Table 4).

## Young adults: Ages 20 to 24

Although employment rates for young male and female adults in both countries are just as cyclical as those for teens, their participation rates have been considerably less cyclical, particularly before the 1990s (Chart 10). The looser relationship between employment and participation rates of young adults relative to teenagers is because of the much larger proportion of non-students in the young adult group. Non-students have a greater attachment to the labour force than do students.

The trends of participation rates for young adults have been broadly similar in the two countries since the mid-1970s. In the late 1980s, male participation rates weakened, while female rates were rising strongly. Male employment rates, on the other hand, were sufficiently weaker in Canada than in the United States after the early 1980s to raise questions about how long the Canadian participation rate could continue to track the U.S. rate. Female participation rates were significantly higher in Canada than in the United States until the 1990s, which was consistent with a higher employment rate.

The absolute decline in the male participation rate in Canada from 1989 to 1992 was much larger than in the United States, resulting in the first divergence in male rates in more than 10 years and a convergence in female rates. (As the U.S. female employment and participation rates have recovered since 1994, they have moved above the Canadian rates for the first time since the mid-1970s.) Since the rise in school attendance rates apparently accounted for much of the weakness in the U.S. participation rate and the decline in the Canadian rate, other structural factor may not have been important for this age group. In fact, an examination of the developments in the movements in the participation rates of students and non-students, suggests cyclical factors played the dominant role.

The job-seeking experience of Canadian students aged 20-24 was relatively good in the 1990s. Their employment rate remained close to its 1990 peak level, which may explain the small rise in their participation rate. Nevertheless, that rise in the student participation rate in the 1990s pales in comparison with what took place in the 1980s, when their participation rate rose along with their school attendance rate. The rise in the participation rate for students in the 1980s can be attributed to the upward trend of tuition fees and the downward trend in government support in the form of grants. The persistence of these trends in the 1990s should have spelled further increases in the participation rate for students. The flattening that occurred indicates a deterioration of job opportunities for older students in the 1990s compared with the 1980s, even though their job-search experience was more successful than that of teenagers and slightly better than that of the core labour force. The contrasting performance of the summer participation rate in the 1980s and 1990s for young adults is further evidence of that deterioration (Chart 9).

In contrast with the experience of Canadian students, the participation rate for young adults who are not in school fell in the 1990s. Most of this decline appears to be cyclical. The fact that part-time employment has become more common among these non-students suggests the decline was the result of a deterioration in labour market conditions for this group (Statistics Canada, 1997).[28] Although the participation rate has begun to recover recently, in 1997 it was still 1.6 percentage points below its 1989 peak.

The participation rates of the 20-24 age group followed employment rates more closely in the 1990-91 than in the 1980-81 recession, in both countries, particularly for women, Since about 1994, only the participation rate for U.S. men has been at odds with the employment rate performance. This development may be because of the higher percentage of students, with weaker at-

tachment to the labour force than non-students, in the population and, in Canada, the changes in EI eligibility may also be loosening the attachment of this age group to the labour force. The relationship between the Canadian participation and employment rates may, therefore, become even closer in the future.

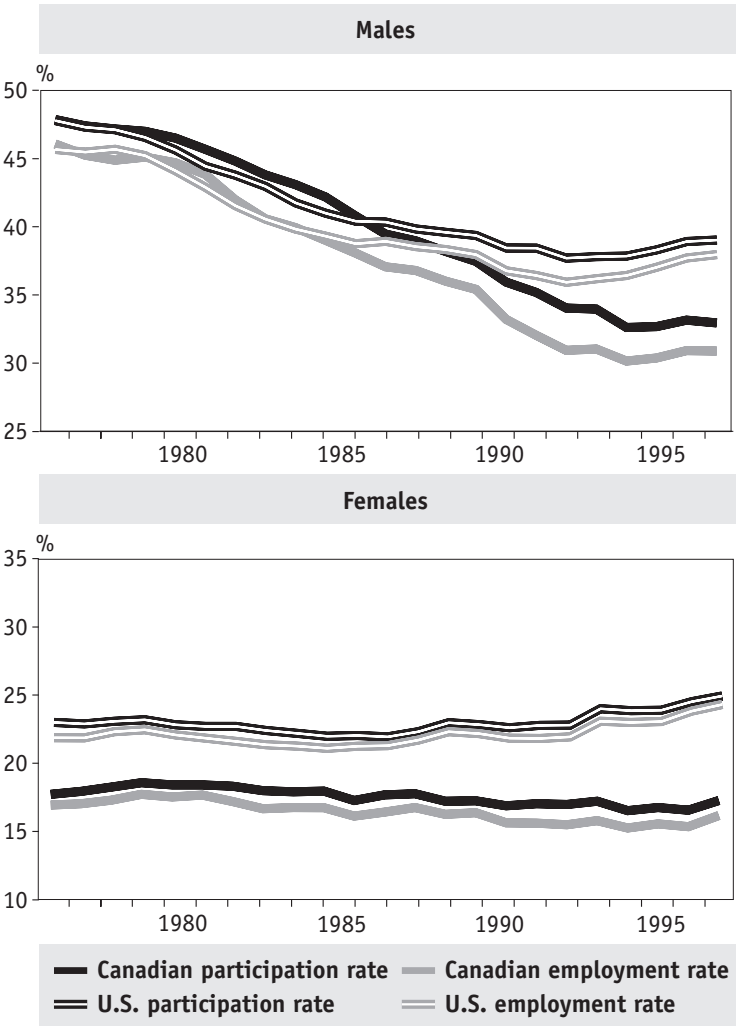
Primarily because of the higher school attendance rate in 1997 than in 1989, a large part of which appears to be permanent, an increase of no more than three to four percentage points from 1996 to 2006 appears likely. The maintenance of all the gains in the attendance rate would, by itself, preclude a return of the participation rate to the peak level reached in 1989. Although the participation rates for Canadian students and non-students can be expected to continue to make cyclical gains, the gap between the participation and the employment rates may shrink toward that of the United States, in response to changed EI rules. In contrast with this projection, the BLS is projecting a decline of 2.6 percentage points for this group by 2006 in the United States (Fullerton, 1997: Table 4).

## Older workers: Ages 55 and over

The most striking characteristics of participation rates for workers aged 55 and over in both countries are the dramatic decline in the male rate from the mid-1970s to the mid-1990s and the close relationship between participation and employment rates, indicating a weak attachment to the labour force (Chart 11).[29] Both the employment and participation rates for men in the two countries ended their decline in the 1990s, and have even risen slightly in the United States. Participation rates for women, which are much lower in Canada than in the United States, exhibited a very weak downward trend until 1986. Since then, these rates have diverged even more as the U.S. rate ratcheted upward. The long-term nature of the downward trend in this older group's participation rates suggests structural factors have been more important than cyclical forces in their labour market decisions. It is even difficult to find a purely cyclical reason for the recent change in the trend in the male rates.

There is a great deal of variation in participation rate patterns among the various age groups that make up the aggregate 55 and over group. For example, the rate for youngest sub-group of women (aged 55-59) rose decisively in the 1980s.

**Chart 11 Participation and employment rates, 55 and over**




Since the same group has been exhibiting comparable behaviour in the United States, it appears the ratcheting-up phenomenon of women's participation rates may be affecting this age group and, may affect the 60-64 age group eventually.

In the United States, a new development appears to be taking place that may be a harbinger for Canada. The change in direction in the participation rate for U.S. men aged 55 and over was caused by an increase of more than two percentage points from 1986 to 1996 in the rate for the 65-75 age group.[30] Since the rise continued throughout the recession, when for most other U.S. male groups it declined, it appears to be structural. In Canada, the participation rate for males aged 65-69 stopped falling in the 1990s, suggesting it may follow the new trend for older American men.

To determine whether the change in the trend of the male participation rate is permanent or if the decline has merely been interrupted, it would be necessary to identify the dominating influences on the timing of permanent withdrawal from the work force. These factors would include the state of workers' health and sources of retirement income (from personal wealth, employer retirement plans and social security). The role of education in the retirement decision might be expected to be important, but at the present time, the evidence is inconclusive.

While the improvements in various measures of social security aimed at the elderly have no doubt enabled a growing proportion of older people to drop out of the labour force, the provision of public pensions does not always have that effect. People may "retire" but still opt to work, perhaps at reduced hours, if there is no earnings penalty. Unlike in the case of social security in the United States, there is no restriction or tax on work in order to receive the Canada or Quebec Pension Plans.[31] Changes in Canada, such as the introduction of cost-of- living indexation and an early retirement option, have made early retirement more attractive since the 1970s[32] but there is little evidence of any substantial effect on labour market decisions from early retirement options in public pension plans in Canada (Baker and Benjamin, 1997:16). It should be remembered that a large percentage of CPP/QPP beneficiaries do not qualify for the maximum pension ($744.79 a month for both CPP and QPP as of July 1, 1998) when they become eligible to claim benefits. Many people have not accumulated the maximum number of years and may, therefore, increase their average pension by working longer. Others may be able to replace years when earnings were low with years at, or close to, the maximum. While disincentives to remaining in the labour force are built into the CPP/QPP, they may affect only those whose incomes would be marginally higher than the penalty level. Higher-income individuals (who likely also have post-secondary education) may have greater motivation to remain in the work force because their opportunity cost of retiring is very large. One study of the relationship between social security and retirement in the United States found that the influence of social security provisions on retirement planning varied according to such factors as marital status and earnings. For example, there was a disincentive for workers with low earnings to continue work after age 61 but a large incentive for high-earnings workers to continue to work from 62 to 64 (Diamond and Gruber, 1997:24-25).

Rather than social security availability being a major incentive to withdraw from the labour force, especially before age 65, a combination of factors such as economic conditions, industrial restructuring and the availability of employer-provided pension plans, may be more influential. For example, for U.S. workers who were covered by both private-sector pension plans and social security, decisions to withdraw from the labour force were found to be influenced more by the employer pension plans (Wise, 1996:3). A Canadian survey of people not in the labour force provided evidence that older workers, who are subject to downsizing, may choose to leave the labour force rather than start a new career. The number of workers who made this decision because of layoffs, plant closures or voluntary early retirement options during the 1990-92 recession was about two thirds larger than the number that left for these reasons in 1987-89 (Siroonian, 1993 and Gower, 1997:11). This development suggests structural change may cause the cyclical effect to be greater than otherwise.

Evidence for the role of education in the retirement decision is both scant and mixed. An analysis of Canadian LFS data for 1991-95 found those with a postsecondary diploma or degree retired earlier than those with eight years of schooling or less (Gower, 1997). Evidence for the United States, however, suggests people with more schooling are more likely to continue working past age 55. In fact, in the United States the participation rate for those who have completed four years or more of college has begun to rise in recent years (Besl and Kale, 1996). It is possible the Canadian findings are a temporary phenomenon, reflecting the generous early retirement options that, in the 1990s, have been a feature of many restructuring efforts in sectors where employees' levels of education tend to be high, e.g. education and public administration. Later retirement among those with the least schooling may be because of inadequate pension entitlements or personal wealth. Many of these people would not even be eligible for the maximum CPP/QPP pension. Canada may, therefore, see a similar turnaround in the participation rate for higher edu-

cated people aged 55 and older as Besl and Kale predict for the United States.

Government policy and social and economic developments appear to be causing the change of direction in the participation rate of the 55-plus group in the United States and may have a similar impact in Canada in the future. These include less-generous retirement support by private and public sectors and a higher percentage of older women who need to be financially independent, after three decades of increased incidence of marriage breakdown (Besl and Kale, 1996). Other likely influences on the decision by Americans about when to leave the workforce mentioned by Besl and Kale are legislation eliminating mandatory retirement and outlawing age discrimination, fiscal constraints on the growth in Social Security benefits and the operation of medicare, which is projected to run out of funds before 2002, and regulations implemented over time to raise the normal retirement age for full Social Security benefits from 65 to 67. All these considerations lead Besl and Kale to expect higher labour force participation rates among older adults in the next century. Labour force projections that assume that participation rates for those aged 55 and older will remain at the current low levels may be overly pessimistic and may underestimate the size of the future labour force.

Finally, the rising trend in the ratio of the self-employed to total employment may have a significantly positive effect on the participation rate, since these people tend to retire later than salaried employees (Gower, 1997).[33] The acceleration in the growth of this ratio in the mid-1990s may, however, be temporary to the extent that self-employment was a second-best solution for some of those who took early retirement as part of the massive reduction in employment in the public sector.

A plausible outcome for the 55-plus age group in Canada would be a relatively strong increase — as much as four to five percentage points — between 1996 and 2006. This compares with the BLS projection for the United States of a rise of 6.5 percentage points for this age group over the same period (Fullerton, 1997).

# Conclusion

This article has attempted to develop a synthesis of various pieces of information about past structural influences on the participation rates of Canada and the United States with a view to hypothesizing how much potential underlying strength there is over the next few years.

Compositional and structural factors appear to have played a significant role in the decline in the participation rate in Canada over the 1990s and in the different performance between the two countries. Rough estimates of the effect of the shifts in weights of demographic groups in the working age population and between students and non-students appear to account for one to 1.5 percentage points of the 2.69 percentage point decline from 1989 to 1997, or 37 per cent to 56 per cent. This is not a minor effect and strongly suggests it was unreasonable to expect the participation rate to have regained the peak level of 67.5 per cent during this time. Compositional effects also appear to account for about 30 per cent of the difference between in the change in the two countries' participation rates over the period.

In addition, structural factors such as the convergence of female participation rates to male rates and a continued trend in early retirements among 55 and over males have all helped to put downward pressure on the aggregate participation rates.

Over the next decade, Canada, as well as the United States and many other members of the Organization for Economic Co-operation & Development, will experience a rising population share of older people, who have on average the lowest participation rates of the major groups. This change in composition would result in a decline in the aggregate participation rate without offsetting increases in the participation rates of age- pecific groups (Chart 5). There is unlikely to be a much larger increase in the school attendance rate, as in the case of teens it appears to be approaching a saturation point. However, because a large proportion of the increase appears to have been structural, the impact will be permanent.

In the case of the largest group — core-age workers — the participation rate appears to have room to increase moderately. As workers enter the core-age group with higher levels of education than those leaving it, there may be a better match

**Table 2 Participation rate projection**

| | 1996 | 1998 | Forecast 2006 |
|---|---|---|---|
| Canada 15-19 | 47.3 | 48.1 | 57.0 |
| U.S. 16-19 | 52.3 | 52.8 | 51.8 |
| Canada 20-24 | 75.5 | 76.0 | 79.5 |
| U.S. 20-24 | 76.8 | 77.4 | 74.3 |
| Canada males 25-54 | 91.0 | 91.3 | 92.3 |
| U.S. males 25-54. | 91.8 | 91.8 | 90.8 |
| Canada females 25-54 | 74.7 | 77.3 | 81.0 |
| U.S. females 25-54 | 76.1 | 76.5 | 79.3 |
| Canada males 55+ | 32.7 | 32.9 | 37.5 |
| U.S. males 55+ | 38.3 | 39.05 | 43.8 |
| Canada females 55+ | 16.8 | 17.3 | 21.1 |
| U.S. females 55+ | 23.9 | 25.0 | 29.9 |
| Aggregate | | | |
| Canada | 64.9 | 65.1 | 66.6 |
| U.S. | 66.8 | 67.1 | 67.6 |

with the skill requirements of employers. This development may end the decline in the rates for men and may help to further narrow the gap between the rates for men and women, albeit at a slower pace than in the 1970s and 1980s. There is, however, a possibility that participation rates for women will rise to a higher level in Canada than in the United States. The participation rate for teens is likely to make some large gains in the face of continued economic expansion, but the small weight of this group will also keep the impact on the aggregate rate relatively small. In the case of young adults, the room for cyclical gains is quite large but, again, their weight in the population is relatively small. The participation rate for older workers could well increase further, although the greatest uncertainty surrounds this group's participation rates.

Structural and demographic factors will likely prevent the aggregate participation rate from returning to its 1989 peak before 2006, but the factors exerting upward pressure on the participation rate are likely to outweigh those that are pulling it down.

Another feature of the aggregate participation rate that appears likely to emerge is a greater propensity for the participation rate to react to a change in the employment rate, closer to the U.S. experience. This results partly from the rising weight in the population of groups whose participation rates tend to vary closely with the corresponding employment rate, e.g. students and those aged 55 and over. In addition, the decline in the proportion of the unemployed who qualify for EI may produce a reduction in the labour force attachment of some groups, such as seasonal workers, and an increased responsiveness to changes in the employment rate.

Taking into account all the developments and factors that seem to be influencing the outcome for each Canadian group examined, plausible projections have been made for eight age/sex groups. The rates are then weighted by their projected population shares to estimate what the aggregate Canadian participation rate might be in 2006. These projections are summarized in Table 2 with those made by the BLS in its most recent biennial employment outlook (Fullerton, 1997). These estimates suggest the aggregate participation rate could rise to more than 66.5 per cent by 2006, compared with 64.9 per cent in 1996. That would still be a percentage point below the U.S. projected rate although the projected rise for Canada between 1996 and 2006 is about double the U.S. rise. Considerable uncertainty, however, surrounds many of the assumptions underlying this projection.

Irene Ip is a Research Advisor in the Research Department at the Bank of Canada. Sheryl King and Geneviève Verdier are Senior Analysts in the Research Department at the Bank of Canada.

## Notes

* Gordon Wilkinson helped in many different ways in the course of this project. The authors would like to thank their colleagues at the Bank of Canada for their assistance and comments. Of course, since the authors are solely responsible for the paper's content, none of the above mentioned is responsible for any remaining errors. No responsibility for errors should be attributed to the Bank of Canada. An earlier version of this paper was delivered to the Congress of the Canadian Economic Association, University of Ottawa, May 30, 1998.

1. The growth of population aged 15 and over, which is a function of birth and death rates and net immigration, interacts with changes in the participation rate to determine the growth of the labour force.

2. Dugan and Robidoux (1999) take a similar approach. In contrast with an earlier article (Ip, King and Verdries,1998), this article has an explicit Canada-U.S. comparison, puts more weight on compositional factors, and less on cyclical factors. The use of annual averages and data for all of 1998, produces somewhat different calculations and estimations.

3. Archambault and Grignon (1999) were unable to use educational cost variables because of data limitations.

4. Except where noted, sources of data are Statistics Canada and the U.S. Bureau of Labor Statistics.

5. Note that population shares are not perfectly comparable between Canada and the United States because of the inclusion of 15-year-olds in the Canadian figures. The United States population is defined to include people aged 16 years and older.

6. These calculations do not take into account the effect of the changes in age composition of the aggregate rate.

7. The calculation varies somewhat with the number of age/sex groups used. This estimation uses 12 groups and 1989 participation rates. Dugan and Robidoux (1999) used 16 groups for 1989 to 1996 to estimate a contribution of -0.75 or about 28 per cent of the total drop. Beaudry and Lemieux (1999) took account of the age composition effect but only for female participation rates on which they find only a small effect on "recent changes". In addition the estimation period does not include 1995 to 1997.

8. Their explanation is the earlier aging of the U.S. population.

9. In 1997 the participation rate for non-students was 78 per cent, while for students it was 35 per cent.

10. Although for the United States the measure is an enrolment rate, the term "attendance" is used throughout for simplicity.

11. Jennings (1998) attributes a further 38 per cent of the decline in the youth participation rate from 1989 to 1997 to the fall in full-time student participation rates and 11 per cent to the fall in non-student participation rates.

12. Teens 16-19 have been used for comparison purposes with the United States.

    Data for Canada are for attendance at school but for the United States the measure is enrolment in school. Thus, there could be a small upward bias in the U.S. measure relative to the Canadian rate.

    U.S. school enrolment statistics are based on replies to the Current Population Survey interviewer's inquiry whether the person was enrolled in regular school. Such schools include elementary and high schools, colleges, universities, and professional schools but exclude those that are not in the regular school system, such as trade schools, business colleges and schools for the mentally handicapped, which do not advance students to regular school degrees. Attendance may be on full- or part-time (U.S. Department of Commerce, 1995).

    For Canada, school attendance statistics are based on replies to the LFS interviewer's inquiry about whether the person was attending any educational establishment (primary, secondary, community college, junior college, CEGEP, university or others) either full- or part-time and taking credit courses toward a degree, diploma or certificate.

    We thank Deborah Sunter of Statistics Canada, Labour Force Survey Division for providing data for the 16-19 and 20-24 age groups for both countries for 1989 and 1997.

13. The unemployment rate in the U.S. for those with less than a high school diploma was 8.1 per cent in 1997 compared with 2 per cent for those with a college degree.

14. The OECD (1997) found that even though the supply of workers with low education levels generally fell between the mid-1980s and the mid-1990s, their labour-market situation worsened in most countries.

15. The indicators used for these estimates are not entirely consistent, relying on full- and part time attendance rates in the Canadian/U.S. differences and on Jennings estimates, which use full-time rates. Thus, they should be interpreted as simply an indication of the possible effect of the fall in attendance rates.

16. See Card and Riddell (1996) for a discussion of the role of EI and labour force attachment. The broader definition of job-seeking in Canada than in the United States also increases the probability that someone who is not working, will be included in the labour force.

17. This estimate uses information from Macredie (1996),

18. Fullerton (1997) notes, in passing, the paucity of research on the long-term decrease in participation rates of core-aged men.

19. Beaudry and Lemieux (1999) found the flattening of the female participation rate in the 1990s is primarily a structural phenomenon.

20. Hayghe (1997) notes that, in the United States, the participation rates for most groups of women in the 25-54 age group rose in the 1970s and 1980s, but that growth was greatest for mothers of children under age 18.

21. The average time per year spent in the labour force by women had been nine months in 1960. See Motley, 1996.

22. In a recent survey, Statistics Canada found women were more likely than men to feel overqualified for their jobs. In 1994, 24 per cent of women with a degree or college diploma were likely to have a clerical or service job compared with 8 per cent of men. "One possible explanation is that more women than men may accept jobs with lower-level requirements in order to balance family demands and earning an income." Kelly, Howatson-Leo and Clark (1997). Also, a much larger proportion of women than men work part-time.

23. Since 1976 the size of these two population groups has been roughly equal in Canada but, because the teen participation rate is much lower, their share of the labour force is less than 6 per cent compared with 10 per cent for the older group.

24. In Canada, 95 per cent of 15- to 16-year-olds are attending school, compared to 97 per cent in the United States; for 17- to 19-year-olds the figures are about 70 per cent in Canada and 71 per cent in the United States. Statistics Canada (1997) and Census Bureau (1995).

25. A Statistics Canada review of youths and the labour market notes the school to work transition has become more difficult for this group in the 1990s. The employment rate for non-student youths (15-24) has fallen from 73.2 per cent in 1992 to 69.2 per cent in 1996. Statistics Canada (1997)

26. An international literacy survey done in 1994, and in which Canada participated, found Canadians in the labour force who were at the lowest level of literacy had a significantly higher level of unemployment than those who were at the highest level of literacy. The differences were similar on three scales, prose, document and quantitative (Statistics Canada, HDRC and National Literacy Secretariat, 1996).

27. Archambault and Grignon (1999) found the minimum wage relative to the industrial wage had a significant negative impact on youth participation rates, particularly of students. Other studies in the U.S. in the 1990s have found a rise in the minimum wage appeared to increase employment. See Card, David and Alan B. Kreuger (1994).

28. In addition, the percentage of youth (15-24) who worked part-time because that was all they could find rose dramatically from 1990 to 1995 (Gordon Betcherman and Norm Leckie, 1997).

29. The fact that since 1976 people aged 65 and over have been ineligible to participate in the EI/UI program may be one reason why participation rates have such a close relationship with employment rates.

30. Fullerton (1997:29) observes the participation rate for this group had been trending down continuously since 1890.

31. In order to qualify for the QPP or CPP between the ages of 60 and 65, the applicant must have "substantially" stopped working, but there is no subsequent restriction on earnings or hours of work for pension recipients. There has been no restriction on applicants between 65 and 70 since 1975.

32. The phase-in period for the CPP/QPP ended in 1976. Indexation was introduced in Canada in the 1970s and the early retirement option (age 60-64) was introduced to the QPP in 1984 and to the CPP in 1987. In the United States, an early retirement option (ages 62-65) was introduced in 1956 for women and in 1961 for men.

33. The large proportion of self-employed in Japan helps to explain the high participation rate for older Japanese (Takashi Oshio and Naohiro Yashiro, 1997).

## References


Archambault, Richard and Louis Grignon (1999) "Decline in Youth Participation Rate Since 1990: Structural or Cyclical?" *Canadian Business Economics*, this issue.

Baker, Michael and Dwayne Benjamin (1997) "Public Pension Programs and Attachment to the Labour Force," Paper presented at the IRPP Conference "Adapting Public Policy to a Labour Market in Transition," Montreal, April.

Bar-Or, Yuval, John Burbidge, Lonnie Magee, and A. Leslie Robb (1995) "The Wage Premium to a University Education in Canada," *Journal of Labor Economics*, Vol.13, No. 4, pp.762-794.

Beaudry, Paul and David Green (1997) "Cohort Patterns in Canadian Earnings: Assessing the Role of Skill Premia in Inequality Trends," National Bureau of Economic Research Working Paper No. 6132.

Beaudry, Paul and Thomas Lemieux (1999) "Evolution of the female labour force participation rate in Canada, 1976-1994: a cohort analysis," *Canadian Business Economics*, this issue.

Besl, John R. and Balkrishna D. Kale (1996) "Older workers in the 21st century: active and educated, a case study," *Monthly Labor Review,* Vol. 119, No. 6, pp. 18-28.

Betcherman, Gordon and Norm Leckie (1997) "Youth Employment and Education Trends in the 1980s and 1990s," Canadian Policy Research Networks Working Paper No. W/03. (Ottawa).

Card, David and Alan B. Kreuger (1994) "Minimum wages and employment: a case study of the fast food industry in New Jersey and Pennsylvania," *American Economic Review,* vol. 84, pp. 772-93.

Card, David and W. Craig Riddell (1996) "Unemployment in Canada and the United States: A Further Analysis," Dept. of Economics, University of British Columbia Discussion Paper No: 96-09.

Diamond, Peter and Jonathan Gruber (1997) "Social Security and Retirement in the U.S." NBER Working Paper No. 6097.

Dugan, Bob and Benoît Robidoux (1999) "Demographic Shifts and Participation Rates in Canada," *Canadian Business Economics*, this issue.

Fortin, Mario and Pierre Fortin (1998) "The Changing Labour Force Participation of Canadians , 1969-96: Evidence from a Panel of Six Demographic Groups," *Canadian Business Economics*, this issue.

Fullerton, Jr., Howard N (1997) "Labor force 2006: slowing down and changing composition," *Monthly Labor Review*, Vol. 120, No. 11, pp. 23-38.

Gower, Dave (1997) "Measuring the Age of Retirement," *Perspectives on Labour and Income,* Cat. No. 75-001-XPE, Vol. 9, No. 2, pp. 11-17.

Gruber, Jonathan (1997) "Social Security Programs and Retirement in Canada," NBER Working Paper No. 6308.

Hayghe, Howard V. (1997) "Developments in women's labor force participation," *Monthly Labor Review*, vol. 120, No. 9, pp. 41-46.

Ip, Irene, Sheryl King and Geneviève Verdier (1998) "Labour force participation rates in Canada," *Bank of Canada Review*, Summer.

Jennings, Philip (1998) *School Enrolment and the Decline in the Youth Participation Rate,* Human Resources Development Canada, forthcoming.

Kelly, Karen, Linda Howatson-Leo and Warren Clark (1997) "I feel overqualified for my job…" *Canadian Social Trends* (Winter) pp.22-16.

Macredie, I. (1996) "The effects of survey instruments on the Canada/U.S. unemployment rate gap," Paper presented at the CSLS/CERF Conference on the Canada-U.S. Unemployment Rate Gap (Ottawa) Feb. 9-10.

Motley, Brian (1996) "Recent Developments in Labor Force Participation," *FRBSF Economic Letter*, No. 96-17.

OECD (1997) "Trade, earnings and employment," in *Employment Outlook*, pp. 93-128.

Oshio, Takashi and Naohiro Yashiro (1997) *Social Security in Japan*, National Bureau of Economic Research Working Paper No. 6156.

Siroonian, Jason. 1993. "A note on the recession and early retirement," *Perspectives on Labour and Income,* Cat. No. 75-001E, Winter, pp.9-10

Statistics Canada (1997) "Youths and the Labour Market," *Labour Force Update*, Spring.

Statistics Canada, Human Resources Development Canada and National Literacy Secretariat (1996) *Reading the Future: A Portrait of Literacy in Canada* (Ottawa).

U.S. Department of Commerce Census Bureau CPS (1995) *Current Population Reports — School Enrolment — Social and Economic Characteristics of Students*, October.

Wise, David A. (1996) "The Economics of Aging," *NBER Reporter*, Summer.