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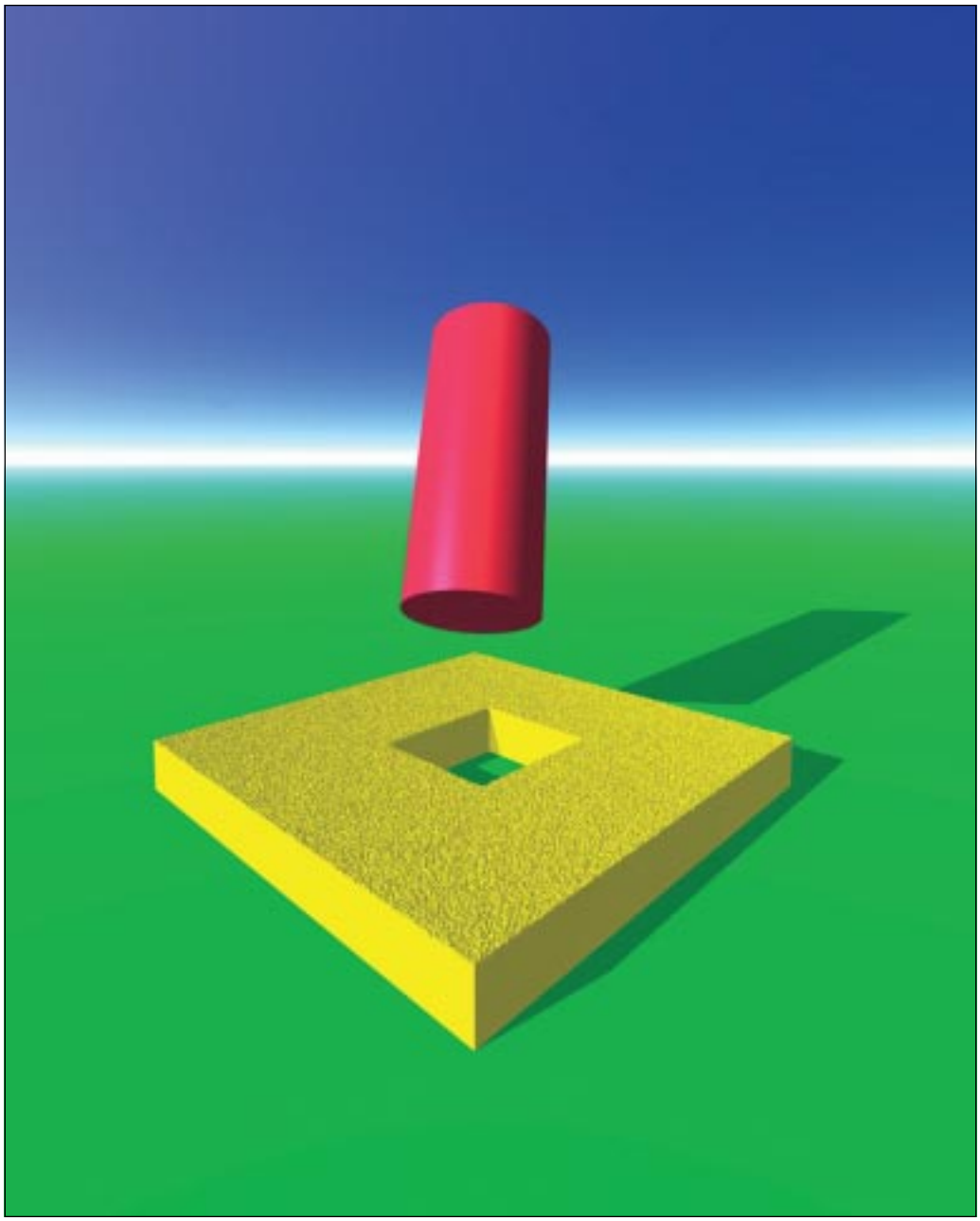
■ DEMOGRAPHY AND THE LABOUR MARKET



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Highlights

In this issue

Demography and the labour market

- Over the next half century, growth in the ratio of retirees to workers will put unprecedented stress on social security programs.

- The ratio is constrained largely by the current shape of the population pyramid. If current age-sex participation rates hold, the overall participation rate could drop from about 65% in 2000 to about 63% in 2010. By 2020, the rate could be below 60% and may fall even more quickly, to about 57% by 2025.

- Of course, age-sex participation rates have changed a great deal in the last 50 years, and will probably continue to change, in response to institutional change and economic conditions.

- The recent decline in the participation of young people appears to have been the result of a combination of factors: increased school attendance, depressed job opportunities and a downward shift in the age composition of the youth group. As skilled workers will be increasingly in demand, youths will tend to remain in school longer. Hence, it is unlikely that youth participation rates will rise significantly in the future.

- The most important influence on the total participation rate over the last 50 years was the dramatic increase among adult women. In the 1970s and 1980s, each successive cohort of women spent more time in the labour force. This, coupled with the size of these baby boom cohorts, pushed up the overall rate dramatically.

- The continued growth in women's investment in education will likely put upward pressure on their age-specific participation rates after age 25, but not enough to offset the downward effect on their overall participation rate as baby boom cohorts leave the labour market.

- Trends in the overall participation rate have also been greatly influenced by the downward trend in the age of retirement. Although it varies greatly, the median age of retirement among men has been falling for several decades. It was close to 65 in the late 1970s and early 1980s, and declined fairly steadily from the mid-1980s to the late-1990s, reaching a low of 61.3 in 1997.

- Just as with retirement age, over the longer term the participation rates of older men have trended down, with a slight upturn in 1999 and 2000.

- Factors that may influence the retirement age in the future are the extent of self-employment (the self-employed tend to retire later), the availability of flexible transitions into retirement (for example, part-time work) and the extent to which older workers are covered by pension plans.

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Demography and the labour market

Deborah Sunter

Essentially, Canada's population began aging in the 1920s. The baby boom temporarily and dramatically warded off the effect of a growing ratio of retirees to workers. It also interacted with the economy for 50 years, in ways difficult to untangle, and will continue to assert an influence for many years to come (see *The power of demographics*).

Over the next half century, growth in the ratio of retirees to workers will put unprecedented stress on social security programs such as the Canada and Quebec Pension Plans (C/QPP), as well as other social programs and institutions such as the health care system. Exactly what that ratio will be is a topic of great interest to those who administer these programs.

Much of the future shape of the population is already determined (Légaré, 2000). To a large extent, this also gives the limits of labour force activity in the future, since demographic composition plays a key role in determining overall participation rates. Factors affecting age-specific participation are more complex and more subject to change, and must, therefore, be based on informed assumptions about future trends in economic growth, institutional change and labour market behaviour.

The 1990s disruption of long-term trends in labour force participation signals the uncertainty of any projection based on recent behaviour. In fact, the deviation from trend was the subject of considerable investigation by many economists in the latter half of the 1990s. The main inquiry concerned the extent to which the collapse in the long-term growth in labour force participation resulted from economic conditions (weak demand) or from more permanent structural change.

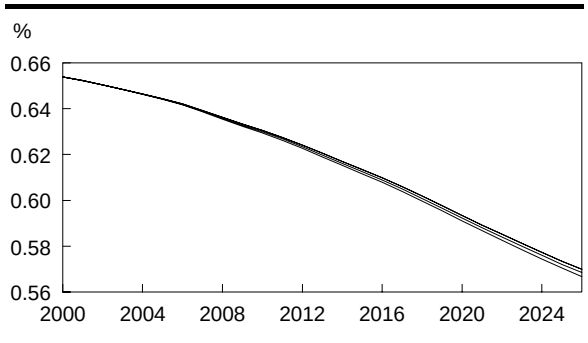
Based on a paper prepared for the Seminar on Demographic and Economic Perspectives from 2000 to 2050. Deborah Sunter is Director of the Labour Statistics Division. She can be reached at (613) 951-4740 or deborah.sunter@statcan.ca.

The power of demographics

The proportion of the population in the labour force is determined by the interplay of many factors, but the main influence is the shape of the population pyramid: the relative share of the various age groups by sex. For example, the likelihood of entering or remaining in the labour market varies considerably over a person's life. To this end, it is useful to have a sense of the potential effect of aging on the overall rate over the next 25 years (based on current labour force behaviour).

Statistics Canada produces four alternative population projections, each broken down by five-year age groups. However, the choice makes little difference to this exercise. No matter which projection is used, the general story is the same: given current age-sex participation rates, the changing demographic structure of the population will put considerable downward pressure on the overall participation rate over the next quarter century. All else being equal, the rate will drop from about 65% in 2000, to about 63% in 2010. By 2020, the rate will be below 60% and will fall even more quickly to about 57% by 2025.

Regardless of population projection, overall participation declines.



Source: Demography Division

Note: The projections include the population in the territories, on reserves and in institutions, while the current participation rates used in the calculations do not. This is not likely to change the downward trend to any significant extent, however. The intent is to illustrate, not to forecast.

Of course, labour force participation is just part of the analysis needed to understand the future interaction between demographic change and the labour market and its effect on social security programs. Also important are the annual and lifetime earnings of workers, which are affected by changes in job security, volume of work and earnings distributions.

This article begins with a brief look at the 1990s; using data from the Labour Force Survey (LFS), it asks how the 1990s deviated from previous decades, and whether these changes are likely to persist. The analysis leans heavily on a recent work that addresses these questions in detail (Picot and Heisz, 2000).

Much of the remaining analysis—drawing on a considerable body of literature—concerns changes in labour market behaviour, and participation rates in particular, among specific age-sex groups. Participation rates are used as a rough proxy for earnings potential. Where important, more specific information on earnings behaviour is explored.

Finally, some new data that provide a longitudinal perspective (from the Survey of Labour and Income Dynamics [SLID]) are briefly explored (see *Data sources*). While much work remains to be done, these new data sets will provide a fuller picture of labour market behaviour over time. This will allow the testing of hypotheses that currently rest on synthetic cohort analysis.[1]

Data sources

The Labour Force Survey is a monthly household survey of a sample of over 50,000 households representative of the civilian, non-institutionalized population 15 years or older in the 10 provinces. It collects data on the labour market activities and demographic characteristics of the working-age population of Canada and provides estimates of the number and characteristics of the employed, the unemployed, and persons not in the labour force.

The Survey of Labour and Income Dynamics is an annual longitudinal household survey that began in January 1993. Respondents enter the survey and remain for six years, completing two detailed questionnaires each year, one on labour market activity and the other on income. The same people are interviewed in successive years to capture transitions in the nation's labour market and other changes experienced by individuals and families.

The recent labour market

The 1990s proved a decade of turbulence and change in the labour market. During the early years of the decade, some expectations were shattered, and a number of new impressions or expectations were formed, correctly or incorrectly. Perhaps the most apocalyptic was that espoused by Jeremy Rifkin (1995), who prophesied that, as a result of globalization and technology, fewer people would be required in the production process, leading to "the end of work" (at least to some extent). Others had more moderate views, but expected a reduction in overall labour demand and a shift in demand for certain types of workers. They assumed that employers would attempt to stem increased costs through the use of technology as a labour replacement, gain more flexibility through the use of just-in-time or contingent workers, and favour the hiring of the highly skilled. The result for workers would be rising job instability, polarized opportunities and growing earnings inequality.

With hindsight, it is probably fair to say that impressions and expectations of change far exceeded reality. But change there has undoubtedly been. For most of the 1990s, labour demand was weak. On the supply side, participation rates plunged but human capital increased. Important institutional changes, such as the reform of the employment insurance system, were also implemented. However, in contrast to the assertions of observers like Rifkin, other analysts found little evidence that technology and globalization were the driving forces.

The single most important factor influencing the labour market over most of the decade appears to have been relatively weak aggregate demand (Picot and Heisz, 2000; Fortin and Fortin,1999; Ip, King and Verdier, 1999) (Chart A). This had a negative effect on job creation and participation rates, particularly for youths and older men.

The slow, almost non-existent, recovery gave way to a significant shift in the types of jobs created. By 1997, almost all net employment growth since 1989 was in the form of self-employment (Chart B) or part-time paid work. Furthermore, unlike most of the growth in self-employment in the 1980s, which had been among employers (who created jobs for others as well), almost all of the increase in the 1990s was own-account (Statistics Canada, 1997).

Chart A: A weaker economy in the 1990s hampered employment growth.

Sources: System of National Accounts; Labour Force Survey

In addition, because Canada's growth in self-employment was not mirrored in the United States, it was interpreted by many as a further sign of weakness in the economy. In effect, it was thought to be a substitute for unemployment, although recent analysis shows little evidence that self-employment grows more strongly during recession and weak recovery than during periods of expansion (Lin, Yates and Picot, 1999). Other factors, such as income tax advantages for the self-employed and increasing payroll taxes, were thought to play a role.

Chart B: Self-employment dominated job growth through much of the 1990s.

Source: Labour Force Survey

Certainly, more analysis is needed to understand the factors behind self-employment growth in the 1990s, especially in view of the abrupt downturn of this phenomenon at the end of the decade. Similarly, part-time work as a share of total employment levelled off over the same period—underlining the difficulty of forecasting labour market trends.

Mixed signals were also seen with respect to changes in job stability. Contrary to popular belief, the risk of permanent layoff in the 1980s and early 1990s was virtually identical. As measured by job duration, job stability actually increased. Only the least educated did not experience increases in job tenure. Part of the rise in job stability, however, was caused by a decline in quit rates, perhaps a reflection of the extent to which people felt insecure, and a reaction to the depressed hiring rates that prevailed through most of the 1990s (Heisz and Côté, 1998).

The lack of progress in earnings for many workers may also have increased the sense of insecurity. Overall wage growth in the 1990s was nonexistent, as wage increases for women were offset by declines among men. Notable declines were also observed in the real earnings of recent labour market entrants, particularly of young men and recent male immigrants, which may presage an enduring downward shift in their lifetime earnings (Picot and Heisz, 2000).

Despite the difficult labour market conditions marking most of the decade, women continued to make gains, although at a slower pace: both participation and employment rates continued to rise for adult (25 and over) women, and their unemployment rate fell to the same level as that of men. This was due, in part, to the continued advancement in women's educational attainment, and to a shift into less traditional industries and occupations. The deterioration in conditions for men, especially younger men, is not as easily explained. Supply side shifts may be part of the answer. The educational advantage once held by young male workers relative to young women and adult workers largely disappeared in the 1990s (Kapsalis, Morissette and Picot, 1999).

After almost half a century of growth, participation declined

The labour force participation rate fell sharply among youths, stalled for women, and continued to edge down for older (55 and over) men through most of

Table 1: Participation rate by age and sex

	1989	1992	1995	1998	2000
			%		
Men	**76.7**	**73.8**	**72.5**	**72.1**	**72.5**
15 – 19	60.9	53.8	50.3	48.3	51.8
20 – 24	85.0	80.9	79.3	78.8	79.9
25 – 29	93.0	90.6	89.7	90.9	90.5
30 – 34	94.6	91.9	91.9	92.8	92.7
35 – 39	94.2	92.6	92.4	92.9	92.6
40 – 44	94.7	92.7	92.0	91.9	92.3
45 – 49	93.5	91.6	91.2	90.7	91.2
50 – 54	89.2	87.5	87.0	85.6	86.5
55 – 59	77.8	74.0	72.4	70.6	72.9
60 – 64	51.6	48.2	43.8	44.7	46.1
65 – 69	16.4	17.7	16.9	17.7	16.1
70 +	6.7	6.3	6.2	6.1	6.1
Women	**58.0**	**57.8**	**57.5**	**58.4**	**59.5**
15 – 19	57.3	52.4	49.4	47.8	51.8
20 – 24	78.2	75.9	73.3	72.7	73.9
25 – 29	77.1	76.6	76.3	79.5	79.9
30 – 34	74.8	75.5	76.0	77.9	79.5
35 – 39	77.2	76.9	77.4	78.8	79.5
40 – 44	76.8	78.1	79.0	79.7	80.9
45 – 49	71.5	75.3	76.3	78.6	79.4
50 – 54	62.2	65.0	66.1	69.0	71.0
55 – 59	44.8	47.7	48.2	50.1	53.4
60 – 64	22.6	23.4	23.6	25.2	27.2
65 – 69	7.3	7.5	7.4	7.4	7.3
70 +	2.3	1.5	1.6	1.9	1.8

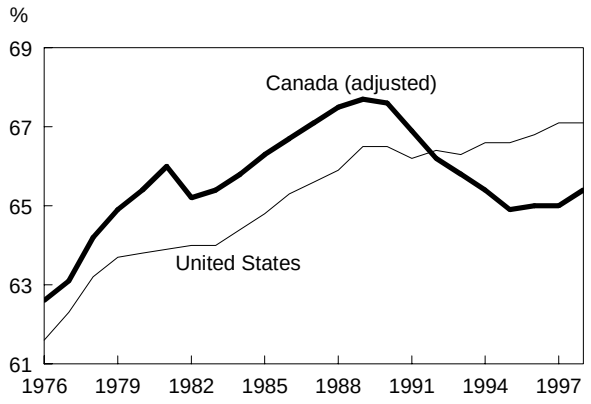
Source: Labour Force Survey

the 1990s (Table 1). As a result, the overall participation rate dropped, after almost half a century of upward movement. This departure from long-term trend was the subject of much investigation and discussion in the mid- and late 1990s, especially since the same phenomenon did not occur in the United States (Chart C).

Not all demographic groups contributed equally to the decline in the labour force between 1989 and 1997. When the population is divided into 5- or 10-year age groups by sex, differences emerge. For men, all age groups except 65-to-69 year-olds experienced a decline. For women, declines were notable only among teenagers and 20-to-24 year-olds (Chart D).

These data, however, cannot provide a measure of the importance of these demographic trends in the overall decline in the participation rate. With the population structure held constant at 1989 shares, the contribution of each group can be calculated. Two-thirds of the overall decline came from the youth group (36.5% from men and 31.1% from women). Older

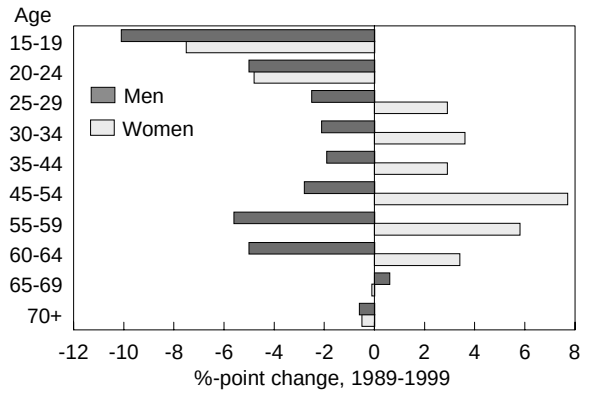
Chart C: Canadian and U.S. participation rates diverged in the 1990s.



Sources: Labour Force Survey; U.S. Current Population Survey

men (55 and over) accounted for a further 21.3%, and older women, 3.2%. Among 25-to-54 year-olds, however, the story was dramatically different by sex. Core-age men accounted for 28.2% of the overall decline, while core-age women actually experienced modest growth in their labour force participation (Sharpe and Grignon, 1999).

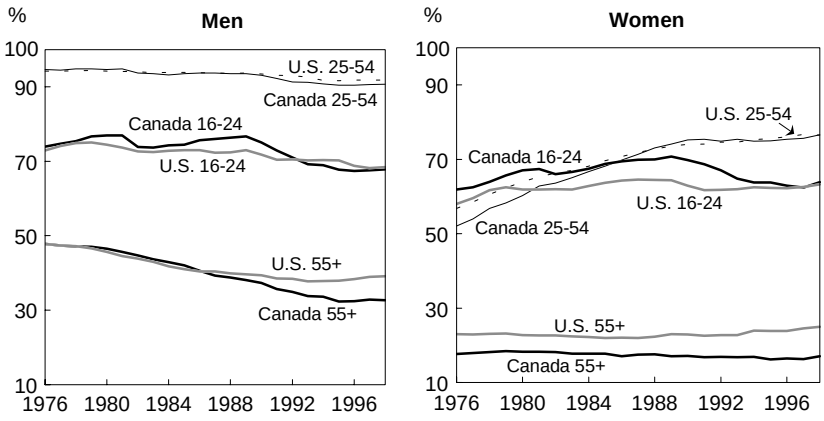
Chart D: The drop in labour force participation differed markedly by age and sex.



Source: Labour Force Survey

Just as most of the decline in the Canadian participation rate in the 1990s was led by youths and those 55 and over (Chart E), these same groups accounted for almost all of the growth in the gap between Canadian and American participation rates.

Chart E: The increased gap between Canadian and U.S. participation rates was attributable to youths and older workers.



Sources: Labour Force Survey; U.S. Current Population Survey

group continued the long-term decline that began at the end of the 1970s, until 1992, when their numbers started to increase. In contrast, the number of 20-to-24 year-olds—the group most likely to participate in the labour force—continued to decline until 1996 (Chart G).

Staying in school longer lowers current participation rates but increases working-life expectancy after age 25. School attendance rates rose steadily through most of the decade, rising from 41% in 1979, to 51% in 1989 and 61% in 1998. Again, the age structure of the youth population had an effect,

Causes and implications of changes in labour force behaviour

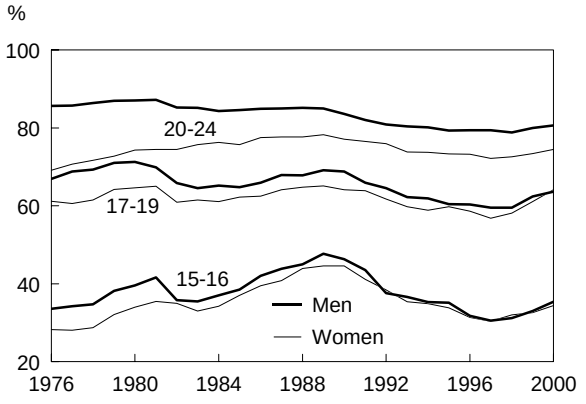
Weak aggregate demand is generally viewed as a major contributor to the drop in labour force participation. But this was by no means the only factor in the 1990s. Demographic composition was also important, as were increased school attendance, changes in the Employment Insurance (EI) program, the effect of pensions, and government downsizing, among others.

Youths

Youths accounted for two-thirds of the overall decline in the labour force between 1989 and 1997, mainly because of their greater susceptibility to the negative effects of cyclical downturns and their higher school attendance rates. The latter accounted for about 52% of the overall decline in youth participation rates during this period. By the end of the 1990s, labour market conditions were finally improving for young people, but their participation rates had not fully recovered (Chart F).

In addition to difficult economic conditions and increased school attendance, change in the age composition of the youth group accounted for 14% of the drop in their participation rate (Statistics Canada, 1999). Because young people's participation increases strongly with age, composition of this group is important. The population of 15-to-16 year-olds grew throughout the 1990s. That of the 17-to-19 year-old

Chart F: Despite an improving labour market, youth participation was stagnant.

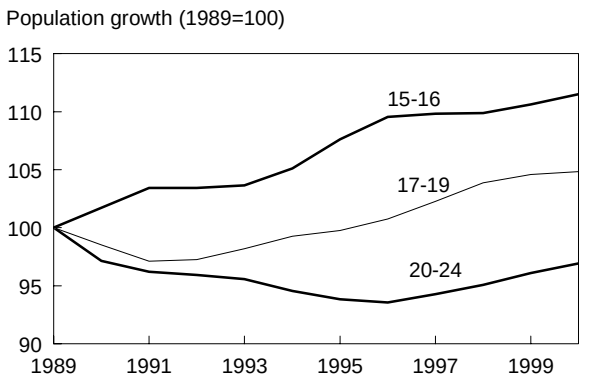


Source: Labour Force Survey

accounting for about 2 percentage points of the increase in attendance rates in the 1990s. However, most of the increase reflects a growing tendency for youths to stay in school longer.

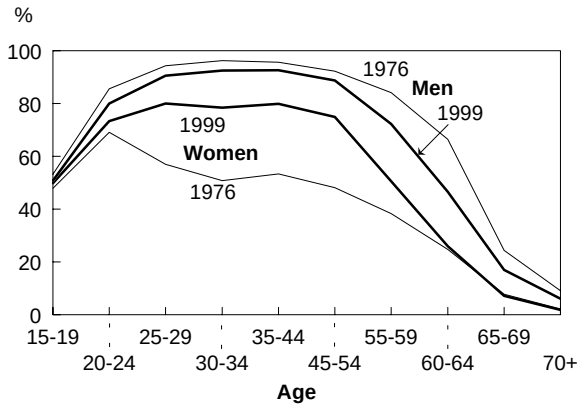
In particular, the number of youths in college and university continued to increase in the first few years of the 1990s. Compared with 1989, college attendance rates were 24% higher at the end of the 1990s; university attendance, 15% higher. However, the

Chart G: Youth participation rates are affected by differing population growth rates.



Source: Labour Force Survey

Chart H: Women's pattern of participation by age has become closer to men's.



Source: Labour Force Survey

growth in the latter was concentrated in the early years of the decade, with little change in the later years.

This levelling-off probably reflects a combination of factors, such as improved labour market conditions and higher tuition fees. The enrolment capacity of postsecondary institutions may also have affected attendance rates (Lemieux, Beaudry and Parent, 2000). If this is the case, the educational system's ability to respond to demand may also be a factor in the long-term school and work activity of youths. Whatever the causes, the significant downward shift in labour force participation is generally thought to be largely structural and likely to last well into the future (Picot, Heisz and Nakamura, 2000; Archambault and Grignon, 1999).

Adult women

The most important factor behind the rise in total labour force participation over the last 50 years was the dramatic increase among adult women. In the 1970s and 1980s, each successive cohort of women spent more time in the labour force. This, coupled with the size of these baby boom cohorts, pushed up cross-sectional participation rates dramatically.

This spectacular rise, in conjunction with a moderate decline among men, narrowed the male-female gap in the rates, from 61 percentage points in 1950 to 32 in 1976 and 14 in 1999. The participation rate profile of women has now taken on roughly the same shape—"high and flat"—as that of men (Chart H).

The apparent stagnation of women's labour force participation in the early 1990s and slow growth since then has led to speculation about women's integration into the labour market. One study suggests that large increases in women's labour force participation are a thing of the past (Beaudry and Lemieux, 1999). In more recent years, the rate of successive generations has become more similar, accounting for the slower growth of adult women's participation in the 1990s.

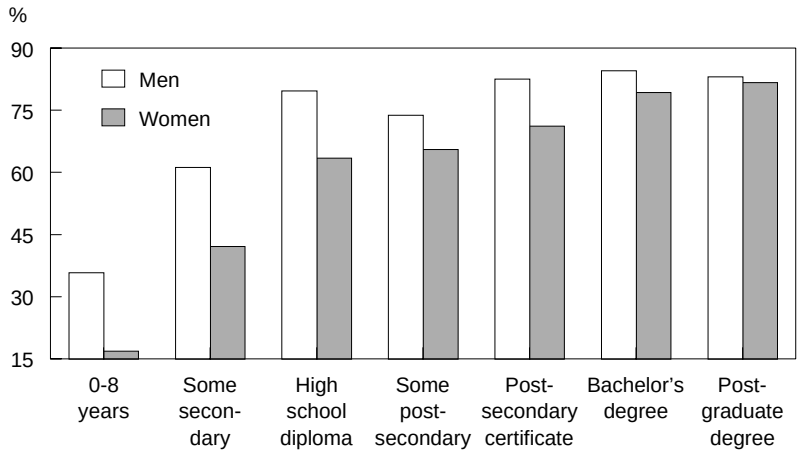
Limits to closing the gap

Women continue to increase their investment in education, which will probably strengthen their labour market attachment and push up participation rates both cross-sectionally and longitudinally (Chart I).

In 1996, some 12% of all working-age women had university degrees, compared with 14% of men. But this overall rate hides the effects of some important changes that have taken place. Among 20-to-24 year-olds, 13% of women had university degrees, compared with 9% of men in this age group. The proportion of 25-to-44 year-olds with a degree was the same for men and women. The big difference was among older cohorts, where degrees were much less common among women (Statistics Canada, 2000).

Women are now the majority (55% in 1997-98) in full-time university studies (56% among undergraduates and 51% among master's degree students, though

Chart I: At higher levels of education, women's and men's participation rates tend to converge.



Source: Labour Force Survey, 1999

only 43% among doctoral candidates). Women are also the majority in most fields of study except mathematics, sciences and applied sciences.

Of course, women's dominant role in the care of children and households will probably preclude a full closing of the participation rate gap. Even so, a recent study using longitudinal data from the Survey of Labour and Income Dynamics sheds new light on the strength of their attachment to the labour market in their childbearing years.

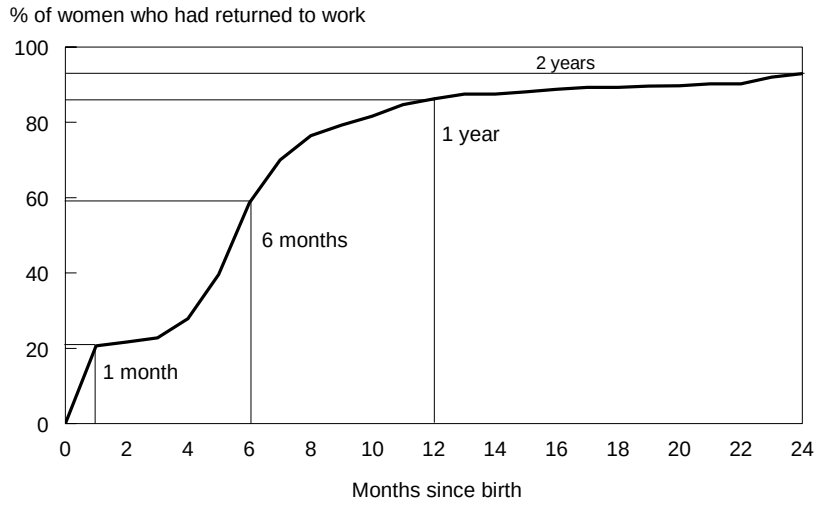
The vast majority of employed women return to the labour force relatively soon after childbirth. Of the 367,000 employed women who gave birth in 1993 or 1994, some 21% were back at work by the end of the first month after childbirth. Within a year, 86% had returned to work, and by two years, 93% had done so (Marshall, 1999) (Chart J).

The speed of return was influenced by two important factors: class of worker and receipt of maternity benefits. Mothers who did not receive maternity benefits were almost six times as likely to have returned to work by the end of the first month. For the self-employed, the odds of returning were almost eight times greater. This may reflect the lack of benefit coverage for this group and perhaps a greater control over working conditions.

Overall, for those who did return within two years, the average time off was 6.4 months. More than 8 in 10 (83%) returned to the same employer, and 9 in 10 to the same employment status (full- or part-time).

Virtually all those who took at least 6 months off received EI benefits, compared with only 40% of those who returned within a month. For those with coverage, recent changes in maternity benefits may further delay returning to work.

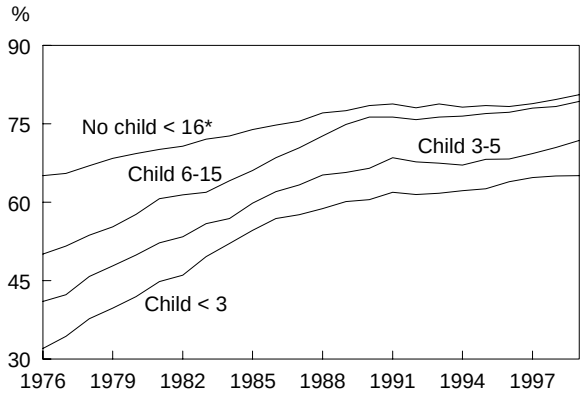
Chart J: The percentage of mothers who return to work rises rapidly for the first eight months after a birth.



Source: Survey of Labour and Income Dynamics, 1993-1996

These longitudinal data help explain the dynamics behind the trends in participation rates among mothers. Labour force participation of women with children, even of those with very young children, has increased dramatically. While their rates have risen overall, no matter the age of the youngest child, differences persist. But participation rates have almost converged between those with school-aged children (6 to 15) and those with children over 15 only or with no children at home (Chart K).

Chart K: Women's participation is influenced by age of youngest child at home.



Source: Labour Force Survey
* Women aged 15 - 54.

Relative earnings of women and men

Despite increasing attachment to the labour force, women are still much more likely than men to work part time. Their lower volume of work leads to lower annual earnings, which affects potential retirement income. In 1998, the female-to-male earnings ratio was 0.63 (that is, for every dollar earned by a man, 63 cents was earned by a woman). Limiting the comparison to full year full time workers removes much of the effect of working hours and raises the ratio to 0.72 (up from 0.58 in 1967). A comparison of hourly wages further controls for volume effects, nudging the ratio to 0.81.[2]

Why the persistent wage gap? A recent study concluded that women's shorter work histories played a significant role, as did job responsibilities, education and major field of study (Drolet, 1999). However, even after controlling for these and other factors, one finds a ratio of 0.85, leaving much of the wage gap still unexplained.

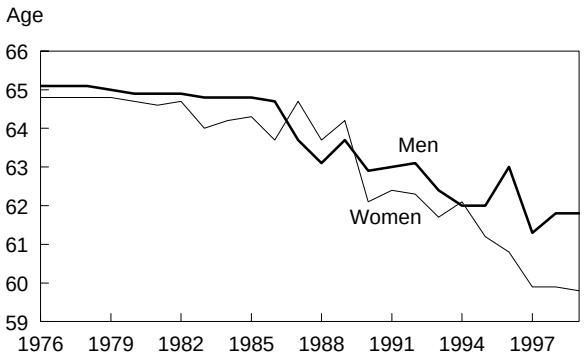
Not surprisingly, the study noted a higher gap for older workers, in part because of the cumulative effect of work experience on wages. The gap will probably narrow in the future, though, as higher education and stronger attachment to the labour market become more commonplace among older women.

This is consistent with other findings, based on longitudinal data from the National Graduates Survey (Finnie and Wannell, 1999). That study found a narrowing wage gap, especially among those with higher education. Indeed, by the doctoral level, no gap existed five years after graduation in 1990.

Men and women 55 and over

Although it varies greatly, the median age of retirement among men has been falling for several decades. It was close to 65 in the late 1970s and early 1980s. Between 1986 and 1993, it declined steadily. The drop between 1986 and 1987 is attributed largely to the 1987 lowering of the minimum age at which one could draw benefits from the C/QPP. The continued decline in the early 1990s is thought to reflect, at least to some extent, the difficult labour market conditions for older workers who had lost their jobs, and the use of early retirement as a workforce adjustment mechanism, particularly in the public sector. Over the last 20 years, women have tended to retire earlier than men but have followed the same downward trend in median retirement age (Chart L).

Chart L: The median age of retirement has declined steadily since the mid-1980s.



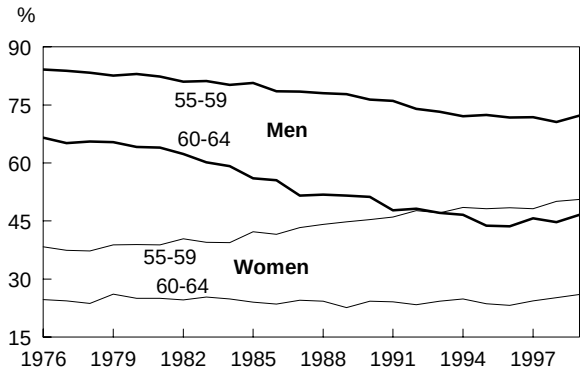
Source: Labour Force Survey

In the second half of the 1990s, the continued decline in retirement age attracted attention. Improved economic conditions and an end to government downsizing were expected to push the age of retirement back to pre-recession levels. This did not occur, however, and the trend did not even level off, let alone show signs of reversing, until almost the end of the decade.

Estimating the age of retirement is not straightforward. Retirement is not a singular concept, nor is it necessarily a permanent state. The measure used here is based on Labour Force Survey data and is at best a useful approximation (Gower, 1997). A more readily available and widely used indicator is the participation rate, although this can be misleading, especially for women.

Just as with retirement age, over the longer term the participation rates of older men have trended down, with a slight upturn in the last couple of years. However, for older women, the rate has actually been edging up steadily, despite the long-term decline in median retirement age (Chart M).

Chart M: Participation rates of older men and women have been converging.



Source: Labour Force Survey

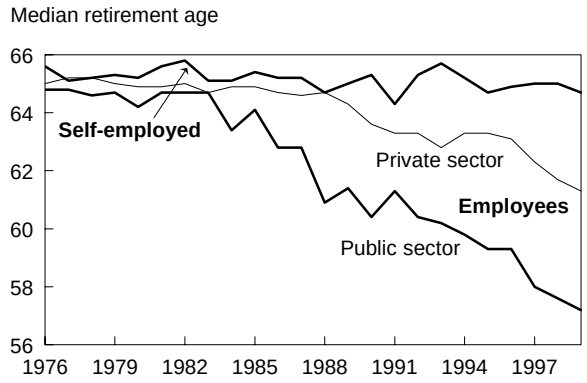
To the extent that some of the decline in the 1990s was a cyclical phenomenon, improved conditions were expected to reverse the trend or at least halt the decline. In the United States, this reversal began in 1994; in Canada, it took until 1997 to appear.

For older women, participation rates will probably increase with time, as younger cohorts with strong labour force attachment replace the current cohorts who never established such an attachment (Dugan and Robidoux, 1999). Older women in Canada may never match the historically higher rates of their American counterparts, however, which have probably been influenced by largely job-related medical benefits.

Factors that may influence trends in retirement

The rate of self-employment is among the many factors that may play a role in future trends in retirement age. Clear differences are apparent in median retirement age by class of worker. The self-employed, who tend to retire at an older age than paid workers, have been over-represented among those still working past the age of 64 (Chart N).

Chart N: The self-employed are more likely to continue working past age 64.

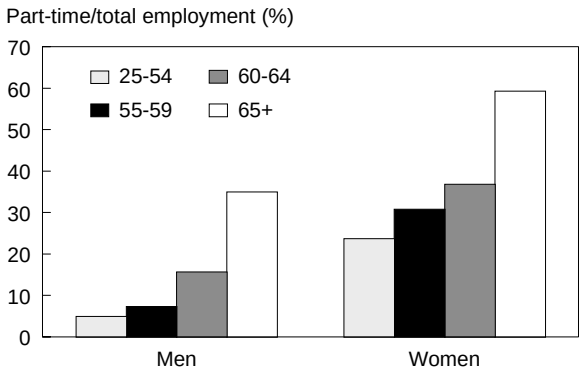


Source: Labour Force Survey

The opportunity to work part time at the end of a long career may benefit both workers and employers and result in delayed retirement. For whatever reason, it is clear that the incidence of part-time work rises with age for both male and female workers (Chart O).

Having a registered pension plan (RPP) also probably influences retirement age (Chart P). Overall RPP coverage appears to have been stable from the mid-1980s to the mid-1990s, but this was the result of a drop in the rate for men offset by an increase for women (Morissette and Drolet, 1999). Further decomposition shows a decline in coverage for young men (25 to 34), stability for young women and for men aged 35 to 54, and an increase among women in that age group.

Chart O: The incidence of part-time work rises by age for both sexes.

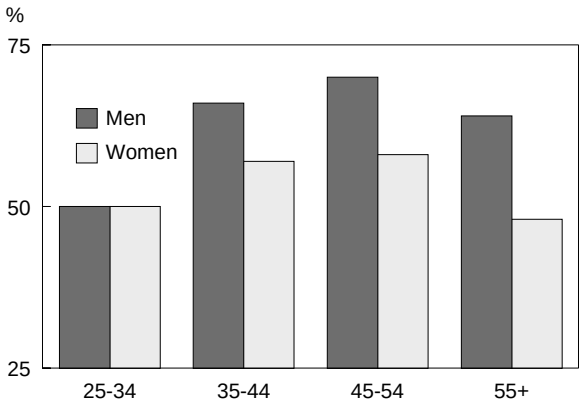


Source: Labour Force Survey, 1997

Most of the decline in young men's coverage was related to a drop in unionization and to employment shifts across industries. Most of the growth in older women's coverage was associated with the increased incidence of relatively well-paid jobs with a high likelihood of pension coverage.

The major unanswered questions are, to what extent does private pension plan coverage influence retirement age, and will the drop in coverage for younger men persist as they age into older cohorts?

Chart P: The proportion of employees with an RPP varies by age and sex.



Source: Survey of Work Arrangements, 1995

Activity patterns and working-life expectancy

Almost all analysis of this subject has been based on cross-sectional data or synthetic cohort analysis. This is helpful, but more information is needed on labour force activity patterns over time to fully appreciate changes in labour market behaviour and the factors affecting that behaviour.

The recent development of a number of longitudinal data sets by Statistics Canada will certainly help to fill this void. In particular, the Survey of Labour and Income Dynamics (SLID) holds the key to many of the interactions and cumulative behaviour patterns that help explain the effect of changing labour market behaviour on lifetime earnings and contributions to pension plans such as the C/QPP. As the survey panels build through time, more and more questions can be answered about labour market dynamics.

For example, information on activity patterns shows that while average monthly participation rates in 1997 were 72% (LFS data), 80% of the working-age population actually worked at some time during the year (SLID data) (Table 2). This suggests, for example, more contributors to the C/QPP than are apparent with only cross-sectional data. Much more sophisticated analysis is needed to estimate changing patterns in volume of work and pensionable earnings.

Table 2: Participation rate by age and sex, 1997

	LFS*	SLID**
Both sexes 16 – 69	**72.4**	**79.6**
Men	**79.2**	**85.6**
Women	**65.7**	**73.5**
16 – 24	65.6	79.3
Men	68.0	80.8
Women	63.1	77.8
25 – 54	83.9	89.3
Men	90.9	95.2
Women	76.9	83.5
55 – 69	37.2	43.9
Men	46.9	54.3
Women	28.0	33.9

Sources: Labour Force Survey and Survey of Labour and Income Dynamics

* Average of monthly participation rates.

** All those who participated in the labour force at some time during the year.

However, SLID and its forerunner, the Labour Market Activity Survey, have already helped demographers improve the measurement of expected working life. Life tables are widely used to summarize the mortality pattern of a population and to estimate average life expectancy. An extension of this concept is working-life tables, which are useful for analyzing average expected labour force activity and inactivity and for summarizing the long-term consequences of current labour force activity patterns (Bélanger and Larrivée, 1992).

Prior to the emergence of longitudinal data sets in the 1980s, working-life tables were constructed from cross-sectional data. They wrongly, but of necessity, assumed that people entered the labour force only once and remained active until retirement or death. The new data sources allow for transitions into and out of the labour force. This is clearly an improvement, but results are still only approximations of what would be obtained by direct retrospective or longitudinal measurement. What's more, they reflect current patterns of age-specific labour force transitions. In this sense, they are not forecasts, but simple projections of current behaviour given current age-specific demographics.

Nevertheless, the results are instructive. The ratio of inactive to active adult life has grown as a result of increased life expectancy. For example, in 1986 the average Canadian man could expect to spend about 33 more years in the labour force if he was active at age 25, and to have 16 years out of the labour force. The working-life expectancy for a woman in the labour market at age 25 was 26 years, with 30 years out of the labour force (Bélanger and Larrivée, 1992).

Ten years later, at roughly the same point in the economic cycle, the expected working life of active 25 year-old men had increased slightly, to 34 years, but the expected inactive years had also increased, to almost 18. However, among women the story had changed more markedly and, perhaps not surprisingly, in the opposite direction. Those active at age 25 could expect to work 29 years and to spend only 28 years out of the labour force.

Summary

As baby boomers begin to retire, changes in the ratio of retirees to workers will increasingly affect social security programs and social institutions. Higher participation rates among women and a reversion to later retirement for both sexes would, of course, increase age-specific participation rates. However, they would do much less to affect the ratio of inactive to active persons once baby boomers become seniors. What is less certain is how much of the recent behaviour in the labour market will translate into persistent trends. For example, the plateauing of women's participation rates in the early 1990s seemed to indicate an upper limit, but now this does not appear to be the case. That women's wages should increase through time is understandable, but that wages for young men should deteriorate, less so. The strong growth in self-employment that continued into the expansion years seemed to indicate a major change in the nature of work, though that too has receded somewhat in the last few years. School attendance rates have levelled off, breaking a long-term upward trend. And perceptions of a rise in job instability do not seem to be founded, although they may be tied to the increased risk for those who do lose their job, since hiring rates were depressed for much of the last decade.

One recent study asked why the 1990s labour market had deviated from that of the 1980s (Picot and Heisz, 2000). It found that a number of possible causes existed, that finding answers to the "why" was an ongoing process, and that a number of major puzzles remained regarding recent labour market outcomes.

The challenge for economists is to isolate changes that are structural from those that are cyclical. Unfortunately, this can often be done only with hindsight—forecasts are only as good as their assumptions. The changes in the 1990s labour market, some of them temporary, some enduring, and some not even yet identified, serve as a warning that longer-term trends can end or reverse, and that change is constant.

Finally, much work remains to be done on activity patterns, for it is cumulative activity that affects a person's well-being and labour market decisions, and this is imperfectly reflected in cross-sectional estimates.

Notes

1 Cohort analysis follows the same group of people over time. Synthetic cohort analysis uses groups from different points in time, but matches them and adjusts for the time interval. For example, if one looked at 15-to-19 year-olds in 1994, then one would consider 20-to-24 year-olds in 1999.

2 Data are from the Labour Force Survey (LFS).

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