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PERSPECTIVES

ON LABOUR AND INCOME

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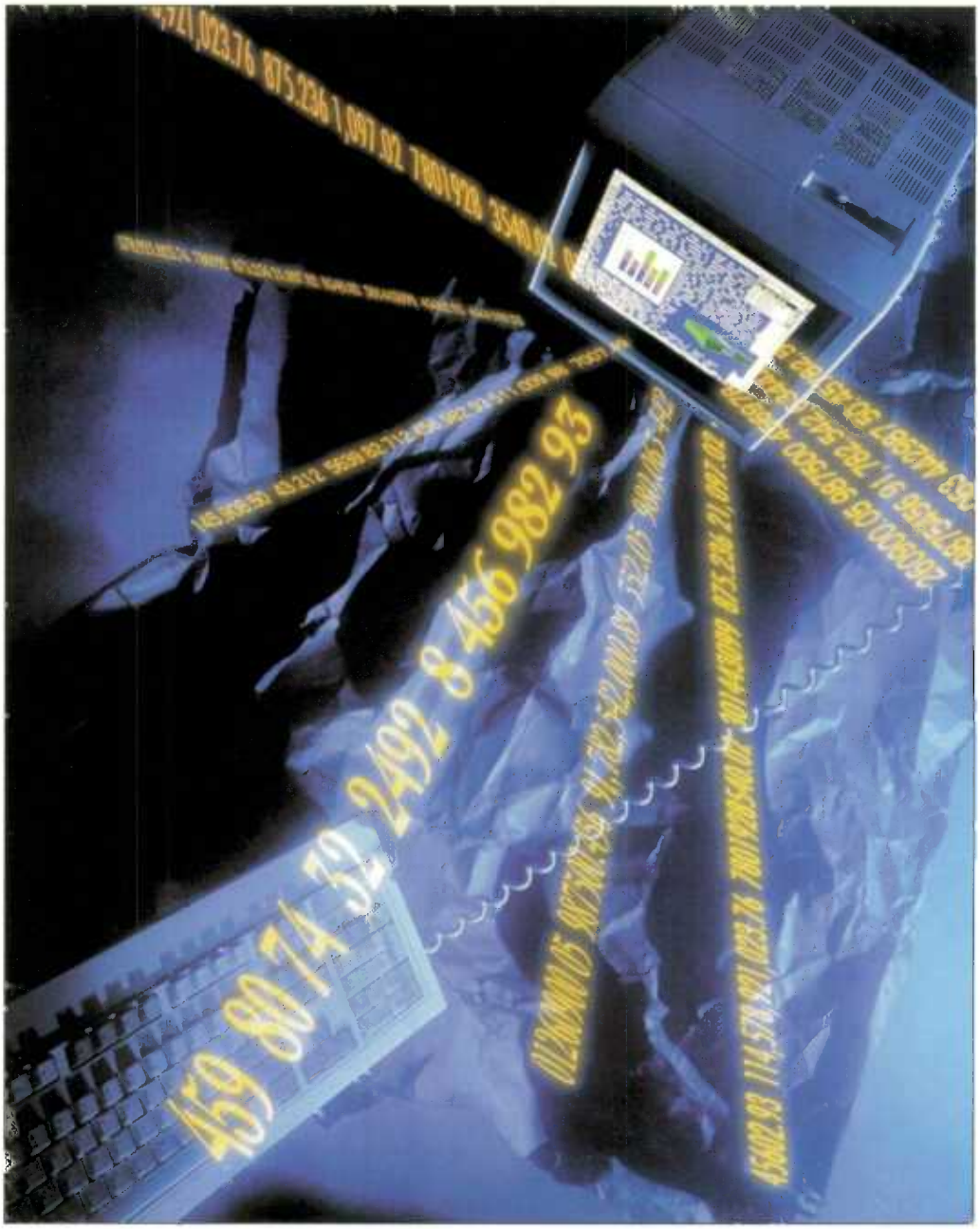

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Winter 2000 Vol. 12 No. 4

PERSPECTIVES

ON LABOUR AND INCOME

Departments

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Articles

PERSPECTIVES
ON LABOUR AND INCOME

Symbols

The following standard symbols are used in Statistics Canada publications:

- . figures not available
- ... figures not appropriate or not applicable
- - nil or zero
- -- amount too small to be expressed
- p preliminary figures
- r revised figures
- x confidential to meet secrecy requirements of the Statistics Act

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Forum

From the Managing Editor

Perspectives *online*

The first monthly online issue of *Perspectives* appeared on the Statistics Canada website October 10, 2000. As mentioned here previously, our goal is to disseminate analysis of labour and income issues on a more timely basis, as well as to further integrate our analytical products. In addition to *Perspectives'* usual content, the "new" version incorporates contents of the former *Labour Force Update*, as well as articles produced in other divisions of the Labour and Household Surveys Branch (namely, the Income Statistics Division and the Special Surveys Division).

Each online issue includes at least one full-length article (with a maximum of three per month). These monthly releases will then be reproduced in the quarterly print version. Twelve months following their initial release, articles will be available free of charge in an "Archives" bin, currently under development. All articles, since the first issue of *Perspectives* in 1989, will be available in this fully searchable historical bin.

The online edition also includes some features of the quarterly version. For example, "Editor's Corner" (similar to "Forum") provides any letters to the editor, errata, and comments on issues related to labour and income. "Key labour and income facts" charts the latest available monthly statistics from the Labour Force Survey; Employment Insurance; the Help-wanted Index; and the Survey of Employment, Earnings and Hours, and provides links to the "Canadian statistics" page on the Statistics Canada website. The print version of "Key labour and income facts" remains unchanged.

"More news" is similar to "What's new?" in that it announces recently released data, research and products related to labour and income, as well as selected upcoming conferences and special events. Finally, we have included links to various guides and manuals, such as the *Labour Market and Income Data Guide* and the *Guide to the Labour Force Survey*. Users can find these links under "Survey information." In short, the online version of *Perspectives* is your entry point to Statistics Canada's wealth of information on labour and income.

We hope you will find the monthly issue timely, informative and useful. *Perspectives* can be accessed from the "In depth" bin on the main Statistics Canada home page (www.statcan.ca). In addition to the regular contacts listed in the publication, users can reach us directly at perspectives@statcan.ca. As always, we welcome your comments and suggestions.

Henry Pold
Managing Editor
E-mail: henry.pold@statcan.ca

Perspectives

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to Managing Editor, *Perspectives on Labour and Income*, 9th floor, Jean Talon Building, Statistics Canada, Ottawa K1A 0T6. Fax (613) 951-4179; e-mail: perspectives@statcan.ca.

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Highlights

In this issue

Incomes of younger retired women: the past 30 years ... p. 9

- Younger retired Canadians have become more reliant on pension income. In 1971, the Canada and Quebec Pension Plans and private pensions provided only 14% of total income for women aged 65 to 69 and 19% for men. By 1997, income from these sources had increased to 36% and 46%, respectively.

- Public and private pension income has helped raise the relative income of 65-to-69 year-old women—from 41% of men's in 1971 to 61% in 1997.

- The main source of income received by younger retired women in 1997 (34%) was still the combined Old Age Security (OAS) and Guaranteed Income Supplement (GIS). For men, the OAS/GIS represented only 19% of their income.

- Women's retirement pension income has risen because of their increased labour force attachment. Yet, although their years of service, earnings, and participation in pension plans have become increasingly similar to men's, considerable differences persist.

- Women still spend, on average, more time per week than men on unpaid work: 38 hours versus 22 for those aged 35 to 44. This naturally affects the time they have available for paid work (27 hours versus 43 for men in this age group) and, ultimately, their current and retirement incomes.

In for the long term: pension plans offered by employers ... p. 18

- Over 5 million Canadian employees belonged to an employer- or union-sponsored pension plan in 1998. The total assets of these plans, also known as registered pension plans (RPP), exceeded $644 billion, much more than those of the public Canada and Quebec Pension Plans and individual registered retirement savings plans combined.

- One form of RPP, the "trusteed pension fund," has had great success investing contributions in the stock and bond markets. Investment income from these sources grew from $1.6 billion in 1976 to $20.5 billion in 1998, a more than 12-fold increase. The income from these investments now far exceeds the combined value of employer and employee contributions.

- Trusteed pension fund managers also buy and sell stocks. The industry as a whole has shown a net profit from these transactions for many years, and since 1990 the amounts have grown significantly, reaching $23.5 billion in 1998.

- Fund managers are legally obliged to ensure benefits for future retirees. The asset mix and investment strategies they adopted in the 1990s virtually guarantee that this obligation will be met.

Incomes of seniors ... p. 23

- During the 1980s, average real incomes among the population aged 65 and over increased 10%, a gain that went largely to seniors at the lower end of the income distribution.

- Among the one-fifth of seniors with the lowest incomes, disposable income rose 31% between 1980 and 1990, compared with only 1% among the one-fifth of seniors with the highest incomes.

- For seniors at the lowest income level, the changes were a direct result of higher benefits from three income sources: Old Age Security, the Guaranteed Income Supplement and the Canada and Quebec Pension Plans (C/QPP). For most seniors, the greatest source of income growth in the 1980s was C/QPP benefits, followed by private pension income.

- The C/QPP was introduced in 1966, but it was not until 1976 that the first people to receive full benefits reached age 65. At the outset of the 1980s, only the youngest seniors qualified for full benefits. This changed over the decade, and by the early 1990s retirement incomes showed the full effect of this income source.

- In 1980, 40% of seniors were in the lowest income group, compared with 20% of all Canadians. By 1995, their proportion in this category had fallen to 17%.

Income inequality within provinces

... p. 33

- In 1998, for every dollar of market income (income before taxes and government transfers) for the 20% of economic families with the lowest incomes, the 20% with the highest incomes had, on average, $14.50. When the comparison is based on after-tax income, the inequality ratio was only $5.40.

- At both the national and provincial level, the inequality ratio was highest for market income and lowest for after-tax income for every year between 1980 and 1998.

- In 1998, Prince Edward Island had the smallest inequality ratio for after-tax income, while Alberta had the largest.

- From 1980 to 1998, the gap between the province with the lowest ratio for total income (income before taxes but after government transfers) and the one with the highest grew from 1.40 to 2.20, while the gap for after-tax income edged up from 1.10 to 1.90.

- Inequalities in market income tended to increase. The other two income measures reveal a similar tendency—though on a smaller scale—for the majority of provinces.

What's new?

... p. 39

- **Just released**

  Women in Canada 2000

  Market Research Handbook

  Social Policy Simulation Database and Model: Version 8.0

  Registered apprenticeship training, 1998

  Pilot Survey of Information Technology Occupations, 2000

  Economic Overview of Farm Incomes

  Aquaculture statistics, 1999 (preliminary)

  Federal electoral districts

  Family Income

  Seniors Income

  Neighbourhood Income and Demographics

  Labour Force Income Profile

  Economic Dependency Profile

  Postal Area Profiles, 1998

  RRSP Contributors

  Canadian Taxfilers

  "An overview of average wages and wage distributions in the late 1990s" *Labour Force Update*

  "New hirings and permanent separations, 1999" *Labour Force Update*

  Employment Insurance data

  Spending Patterns in Canada, 1998

  Pension Plans in Canada: Statistical Highlights and Key Tables, January 1, 1999

  Pension Coverage and Retirement Savings of Young and Prime-aged Workers in Canada: 1986-1997

  User Guide to 1996 Census Income Data

  Should the Low Income Cutoffs be Updated? A Summary of Feedback on Statistics Canada's Discussion Paper

Perspectives

In the works

Some of the topics in upcoming issues

Year-end review

A wrap-up of changes and trends in the labour market in 2000. This popular annual feature makes its return to *Perspectives* in the January online issue.

Adjusting family incomes for family size and characteristics

This article applies equivalence scales to after-tax family income data for the 1980s and 1990s to explore the question, "what effect do family size and composition have on economic well-being and what are the related trends?"

Labour force participation: cross-sectional and longitudinal perspectives

This article looks at the demographic and economic factors that will affect public pension plans over the coming years. It shows how the 1990s labour market deviated from those of previous decades, and considers whether these changes are likely to persist. Some longitudinal data are available to test hypotheses usually subjected to synthetic cohort analysis.

Economic integration of recent immigrants

Using the Census of Population, supplemented by the longitudinal Immigration Database, this article compares the employment rates, education-to-occupation match rates and employment incomes of recent immigrants and Canadian-born university graduates.

Recent trends in rural employment

This article provides a regional comparison of recent labour market trends in rural areas. To put the trends into a broader context, the cross-sectional labour market characteristics of these areas are also presented.

PERSPECTIVES ON LABOUR AND INCOME

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Incomes of younger retired women: the past 30 years

Katherine Marshall

Like many OECD countries, Canada is going through a demographic transition. With rising life expectancy and lower fertility and net migration rates, the proportion of the population in older age groups continues to grow. The trend toward earlier retirement, coupled with increased life expectancy, has greatly extended the period of retirement, making the issue of pre-retirement financial planning more crucial than ever.

These trends have put increased financial pressure on public retirement-income security programs. Concern over these programs has led to a fundamental change in social policy regarding retirement, in which the role of government is being reduced and the responsibility for the provision of retirement income gradually transferred to the individual. This view of retirement encourages people to become more self-reliant through employer-sponsored pension plans, tax-sheltered investment accounts, and other investments. This raises concerns for elderly women who, compared with men, have traditionally had lower average incomes and have relied heavily on income from universal old-age transfer payments.

Furthermore, the ability to become "self-reliant" assumes strong labour force attachment and sufficient earnings prior to retirement, as most pension plan benefits are dependent on previous earnings and length of service, and contributions to tax-sheltered investment plans depend largely on how much a person can afford to set aside. Even though the labour force experiences of women and men are more similar today, considerable differences persist—differences attributable to women's primary role in caring for the household. As a consequence, it can be assumed that most women will have lower non-government retirement income than men.

Katherine Marshall is with the Labour and Household Surveys Analysis Division. She can be reached at (613) 951-6890 or marskat@statcan.ca.

This article examines the extent of change in the source, distribution and level of individual incomes of younger retired women (and men) that has resulted from the development and maturation of public and private pension plans. The younger retired (aged 65 to 69) are examined, since they represent the most recently retired and therefore the most affected by relatively recent changes to pension plan benefits and other determinants of retirement income. As the elderly of the future, their initial retirement incomes are likely to persist.[1] In other words, 65-to-69 year-olds can be viewed as the flow into the stock of retired persons. Trends in the incomes of this age group are, therefore, somewhat predictive of trends in the future incomes of the population aged 65 and over.

The article also examines the long-term change in women's labour force involvement (including participation, earnings and pension coverage) as one of the reasons for the reduction of differences between the incomes of elderly women and men. As well, it discusses how both future labour market changes for women and current social roles may eventually affect women's retirement income.

This study analyzes the incomes of *individuals* and, with the exception of the section on low incomes, makes no reference to the incomes of the people with whom they may live. For those who live in families, individual incomes are not indicative of their standard of living or economic well-being, since that is a function of family income (that is, the sum of individual incomes of those who make up the family).

Individual incomes are used here to show how past trends have influenced the relative incomes of individual men and women aged 65 to 69, and how the incomes of those in this age group will influence the relative incomes of older age groups as the former continue to age. Individual incomes of persons aged 65 to 69 tend to be stable over time. Family incomes are unstable. The death of a spouse, particularly the

one with the higher income, will often have a dramatic effect on the surviving spouse's standard of living. But it will not lower that person's individual income. (In cases of retirement income sources with survivor's benefits, it may even increase it.) This means, for example, that a woman's income at age 65 to 69 is indicative of her income many years later when, given the differences in life expectancy between men and women, the probability of widowhood is much greater and a decline in standard of living may occur.

Overview of income sources

The income of elderly Canadians is derived mainly from three broad sources, often described as tiered:

First tier: OAS and GIS

Introduced in 1952, Old Age Security (OAS), in conjunction with the Guaranteed Income Supplement (GIS), is a government income security program designed to provide a basic guaranteed income to all Canadians. It is available to all citizens aged 65 and over who meet certain residency requirements, regardless of past labour force involvement. OAS provides a monthly flat-rate benefit fully indexed to the Consumer Price Index. The benefits began being taxed in 1989 (Myles, 2000); since then, persons with higher incomes have had to repay all or part of this income.[2]

The GIS, which began in 1967, is an income-tested supplement intended for those 65 and over with low income levels, which includes many who rely almost solely on OAS. A Spouse's Allowance was introduced in 1975 as another income supplement for those with limited income.[3] Neither of these government supplements is taxable and neither requires previous contributions. Provincial governments also provide supplemental income programs for elderly persons with low income, although these are small relative to the programs just described.

Second tier: C/QPP[4]

Since 1966, these government-sponsored social insurance plans have been aimed at providing workers with a certain level (roughly 25%) of previous earnings, up to a ceiling,[5] after retirement. The plans provide mandatory coverage for all workers aged 18 and over, regardless of status (for example, full-time, part-time, employees or self-employed workers), and both employees and employers are required to contribute.[6] Benefits are available to anyone aged 60 or over who has worked and contributed to the Canada and Quebec Pension Plans (C/QPP),[7] but the amount depends on the contributory period and annual average earnings during that period.

Third tier: Private savings

Employer-sponsored registered pension plans (RPP), also known as "private" pension plans to distinguish them from the C/QPP, have existed since the late 1800s but became widespread after the Second World War. They are provided to workers by some employers and unions and are designed to replace a proportion of previous earnings after retirement. Most RPPs require both the employee and employer to make contributions. Benefit rates are usually calculated as a fixed percentage of earnings for each year of service, and the formula is meant to replace approximately 60% to 70% of previous earnings for those with many years of service (Statistics Canada, 1996).[8]

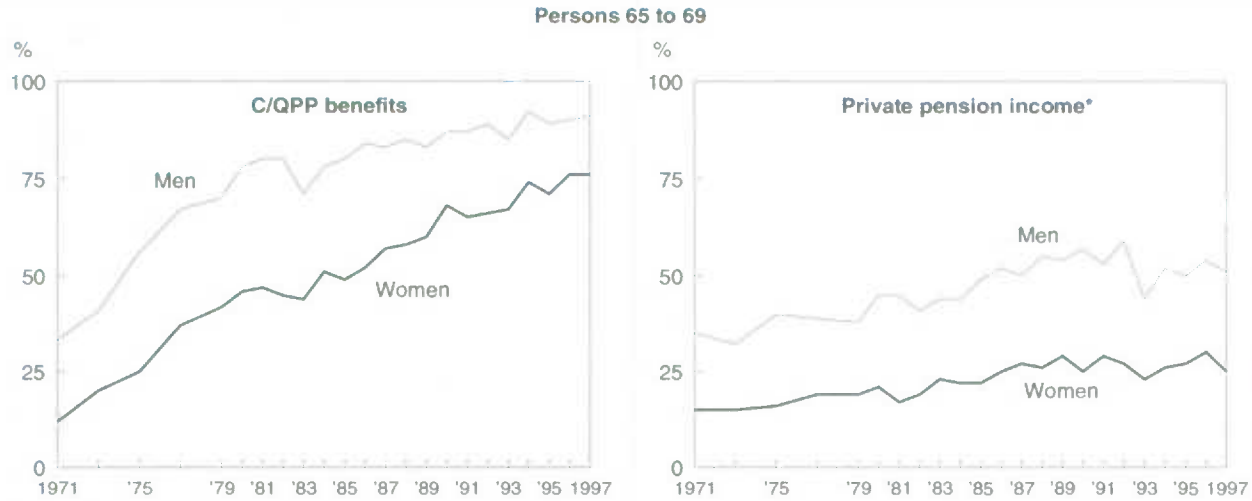
Registered retirement savings plans (RRSP), introduced in 1957, were designed to provide individual workers with a tax incentive to save for retirement. The annual maximum workers could save has changed several times since 1957, but throughout the years the ceiling for those with RPPs has been lower than for those without. Since 1991, the plan has allowed taxpayers to contribute up to 18% of their annual earned income, and then to defer paying tax on the amount contributed and on any interest or capital gains earned.

Income

Source of income has altered for the elderly

The enhancement and maturation of public and private pension plans in Canada have resulted in changes to the type of income young retirees have received over the past 30 years. Although the incidence rate for receiving pension benefits has increased for both sexes, the rate for women, because of their relatively low involvement in the labour force, has been consistently lower than men's. For example, in 1992, after the C/QPP had been in existence for 25 years, 89% of men aged 65 to 69 were receiving retirement benefits from the plans, compared with only 66% of women (Chart A). However, because these plans are compulsory, and women's labour force participation has been increasing, the incidence rate for C/QPP benefits reached 76% for women in 1997 (up 10 percentage points). The rate for men increased to 91% (up 2 points).

Chart A: Despite improvements, proportionately fewer women receive pension benefits.



Source: Survey of Consumer Finances
* *Includes RPP benefits and/or RRSP annuities.*

By 1997, some 50% of men and 25% of women aged 65 to 69 were receiving some income from a private pension.[9] The proportion has increased for both sexes since 1971, but in contrast to the experience with the C/QPP, the difference between the two has not yet narrowed. One of the reasons for this may be the exclusion of most part-time workers (who are predominantly women) from RPPs until the 1980s (Statistics Canada, 1996).

... as has the distribution

The increasing incidence of receiving second- and third-tier type income (public and private pensions) has changed both the distribution of income sources and the total income for the recently retired (Table 1). Again, the effect of pension income has been more striking for men than for women. By 1997, private pension income had

Table 1: Total income* by source

	Men 65 to 69				Women 65 to 69			
	1971	1981	1991	1997	1971	1981	1991	1997
				%				
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
OAS/GIS	20	18	18	19	51	40	34	34
C/QPP	3	13	17	20	2	10	17	22
Private pension	16	17	23	26	12	8	13	14
Investment income	19	21	12	7	20	27	20	12
Employment	38**	26	25	20	11**	10	10	11
Other transfers	4**	5	5	8	4**	5	6	7
				1997$				
Average income (after tax)	22,000	24,000	24,600	23,300	8,900	12,800	14,300	14,200
Income ratio (women/men)					0.41	0.53	0.58	0.61

Source: Survey of Consumer Finances
* *Based on before-tax income.*
** *Published data for 1971 collapse employment and other transfer income; this study has estimated the likely breakdown based on past trends.*

become the main source of income for men aged 65 to 69 and represented 26% of the total, up from 16% in 1971. Private pension income for women represented just 14% of the total, only slightly more than it had in 1971 (12%).

On the other hand, whereas C/QPP income was almost non-existent in 1971, it had come to represent one-fifth of income for both women and men by 1997. And, although reduced from 51% in 1971 to 34% in 1997, OAS/GIS remained women's main source of income. Equally noteworthy is men's decreased reliance on employment income, which had provided over one-third in 1971 but was down to one-fifth in 1997, reflecting declining labour force participation for this group.

The proportional increases in both private and public pension income have also helped to raise the total average income of women aged 65 to 69, from $12,800 in 1981 (in 1997 dollars) to $14,200 in 1997. The increased pension income for men has helped to offset the large decrease in employment income, though not enough to prevent a slight drop in their total average income from $24,000 in 1981 to $23,300 in 1997. Overall, women's income levels have moved toward those of men. For example, in 1971 women aged 65 to 69 received 41% of men's income; by 1981, the percentage had increased to 53% and by 1997, it reached 61%.

Living in low income

The narrowing of the income gap is reflected in the changing percentages of women and men with low incomes. Low income is based on *family* income rather than on *individual* income (studied everywhere else in this article). The incidence of low income is, therefore, a function not just of individual income, but, for persons living in families, of their combined (that is, family) income. In any case, in 1980 some 39% of women aged 65 to 69 were living in low income; that is, their after-tax family income was less than 50% of the median adjusted[10] income of all families and unattached individuals regardless of age. This rate had decreased to 9% by 1997 (Chart B). Although the incidence of low income dropped for men aged 65 to 69 as well, the change was much smaller: from 11% to 5%.

Chart B: The incidence of low income* has dropped considerably for women aged 65 to 69.

Source: Survey of Consumer Finances
* *Based on low income measures (one-half of median adjusted family income).*

In short, the proportion of younger retired persons receiving public and private pension benefits has increased steadily since these income programs were introduced. Furthermore, these sources have come to represent a larger proportion of total income. However, the percentage receiving these pensions and the average annual amounts received have been consistently lower for women than for men. These differences narrowed somewhat during the late 1980s and the 1990s—a direct result of women's increasing involvement in the labour market. But what was the degree of labour force attachment of the women who retired during this period, and how does it compare with that of older and younger generations?

Labour force attachment

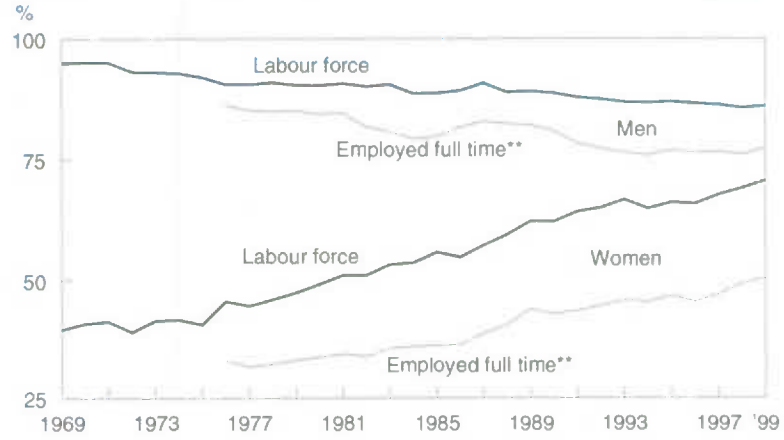
Participation rates converge

One method of examining the previous labour force attachment of several generations of younger retired women is to look at the employment behaviour of women over the years. For example, women who were aged 65 to 69 in 1999 would have been in their

pre-retirement years in 1984, when they were between 50 and 54. According to this form of analysis, 54% of women aged 65 to 69 in 1999 were in the labour force in their early fifties (Chart C). This compares with a participation rate of 89% for men aged 50 to 54 in 1984. Fifteen years earlier (1969), only 39% of women aged 50 to 54 were in the labour force; by 1999, a full 71% of this age group were participating. An opposite trend is revealed for men: whereas a full 95% aged 50 to 54 were in the labour force in 1969, only 86% of men in their early fifties were participating by 1999.

So, too, have full-time employment rates (in this study, full-time employment expressed as a proportion of the population in the same age group) dropped for men aged 50 to 54 and increased for women. That being said, men have consistently been more likely than women to work full time. As of 1999, their full-time employment rate was still considerably higher than women's: 77% versus 50%.

Chart C: Labour force participation is converging for women and men aged 50 to 54.*



Source: Labour Force Survey

* *For the years 1969 to 1971 the age category is 45 to 54.*

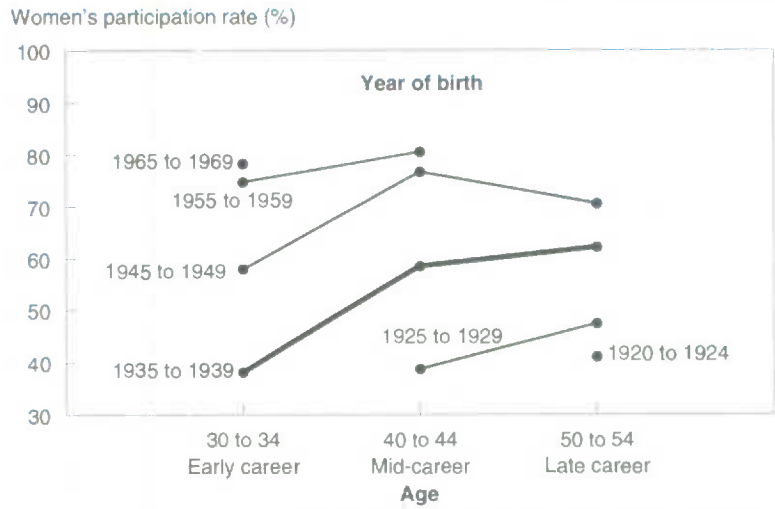
** *Employed full time divided by the population. Data for hours of work prior to 1976 have a high percentage of missing values.*

Women's participation now high throughout life cycle

Although a majority of women may now be participating in the labour force a decade before the traditional age of retirement, pension eligibility and earnings-replacement rates are generally dependent on lifetime years of service. A common pattern for women of earlier generations was to withdraw from the labour force through the child-rearing years, and then return to work once their children had grown up. Cohort analysis as a proxy for lifetime labour force participation rates confirms that rates have tended to rise as women age.[11] For almost all groups examined, labour force participation was lowest when the women were in their early thirties and highest when they were in their early fifties (Chart D).

Not only is the pre-retirement participation rate higher for the cohort born soon after World War II, but so too are the early and

Chart D: Labour force participation patterns of women have changed dramatically.



Source: Labour Force Survey, 1969 to 1999

mid-career rates of women from more recent generations. For example, only 39% of women born between 1925 and 1929 were participating in the labour force in their early forties, compared with 81% of women born between 1955 and 1959. Women today tend to have high labour force participation rates throughout their adult lives. For the women who retired in the late 1990s, labour force participation was strong only at the end of their working lives.

Earnings converge as well

Pension benefits are a function of both the number of years in which someone contributed to the plan and the earnings during the years when contributions were made. The data in the previous section suggest a steady increase in the number of years that women are potential contributors to pension plans, compared with a slight decline for men. This section looks at the earnings of women and men.

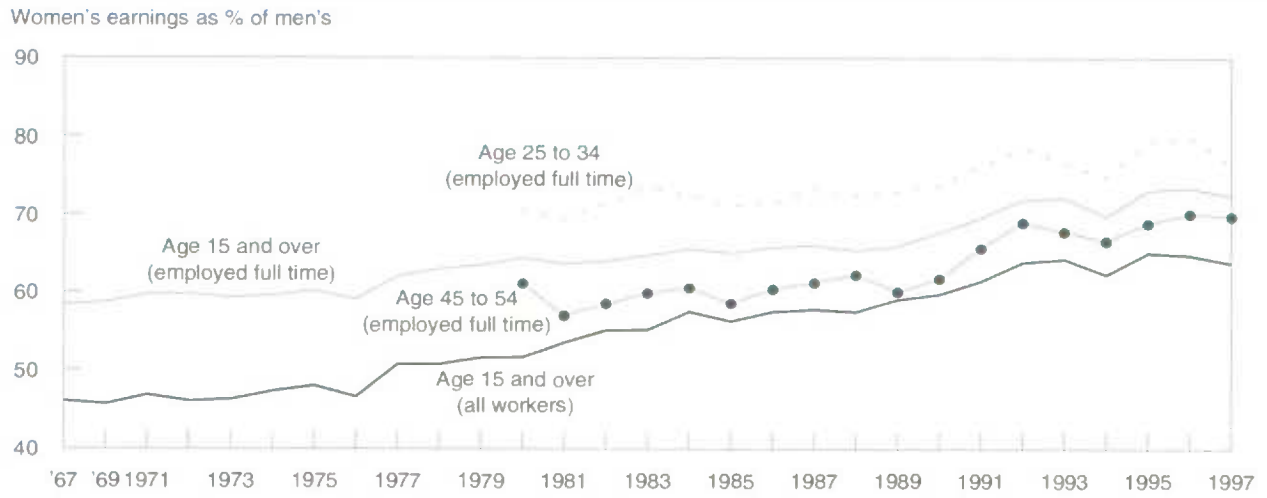
For a number of reasons not addressed here, women have consistently earned less than men. However, similar to the trend for labour force participation rates, the earnings gap between women and men narrowed over 30 years. In 1967, earnings of women working full year full time were 58% of men's, but had increased to 72% by 1997 (Chart E). Also, as seen earlier, not only do younger women now have higher-than-ever participation rates, but they have also made the largest gains in earned income relative to men's. For example, in the late 1990s women aged 25 to 34 working full year full time had earnings close to 80% of their male counterparts'. That said, full-time working women who retired in the late 1990s—the key interest group—were earning only around 60% of men's earnings during their pre-retirement years (aged 45 to 54 in the early 1980s).

Women's participation in private pensions increasing

In terms of average individual retirement incomes, the amount from pension schemes is a function of three variables: years of contribution, level of earnings while contributing, and the probability of having contributed at all. The third variable does not play a role in the case of the C/QPP, since coverage is effectively universal. However, private pensions are less inclusive, so the proportions of men and women participating in a private pension plan will have a bearing on the level (and composition) of *average* retirement incomes measured over the entire population.

More women now belong to an RPP, for two main reasons: their labour force participation has increased, and so too has their access to this benefit. In 1983, some 36% of women in paid jobs were members of

Chart E: Women's average earnings still lag men's.



Source: Survey of Consumer Finances

an RPP. This rate had increased to 39% by 1998 (Table 2). The employee coverage rate for women has grown largely because of revised legislation that has required employers with RPPs to include part-time workers. In contrast, the coverage rate for men dropped from 52% in 1983 to 42% in 1998. This can be attributed primarily to the proportional employment decreases in areas such as manufacturing and the public sector, industries that are more likely than others to offer RPPs.

Table 2: RPP coverage and RRSP contributions

Employees covered by an RPP			Taxfilers under age 65 who contributed to an RRSP, and median contribution				
	Men	Women		Men		Women	
	%			%	$	%	$
1983	52	36	**1994**	37	2,800	27	2,000
1985	50	36	**1995**	38	2,800	30	2,000
1987	48	36	**1996**	39	3,000	31	2,000
1989	47	37	**1997**	39	3,000	32	2,100
1991	49	41	**1998**	40	2,900	30	2,000
1993	47	42					
1995	44	41					
1997	42	40					
1998	42	39					

Sources: Census of Trusteed Pension Funds; Small Area and Administrative Data Division

In the long term, retired women may be almost as likely as men to receive a pension from an RPP. However, given the differential earnings of women and men, the level of benefits will not be the same. This is because over 70% of all RPP members belong to plans that calculate pension benefits as a percentage of previous earnings. For the vast majority of these members, pensions are accrued at 2% for each year of service. That is, average annual pensions will equal 2% of earnings multiplied by the number of years of participation in the plan.

With regard to RRSPs, approximately 3 out of 10 women and 4 out of 10 men were making contributions by the end of the 1990s, with women putting away roughly two-thirds of men's savings ($2,000 versus $2,900 in 1998). As with RPP coverage, women's lower contribution rates and amounts have been influenced by lower labour force participation rates and lower average earnings.[12] However, some women may benefit from RRSP rules allowing contributions to be made on behalf of lower earning spouses and claimed as tax deductions by the earners themselves.[13] Although RRSP participation rates can be a useful indicator of retirement planning, lifetime accumulation levels are more important, albeit not currently known.[14]

Income, labour force attachment and social roles

For many of the key factors associated with pension benefits—number of years of labour force participation, level of earnings, and pension plan coverage—the experiences of women and men are becoming more similar. This confirms the sense that traditional roles of husband-as-breadwinner and wife-as-homemaker have been converging. Recent time-use data show that although work roles still tend to follow these lines, women, on average, are increasing their time spent on paid work, and men are increasing their time spent on housework, childcare and other unpaid work. However, despite a "blending" of the roles, women still carry most household and family responsibilities (Table 3), and this affects the time they have available for paid work, and ultimately, their economic success: "Even where women work outside the home, they generally carry the major responsibility for home and family. This has an impact on their career advancement and their earning capacity" (Townson, 1995). Therefore, given the continuing role distinction, it is

Table 3: Average work hours per week

Age		Total	Paid	Unpaid*
15 to 24	Men	31	22	9
	Women	34	18	17
35 to 44	Men	65	43	22
	Women	64	27	38
55 to 64	Men	46	23	23
	Women	47	13	34

Source: General Social Survey, 1998

* *Comprises household work, shopping, childcare, social support and volunteer activities.*

unlikely that women's and men's labour force attachment will match in the near future. This means retirement incomes will continue to differ as well, since the ability to save depends on level of earnings. Furthermore, pension benefits are dependent on total years of service and previous earnings; even though some RPPs take into account women's role in family responsibilities,[15] most do not.

Conclusion

Younger retired Canadians are becoming more reliant on pension income and personal savings. For example, income from the Canada and Quebec Pension Plans and private pensions represented only 14% of total income for women aged 65 to 69 in 1971, and 19% for men. By 1997, the income from these sources had increased to 36% and 46%, respectively. However, despite some narrowing of the difference in the late 1980s and the 1990s, the percentage of women receiving pensions and the average amounts received remain considerably lower than those of men.

The narrowing of the difference between women's and men's retirement income in the late 1990s can be attributed partly to the greater lifetime labour force attachment of recently retired women. The income difference will most likely continue to diminish in the future because of the even stronger labour force involvement of young women today. However, given that women are still predominantly responsible for most household and family work, it would be unrealistic to expect their lifetime attachment to equal that of men, at least for some time. Therefore, it is also unlikely that women's and men's retirement income will converge completely.

Perspectives

Notes

1 The extent to which initial retirement incomes persist is largely a function of source of income. Indexed pension plans (public or private) will preserve the purchasing power of income received at age 65 to 69, as will indexed government transfer payments. The value of private pension plans with fixed benefits will be eroded by inflation. Investment income, to the extent that it comes from interest payments, will tend to vary according to the prevailing interest rate.

2 More recently, the amount paid under OAS in any one year is based on the previous year's income. This has the same general effect as taxing the benefit after it is received.

3 This is available to persons 60 to 64 who are married to GIS recipients (or widow[er]s of former recipients).

4 The Quebec Pension Plan is administered by the province of Quebec but is viewed in this article as identical to the Canada Pension Plan, which operates in the other nine provinces and the three territories.

5 The ceiling is based on an estimate of average annual earnings and is updated regularly.

6 The self-employed must pay both the employee and employer share of C/QPP contributions.

7 In order to be eligible for benefits, the CPP requires at least one payment, while the QPP requires contributions for a minimum of one year.

8 In many cases, employer-sponsored pension plans have been "integrated" with the Canada and Quebec Pension Plans so that the earnings replacement ratio (say, 50%) is achieved through a combination of the plans' respective benefits.

9 Some women may have been receiving survivor's benefits, although the incidence of this was probably low for the 65-to-69 year group.

10 Income was adjusted for family size only.

11 Cohort analysis of cross-sectional data enables estimations of lifelong participation rates; however, it cannot tell about the movement of women into and out of the labour force, which is an important element when determining total years of service. Longitudinal data are needed to know the number and duration of work interruptions for women over the past 30 years.

12 While women as a group are less likely to contribute to an RRSP than men, this reflects the higher earnings of men. For both men and women, the higher the income the higher the RRSP participation rate. When disaggregated by income, at each income level women are more likely than men to be RRSP participants (Statistics Canada, 1999).

13 The practice of making spousal contributions is not widespread. In 1989, only 3.4% of RRSP contributors made some or all of their contribution in their spouses' names; 98% of these contributors were husbands (Frenken, 1991).

14 The 1999 Survey of Financial Security, to be released in December 2000, should provide important information on total RRSP savings. This survey will also provide the first review since 1984 of the amounts invested outside RRSPs and of the value of non-financial assets such as dwellings, both of which are important in the determination of economic well-being in retirement years.

15 The federal public service pension plan allows employees to take up to five years off for the "care and nurturing" of preschool-aged children; employees are then able to "buy back" these pensionable years of service when they return to work. The buy-back option is also available for other kinds of extended leave.

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In for the long term: pension plans offered by employers

Robert D. Anderson

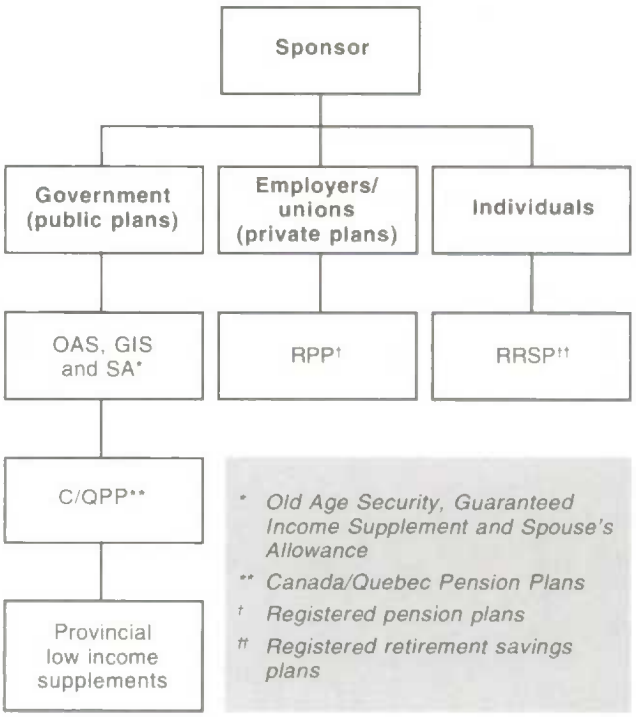
Most people are familiar with some aspects of Canada's retirement income programs. The federal and Quebec governments are responsible for the Canada and Quebec Pension Plans (C/QPP), and the choices that the responsible ministers make are subject to legislative and public debate. Registered retirement savings plans (RRSP) are another well-known element of retirement planning.

People are less familiar with another form of retirement saving—the pension plans offered by many employers or unions—yet for millions of Canadians, benefits from these plans will be one of their main sources of retirement income. Money in these plans is invested in a wide range of financial and capital markets to ensure that benefits will be available to future retirees.

This article situates these pension plans within the context of the other major retirement income programs, and describes the investment strategy these plans follow.

Pension plans offered by employers or unions are frequently referred to as "private" pension plans to distinguish them from the public C/QPP (Figure). They are also called registered pension plans (RPP), as they must be registered with the Canada Customs and Revenue Agency (CCRA) and one of the pension supervisory authorities. These plans are provided by employers or unions in both the public and private sectors.

Figure: Retirement income programs



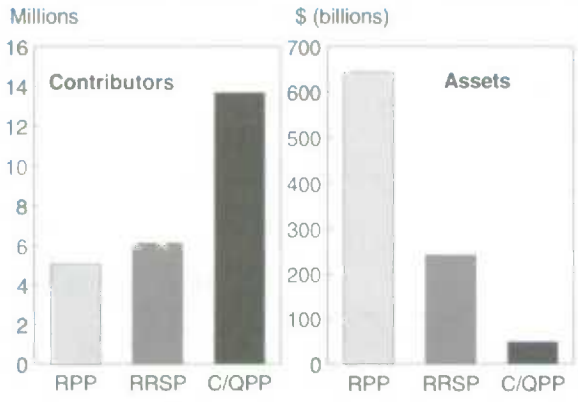
Relative importance of the programs

Two different pictures of the relative importance of the programs emerge, depending on whether they are viewed in terms of number of contributors, or value of assets[1] (Chart A). In terms of contributors, the public plans (C/QPP) are by far the largest, with 13.7 million persons having contributed in 1998. Public plans are compulsory for employed workers. Contributors to RRSPs numbered about 6.1 million, showing the popularity of these widely available retirement planning products. Finally, over 5 million persons were covered by RPPs.

When programs are viewed in terms of assets accumulated, however, another picture of their relative importance appears. The C/QPP—with the most contributors—had assets of under $50 billion at the end of 1998, the least of the three programs. Assets accumulated in RRSPs amounted to $241 billion, and those in registered pension plans—with the fewest contributors—reached $644 billion.[2]

Robert D. Anderson is with the Income Statistics Division. He can be reached at (613) 951-4034 or robert.anderson@statcan.ca.

Chart A: Public plans have the most contributors; RPPs have the most assets.



Source: Census of Trusteed Pension Funds, 1998

The value of assets increased 138% for RPPs and 200% for RRSPs over the 1988-to-1998 period. In contrast, the combined assets in the C/QPP declined (Table).

Funding arrangements

The funds in RPPs are most commonly managed through a trust arrangement. Most of the remaining monies in these plans are held in consolidated revenue arrangements administered by the federal and some provincial governments. They cover most federal public servants, the RCMP and the military. Insurance company contracts and Government of Canada annuities are also used by some RPPs, although these amounts are relatively small. What all registered pension plans have in common is their tax treatment by the CCRA: money going into the plans is not taxed, but benefits paid out are. The plans differ with respect to their funding arrangement, their terms and conditions, and their investment of funds.

A funding arrangement is defined through a legal document outlining the obligation of the funding agency (for example, trust company or insurance company) with respect to the pension plan. The instruments are registered with the appropriate pension authority and/or the CCRA. The terms of the plan specify, among other conditions, who is eligible or required to join the plan and who must pay contributions, what benefits are paid out and under what conditions, and how the funds' assets may be invested.

Like the C/QPP, many (though not all) RPPs require contributions from employees. "Contributory" plans cover about 73% of total RPP membership, including virtually all members of public sector plans. Non-contributory plans are offered almost exclusively by private sector employers.

Table: Accumulated assets in retirement income programs, at December 31

	1988		1990		1992		1994		1996		1998	
	$ (billions)	%	$ (billions)	%	$ (billions)	%	$ (billions)	%	$ (billions)	%	$ (billions)	%
Total	**402.1**	**100.0**	**489.2**	**100.0**	**588.5**	**100.0**	**691.1**	**100.0**	**803.5**	**100.0**	**935.0**	**100.0**
C/QPP	50.8	12.6	55.0	11.2	56.9	9.7	54.4	7.9	51.6	6.4	49.4	5.3
RPP	270.8	67.3	324.2	66.3	384.3	65.3	452.7	65.5	528.1	65.7	644.4	68.9
Trusteed	156.1	38.8	198.1	40.5	235.4	40.0	290.8	42.1	351.1	43.7	438.3	46.9
Government	86.3	21.5	95.0	19.4	112.8	19.2	121.6	17.6	137.0	17.0	160.7	17.2
Other*	28.3	7.0	31.1	6.4	36.1	6.1	40.4	5.8	40.0	5.0	45.4	4.9
RRSP**	80.5	20.0	110.1	22.5	147.3	25.0	184.0	26.6	223.8	27.9	241.2	25.8

Source: Census of Trusteed Pension Funds
Note: Dollar values are not adjusted for inflation.
* *Insurance company contracts and Government of Canada annuities.*
** *Reserves in self-administered RRSPs are not included.*

Fund investments

The assets of funds governed by a trust agreement (called "trusteed pension funds") are invested in the financial and capital markets. Until recently,[3] the funds in consolidated revenue arrangements were not: employee contributions were part of general tax revenues and were not invested or set aside for future benefit pay-outs.

The remainder of this article focuses on trusteed pension funds, which represent 68% of all RPP assets. It is these funds that are invested in the financial and capital markets. Their growth explains most of the increase in the total value of RPPs.

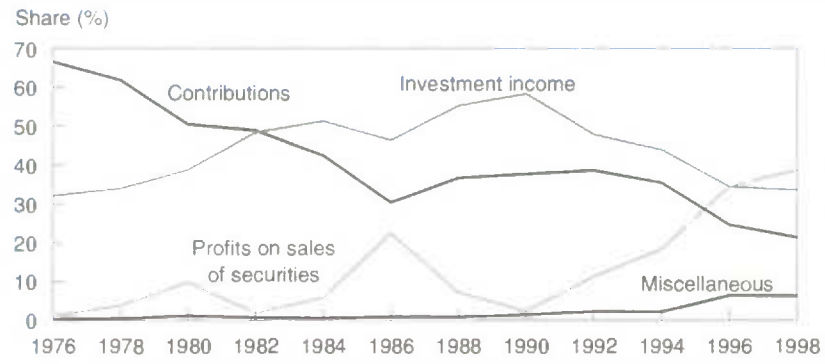
The assets available from trusteed pension funds for investment in the financial markets topped $438 billion in 1998. These funds have various sources of revenue in addition to employee and employer contributions: investment income from bond interest and stock dividends; profits from the sale of securities (stocks and other forms of equity investment); and real estate, mortgage and short-term investments. The importance of some of these sources has changed dramatically over time, reflecting varying economic forces and funding strategies (Chart B).

Perhaps the most notable change over the last two decades was the decline in the relative importance of contributions as a revenue source. That being said, contributions nearly quadrupled during the period under review (1976 to 1998), from $3.4 billion to $13.0 billion (Chart C).

The explanation for the decline in the relative importance of contributions lies in the more rapid increase of the other revenue sources. For example, investment income (mostly bond interest and stock dividends) grew from $1.6 billion in 1976 to $20.5 billion in 1998, a more than 12-fold increase. It became the largest single source of revenue in 1983, exceeding employer and employee contributions combined. The value of investment income increased every year over the period except 1991, when it declined slightly.

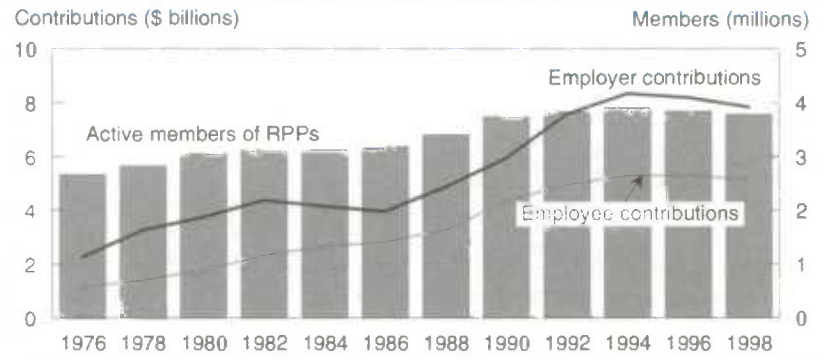
Investment income is closely related to bond yield rates, which tend to track bank rates. Thus, it increases more during periods of high bond yields than in years of low bond yields. For example, rising bond yield rates in the early 1980s led to large annual increases in investment income; conversely, falling bond yield rates throughout most of the remainder of the 1980s slowed the growth of the funds' investment income. In recent years

Chart B: For trusteed RPPs, the relative importance of revenue sources has changed significantly.



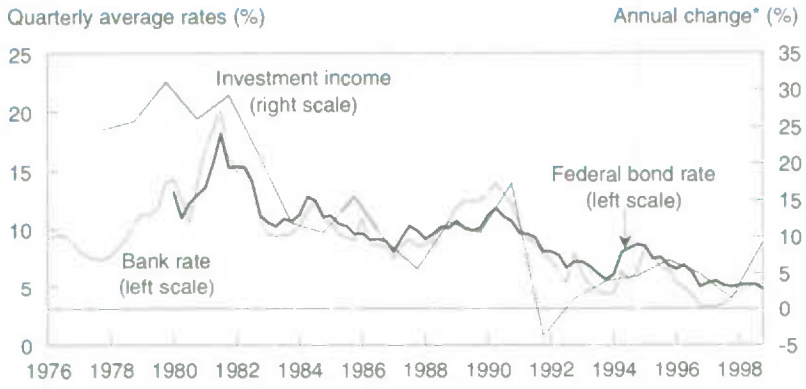
Source: Census of Trusteed Pension Funds

Chart C: Though their relative importance has declined, total contributions to trusteed RPPs have risen.



Source: Census of Trusteed Pension Funds

Chart D: For trusteed RPPs, investment income is closely related to bond yield rates.



Sources: Quarterly Survey of Trusteed Pension Funds; CANSIM
* *Fourth quarter over fourth quarter.*

bond yield rates have been relatively low, dampening annual growth in the investment income of trusteed pension funds (Chart D).

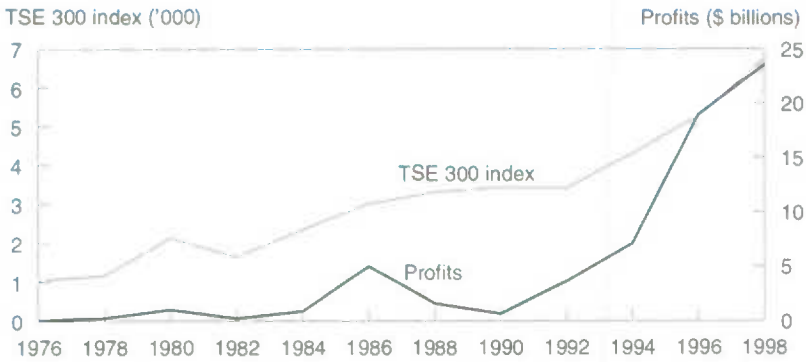
Trusteed pension fund managers also buy and sell stocks. The industry as a whole has shown a net profit from these transactions for all the years under review, and the amounts have grown significantly since 1990, reaching $23.5 billion in 1998. A major turning point occurred in 1996, when profits from the sale of securities (stocks) contributed the same amount ($18.9 billion) to revenues as yields from investment income.

Security and growth

Trusteed pension fund managers are obliged by law to ensure that assets are not at risk. They must operate in a prudent manner in making investment decisions. Typically, a fund would have about 35%-to-40% of its assets in bonds, 35%-to-40% in stocks or pooled equity funds, and the remainder in cash, short term investments, real estate or mortgages. The allocation of the 35%-to-40% invested in the stock market requires a strategy specifically oriented to providing retirement benefits, because that is the financial objective of pension fund investment. One strategy for investing in the stock market is to match the composition of an index such as the TSE 300. In other words, a fund manager would purchase stocks in the communications, transportation, retail and other sectors in the same proportion as they are represented (weighted) in the index. This is because over the long term all major indexes have increased in value. However, the composition of the index also changes over time, meaning that the asset mix of the fund needs to be reviewed every few years. This strategy, among others, has been widely adopted by trusteed pension fund managers.

QPP funds have for some time been invested in the financial and capital markets. Only recently, however, have monies in the CPP been directly invested in equities.

Chart E: If managers of trusteed funds sell during periods of rising market indexes, profits rise.

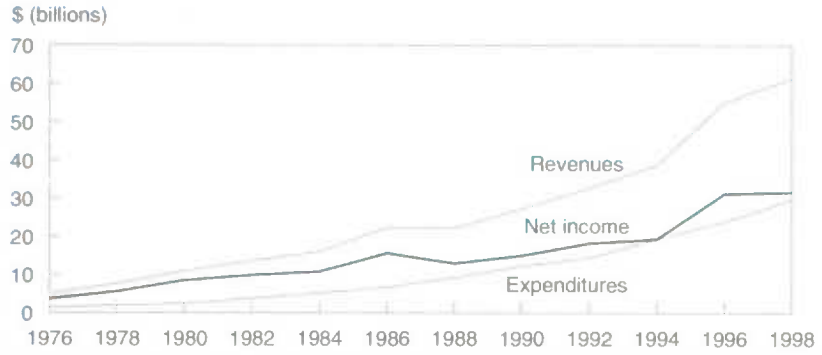


Sources: Census of Trusteed Pension Funds; CANSIM

When to buy and sell

If fund managers decide to sell stocks to earn profits, the annual growth of these profits will track the annual growth of a stock market index (Chart E). Both the TSE 300 and the profits of the funds have been climbing steadily since 1992. By 1994, fund managers were selling off at a rapid rate to take advantage of rising stock prices. They would then re-invest the profits to buy, and then sell, more stocks.

Chart F: Trusteed pension funds have always had a positive cash flow.



Source: Census of Trusteed Pension Funds

These decisions to buy and sell are made over years, not days or months. Fund managers are not "market timers"; that is, they do not look for short-term gains or attempt to make profits on the day-to-day movement of stock prices, even though they may well be able to "afford" significant losses over a short term. Investing for retirement, whether by pension fund managers or by individuals, means being in for the long term, regardless of current market conditions such as unprofitable economic sectors or depressed overseas stock prices. The strategy of long-term investment in the stock market, combined with investment in the more traditional bond markets, is designed to provide the security that future beneficiaries require, while still providing growth in the value of fund assets.

Positive cash flow

The largest component of trusteed pension fund expenditures is benefits to retired members. Further expenditures relate directly to managing the funds' assets, namely, administration costs. Also, some sales of stocks incur losses. Nonetheless, the trusteed pension fund sector has always had a positive cash flow—revenues have always far exceeded expenditures (Chart F).

Summary

Registered pension plans constitute, in terms of dollars, the largest component of the retirement income system. The largest proportion of the monies in RPPs is held in trusteed pension funds and is actively invested in the financial markets. These investments have generated significant revenue for the funds. In the 1970s, revenues from contributions were the driving force behind the growth in fund assets, followed by investment income during the high-interest period of the 1980s and early 1990s. In recent years, profits from the sale of stocks have taken over as the largest source of fund revenue.

Whether profits from the sale of stocks will continue to drive net income depends upon stock prices. Trusteed pension fund managers are required by law to ensure the viability of the fund, so contributions and low-risk forms of investment income such as bond interest and stock dividends will remain major sources of fund revenues, providing a healthy cushion against stock market volatility and virtually guaranteeing retirement benefits for plan members.

Perspectives

Notes

1 The figures are for 1998, the latest available for all programs.

2 All dollar values are in current dollars (that is, unadjusted for inflation).

3 In April 1999, the CPP Investment Board began investing in an index fund composed of companies listed on the TSE 300.

Reference

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Incomes of seniors

John Myles

Since the early 1980s, virtually every member of the Organisation for Economic Co-operation and Development (OECD) has undergone at least one major pension reform, a process far from over.[1] The pressures for reform are well known. Rapidly aging populations combined with slow economic growth have created an atmosphere of austerity very different from the expansion that characterized the 1950s through 1970s, when most contemporary old age security systems were designed. And seniors, once generally considered to be "too poor," are now thought by some to have become "too rich" (relative to other groups).

Against this international backdrop, Canada's old age security system appears to have achieved an enviable position. Public expenditures on income security for seniors are modest by international standards and are projected to peak at levels *well* below those of most other Western nations this century.[2] Nevertheless, low income rates among Canadian seniors measured by the usual "relative" standard (persons with adjusted incomes less than 50% of the median) are now among the most moderate in the OECD, even when compared with egalitarian Sweden (Hauser, 1997; Smeeding and Sullivan, 1998).[3]

Moreover, this development is not simply an artifact of moving large numbers of seniors from just below to just above the income cutoffs. Seniors with lower incomes have gained substantially. Conversely, it would be extremely difficult to claim that Canadian seniors have become "too rich." Although mean incomes among older Canadians have risen considerably since the early 1980s, virtually all of the gains have taken place at the lower end of the income distribution. As a result, income inequality among Canadian seniors has fallen substantially since 1980.

These outcomes reveal a turnaround from a few decades ago, when Canadian seniors fared poorly by U.S. and other international standards.[4] This article uses the Survey of Consumer Finances to review trends in the level and distribution of income among seniors (see *Data source and methodology*). It does so in the context of the main change in Canada's retirement income system over the period: the maturation of earnings-related pension schemes, both public and private. Between 1980 and 1996, income from contributory public and private earnings-related pensions rose from approximately 21% to 46% of disposable income among the population aged 65 and over. The share of income from Old Age Security (OAS) and the income-tested Guaranteed Income Supplement (GIS), in contrast, remained stable in the 1980s and declined slightly in the 1990s.

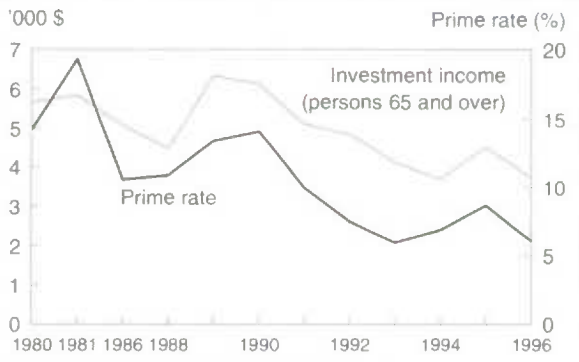
The expanded role of earnings-related pensions is the result of changes in the 1950s and 1960s. The Canada and Quebec Pension Plans (C/QPP) were implemented in 1966 and the first cohort to receive full C/QPP benefits turned 65 in 1976. The rising importance of C/QPP income since then is a result of cohort succession among seniors, as more recent cohorts displace older cohorts, and a dramatic increase in the share of women receiving their own C/QPP pension.[8] Private pensions grew rapidly in the 1950s and 1960s, reaching a coverage rate for paid workers of 40% in 1970. Cohorts retiring as late as 1980 were unlikely to have significant contribution years (they entered the labour market in the 1930s and 1940s), but the average number of contribution years and coverage rates did rise as the decade proceeded, a trend noted over a decade ago (Oja and Love, 1988).

Adapted from The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low-Income among the Elderly, *published by Statistics Canada (Catalogue no. 11F0019MPE, no. 147) and by the* Canadian Journal on Aging *(19, no.3: 287-316).* *John Myles is Professor of Sociology, Florida State University, and was Visiting Research Fellow with Statistics Canada's Business and Labour Market Analysis Division in 1998-99. He can be reached at jmyles@garnet.acns.fsu.edu.*

Data source and methodology

Data are from the Survey of Consumer Finances economic family file for 1980, 1981, 1986 and 1988 through 1996. Inferring secular trends in the level and distribution of income requires careful consideration of effects associated with the business cycle. Among working-age families, the main concern is identifying points in the cycle when employment and unemployment levels are approximately the same. Among seniors, the main confounding cyclical factor is interest rates, which have a profound effect on investment income (Chart). Investment income was high at both the beginning and the end of the 1980s, when real interest rates were at their peak, and has declined since the early 1990s as interest rates have fallen. To identify secular trends, therefore, much of the analysis focuses on years in which interest rates were roughly similar. The years 1980 (prime rate = 14.25) and 1990 (prime rate = 14.06) are two comparable points. For the later period, 1991 and 1995 (with prime rates of 9.94 and 8.65, respectively) are used.

Investment income is closely tied to interest rates.



Sources: Survey of Consumer Finances; CANSIM

As with the calculation of Statistics Canada's low income cutoffs, income is for the *economic family*, which includes all individuals sharing a common dwelling and related by blood, marriage or adoption. The unit of analysis, however, is the individual and includes all persons who were 65 or older in the reference years. Counting families (or households) rather than individuals would have given persons in larger households smaller weights than persons living on their own (Hauser, 1997).

Individual incomes are computed with the aid of an equivalence scale rather than with family income divided by family size. This accounts for economies of scale, that is, the ability of persons sharing accommodation and other living expenses to achieve a higher standard of living than they would if they were living on their own. Results can be highly sensitive to the choice of equivalence scale (Burkhauser, Smeeding and Merz, 1996). This is especially true for estimated differences between seniors living on their own (for example, unattached women) and elderly married couples and other persons living with family members. This study uses the "central variant" proposed by Wolfson and Evans (1990), which assigns a weight of 1.0 to the first person and 0.4 to each additional person. If one were to assume lower economies of scale (by assigning a weight of 0.6 or 0.8 to the second person, for example), differences between unattached and other seniors would be smaller than reported. All dollar values in the tables and text are expressed in 1996 currency.

The choice of the economic family as the income unit is appropriate for an analysis of the economic *welfare* of seniors, but this differs from an assessment of the economic *resources* of the group. The assumption is that seniors residing in higher income families enjoy a higher living standard than those in lower income families, irrespective of the source of that income. The results reported here reflect changes in seniors' living arrangements, as well as in the amount of income they receive from pensions, investments, and especially, earnings.[5]

Much of the analysis reports a single series for all seniors without distinguishing by family type. However, results are sometimes reported separately for unattached (single, widowed or divorced) women living on their own, traditionally seen as among the most economically vulnerable in this age group.[6]

This analysis uses disposable income, which is total income minus taxes. Total income comprises employment income (earnings), investment income, income from private pensions, C/QPP income, OAS/GIS income, and other government transfers.[7] Taxes are shown as a component of disposable income because if they decrease, disposable income increases and vice versa.

Investment income includes dividends, interest, rental and estate income. Private pension income includes retirement pensions, annuities and superannuation. Ideally, income from registered retirement income funds should be separated from that generated by employer pensions. Because this is not possible for years prior to 1993, both kinds of income are included with private pension income.

Over the 1980s, rising incomes among older persons were related mainly to the growth in C/QPP benefits. Across most of the income distribution (the second through fifth quintiles), C/QPP benefits were uniformly distributed. These results, however, describe a particular moment in history, and it is unlikely that more recent trends will resemble those of the 1980s and early 1990s. The C/QPP was "rushed" to maturity by legislation that provided full benefits after only 10 years of contributions. The full effect of expanded coverage and rising benefits from employer-sponsored registered pension plans (RPP) and personal registered retirement savings plans (RRSP) will take longer to appear.

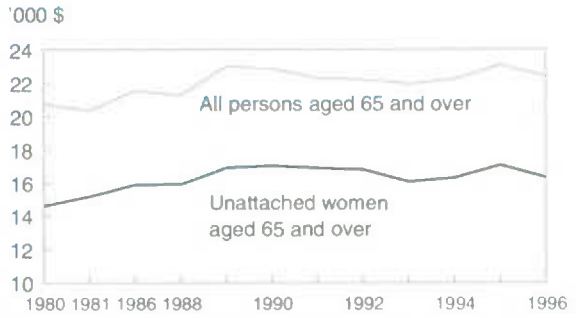
Declining income inequality since 1980 means simply that income gains among seniors, especially those financed by payroll and other taxes, have been directed disproportionately to persons in the bottom half of the income distribution. In Canada, as elsewhere, average incomes among seniors have risen faster in recent decades than average incomes among working-age families. This trend is due as much to slow real wage growth and falling relative wages among younger workers (under 35) as to rising pension income among older persons.[9]

Trends in income levels

Mean disposable (after-tax) income among seniors rose during the 1980s but was at roughly the same level in 1996 as in 1989 (Chart A). Over the intervals compared (1980 to 1990 and 1991 to 1995), mean disposable income rose 10% and 3%, respectively (Table 1).

The growth in average incomes reflects sharp increases in pension incomes, which more than offset declining earnings and rising taxes. Together, C/QPP

Chart A: Seniors' average disposable income rose in the 1980s, but stagnated in the early 1990s.



Source: Survey of Consumer Finances

Table 1: Changes in mean adjusted income by source, population 65 and over

	Disposable income	Employment income	Private pensions	Investment income	OAS/GIS	C/QPP	Other transfers	Taxes
1980 to 1990					$			
1980	20,740	6,110	2,650	5,680	5,940	1,700	760	-2,110
1990	22,870	4,450	4,330	6,140	6,560	3,720	1,030	-3,360
Change	*2,140*	*-1,660*	*1,680*	*450*	*620*	*2,020*	*270*	*-1,250*
% change	*10*	*-27*	*64*	*8*	*10*	*119*	*35*	*59*
Distribution					%			
1980	100.0	29.5	12.8	27.4	28.7	8.2	3.7	-10.2
1990	100.0	19.5	18.9	26.8	28.7	16.3	4.5	-14.7
1991 to 1995					$			
1991	22,310	5,070	4,250	5,120	6,540	3,670	1,080	-3,420
1995	23,080	4,580	5,660	4,500	6,330	4,530	1,100	-3,620
Change	*780*	*-480*	*1,410*	*-610*	*-210*	*850*	*20*	*-200*
% change	*3*	*-10*	*33*	*-12*	*-3*	*23*	*2*	*6*
Distribution					%			
1991	100.0	22.7	19.0	22.9	29.3	16.5	4.9	-15.3
1995	100.0	19.8	24.5	19.5	27.4	19.6	4.8	-15.7

Source: Survey of Consumer Finances

and private pension income rose from 21% of disposable income in 1980 to 44% in 1995. The largest gains were from C/QPP income ($2,020) in the 1980s and private pensions ($1,410) in the 1990s. Over the entire period (1980 to 1995), the share of private pension income doubled (from 13% to 25%), while that of C/QPP income more than doubled (from 8% to almost 20%).

OAS/GIS income rose in the 1980s ($620) and then declined slightly ($210) in the 1990s. Its share of disposable income fell slightly, from approximately 29% in 1980 to 27% in 1995. The changes reflect two offsetting trends: an increase in GIS benefits in 1984, and a growth in income from other sources (for example, pension income), which produced a drop in GIS benefits for seniors with low income (at the rate of 50 cents for each dollar of additional income from other sources).

Investment income was slightly higher ($450) in 1990 than in 1980 but was substantially lower by 1995, reflecting the effect of changing interest rates, as well as a possible substitution of pensions for other forms of savings. One obvious implication of the growing relative importance of earnings-related pension income is its lower volatility, which signals greater security for seniors.

For this group, the share of earnings fell from about 30% to 20% of disposable income during the 1980s and remained at that level in the 1990s.[10] Income taxes rose from about 10% of total income in 1980 to almost 16% by 1995, reflecting both rising incomes and changing tax provisions (including the OAS "clawback" implemented in 1989).

Unattached women

"Unattached" women (widowed, divorced or single women living on their own) have long been among the more economically vulnerable seniors. Average disposable income of this population grew somewhat more (17%) between 1980 and 1995 (Table 2) than it did among all seniors (11%).

C/QPP benefits played the dominant role in this increase. Such income rose from 8% to 16% of these women's total income between 1980 and 1990 and to 23% in 1995. Private pensions grew from 12% to 22% over the entire period. Among women reporting these benefits, many may have been receiving survivor's benefits.

While trends among unattached women are often used as indicators of what is happening to the most economically vulnerable seniors, this population is not homogeneous. The following section examines changes among seniors with lower and higher incomes.

Table 2: Changes in mean adjusted income by source, unattached women 65 and over

	Disposable income	Employment income	Private pensions	Investment income	OAS/GIS	C/QPP	Other transfers	Taxes
1980 to 1990					$			
1980	14,630	980	1,690	4,820	6,150	1,230	530	-770
1990	17,060	600	2,420	5,130	7,040	2,750	910	-1,800
Change	*2,430*	*-370*	*730*	*310*	*890*	*1,520*	*380*	*-1,030*
% change	*17*	*-38*	*43*	*6*	*14*	*124*	*72*	*133*
Distribution					%			
1980	100.0	6.7	11.6	32.9	42.0	8.4	3.6	-5.3
1990	100.0	3.5	14.2	30.0	41.3	16.1	5.4	-10.5
1991 to 1995					$			
1991	16,940	510	2,670	4,800	6,950	2,920	930	-1,840
1995	17,080	520	3,750	3,270	6,770	3,880	850	-1,960
Change	*150*	*10*	*1,080*	*-1,520*	*-180*	*950*	*-80*	*-120*
% change	*1*	*2*	*41*	*-32*	*-3*	*33*	*-9*	*6*
Distribution					%			
1991	100.0	3.0	15.7	28.3	41.0	17.3	5.5	-10.9
1995	100.0	3.0	21.9	19.2	39.6	22.7	5.0	-11.5

Source: Survey of Consumer Finances

Trends in inequality

Income inequality as measured by the Gini[11] coefficient (Chart B) declined substantially over the 1980s (from .325 in 1980 to .274 in 1990), stabilizing at a slightly lower level in the mid-1990s (.266 in 1995).

Average incomes of seniors rose in all income quintiles during the 1980s but gains were inversely related to income level, rising by 31% in the lowest quintile, less than 10% in the fourth quintile and only 1% in the top quintile (Table 3). Both absolute and relative changes in the 1990s were considerably more modest.

Chart B: Inequality in adjusted disposable income among persons 65 and over declined substantially.

Source: Survey of Consumer Finances
** See note 11.*

In the 1980s, rising incomes in the lowest quintile reflected a substantial increase in OAS/GIS benefits ($2,000) and C/QPP income ($850) (Table 4). In the second through fourth quintiles, C/QPP benefits were the largest source of rising incomes. Increases in C/QPP benefits were similar in the second through fifth quintiles, ranging from $2,090 to $2,590. Falling employment income in the fourth and fifth quintiles was more than offset by significantly higher private pension and C/QPP income and by higher investment income in the fifth quintile. But these gains were reduced and almost entirely offset in the latter by sharply higher taxes (which by 1990 included the "clawback" of OAS benefits).

Real income gains in the 1990s were comparatively modest in all quintiles. Higher C/QPP benefits favoured lower income households, but the gains were significantly offset by lower GIS benefits that, by design, are reduced as other income rises. Private pensions grew faster than C/QPP in the 1990s, mainly benefiting the higher quintiles.

Table 3: Mean adjusted disposable income by income quintile, population 65 and over

Quintile	1980	1990	1991	1995
		$		
Bottom	8,810	11,570	11,770	12,280
Second	12,490	15,190	14,990	15,550
Third	16,330	19,070	18,290	19,330
Fourth	23,670	25,810	24,580	25,330
Top	42,390	42,720	41,920	42,930

	Change			
	1980 to 1990		1991 to 1995	
	$	%	$	%
Bottom	*2,770*	*31*	*510*	*4*
Second	*2,700*	*22*	*550*	*4*
Third	*2,740*	*17*	*1,040*	*6*
Fourth	*2,140*	*9*	*750*	*3*
Top	*330*	*1*	*1,020*	*2*

Source: Survey of Consumer Finances

Low (and high) income trends

Rising incomes and declining low income rates among seniors have occurred in most OECD countries since the end of the 1960s, reversing the trend of the previous two decades. Following the Second World War, the economic status of this group fell relative to the working-age population, for at least two reasons. First, the rapid postwar decline in labour force participation among men 65 and over took place in a context of relatively underdeveloped old age pension systems. Second, working-age families were enjoying unprecedented increases in wages and earnings. In effect, seniors missed the rising tide of postwar expansion. By the mid-1960s, poverty within this group was a major concern, and old age pensions underwent a major round of legislative reform (Myles, 1989). The results of reform were evident sooner in some countries than in others. In the mid-1970s, low income rates among Canadian seniors were still well above those of their U.S. counterparts (Myles and Quadagno, 1994; Smeeding and Sullivan, 1998).

Table 4: Mean adjusted income by source and income quintile, population 65 and over

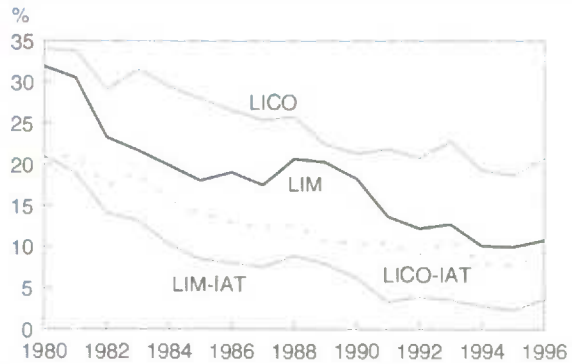
Quintile	Disposable income	Employ-ment income	Private pensions	Investment income	OAS/GIS	C/QPP	Other transfers	Taxes
					$			
Bottom								
1980	8,810	120	230	670	6,430	670	720	-40
1990	11,570	110	220	600	8,440	1,510	940	-250
Change	*2,770*	*-13*	*-16*	*-61*	*2,000*	*850*	*220*	*-220*
Second								
1980	12,490	440	680	1,760	7,430	1,360	860	-50
1990	15,190	450	1,000	1,960	7,690	3,450	940	-290
Change	*2,700*	*16*	*310*	*190*	*250*	*2,090*	*80*	*-240*
Third								
1980	16,330	2,540	1,770	3,300	6,160	2,080	860	-370
1990	19,070	2,070	3,070	3,900	6,030	4,230	1,080	-1,310
Change	*2,740*	*-460*	*1,290*	*600*	*-130*	*2,160*	*220*	*-950*
Fourth								
1980	23,670	7,470	3,610	6,580	5,030	2,050	740	-1,810
1990	25,810	5,930	5,780	6,670	5,420	4,640	1,060	-3,690
Change	*2,140*	*-1,540*	*2,160*	*91*	*400*	*2,590*	*320*	*-1,880*
Top								
1980	42,390	19,990	6,940	16,100	4,670	2,330	630	-8,270
1990	42,720	13,710	11,610	17,550	5,240	4,750	1,110	-11,240
Change	*330*	*-6,280*	*4,670*	*1,440*	*570*	*2,420*	*480*	*-2,970*

Source: Survey of Consumer Finances

Two common measures of low income are Statistics Canada's low income measure (LIM) and low income cutoff (LICO). LIMs are purely relative measures calculated by estimating the percentage of the population belonging to families with less than 50% of the median income for all families. One is based on pre-tax income (LIM) and the other, on post-tax income (LIM-IAT). The latter cutoff corresponds to the standard used in the international comparative studies noted earlier. By this criterion, low income among seniors had virtually disappeared in Canada by the mid-1990s (Chart C).

Statistics Canada's low income cutoffs are the more familiar standard in Canadian discussions of low income levels. As with the LIMs, two series are calculated: before (LICO) and after (LICO-IAT) taxes. LICOs are based on an estimate of the percentage of income the average family spends on necessities (food, clothing and shelter). Since proportional expenditures on necessities decline as income rises, families who spend significantly more than average (more than 20%) are deemed to be in low income. The LICOs are rebased from time to time to take account of changes in real living standards. Here, however, the 1992 base is used throughout, effectively treating the LICOs as "fixed" measures of low income.[12] In contrast, trends in living standards among seniors relative to those in the entire population are captured by the LIMs.

Chart C: Regardless of the measure used, low income rates among persons 65 and over have declined.



Source: Survey of Consumer Finances

Since most seniors with low incomes are clustered within a narrow income band, small differences in the choice of cutoff produce large differences in the percentage of the people who fall beneath it.[13] Given the changes in taxation over the period, declines in the post-tax low income rates are much sharper than declines in the pre-tax rates. Trends in the LICO and the LICO-IAT show changes measured in real (constant 1996) dollars, while trends in the LIM and LIM-IAT are indicative of changes in the position of seniors relative to the population. LIMs tend to be countercyclical, since the incomes of older persons rise more slowly than those of younger families during periods of economic expansion (when labour market earnings are rising) and, conversely, decline much less than those of younger families during recessions, when earnings are falling. For the period as a whole, however, low income rates fell, and fell substantially, irrespective of cutoff.

The severity of low income among seniors also lessened over the period. Between 1980 and 1996, for example, the average "low income gap" (the income required to lift people above the cutoff, expressed as a percentage of the cutoff) within this group shrank from 26% to 19% (based on the LICO) or from 22% to 17% (based on the LICO-IAT). In short, the real living standards of seniors below the low income cutoff rose.

Given the design of the Canadian old age security system, it is entirely possible that low income trends are the product of the Guaranteed Income Supplement (GIS). Canada, unlike most nations, has a flexible income security system, owing to the introduction of the GIS in 1966. The GIS is designed as a negative income tax or, as the name indicates, a guaranteed income. In theory, the guarantee level may be such that all seniors with low incomes are concentrated in an income band just above the low income cutoffs. In that case, declining low income rates could be simply a reflection of this phenomenon.

Even when measured against the most generous cutoff (the LICO), however, this conclusion finds little support (Table 5). Declines in the LICO rate in the first half of the 1980s were achieved in this way. GIS benefits were raised in 1984 and by 1986, the LICO rate had fallen to about 27% from 33% in 1980, with virtually all of the change a result of an increase in the share of seniors just above the LICO. However, over the entire period this rate declined from 33% to 21% and the LICO-IAT rate, from 20% to 10%. About three-quarters of the change reflected in the former and all of the change in the latter was the result of an increase in the percentage of seniors whose incomes were at least one-and-a-half times their respective cutoffs.

Table 5: Income levels relative to low income cutoffs, population 65 and over

	1980	1986	1990	1996
		%		
Income relative to LICO				
< 1.0	33.4	26.6	21.3	20.8
1.0 – 1.5	25.4	30.9	28.0	29.4
1.5 – 3.0	29.9	31.9	36.4	35.2
3.0 +	11.3	10.6	14.3	14.6
Income relative to LICO-IAT				
< 1.0	20.1	12.9	10.3	9.6
1.0 – 1.5	26.0	29.9	25.1	26.8
1.5 – 3.0	38.2	44.3	47.9	48.3
3.0 +	15.8	12.8	16.7	15.3

Source: Survey of Consumer Finances

How have seniors fared relatively?

In 1980, almost 40% of all seniors were in the bottom income quintile (Table 6), twice the rate of the population as a whole. By 1995, just over 17% were in this quintile, somewhat below the level (20%) of the entire population. Among unattached older women, the percentage in the bottom quintile fell from 70% to 42%. Approximately 80% of the total shift out of this quintile reflected movement into the second and third quintiles by seniors as a whole, and into the second by unattached older women. The proportion of seniors in the top two quintiles increased very little, however. In short, though seniors moved up significantly over the period, most did so from the bottom to the middle of the income distribution.

Conclusion

In the mid-1990s, the income retirement system that had been put in place in the 1960s appeared to have struck a delicate balance. By the standards of OECD countries, Canadian public expenditures on income security for seniors have been quite modest and are projected to peak at levels *well* below those expected

Table 6: The distribution of the elderly by income quintile

Quintile	1980	1990	1995
		%	
Population 65+			
Bottom	39.7	25.2	17.5
Second	22.1	29.7	32.5
Third	12.2	16.2	20.0
Fourth	13.3	14.9	16.0
Top	12.8	13.9	14.0
Unattached women, 65+			
Bottom	69.5	53.4	42.0
Second	13.7	26.1	35.4
Third	5.6	9.1	11.1
Fourth	5.7	6.4	7.5
Top	5.6	5.0	4.0

Source: Survey of Consumer Finances

in most other Western nations this century (OECD, 1996). At the same time, low income rates among Canadian seniors have been brought down. These two facts capture the essence of the decline in income inequality among seniors since 1980: real incomes among seniors have risen, but most of the gains have gone to those at the lower end of the income distribution.

The relative status of seniors in any period is a result of what might be called generational overlap. The relative low income of seniors in the 1960s reflected the timing of their birth—too soon to reap the benefits of rising wages and pension benefits that came to younger cohorts with the postwar boom. They carried the economic scars of the depression years into old age at the very moment when working-age families were experiencing gains in real incomes not seen before or since. The relative gains in incomes of seniors since 1980 are, on the one hand, a product of their own biographies (the rising wages and better pensions that followed the war) and, on the other, the relative stagnation in wages and incomes of working-age families in more recent decades.

In the absence of legislative changes, projections based on current indexing provisions for OAS and GIS benefits suggest a substantial rise in low income rates among future seniors (Wolfson and Murphy, 1994).[14] Nor should one expect future declines in income *inequality* among older persons similar to that of the 1980s. Declining income inequality in that decade was the product of a large decline in earned income and a shift toward pension, especially C/QPP, income. In short, a source of income that is highly concentrated was falling, offset by a rapid increase in an income source with very low concentration. This was a period of transition that will probably not be repeated. The fall in earned income has a lower limit and the C/QPP is near maturity. The first decade of this century is more likely to see continued maturation of employer-sponsored pension plans and personal registered retirement savings plans.[15] As these elements of the retirement income system are more highly concentrated among high-wage earners, the trend toward declining inequality among Canadian seniors will probably not continue indefinitely.

Perspectives

Notes

1 For a review and analysis of these reforms, see Myles and Pierson (forthcoming).

2 The Organisation for Economic Co-operation and Development projects that Canadian expenditures on public pensions will rise to 9% of GDP in 2040 from 5% in 1995 (OECD, 1996). In contrast, average expenditures in the continental European countries were 10% of GDP in 1995 and are projected to rise to 16% by 2040 (Myles and Pierson, forthcoming).

3 By the usual international standard, low income rates among Canadian seniors had fallen to about 5% in 1994, compared with a U.S. rate in excess of 20%. Among the population aged 70 and over, Canada's low income rate was below that of Sweden, the usual international "winner" in poverty reduction (Smeeding and Sullivan, 1998).

4 In the mid-1970s, low income rates among Canadian seniors were still well above those of their American peers (Myles and Quadagno, 1994; Smeeding and Sullivan, 1998). The first truly comparative studies of low income rates among seniors for the early 1980s placed Canada at the lower end internationally (Smeeding, Torrey and Rein, 1987).

5 Rising pension income may affect family earnings among seniors in two ways: it may reduce the labour supply of older persons, and it may reduce the propensity of older persons to reside with other family members (for example, adult children) who are in the labour force. The share of all seniors in the labour force declined from 10% in 1980 to 7% in 1995.

The share of those not in the labour force but residing with a family member who was a labour force participant declined from 19% to 17%. The percentage of older persons in families with no labour force participant present rose from 71% to 77%.

6 "Unattached" elderly women are a heterogeneous group. The incomes of never-married (single) women are closer to those of men than to those of widowed or divorced women. The effect of widowhood is an especially important (and complex) topic, which is not addressed here.

7 Since 1989, OAS benefits have been "clawed back" from seniors with high incomes.

8 Married persons in families receiving at least one C/QPP pension rose from 74% to 93% between 1980 and 1996, and the percentage in families receiving two C/QPP pensions, from 18% to 55%. Some 65% of couples also received at least one private pension by 1996, up from 45% in 1980. The percentage of unattached older women receiving a C/QPP benefit rose from 44% to 78% over the period; 39% were receiving a private pension in 1996, up from 29% in 1980.

9 Relative to the working-age population, average incomes among U.S. seniors are higher than among their Canadian counterparts. However, higher income inequality among U.S. seniors means that shares of seniors with high and low incomes are also larger in the United States. The reasons for those differences are complex, but reflect in part higher income inequality during the working years that is then carried forward into retirement, and less protection for seniors with low incomes.

10 About one-third of the decline in earnings could be explained by changes in the living arrangements of older persons, that is, by a change in the proportion of seniors residing with another family member who is a labour force participant. This is a maximum estimate since it takes account of compositional shifts only and does not include any behavioural response by seniors or other family members (for example, younger spouses or older adult children, who might reduce their labour supply in response to the higher pension income of the older person). Among all retired persons 65 and over residing with other family members still in the labour force, pension income was the only source of rising family incomes over the 1980-to-1995 period. As a result, total pension income in these families rose from 25% to 38% of disposable income.

11 The Gini coefficient can be used to derive an estimate of differences (for example, in income inequality among several groups) or of changes in inequality over time. This number lies between zero and one, denoting, respectively, total equality and total inequality.

12 The LICO is fixed at the 1996 levels, based on the 1992 revisions. Earnings are then computed in 1996 constant dollars, and the cutoffs applied to these earnings.

13 In 1996, the average LICO was approximately 56% of the median pre-tax income of all families, and the LICO-IAT, about 55% of median post-tax income. In effect, shifting from the pre-tax to the post-tax distribution cuts the low income rate of seniors in half. Moving from the LICO-IAT (55% of the median) to the LIM-IAT (50% of the median) cuts the low income rate in half again.

14 Paradoxically, this will not occur if future cohorts of workers experience very low real wage growth.

15 Recent declines in occupational pension coverage for younger men (Morissette and Drolet, 1999) may also affect future retirement incomes.

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Income inequality within provinces

Dimitri Sanga

Inequality of income distribution is a subject of continual debate. Canada is no less affected than other countries by this situation, whether at the national or provincial level. Public interest in this phenomenon is always high.

This article looks at the degree of inequality in the distribution of total income, market income and after-tax income within each province, and compares it with the degree of income inequality in the other provinces. The study does not consider which province has the highest or lowest average income, but which province has the most or the least inequality in its distribution of income. The article covers the years 1980 to 1998 (see *Data sources and definitions*).

The study does not attempt to determine the reasons for or sources of provincial inequalities, but rather to describe them and to see how they behave over time.

Studies that have addressed this issue so far seem to agree in most cases. All show differences in the degree of income inequality within the provinces. Some state that such differences between provinces have been shrinking since 1960. Others qualify their conclusions, arguing that it depends on how income is defined. Nevertheless, most seem to agree that inequalities in *earnings* have grown in the majority of provinces. Moreover, the trends observed are the same regardless of sex or age group (Finnie, 1998). Interprovincial variability indicators are higher for market income than for total income (Alter and Greenberg, 1990). The gaps are smaller, however, when the comparison is done with after-tax income. Thus, inequality tends to be reduced by taxes and government transfer payments, and increased by capital income.

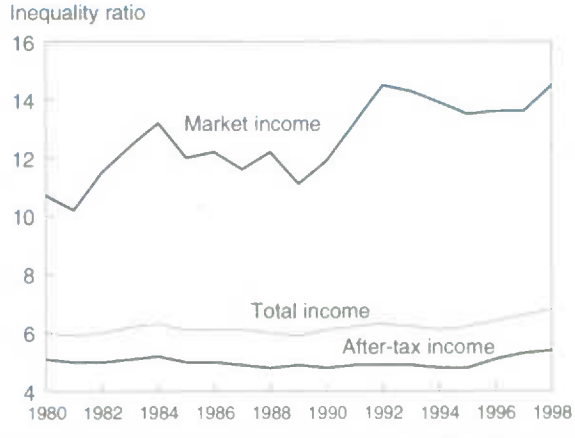
In this analysis, inequalities in family income distribution are examined by province using a straightforward approach based on upper and lower quintile ratios. The family unit is treated as a whole, without regard for the presence or absence of children or for differences in the marital or labour market status of family members.

Dimitri Sanga is with the Prices Division. He can be reached at (613) 951-3116 or dimitri.sanga@statcan.ca.

Gaps are widest for market income

In Canada, the inequality ratio was highest for market income and lowest for after-tax income for every year in the study period (Chart A). Inequalities are thus reduced by government transfer payments and income taxes. The gap in average market income between the upper and lower quintiles was at least twice as large as the average after-tax gap, regardless of the year. In 1998, for example, for every dollar of market income for the 20% of economic families with the lowest incomes, the 20% with the highest incomes had, on average, $14.50. When the comparison is based on after-tax income, the difference was only $5.40.

Chart A: Market income inequality has been higher than that of other income measures.



Sources: Survey of Consumer Finances; Survey of Labour and Income Dynamics

Data sources and definitions

The data, from the Survey of Consumer Finances (SCF) and the Survey of Labour and Income Dynamics (SLID), cover 1980 to 1998. The SCF was an annual supplement to the Labour Force Survey until 1997. The recent publication of 1998 income data in the annual report *Income in Canada* (Statistics Canada, 1998) introduced SLID as the official source of annual data on income, replacing the SCF. This article uses SLID estimates for 1996, 1997 and 1998, as well as those of the SCF for 1980 to 1995. The latter have been revised to make them comparable.

Economic family: two or more persons who live in the same dwelling and are related to each other by blood, marriage, common law or adoption.

Market income: total earnings (from paid employment or self-employment), investment income, retirement income (private pension plan) and "other income." It excludes government transfers. It is also known as income before taxes and transfers.

Government transfers: all direct payments to individuals and families by the federal, provincial and municipal governments: Old Age Security pensions, the Guaranteed Income Supplement, Spouse's Allowance, Canada and Quebec Pension Plan benefits, Child Tax Benefits, Employment Insurance benefits, workers' compensation benefits, credits for the goods and services tax (GST) or the harmonized sales tax (HST), provincial or territorial tax credits, social assistance payments and other payments.

Total income: income from all sources before deduction of federal and provincial taxes. Total income is also known as income before taxes (but after transfers). It includes market income and government transfer payments.

Income tax: total federal and provincial taxes on income and capital gains in a given year.

After-tax income: total income minus income taxes.

Quintile ratios: Most studies of provincial differences have used either the coefficient of variation or the Gini coefficient as a measure of inequality. This study uses the ratio of the average income of the top quintile to that of the bottom quintile. (The income averages are adjusted with sample weights.) This same measure is used in analyses accompanying published estimates of income distribution derived from the SCF.

For all measures of income, quintiles are formed by ranking the families in ascending order of after-tax income and dividing the entire sample into five equal parts. The top quintile consists of the 20% of families with the highest after-tax incomes, and the bottom quintile, the 20% of families with the lowest incomes. Thus, the average market income of the top quintile is the average market income of families in the **top after-tax income quintile**. This method keeps the composition of each quintile constant.

The inequality ratio measures how much the families in the top income quintile have, on average, for every dollar of those in the bottom quintile. The higher the ratio the greater the gap in income distribution among the families. For example, a ratio of 5 means that, on average, for every dollar claimed by the 20% of families with the lowest incomes, the 20% with the highest incomes had $5.

The inequality ratio for market income rose from 10.70 in 1980 to 14.50 in 1998. Most of the increase occurred during the recessions of the early 1980s and 1990s. The ratios for the other two income measures grew, but on a smaller scale: the total-income ratio edged up from 6.00 to 6.80 between 1980 and 1998, while the after-tax ratio shifted from 5.10 to 5.40. After remaining relatively stable in the early 1990s, they experienced a marked increase toward the latter half of the decade.

The findings for the various inequality ratios also apply provincially. Thus, for any year and any province, the inequality ratio was greatest for market income and smallest for after-tax income (Table), reflecting the effects of taxes and government transfers.

Inequality ratio varies by province

To compare income inequality by province, the study chose the provinces with the largest and smallest gaps in after-tax income. After-tax income was chosen because that was the measure used to form the income quintiles on which the inequality ratios were based. Moreover, after-tax income is closer to disposable family income.

In 1998, Prince Edward Island had the smallest inequality ratio for after-tax income, while Alberta had the largest (Chart B). In Prince Edward Island, the 20% of families with the highest incomes had $4.20 in after-tax income for every

Table: Inequality ratios, by province

	Canada	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
						$					
Market income											
1980	**10.70**	16.00	9.30	11.80	13.10	13.00	8.80	10.70	9.40	8.90	9.10
1981	**10.20**	17.90	12.90	13.10	16.40	11.20	8.10	12.00	14.30	8.20	9.60
1982	**11.50**	17.60	12.70	13.80	18.80	11.70	9.50	12.20	12.50	9.20	13.40
1983	**12.40**	14.50	10.30	13.90	20.90	12.30	10.70	12.00	12.10	11.60	12.70
1984	**13.20**	18.50	11.50	15.80	17.30	14.90	10.50	11.00	15.30	12.60	13.90
1985	**12.00**	21.80	10.40	13.00	16.40	13.10	9.50	10.30	15.40	9.60	13.00
1986	**12.20**	16.60	11.20	16.00	15.30	13.60	9.50	11.40	15.80	9.80	13.10
1987	**11.60**	16.90	11.30	13.60	16.60	12.70	9.20	10.50	11.80	10.40	13.50
1988	**12.20**	16.30	10.30	13.80	15.20	14.20	9.30	12.00	13.10	10.90	11.40
1989	**11.10**	15.30	13.60	15.10	14.70	12.40	9.20	10.50	12.30	11.80	9.00
1990	**11.90**	16.90	12.20	13.20	13.80	13.20	9.70	10.90	12.90	10.70	12.60
1991	**13.20**	18.80	12.30	13.40	15.60	15.60	11.90	11.50	10.90	11.00	10.70
1992	**14.50**	22.40	9.80	15.60	16.40	14.20	14.00	12.90	13.50	12.90	11.90
1993	**14.30**	21.70	10.40	18.30	14.60	14.50	13.70	12.00	13.50	11.90	13.70
1994	**13.90**	20.50	9.50	15.90	16.20	15.40	13.30	10.90	13.00	9.80	12.20
1995	**13.50**	30.40*	11.30	14.30	16.40	14.70	12.50	10.50	12.20	9.50	12.40
1996	**13.60**	19.20	9.60	16.80	19.90	15.30	12.90	12.90	13.20	10.40	10.20
1997	**13.60**	20.50	11.80	15.20	20.50	14.10	12.80	12.80	11.70	10.10	10.60
1998	**14.50**	22.20	11.80	19.20	20.80	15.10	13.50	13.50	12.30	14.50	10.90
Total income											
1980	**6.00**	6.10	5.00	5.40	5.20	6.00	5.70	6.10	6.00	6.40	5.90
1981	**5.90**	5.90	5.30	5.70	6.30	5.70	5.40	6.60	7.20	5.80	5.90
1982	**6.00**	5.90	5.30	5.60	6.00	5.70	5.60	6.30	6.50	6.20	6.70
1983	**6.20**	6.10	5.60	5.90	6.50	5.70	6.20	6.20	6.30	6.70	6.20
1984	**6.30**	5.80	4.90	6.10	6.20	6.30	6.00	5.80	7.00	6.80	6.50
1985	**6.10**	6.20	4.80	6.00	5.70	5.70	5.80	5.80	7.40	5.80	6.60
1986	**6.10**	5.60	4.80	6.10	5.40	5.90	5.80	6.00	7.50	5.90	6.20
1987	**6.10**	5.80	5.10	5.80	5.70	6.10	5.60	5.60	6.10	6.10	6.50
1988	**6.00**	5.50	4.70	5.60	5.40	5.90	5.70	5.80	6.30	6.00	5.70
1989	**5.90**	5.50	5.20	5.90	5.60	5.70	5.80	5.40	6.20	6.40	5.30
1990	**6.10**	5.70	5.00	5.50	5.40	5.80	5.80	5.80	6.50	6.10	6.70
1991	**6.20**	5.80	5.20	5.50	5.60	6.20	6.10	5.80	6.00	6.50	5.70
1992	**6.30**	6.20	4.70	6.10	5.70	5.70	6.30	5.80	6.60	6.80	6.10
1993	**6.20**	5.90	4.50	6.40	5.40	5.70	6.20	5.90	5.90	6.70	6.60
1994	**6.10**	6.20	4.30	6.10	5.90	6.00	6.10	5.30	5.90	5.90	6.00
1995	**6.20**	6.80	4.60	5.90	6.00	6.00	6.20	5.30	6.30	5.90	6.30
1996	**6.40**	5.90	5.00	6.20	6.10	6.30	6.40	6.10	6.20	6.40	5.90
1997	**6.60**	6.10	5.30	6.20	6.20	6.40	6.50	5.90	5.80	6.40	5.90
1998	**6.80**	6.30	5.30	6.70	6.20	6.50	6.80	6.10	5.80	7.50	6.20
After-tax income											
1980	**5.10**	5.10	4.30	4.60	4.50	4.80	4.90	5.10	5.30	5.40	5.20
1981	**5.00**	5.00	4.60	4.80	5.30	4.80	4.60	5.50	6.10	4.90	5.00
1982	**5.00**	5.00	4.50	4.60	5.00	4.60	4.70	5.30	5.40	5.30	5.60
1983	**5.10**	5.00	4.70	5.00	5.30	4.60	5.10	5.20	5.40	5.70	5.20
1984	**5.20**	4.90	4.30	5.10	5.10	5.00	5.00	4.80	5.90	5.80	5.30
1985	**5.00**	5.10	4.20	5.10	4.80	4.70	4.80	4.90	6.10	5.00	5.50
1986	**5.00**	4.60	4.00	5.00	4.50	4.80	4.80	4.90	6.00	5.00	5.20
1987	**4.90**	4.80	4.20	4.60	4.70	4.80	4.60	4.60	5.00	5.20	5.20
1988	**4.80**	4.60	4.00	4.50	4.40	4.60	4.60	4.50	5.00	4.80	4.70
1989	**4.90**	4.50	4.30	4.70	4.50	4.40	4.70	4.50	4.90	5.10	5.10
1990	**4.80**	4.60	4.20	4.40	4.40	4.50	4.60	4.50	5.20	4.80	5.40
1991	**4.90**	4.70	4.20	4.40	4.50	4.70	4.90	4.50	4.70	5.00	4.60
1992	**4.90**	5.00	3.90	4.80	4.60	4.40	5.00	4.50	5.30	5.40	4.80
1993	**4.90**	4.80	3.80	5.00	4.40	4.40	4.90	4.60	4.60	5.30	5.20
1994	**4.80**	4.90	3.60	4.80	4.70	4.50	4.70	4.20	4.60	4.80	4.80
1995	**4.80**	5.30	3.80	4.70	4.80	4.50	4.80	4.20	4.80	4.80	5.00
1996	**5.10**	4.80	4.20	5.00	4.90	4.80	5.00	4.80	4.90	5.00	5.30
1997	**5.30**	4.80	4.30	5.00	5.00	5.30	5.20	4.70	4.70	5.30	5.00
1998	**5.40**	4.90	4.20	5.40	4.90	4.90	5.50	4.70	4.60	6.10	5.10

Sources: Survey of Consumer Finances; Survey of Labour and Income Dynamics

* *Because the data are based on sample surveys, occasionally, as in 1995, an outlier may affect results.*

Chart B: In each province, market income shows the greatest inequality.

Source: Survey of Labour and Income Dynamics, 1998

than for total income or after-tax income—and it increased over time (from 7.20 in 1980 to 11.30 in 1998). The largest gap was almost 21 in 1995. This was attributable to an exceptionally high ratio for market income in Newfoundland (30.40)[2] in contrast to a low of 9.50 in Alberta.

Despite relative stability at the beginning of the study period, up to the mid-1990s, differences grew between the province with the lowest ratio for total and after-tax income and that with the highest. The differences sharpened between 1997 and 1998. Over the full 1980-to-1998 period, the gap in total income grew from 1.40 to 2.20, while that for after-tax income edged up from 1.10 to 1.90.

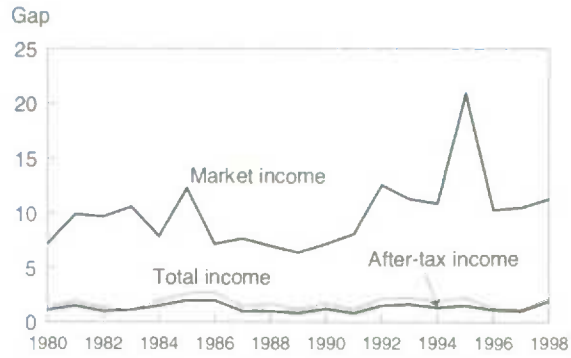
dollar of the 20% with the lowest incomes. In Alberta, this gap was $6.10. The difference between these two provinces was smaller for after-tax income ($1.90) than for market income ($2.70), matching the intraprovincial trends. This comparison can be made for any pair of provinces.

Provincial differences in market income have widened

The study also looked at provincial differences in income inequality each year from 1980 to 1998, by studying the gap between the province having the greatest inequality and the one having the least.

Once again, market income demonstrated the largest difference in inequality ratios each year (Chart C).[1] Over the entire period studied, the difference was about seven times larger, on average, for this measure

Chart C: Market income displays the greatest gap* in interprovincial inequality ratios.



Sources: Survey of Consumer Finances; Survey of Labour and Income Dynamics

** Because the data are based on sample surveys, occasionally, as in 1995, an outlier may affect results.*

How has inequality changed within provinces?

An examination of the change in gaps within each province from 1980 to 1998 confirms the observations about differences between the provinces. That is, inequalities in market income tended to increase (Table). The two other income measures reveal a similar tendency—though on a smaller scale—for the majority of provinces.

As for market income ratios, Alberta, Newfoundland, Nova Scotia and Prince Edward Island saw very marked increases from 1996 to 1998. Their ratios grew by 4.10, 3.00, 2.40 and 2.20, respectively. Over the same period, moderate increases took place in New Brunswick (0.90), British Columbia (0.70), Ontario (0.60) and Manitoba (0.60). Quebec and Saskatchewan registered drops in their inequality ratios.

Between 1996 and 1998, only Saskatchewan saw a slight decline (0.40) in its ratio for total income, while Manitoba's remained stable. This ratio edged up by 1.10 in Alberta and by less than 0.60 in the rest of the provinces. In the case of after-tax income, the ratio in Saskatchewan dipped by 0.30, and those of British Columbia and Manitoba, by 0.20 and 0.10. Alberta registered an increase of 1.10, while Ontario, Nova Scotia, Quebec and Newfoundland saw rises of less than 0.60. Ratios in New Brunswick and Prince Edward Island remained stable.

Summary

Inequalities in income distribution within provinces follow a pattern consistent with the findings of a number of studies. In particular, market income exhibits greater inequality than the other two measures, total income and after-tax income. The same observation applies at the national level.

Throughout the period studied, Prince Edward Island exhibited the lowest inequality ratio for both total income and after-tax income. Newfoundland had, for most of the period, the highest inequality ratio with respect to market income.

The results of this analysis apply to economic families, without regard for family composition. One possible avenue of future research would be to study the differences in inequality ratios relative to family composition. As well, these ratios could be based on income deciles rather than quintiles (see *Ratios based on total income quintiles and deciles*), which would provide

Ratios based on total income quintiles and deciles

The ratio of the average income of the top decile to that of the bottom decile measures how much the 10% of families with the highest incomes have, on average, for every dollar of the 10% of families with the lowest incomes. Ratios based on deciles are higher than those based on quintiles.

	Quintiles	Rank	Deciles	Rank
British Columbia	7.1	1	14.0	1
Canada	**6.2**		**10.4**	
Ontario	6.0	2-3	10.1	3
Manitoba	6.0		9.7	4
Alberta	5.9	4-5-6-7	10.6	2
Quebec	5.9		9.6	5
Saskatchewan	5.9		9.5	6
Nova Scotia	5.9		8.8	8
New Brunswick	5.7	8	9.3	7
Newfoundland	5.5	9	8.4	9
Prince Edward Island	4.4	10	6.3	10

Source: Survey of Consumer Finances, 1997

Ratios of averages and medians based on total income deciles

The ratios are based on the amount that families in the appropriate quintiles or deciles have, on average. Median income could be used instead. Ratios based on averages are higher than those based on medians.

	Average	Rank	Median	Rank
British Columbia	14.0	1	9.0	2
Alberta	10.6	2	9.1	1
Canada	**10.4**		**8.7**	
Ontario	10.1	3	8.4	3
Manitoba	9.7	4	8.1	5
Quebec	9.6	5	8.3	4
Saskatchewan	9.5	6	7.6	8
New Brunswick	9.3	7	7.9	6
Nova Scotia	8.8	8	7.7	7
Newfoundland	8.4	9	7.5	9
Prince Edward Island	6.3	10	5.6	10

Source: Survey of Consumer Finances, 1997

some idea of the difference between incomes of the 10% of families with the highest incomes and those of the 10% of families with the lowest. Another option would be to use median income instead of average income, based on either quintiles or deciles (see *Ratios of averages and medians based on total income deciles*).

Perspectives

Notes

1 The pattern for all provinces combined was similar.

2 Because the data are based on sample surveys, occasionally, as in 1995, an outlier may affect results.

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What's new?

Recent reports and studies

JUST RELEASED

Women in the workforce

In 1999, 55% of all women aged 15 and over had jobs, up from 42% in 1976. As a result, women accounted for 46% of the workforce, up from 37%. Some 28% of all employed women worked less than 30 hours per week, compared with just 10% of employed men.

The majority of employed women continue to be concentrated in certain occupations. In 1999, 70% of all employed women were in teaching, nursing and related health occupations, clerical or other administrative positions, and sales and service occupations. The proportion employed in traditionally female-dominated occupations, however, has slowly declined since 1987, when 74% were in such jobs.

Women have increased their representation in several professional fields in recent years. In 1999, they made up 49% of business and financial professionals, up from 41% in 1987. Women also made up 47% of all doctors and dentists, up from 44%. As well, they have increased their share of total employment in managerial positions, from 29% to 35%. In contrast, only 20% of professionals employed in the natural sciences, engineering, and mathematics in 1999 were women, little changed since 1987 (17%).

The average earnings of employed women are still substantially lower than those of men. In 1997, women working full year full time had average earnings of just under $31,000, or 73% of their male counterparts' earnings. However, their average earnings were up from 68% in 1990 and around 64% in the early 1980s.

The fourth edition of *Women in Canada* provides a comprehensive statistical profile of the evolving status of women in Canadian society, with details on their demographic characteristics, family arrangements, health, education, employment and unpaid work activity, income, housing, and criminal victimization. This 300-page report also includes separate sections on immigrants, members of the visible minority community, Aboriginal women and seniors.

Women in Canada 2000 (Catalogue no. 89-503-XPE, $45) is now available. For more information, contact Colin Lindsay, Housing, Family and Social Statistics Division, at (613) 951-2603; fax: (613) 951-0387; lindcol@statcan.ca.

Market research update

Since 1975, the *Market Research Handbook* has been an authoritative source of socio-economic information, providing key characteristics of local and national markets. With accurate and timely statistics on the changing demographics, standards of living, and economic characteristics of Canadian society, the handbook helps businesses locate target markets, track their market share, and assess their competitive position.

The 2000 edition contains the latest data from the 1996 Census and a wide range of surveys, and incorporates a number of features designed to make it more user-friendly. Features include a user's guide, annotated charts, help lines for each data source, and references to CANSIM, Statistics Canada's Canadian Socio-economic Information Management System.

The 2000 edition of the *Market Research Handbook* (Catalogue no. 63-224-XPB, $125) is now available. For general information about this publication, contact Serge Bourret, Small Business and Special Surveys Division, at (613) 951-0821.

Social policy simulation

The Social Policy Simulation Database and Model (SPSD/M) is a static microsimulation model based on 1996 microdata. It comprises a database, a series of tax/transfer algorithms and models, analytical software and user documentation. Produced as an occasional product since 1985, it has been widely used to study changes to the tax and transfer system.

The SPSD/M allows estimation of the income redistribution effects or cost implications of changes in the personal taxation and cash transfer system, and the potential effects of changes in taxes, earnings, demographic trends, and a wide range of other factors. It can be used to study federal and provincial tax and transfer changes from 1984 through 2003.

The SPSD/M allows "what-if" questions to be answered. What if there were a change to the taxes Canadians paid or transfers they received? Who would gain and who would lose? Would single parent households in a particular province be better off? By how much? How much extra money would federal or provincial governments collect or pay out?

The Social Policy Simulation Database and Model: Version 8.0 (Catalogue no. 89F0002XCB, $5,000/$12,500) is now available on CD-ROM. For more information, contact Susan Carrothers, Social and Economic Studies Division, at (613) 951-1782; spsdm@statcan.ca.

Registered apprenticeship training, 1998

Approximately 177,700 people were registered in trades apprenticeships in 1998, some 3% more than in 1997. While all sectors of registered apprenticeship training have grown in recent years, many still remain below 1991 levels.

The number of registered apprentices has been rising since 1995, after a drop in the early 1990s that coincided with the recession. The demand for apprentices declined during this period, perhaps the result of the weak economy and fewer opportunities for on-the-job training.

Overall, registrations in such training in 1998 were 8% lower than in 1991. The decrease was especially evident in building construction and electrical/electronics and related. Only the food and services trades and other trades had higher registration.

While registrations were down, the total workforce linked to most major trade groups has been on the rise, and was higher in all sectors in 1998 than in 1991.

For general inquiries, contact Sharon-Anne Borde, Culture, Tourism and the Centre for Education Statistics, at (613) 951-1503; fax: (613) 951-9040; sharon-anne.borde@statcan.ca. To enquire about concepts, methods or data quality, contact Karl Skof or Bernard Bourgoin, Culture, Tourism and the Centre for Education Statistics, at (613) 951-1529; skofkar@statcan.ca or (613) 951-1506; bourber@statcan.ca, respectively; fax: (613) 951-6765.

Pilot Survey of Information Technology Occupations, 2000

Sponsored by Human Resources Development Canada, this employer survey provides information on 21 information technology (IT) occupations for the computer design and related services industry across Canada, as well as the architectural, engineering and related services industry in Quebec and the insurance carriers industry in Ontario. Estimates on the numbers of IT employees and contract workers are available, as is information on job vacancies, hiring, recruitment and retention practices, and training.

For more information, or to enquire about concepts, methods or data quality, contact Cathy Connors, Small Business and Special Surveys Division, at (613) 951-1634; cathy.connors@statcan.ca.

Farm incomes, 1996: Potato farms

Economic Overview of Farm Incomes offers farm financial information and analysis based on data from the Taxation Data Program and various agricultural surveys. The new bulletin provides a detailed analysis of potato farms, including information on farm-level revenues, expenses,

and net operating income before depreciation, by revenue class and by province. Information on the concentration and specialization of production, as well as on the physical characteristics of potato farms by revenue class, is also included.

The ninth bulletin in the series *Economic Overview of Farm Incomes*, a joint publication of Statistics Canada and Agriculture and Agri-Food Canada, is now available. The August 2000 issue (Catalogue no. 21-005-XIE, free) is now available on Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Free publications," then "Agriculture."

For more information, or to enquire about concepts, methods or data quality, contact Lina Di Piétro or the Client Services Unit, Agriculture Division, at (613) 951-3171 or (613) 951-5027, respectively; fax: (613) 951-3868.

Aquaculture statistics, 1999 (preliminary)

Fish farmers generated record revenues in 1999 as product sales climbed to an estimated $548 million, up 7% over 1998. The driving force behind the growth was the higher value of exports, which reached $386 million, an increase of 5% over 1998 and more than double the annual levels exported in the early 1990s. These went largely to the United States, where demand for Canadian finfish, principally salmon, remained strong. Domestic sales, meanwhile, remained relatively flat.

Fish farmers in British Columbia and New Brunswick continued to be the industry leaders. Together these two provinces accounted for 85% of total sales of aquaculture products; British Columbia generated more than one-half of the sales and New Brunswick almost one-third. The industry in both provinces is based largely on finfish operations, which accounted for an estimated 91% of total national sales in 1999.

Prince Edward Island, the country's largest producer of shellfish, continued to expand production in 1999. Total revenue from the sale of shellfish reached an estimated $22 million, a jump of 11% over 1998 (mirroring that of finfish [10%]). This amount represented more than one-half of the total national sales.

The gross value added (the difference between gross output and product expenses) to the Canadian economy by the aquaculture industry in 1999 was an estimated $241 million, a rise of 11% over the previous year. This was due to growth in output (including inventories). Depreciation and interest also rose marginally, reaching $26 million and $15 million, respectively.

The statistics now available are production and value by province and species, exports and value added. Data will be available soon in the updates to the *Livestock Statistics—Update* binder (Catalogue no. 23-603-UPE, $45/$149) or the *Agriculture Economic Statistics* binder (Catalogue no. 21-603-UPE, $26/$52). Revised 1999 estimates of value added, production and exports for the aquaculture industry will be released in March 2001.

For more information, or to enquire about concepts, methods or data quality, contact Bernadette Alain, Truro Agricultural Statistics Office, at (902) 893-7251; bernadette.alain@statcan.ca or Tony Dupuis, Agriculture Division, at 1 800 465-1991; (613) 951-2511; tony.dupuis@statcan.ca.

WHAT'S NEW IN SAADD?

Federal electoral districts

Canadians can obtain a wealth of information about their federal electoral district, free of charge, on Statistics Canada's website (www.statcan.ca). The Agency is making available statistical profiles of all 301 federal electoral districts. The profile includes data from the 1996 Census and a mapping feature.

Four major components are featured: population and demographic characteristics; education; income and work; and families and dwellings. For example, education levels of people aged 15 and over are available, as are their occupations, mother tongue and the composition of their families. Readers can also compare data for their federal electoral district with provincial and national data.

For more information, contact your nearest Statistics Canada Regional Reference Centre.

Information for 1998, showing age and sex of the population, income ranges and income sources by federal electoral district, is now available on a cost-recovery basis. For families, information is also available on family composition, age and sex of family members, sources of income and reliance on government transfers.

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

1998 income

The median income of census, or nuclear, families increased 2% from 1997 to 1998, to $47,300, after adjusting for inflation. Oshawa ($60,000) had the highest family income of all census metropolitan areas (CMA), followed by Windsor ($59,800).

Median income was much higher for husband-wife families ($52,500) than for lone-parent families ($22,700). The CMA with the highest median family income for husband-wife families was Windsor ($66,500); for lone-parent families it was Calgary ($28,500).

The median total income of individuals in Canada was $20,100 in 1998, an increase of 2.7% over 1997, after adjusting for inflation. People in all census metropolitan areas (CMA) reported modest increases in median total income; those in Calgary had the largest rise at 4.3%, followed by Chicoutimi-Jonquière (3.7%) and Saint John and Sherbrooke (3.6%).

The highest median total incomes were still in Oshawa ($25,900) and Ottawa-Hull ($25,200). The lowest were in Trois-Rivières ($17,100) and Chicoutimi-Jonquière ($18,200), although both recorded greater-than-average year-over-year increases compared with all CMAs. However, the relative ranking of CMAs according to median total income changed little from 1997 to 1998.

This information came from income tax returns filed in the spring of 1999. The data for *Family Income* (Catalogue no. 13C0016), *Seniors Income* (Catalogue no. 89C0022), *Neighbourhood Income and Demographics* (Catalogue no. 13C0015), the *Labour Force Income Profile* (Catalogue no. 71C0018) and the *Economic Dependency Profile* (Catalogue no. 13C0017) are available for letter carrier routes, urban forward sortation areas (the first three characters of the postal code), cities, towns, census divisions, CMAs, each province and territory, and Canada. For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

Postal area data, 1998

Postal Area Profiles covers more than 5,000 communities across Canada. Based on 1998 tax records, this databank presents a comprehensive picture of these communities.

The profiles consist of five tables, which provide information on taxfilers and dependants, selected sources of income of individuals, labour force participation, economic dependency on transfer payments, and family characteristics. Each community can be compared with provincial and national figures to show how it fits into the broader picture. The data span four years to show recent trends. High standards of confidentiality ensure that no individual or family can be identified.

To order Postal Area Profiles, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

Registered retirement savings plan contributions, 1999

Contributions to registered retirement savings plans (RRSP) rebounded to their second highest level in 1999. A record 6,207,000 taxfilers contributed to an RRSP during the 1999 tax year, up 1.4% from the previous year. They contributed $27.8 billion, a 2.6% increase from 1998 (after adjusting for inflation as measured by the Consumer Price Index).

Both the number of contributors and the amount of their contributions recovered, after declining in 1998 for the first time since 1991. Contributions in 1999 were still short of the record $28.2 billion set in 1997. About 29% of all taxfilers contributed, or 36% of those eligible.

Although only 37% of eligible taxfilers were from Ontario, they contributed $11.9 billion, or 43% of the total. Contributors from Quebec deposited $5.9 billion, or 21% of the total. The number of contributors increased in all provinces except Saskatchewan, where 197,200 people made contributions, down 2.5%. There, the number of contributors peaked in 1996, decreasing ever since.

The average contribution in 1999 was $4,477, compared with $4,576 in 1997 and $4,424 in 1998, after inflation is taken into account. In general, taxfilers with the highest incomes contributed the most. In 1999, the average contribution of those whose total income exceeded $80,000 was $12,535, while for those with total income between $60,000 and $79,999, the average contribution was $6,199.

Databanks for *RRSP Contributors* (Catalogue no. 17C0006, variable price) and *Canadian Taxfilers* (Catalogue no. 17C0010, variable price) are available for Canada, the provinces and territories, cities, towns, census metropolitan areas, census divisions, and areas as small as forward sortation areas (the first three characters of the postal code) or letter carrier routes. For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745;saadinfo@statcan.ca.

WHAT'S NEW IN LABOUR STATISTICS?

Latest on the labour force

An overview of average wages and wage distributions in the late 1990s

By the hour or by the week, average wages in 1999 increased at about double the 1998 pace, according to the Labour Force Survey (LFS).

During 1999, the 12 million employees in Canada earned an average $16.14 an hour, or $595.62 a week. The average hourly wage increased by 39 cents or 2.5% from 1998, just over double the 1.2% increase from 1997. The average weekly wage rose $15.73, or 2.7%, compared with 1.4% in 1998. The increase in average weekly wages was due in part to slightly longer work hours.

Both increases exceeded the average 1.7% rise in the Consumer Price Index (CPI). This means that average real hourly wages (adjusted for growth in the CPI) rose 0.8%, while average real weekly wages increased 1.0%.

Hourly wages rose more for men than women. However, because the number of work hours increased for women and declined for men, average weekly wages increased proportionally more for women.

Employees in Ontario made an average $633.05 a week in 1999, highest among the provinces. At $625.22, British Columbia was the only other province to exceed the national average. Average weekly wages were relatively low in the four Atlantic provinces. Hourly wages rose 4.0% in Alberta, the strongest growth rate among the provinces. Weekly wages increased most in Alberta and Ontario (3.6%).

New hirings and permanent separations, 1999

Atlantic Canadians flowed into and out of jobs or businesses at a higher rate than people in other regions of the country in 1999. Ontario and British Columbia recorded the lowest rates among the provinces. In addition, the degree to which people moved into and out of jobs or businesses varied with age and education, and from industry to industry.

Young people set the tone for a dynamic labour market. The pace at which youths (15 to 24) moved into or out of jobs or businesses was much greater than that for adults 25 to 54 or older workers (55 and over). In 1999, about 2.6 million hirings of young people occurred, resulting in a hiring rate of 55%. This rate was almost twice the national average (28%).

People with university degrees were less likely to be laid off than those with a high school education or less.

On an industry basis, job stability was relatively low in the accommodation and food industry, in retail trade, and in construction.

Even the time of year had an effect, mainly because of turnover among young people. As a rule, the most dynamic month is September, when students leave their summer jobs and when some seasonal jobs come to an end. Hirings outnumber separations, however, at the beginning of summer.

Just over 5.4 million hirings occurred in 1999, accounting for 28% of jobs held and businesses owned that year (excluding second jobs or businesses). In addition, an estimated 5.1 million permanent separations (quits or layoffs) took place. They represented 26% of jobs held or businesses owned throughout the year. Of these separations, 55% were quits.

The above articles appear in *Labour Force Update* (Catalogue no. 71-005-XPB, $29/$96, Volume 4, nos. 2 and 3), now available. For more information, or to enquire about concepts, methods or data quality, contact Geoff Bowlby, Labour Statistics Division, at (613) 951-3325; fax: (613) 951-2869; bowlgeo@statcan.ca.

Employment Insurance data

Statistics Canada and Human Resources Development Canada have uncovered an error in the calculation of Employment Insurance beneficiaries. This error affected the data from January 1997 to April 2000. A historical revision is under way to revise the data back to January 1997.

For the next few months, these data will be released only at the provincial level and unadjusted for seasonal trends. The series on claims received and allowed, benefit payments and weeks paid, which are correct, will continue to appear in both *The Daily* and on CANSIM as regularly scheduled.

For more information, contact Justin Lacroix, Labour Statistics Division, at (613) 951-0775; fax: (613) 951-4087; labour@statcan.ca.

WHAT'S NEW IN INCOME STATISTICS?

Spending patterns, 1998

Spending Patterns in Canada presents statistical highlights and key tables from the annual Survey of Household Spending (which replaces the Family Expenditure Survey and the Household Facilities and Equipment Survey). Information includes, for example, how Canadian households spend their money, and what appliances, communications or home entertainment equipment they have. Also available are certain characteristics of Canadian homes—number of rooms, heating methods, and state of repair, for example.

The survey collects information about expenditures by households and families in Canada on a wide variety of goods and services—from food and shelter to pet expenses and movie admissions. It also collects data about dwelling characteristics, household appliances, home entertainment and communications equipment, and vehicles.

Spending Patterns in Canada, 1998 (Catalogue no. 62-202-XIE, $34 or Catalogue no. 62-202-XPE, $45) is now available. For more information about the current survey results and related products and services, contact Client Services, Income Statistics Division, at 1 888 297-7355 or (613) 951-7355; fax: (613) 951-3012; income@statcan.ca.

Pension plans, January 1, 1999

Employer-sponsored registered pension plans (RPP) remain an integral part of saving for retirement, although their coverage has been declining throughout the 1990s. At the end of 1998, some 41% of paid workers were covered by RPPs, down from 45% in 1992.

The number of members has also been falling, from a peak of 5.3 million early in the decade. Just under 5.1 million workers belonged to some 14,900 RPPs at the end of 1998. The drop in membership appears to have slowed in recent years, with membership edging up 0.1% from 1997. At the end of 1998, about 2,272,000 female workers belonged to an RPP, up from about 2,250,000 at the end of 1996. At the same time, the number of male workers covered by an RPP declined from 2,866,000 to about 2,819,000.

Registered retirement savings plans (RRSP) continued to outstrip RPPs in terms of both participation and amounts. In 1998, Canadians contributed $62.0 billion to the three main retirement income programs: RPPs, RRSPs and the Canada and Quebec Pension Plans (C/QPP). RPPs accounted for 27% of that amount, compared with 43% for RRSPs and 30% for the C/QPP.

Just over 6.1 million taxpayers contributed to an RRSP in 1998, compared with the 5.1 million members covered by an RPP. The contributors to the C/QPP (13.6 million) far exceeded those of both RPPs and RRSPs because that program is mandatory for all workers.

About 53% of paid workers in Newfoundland belonged to RPPs in 1998, the highest proportion in the country—reflecting that province's high unionization rate. Coverage also exceeded the national average in four other provinces: Manitoba, Saskatchewan, Quebec and Nova Scotia. Manitoba is the only province in which membership in an RPP, if offered, is compulsory. Alberta had the lowest coverage rate, 31%, owing in part to its low rate of unionization.

The number of RPP members in the public sector decreased 7% between 1992 and 1998. This was a result of recent cutbacks in the number of federal and provincial government employees. In contrast, the number of RPP members in the private sector grew a slight 1% between 1992 and 1998. This was the result of a growing number of women employed in the private sector who belonged to RPPs. Public sector employers offered roughly 1,200 RPPs in 1998. Although these made up only about 8% of all such plans, they accounted for 46% of total plan membership. Just over 56% of all RPP members in the public sector were women.

Pension Plans in Canada: Statistical Highlights and Key Tables, January 1, 1999 (Catalogue no. 74-401-SIB, $30 or Catalogue no. 74-401-SPB, $40) is now available. A table with data on the labour force and paid workers covered by an RPP is also available, free of charge, on Statistics Canada's website (www.statcan.ca). On the "Canadian statistics" page, choose "The people," then "Labour, employment and unemployment," then "Employment Insurance and pensions." To obtain custom tabulations, for more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ *Research paper series*

Pension Coverage and Retirement Savings of Young and Prime-aged Workers in Canada: 1986-1997
R. Morissette and M. Drolet
Income research paper series
(Catalogue no. 75F0002MIE00009)

This paper assembles data from several household surveys to document how pension coverage of young and prime-aged workers evolved in Canada between the mid-1980s and the mid-1990s. Between 1986 and 1997, pension coverage fell significantly for men, dropped slightly for young women and increased for prime-aged women. The decline in union density and employment shifts toward low-coverage industries explain most of the drop in pension coverage of men and young women. In contrast, most of the increase in coverage of prime-aged women remains unexplained.

While pension coverage fell for men and young women, their real average contributions to registered retirement savings plans (RRSP) grew substantially. As a result, the sum of the amounts they contributed to registered pension plans (RPP) and RRSPs increased markedly. This means that although total compensation for these people may have decreased (through the drop in their RPP coverage), workers' preparation for retirement seems to have improved in the late 1990s.

User Guide to 1996 Census Income Data
J. Gartley and A. Rashid
Income research paper series
(Catalogue no. 75F0002MIE00010)

This guide explains the concept of income and provides definitions of the various sources of income and derived income variables. The report also documents features of the census that can affect census income estimates. For example, it includes the income questions asked in the 1996 Census and the instructions to respondents. The report briefly explains the methodology adopted to capture the response information, to process and edit it for inconsistencies, and to impute for non-response. The effect of these operations on income data is described.

The report includes summary results of a comparison of census income estimates with those of other sources such as the National Accounts and the Survey of Consumer Finances. Also included is a detailed review of income-related content and coverage in the census since 1971.

Should the Low Income Cutoffs be Updated? A Summary of Feedback on Statistics Canada's Discussion Paper
C. Cotton and M. Webber
Income research paper series
(Catalogue no. 75F0002MIE00011)

This report summarizes responses to a discussion paper on low income cutoffs released in January 2000. Low income cutoffs (LICO) are thresholds used to calculate low income rates. They start with what families spend, on average, on food, shelter and clothing as a proportion of income. A margin of 20 percentage points is added to this figure. Current low income rates represent the point at which a family would generally spend more than 55% of its before-tax income or 64% of its after-tax income on these three essentials. The current LICOs reflect family spending patterns observed in the 1992 Family Expenditure Survey (FAMEX).

The discussion paper proposes three options for updating the cutoffs and for dealing with the availability of annual expenditure data from the Survey of Household Spending (SHS), which has replaced FAMEX. Option 1 maintains the status quo. Statistics Canada would continue to produce low income information based on 1992 and 1986 spending patterns, updating the LICOs annually using the Consumer Price Index (CPI). This option defers a decision on rebasing to some unspecified date.

Option 2 rebases the LICOs to reflect spending patterns in 1997, the first year the SHS was conducted. The cutoffs would be backcast, perhaps to 1990. For historical continuity, Statistics Canada would also produce low income rates using the 1992 base, but would drop the 1986 base. This approach is consistent with past rebasing exercises.

Option 3 takes advantage of the annual expenditure data now available. Cutoffs would be calculated annually, using current spending data. These cutoffs would be used for production of low income rates for that year only—they would not be backcast or extended into the future. The 1992 base series would also be maintained, for continuity.

The discussion paper recommended Option 3 because it affords an opportunity to use the latest available data without loss of continuity. By the time the 1999 income results are published in the spring of 2001, three years of annual spending data from the SHS will be available. Most reviewers supported this option.

The above research papers are available free on Statistics Canada's website (www.statcan.ca). On the "Products and Services" page, choose "Research papers (free)," then "Personal finance and Household finance," then "Income research paper series." For more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

Perspectives

Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data
Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures
Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

Business Conditions Survey of Manufacturing Industries
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-2793

Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements
Bureau of Labour Information
(Human Resources Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income
Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics
Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Consumer Finances
Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending
(replaces *Household Facilities and Equipment Survey* and *Family Expenditure Survey*)
Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General Social Survey

Education, work and retirement
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey
Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

Quarterly Survey of Trusteed Pension Funds
Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey
Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys
(Postsecondary)
Frequency: Occasional
Contact: Bill Magnus
(613) 951-4577

The labour market in the 1990s

The economy of the 1990s was characterized by buzzwords and phrases such as "downsizing," "high performance workplaces," "increasing globalization," "technological revolution," "the end of work," and "the knowledge-based economy." Behind most of these phrases is the notion that competitive and technological pressures have radically altered the production processes, hiring, and business strategies of firms, thus affecting the labour market in a major and often negative manner.

However, in addition to change resulting from the influence of technology and competition on labour demand, factors that potentially affected outcomes in the 1990s include a weak economic recovery, supply-side shifts, changing labour market institutions, and a change in the way firms organized their workforces.

In some ways the 1990s labour market was similar to the 1980s, while in others it was different. Understanding what causal factors underlie these changes is an ongoing process, and there appear to be a number of major puzzles regarding recent labour market outcomes.

Definitions

Gross Domestic Product (GDP) is the total dollar value of all goods and services produced within Canada during a given year. It is also a measure of the income generated by production within Canada.

The **hiring rate** is the fraction of all workers in a firm who were hired in a given year.

Between any two years, **job creation** is the increase in employment observed in companies that are expanding, and **job destruction** (or loss) is the decrease in employment in all contracting companies.

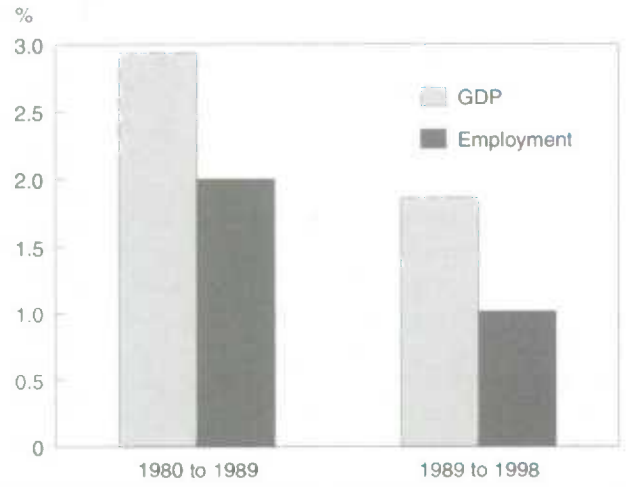
Average job tenure is the average complete length of time a worker just starting a new job can expect to remain with that employer.

Labour force participation rate is the total labour force (the employed and the unemployed) expressed as a percentage of the population aged 15 and over.

Permanent layoff occurs when a worker is laid off from a company and does not return within 12 months.

Permanent separation is a separation in which the person does not return to the same employer by the end of the calendar year following the separation. It includes both layoffs and quits.

Average annual growth in GDP and employment



Sources: Labour Force Survey; CANSIM

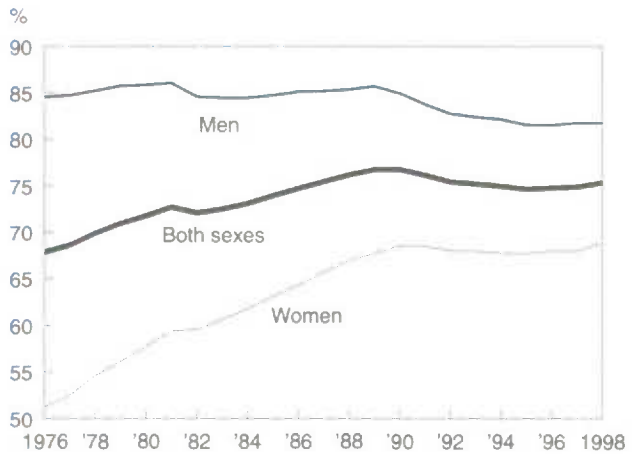
Perhaps the single most important factor influencing labour market outcomes in the 1990s was weak aggregate demand. Gross domestic product (GDP) grew at an annual average rate of almost 3% over the 1980s (1980 to 1989), but only 1.8% over the 1990s (1989 to 1998). This weak GDP growth contributed to low employment growth, which fell from an average of 2% per year in the 1980s to only 1% in the 1990s. This, in turn, may have affected other outcomes, such as the shift to self-employment and depressed labour market flows.

Sources of employment growth

Source: Labour Force Survey

Job gains during the last decade were concentrated in own-account self-employment rather than in traditional full-time paid employment. Over the 1990s, full-time paid jobs accounted for only 18% of net job creation, versus 58% in the 1980s, and 75% in the United States during the 1990s. Self-employment accounted for about 58% of the net change in total employment during the 1990s, compared with only 22% during the 1980s and 6% in the United States.

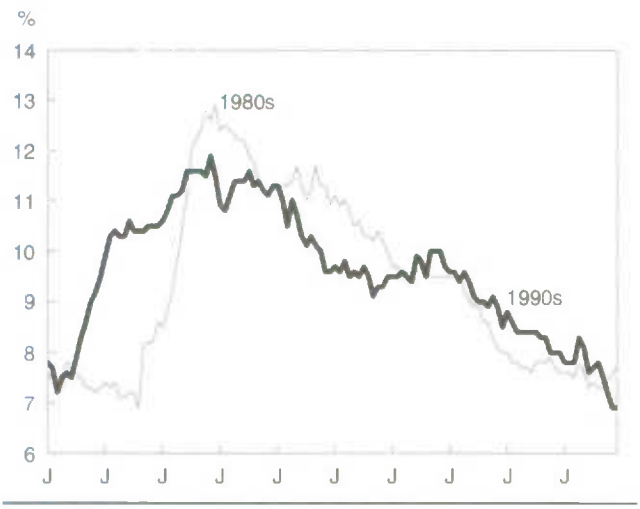
Labour force participation rate*



Source: Labour Force Survey
** Among 15-to-64 year-olds.*

The labour force participation rate declined in the early 1990s and remained depressed through 1998. Most of this drop was due to declines among young workers and older men. Forty-one percent of the shortfall in the 1990s (the difference between the observed values and what one would expect based on the last cyclical peak in 1989) was among young men, 30% among young women, and 31% among men 55 to 64. For youths, most of this was due to their increased tendency to stay in school, which was probably related to deteriorating job opportunities, and the belief that higher levels of education were required to compete in the labour market. Little overall change among prime-aged workers masked a deterioration among men and an improvement among women. For 25-to-54 year-olds, participation was 36% lower than expected among men in 1998 (based on the patterns of 1989), and 37% higher among women.

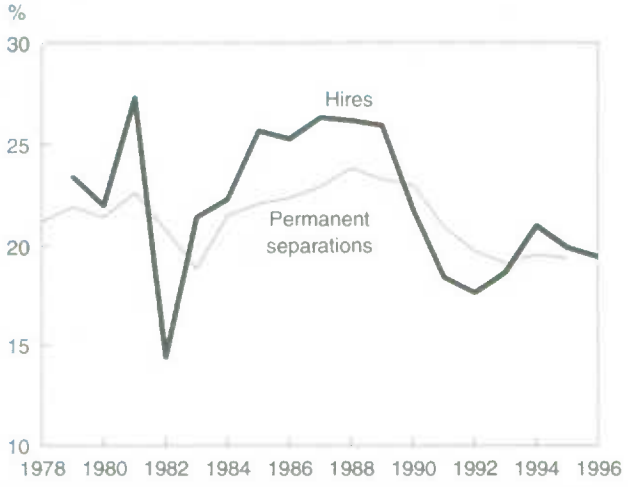
Unemployment rate, 1980s and 1990s



Source: Labour Force Survey

Although unemployment did not rise between the 1980s and the 1990s, by historical standards it was high during both cycles. The unemployment rate fell at about the same rate during the 1990s recovery as it had during the 1980s, although it remained high longer during the later recession. Unemployment duration was marginally longer and incidence marginally lower in the 1990s, although these differences were small. However, while unemployment in the 1990s resembled that of the 1980s, for a worker with a given level of education and experience, the unemployment rate rose and the likelihood of holding a job declined. Only by increasing their human capital could workers maintain their relative position in the labour market.

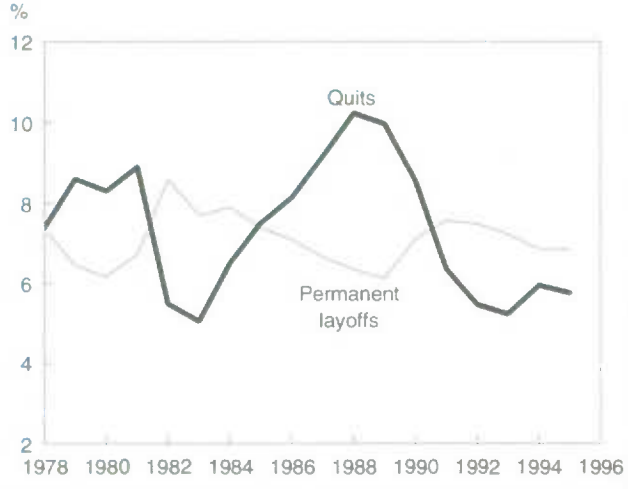
Hiring and permanent separation rates



Source: Longitudinal Worker File

The story regarding labour flows is one of less mobility, at least to the mid-1990s. Employers reduced hiring rather than increase layoffs. Post-recession new hires were 20% of employment during the mid-1990s, compared with 24% during the mid-1980s. New labour force entrants were probably those most affected.

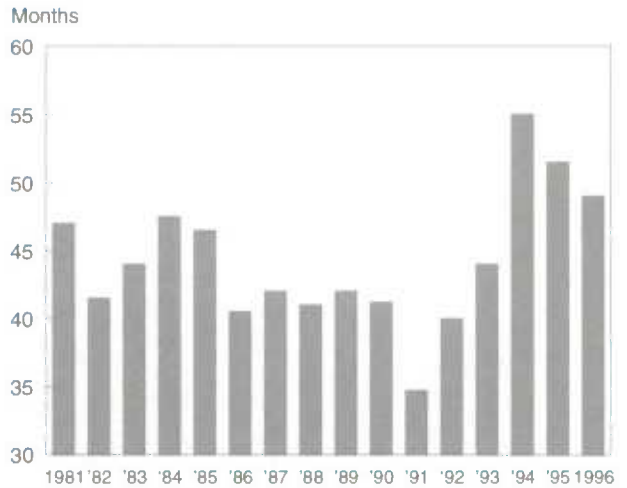
Permanent layoff and quit rates



Source: Longitudinal Worker File

While hiring rates were low, the likelihood of being permanently laid off did not increase during the 1990s. This holds even after controlling for changes in the composition of the workforce. In the face of poor job opportunities, quit rates fell from 7.4% during 1983 to 1985 to 5.6% during 1993 to 1995. With lower quit rates and no substantial rise in permanent layoffs, the likelihood of a worker's permanently separating from a firm actually fell—from 22.0% during 1983 to 1985 to 19.3% during 1993 to 1995. Lower rates of hiring and permanent separations served to diminish labour mobility.

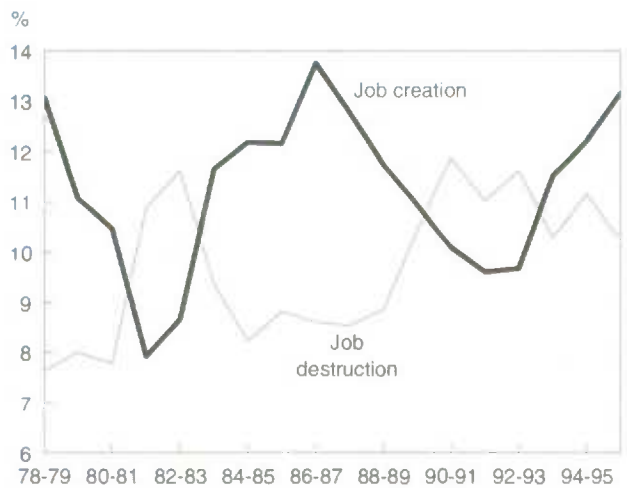
Average complete length of a new job



Source: Labour Force Survey

Along with lower labour turnover comes longer job tenure. Despite concerns regarding job stability, average job tenure in paid jobs increased. The completed length of a new job rose from an average 45 months during 1983 to 1986 to 50 months during 1993 to 1996. This is not necessarily a positive sign, as it reflects in part lower quit and hiring rates in a weak job market. However, it challenges the notion that job stability has fallen.

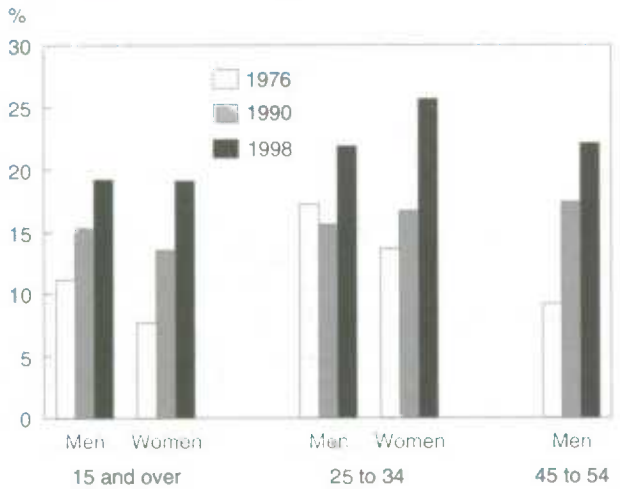
Job creation and destruction rates



Source: Longitudinal Employment Analysis Program

"Downsizing" reflects the notion that firms reduced their workforce and labour costs in order to increase competitiveness structurally, not in response to a cyclical decrease in demand. Paid employment growth was indeed quite weak during most of the 1990s. Job destruction increased in the 1990s relative to the 1980s, which on the surface is consistent with more downsizing. Between 1984 to 1986 and 1994 to 1996, two roughly comparable periods in the economic recovery, the job destruction rate rose 1.8 percentage points. While an increase during the recession was to be expected, the rate remained high during the recovery of the 1990s. Most of the increase was within industries rather than the result of a compositional shift in employment toward industries with high job destruction rates.

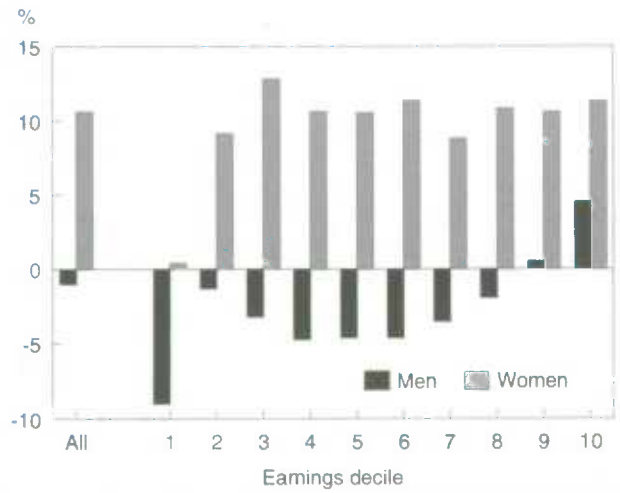
Proportion of labour force with a university degree



Source: Labour Force Survey

The changing relative position of women and men is one of the most significant labour market phenomena of the 1990s. During this time, women's educational attainment rose, while men's lagged. For example, between 1976 and 1998 women in the labour force with a university degree were increasing at 7.6% per year versus 4.2% for men. By 1998, the gap had disappeared. In fact, the educational advantage held by young men (over young women and older men) in 1976 was reversed.

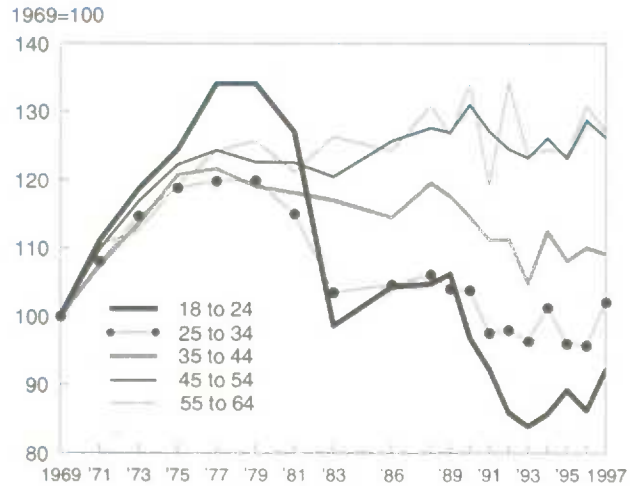
Growth in average real annual earnings, 1986 to 1995



Source: Survey of Consumer Finances

While women continue to earn less than men, the gap has been narrowing. The weekly earnings of full-time working women rose 12% between 1989 and 1996, while they fell marginally for men. The growth in annual earnings of women has far outstripped that of men across the entire earnings distribution. Between 1986 and 1995 (comparable years in the business cycle), annual earnings rose 11% for women and fell 1% for men. Except in the case of women at the bottom of the earnings distribution, earnings growth was consistently between 9% and 11%. Men's earnings fell, except in the top two deciles of the earnings distribution. (Each decile represents 10% of all earners, ranked from lowest to highest.)

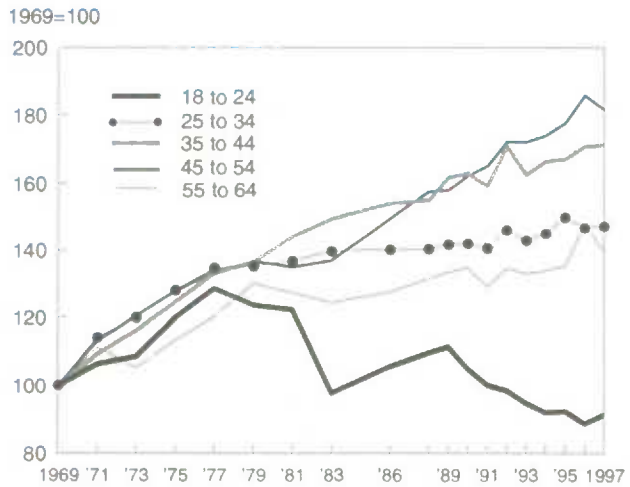
Real annual earnings by age, men working full year full time



Source: Survey of Consumer Finances
Note: Data are for 1969, 1971, 1973, 1975, 1977, 1979, 1981, 1983, 1986 and 1988 to 1997.

Cross-sectional data clearly indicate an increasing earnings gap between younger and older workers during the 1980s and 1990s, particularly among men. Real annual earnings of men under 35 fell during both recessions, and did not recover until the mid-1990s. Meanwhile, earnings rose among older men, further increasing the wage gap. Rising relative wages for older men did not seem to be due to their work experience. For successive cohorts of men entering the labour market and gaining experience, the age/earnings profile shifted downward. Wages fell for young men entering the labour market, and did not catch up to those of earlier cohorts as the newcomers gained experience.

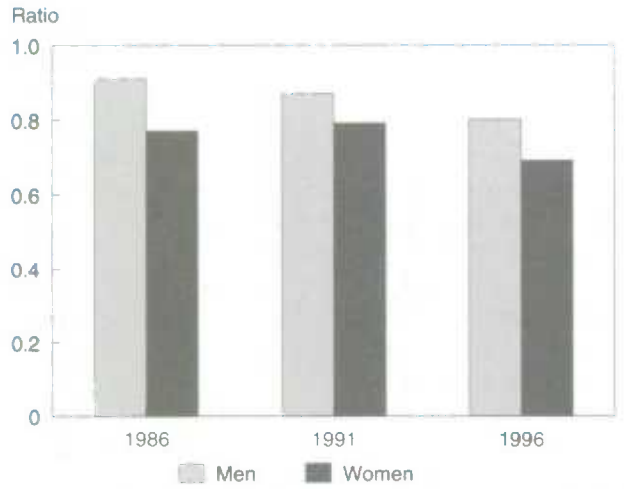
Real annual earnings by age, women working full year full time



Source: Survey of Consumer Finances
Note: Data are for 1969, 1971, 1973, 1975, 1977, 1979, 1981, 1983, 1986 and 1988 to 1997.

Changes in supply do not explain the drop in relative earnings of youths, as the number of younger workers fell in both absolute and relative terms during the 1990s. The number of 25-to-34 year-olds in the labour force fell, while that of 45-to-54 year-olds increased 4.8% per year. These trends held for both sexes. The earnings of youths may have fallen behind partly because of the rising education of older workers. These changing relative levels of education accounted for about one-quarter of the rising cross-sectional earnings gap between younger and older workers during the 1980s, and for most of it during the 1990s.

Relative employment* rates of recent immigrants

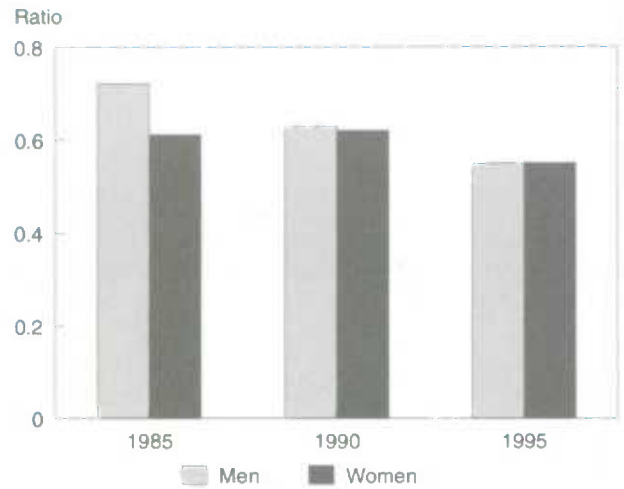


Source: Census of Canada

* *Employment rates for university-educated, recent immigrants (arrived up to five years before the dates shown), as a proportion of the rates for their Canadian-born counterparts aged 25 to 44.*

In addition to young workers, recent immigrants constitute a growing source of new entrants to the labour market. Their employment rates dipped for each successive cohort over the 1980s and 1990s, particularly among men. Among male university graduates, the share who were employed relative to all workers fell. For both sexes, the employment/population ratio fell steadily, from 91% of their Canadian counterparts in 1986 to 80% by 1996. For women, it fell between 1991 and 1996, while for men it had fallen steadily since the mid-1980s. Just as with young men, immigrants saw a deterioration in their labour market success.

Relative earnings* of recent immigrants

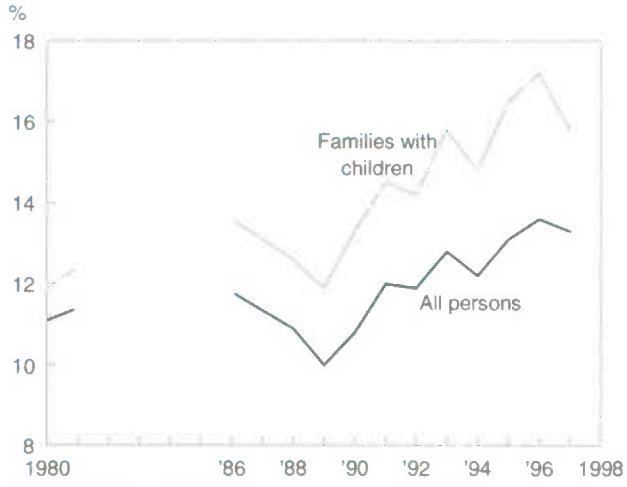


Source: Census of Canada

* *Average earnings of university-educated, recent immigrants (arrived up to five years before the dates shown), as a proportion of earnings of their Canadian-born counterparts aged 25 to 44.*

As with employment, the fall in immigrants' earnings was similar to that of youths. Again, among employed male university graduates, earnings relative to those of all workers have been falling. The earnings of male immigrants relative to those of Canadian-born workers fell from 72% in 1985 to 55% a decade later. For women, the ratio fell from 61% to 55%. Compositional changes could influence these results, but this seems unlikely, since this particular group (university-educated men and women aged 25 to 44) is comparable through time.

Low income rates*



Source: Survey of Consumer Finances

* *Low income cut-off based on after-tax/transfer income.*

The rate of low income was higher in 1997 than in 1989 (13% versus 10%). This represents a significant deviation from the 1980s, when rising government transfers to low income families helped stop rates from rising. These trends are even more striking among families with children. Low income rates were stable through the 1980s as significant declines in employment earnings occurred simultaneously with two other changes: transfers rose and families adjusted their lifestyles to reduce low income (through smaller families, delayed childbearing, dual-earner couples, and higher education levels). For low income families with children, social transfers by the early 1990s accounted for two-thirds of family incomes, and employment earnings just one-third, the reverse of the 1970s. By the mid-1990s, however, adjustments in family characteristics had ceased to put downward pressure on the low income rate (that is, the number of dual-earner families was declining, and the number of children per family was stable, as was educational attainment) and transfers fell faster than employment earnings rose. In this environment, the low income rate increased significantly.

Charts and text were adapted from "The labour market in the 1990s" (Parts I & II), which appeared in the January 2000 and February 2000 issues of *Canadian Economic Observer* (Catalogue no. 11-010-XPB) and from *The Performance of the 1990s Canadian Labour Market*, Analytical Studies Branch research paper no. 148 (Catalogue no. 11F0019MPE). For more information, contact Andrew Heisz, Business and Labour Market Analysis Division, at (613) 951-3748; andrew.heisz@statcan.ca.

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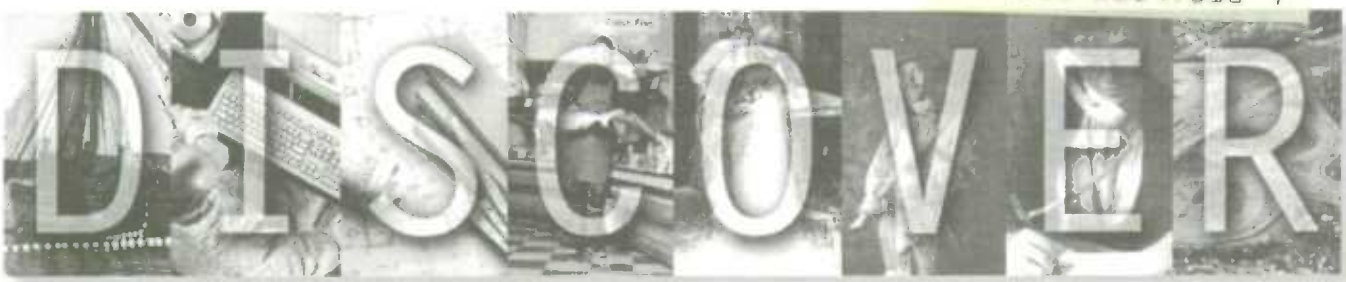

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