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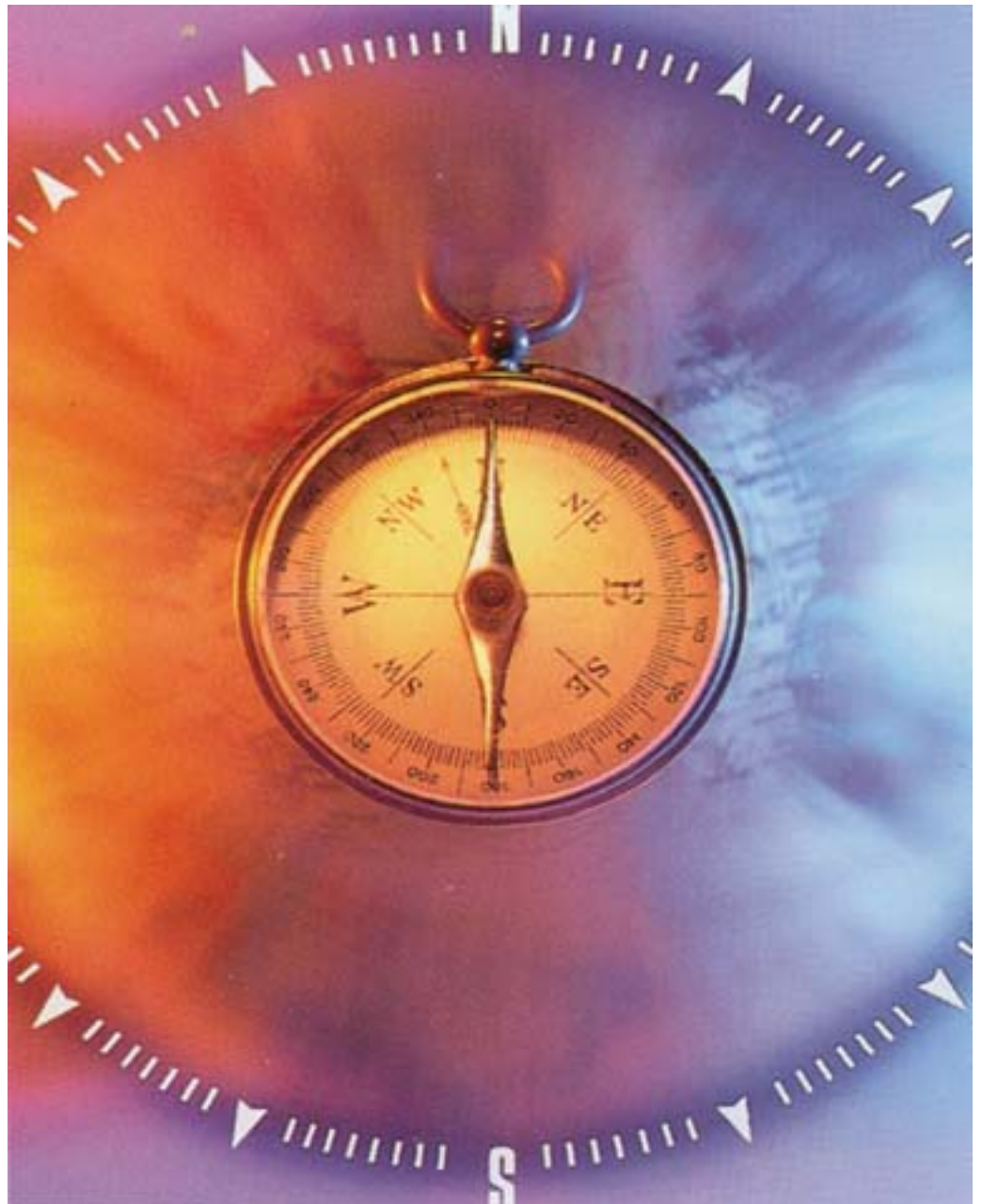
ON LABOUR AND INCOME

**MAY 2004**

Vol. 5, No. 5

■ **LOW INCOME  
IN CENSUS  
METROPOLITAN  
AREAS**

■ **INCOME REPLACEMENT  
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E	use with caution
F	too unreliable to be published

# Highlights

*In this issue*

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## ■ Low income in census metropolitan areas

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- During the 1990s, the low-income rate for all census metropolitan areas combined rose slightly, from 17.2% to 17.7%. The largest rise was in Vancouver, where the rate increased from 15.8% to 19.1%.
- Three groups—recent immigrants, Aboriginal people and lone-parent families—were more likely than others to live in low-income neighbourhoods. In 2000, 11.7% of Aboriginal people lived in low-income neighbourhoods, as did 9.7% of recent immigrants, and 8.7% of lone-parent families. This compares with 4.4% of CMA residents overall.
- Recent immigrants in particular saw a rise in their low-income rate. The rate reached 35% in 2000 (nearly twice the overall CMA average), compared with 23.1% in 1980.

## ■ Income replacement among recent widows

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- One year after the death of her husband, a widow's income, adjusted for household size, is very similar to what it was the year before. The 'income replacement rate' of the median widow increased according to the age of her husband at death, ranging from 82% for those whose husbands died at less than age 55, to 98% for husbands who died at 75 or older.
- The financial situation of widows in Canada one year after the death of their husbands compares favourably with that of widows in the United States, Great Britain and Germany.

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Perspectives

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# Low income in census metropolitan areas

*Andrew Heisz and Logan McLeod*

*Recently, Statistics Canada released the first in a series of reports examining trends and conditions in Canada's largest urban areas. This article covers the main highlights.*

*Readers are encouraged to read the full report for more details:*

*Low Income in Census Metropolitan Areas, 1980-2000, by Andrew Heisz and Logan McLeod, 2004.*

*Internet: [www.statcan.ca/english/research/89-613-MIE/89-613-MIE2004001.htm](http://www.statcan.ca/english/research/89-613-MIE/89-613-MIE2004001.htm)*

All Canadians—business people, politicians and the general public—share a heightened interest in and awareness of the ‘status’ of Canada’s metropolitan areas. They are concerned about renewing community life in the urban centres. This means addressing poverty, enhancing the business climate, and providing new opportunities to learn and to work for all Canadians—including new immigrants and Aboriginal people.

This article examines income and low income in Canada’s 27 census metropolitan areas (CMAs) between 1980 and 2000 using census data. It looks at the situation of families and the neighbourhoods they live in. The objective is to present a statistical portrait of Canada’s urban areas, and to describe the income of Canadians from an urban perspective. A diversity of outcomes across metropolitan areas, income levels, decades, and demographic groups are summarized.

## **Income between 1980 and 2000**

The median income of families<sup>1</sup> living in a metropolitan area in 2000 amounted to \$62,300, a 1% increase from 1990 (Table 1). But on the whole, incomes rose faster during the 1980s. Median family income in metropolitan areas rose 5% during the 1980s and 7% over the entire 20-year period.

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These aggregate trends were generally reflected among individual CMAs, but outcomes were diverse. In the 1980s, 15 of 27 CMAs posted growth of at least 5%, but 4 showed either no growth or a decline. These CMAs tended to be located in western Canada, where the recession of the 1980s hit hardest. In the 1990s, while 12 CMAs showed either no growth or a decline, the median income of some continued to grow. Altogether, 5 CMAs posted a growth rate of 5% or more in the 1990s.

Most CMA residents shared in the economic growth of the 1980s to some extent. Incomes increased at both ends of the income distribution, particularly at the top. Because of rising income at the bottom of the distribution, the low-income rate in CMAs fell from 18.3% to 17.2% between 1980 and 1990.<sup>2</sup> Most centres shared in this decline.

In the 1990s, growth was concentrated more among high-income families, with the income of lower-income families growing little or declining in many CMAs (Chart A). An examination of income growth at the 10<sup>th</sup> and 90<sup>th</sup> percentiles serves as an illustration. At the 10<sup>th</sup> percentile, income is lower than 90% of the population and higher than 10%. At this percentile, income fell by 1.6% in the 1990s; in 9 CMAs, it fell by 5% or more. Similarly, at the 90<sup>th</sup> percentile, income is higher than 90% of the population and lower than 10%. At this percentile, income rose by 7.7%, with 21 CMAs registering 5% or more, and 7 CMAs 10% or more.

As a result of falling incomes at the 10<sup>th</sup> percentile, the low-income rate for all CMAs combined rose slightly, from 17.2% to 17.7% between 1990 and 2000.

**Table 1: Median income for economic families**

	1980	1985	1990	1995	2000	1980-1990	1990-2000	1980-2000
			2000 \$				% change	
<b>All CMAs</b>	<b>58,400</b>	<b>57,100</b>	<b>61,500</b>	<b>57,000</b>	<b>62,300</b>	<b>5</b>	<b>1</b>	<b>7</b>
St. John's	50,200	48,600	55,800	50,900	54,300	11	-3	8
Halifax	51,300	53,600	58,000	54,700	57,400	13	-1	12
Saint John	49,800	44,500	51,400	48,900	51,600	3	0	4
Chicoutimi-Jonquière	49,300	48,900	51,400	47,500	51,400	4	0	4
Québec	53,800	50,900	54,900	51,500	54,800	2	0	2
Sherbrooke	46,300	44,200	46,400	45,800	49,400	0	6	7
Trois-Rivières	46,300	44,800	48,500	46,300	48,400	5	0	5
Montréal	53,700	51,200	54,800	50,400	55,000	2	0	2
Ottawa-Gatineau	62,800	64,800	70,700	64,400	71,600	12	1	14
Kingston	53,000	55,600	59,400	56,300	59,800	12	1	13
Oshawa	61,000	63,900	68,800	65,900	71,500	13	4	17
Toronto	65,400	65,800	70,200	63,300	70,300	7	0	7
Hamilton	59,400	58,800	62,600	60,800	65,500	5	5	10
St. Catharines-Niagara	54,200	53,700	55,300	53,600	57,400	2	4	6
Kitchener	56,100	55,700	60,900	60,100	65,900	9	8	18
London	56,000	55,300	59,100	56,800	61,100	5	3	9
Windsor	54,100	58,900	59,000	62,500	68,500	9	16	27
Greater Sudbury	55,100	52,700	61,000	57,200	57,500	11	-6	4
Thunder Bay	59,200	58,600	62,800	59,900	60,500	6	-4	2
Winnipeg	54,500	55,400	56,800	53,500	57,300	4	1	5
Regina	59,300	58,200	60,300	56,200	59,800	2	-1	1
Saskatoon	55,000	53,600	54,300	51,600	55,000	-1	1	0
Calgary	66,400	63,000	66,200	61,900	69,000	0	4	4
Edmonton	63,900	58,100	61,200	56,600	63,000	-4	3	-1
Abbotsford	51,900	45,800	55,100	52,700	56,000	6	2	8
Vancouver	63,000	56,700	64,700	58,000	62,900	3	-3	0
Victoria	55,100	48,700	57,800	56,200	60,600	5	5	10

Source: Census of Canada, 1981-2001

However, trends among CMAs were mixed, with low-income rates rising in some and falling in others. The largest rise was in Vancouver, where the rate increased from 15.8% to 19.1%.

### Low-income rates higher and rising among recent immigrants

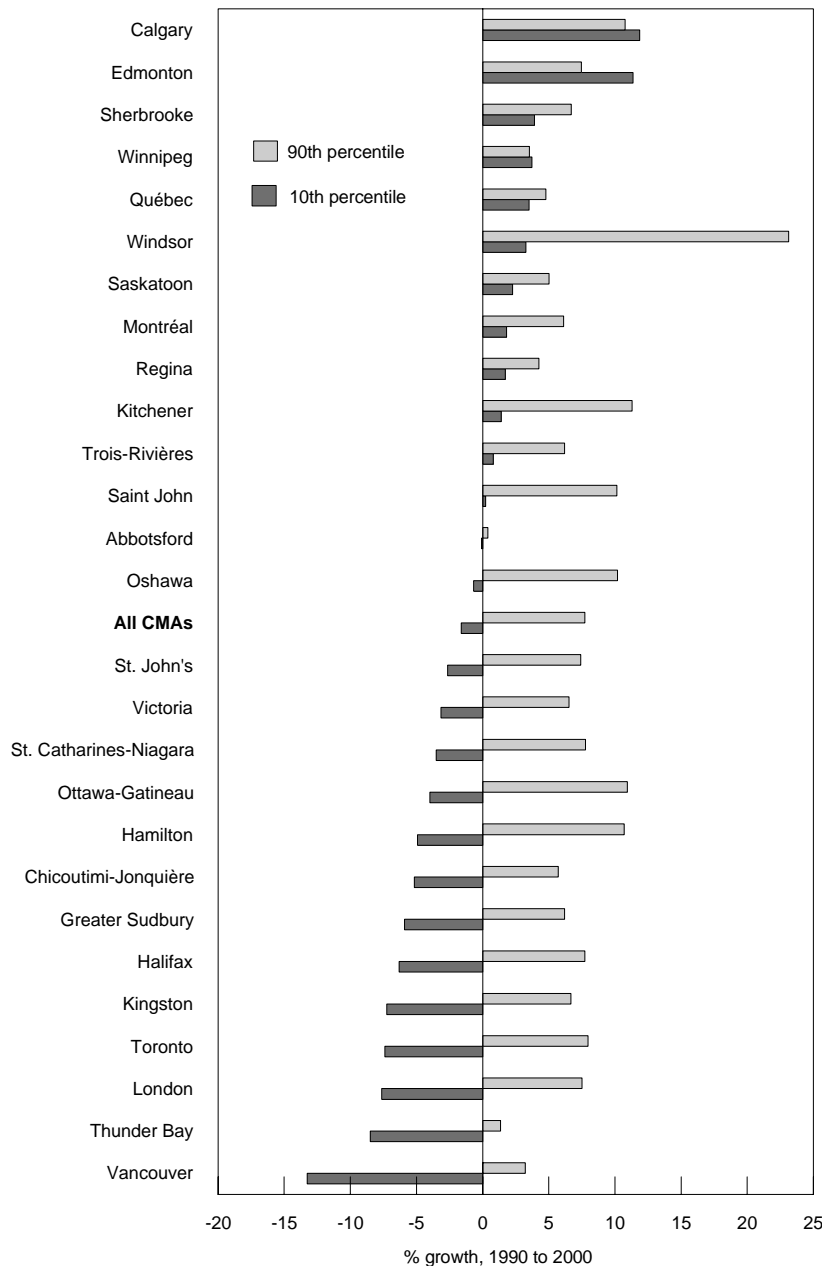
Low-income rates within CMAs were higher among certain groups, making them disproportionately represented among the low-income population. Three groups in particular tended to have higher low-income rates relative to the population of a given CMA:

recent immigrants (those who arrived during the decade preceding the census),<sup>3</sup> Aboriginal people, and lone-parent families.

The low-income rate for lone-parent families<sup>4</sup> was 46.6% in 2000, compared with 15.4% for other types of families (Table 2). Although high in 2000, the low-income rate among lone-parent families was even higher in 1980 (54.2%). In 2000, individuals in lone-parent families made up a disproportionately large share of the low-income population in CMAs—19.3% compared with 7.3% of the overall CMA population.



**Chart A: At the 90th percentile, income grew in all CMAs; at the 10th percentile, in only half.**



Source: Census of Canada, 1991 to 2001

In 2000, recent immigrants had a low-income rate of 35.0%, nearly twice the overall CMA average. In

1980, in contrast, their rate was only 23.1%. The growth was substantial in CMAs with large populations of

recent immigrants. As with lone parents, recent immigrants represented a disproportionate share of the low-income population.

While low-income rates rose for recent immigrants, their share of the population also increased, especially in the 1990s. In 2000, 9.0% of CMA residents were recent immigrants, compared with 6.1% in 1990.

In Toronto and Vancouver, two large CMAs, the low-income rate increased in the 1990s. Virtually all of the rise in these areas was concentrated among recent immigrants. In Toronto, the low-income rate in 2000 was 17.7%, up 1.8 percentage points from 1990. Among recent immigrants, however, the rate rose by 4.6 points to 32.8%. In contrast, among all other groups, it was virtually unchanged. In Vancouver, the low-income rate rose by 3.3 percentage points to 19.1%, while among recent immigrants, it rose 10.7 points to 37.4%. In contrast, among all other groups, it increased only 0.7 points to 15.4%.

Among Aboriginal people in CMAs, 41.6% were living in low income, more than double the national average for CMAs. As with lone parents and recent immigrants, Aboriginal people represented a disproportionately large share of the low-income population. (Because of changes in collection of information on Aboriginal people, they can be consistently defined only in the 1996 and 2001 censuses.)

CMAs have widely varying proportions of Aboriginal people and immigrants. Consequently, the composition of the low-income population varied widely. In Winnipeg, Regina and Saskatoon, Aboriginal people represented more than 20% of the low-income

**Table 2: Low-income rates and population shares, by group, 2000**

	Low-income rate	Population	
		Total	Low-income
		%	
<b>All persons</b>	<b>17.7</b>	<b>100.0</b>	<b>100.0</b>
Aboriginal people	41.6	1.6	3.7
Recent immigrants	35.0	9.0	17.7
Other immigrants	18.3	20.8	21.5
Other	14.7	68.7	57.0
Not in lone-parent families	15.4	92.7	80.7
In lone-parent families	46.6	7.3	19.3

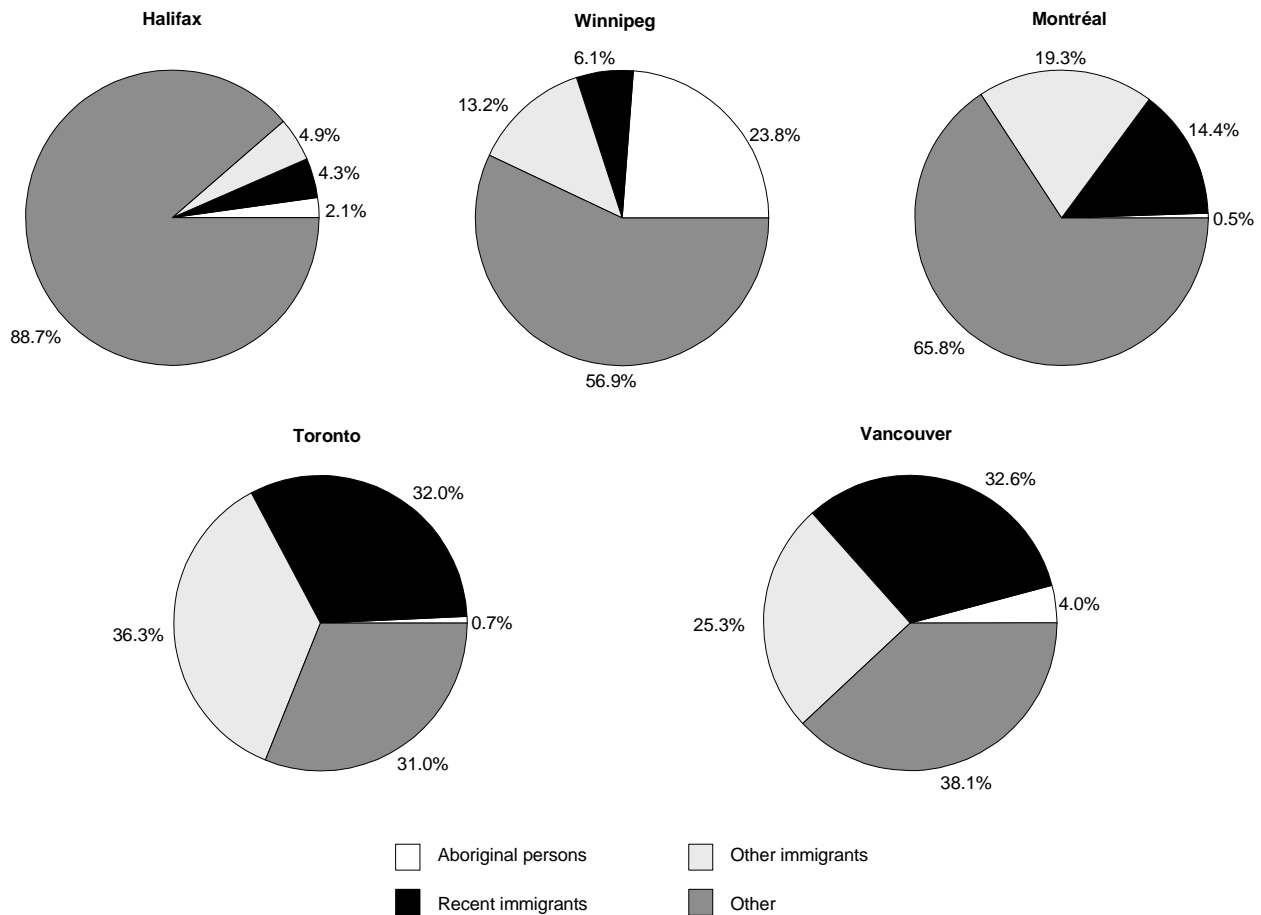
Source: Census of Canada, 2001

population. In Toronto and Vancouver, little of the low-income population consisted of Aboriginal people. On the other hand, recent immigrants comprised much larger shares: 32.0% in Toronto and 32.6% in Vancouver (Chart B).

**Widening income gap between richer and poorer neighbourhoods**

The increase in the income gap between higher- and lower-income families in CMAs was reflected in

**Chart B: The composition of the low-income population varied considerably by CMA.**



Source: Census of Canada, 2001

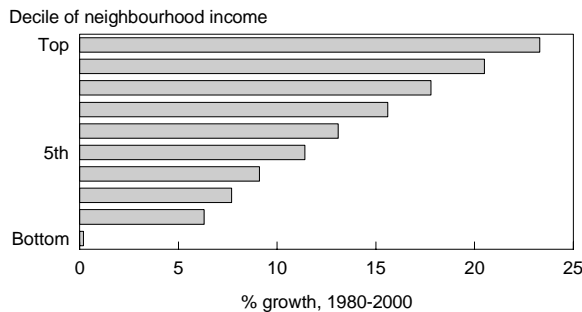


an increasing income gap between lower- and higher-income neighbourhoods (defined by census tracts). In Toronto, for example, median family income in the poorest 10% of neighbourhoods rose 0.2% from 1980. In the richest 10%, it was up 23.3% (Chart C). This increasing difference was observed in all larger CMAs (Chart D). In areas such as Ottawa-Gatineau, Kitchener, St. Catharines-Niagara and London, income rose in both higher- and lower-income neighbourhoods, although more in the former. In Hamilton, income rose in both higher- and lower-income neighbourhoods, although more in the former. In Winnipeg, Calgary, Montréal, Québec and Edmonton, income rose in higher-income neighbourhoods and fell in lower-income neighbourhoods. In Vancouver, it fell in lower-income neighbourhoods, but was unchanged in higher-income neighbourhoods.

However, while the income gap between richer and poorer neighbourhoods grew, the proportion of low-income neighbourhoods remained relatively stable between 1980 and 2000 in the 27 CMAs. (A low-income neighbourhood has a low-income rate exceeding 40%.) In 1980, 6.1% of CMA neighbourhoods were low-income neighbourhoods. This fell to 5.5% in 1990, doubled to 11.8% in 1995, then fell again, to 5.8%, in 2000 as economic conditions improved.

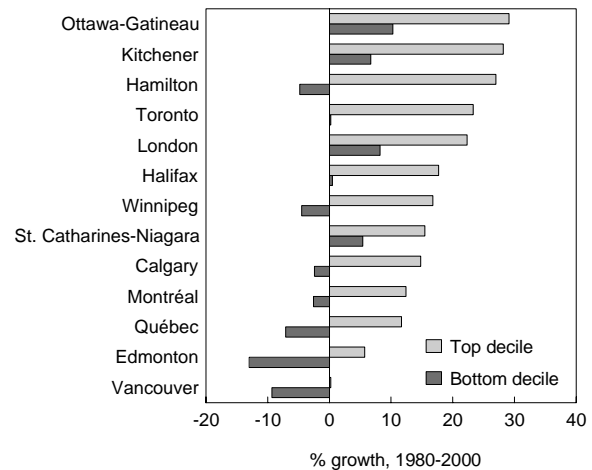
The location of low-income neighbourhoods in the largest CMAs is also of concern. Are they clustered together in the downtown core or dispersed throughout the CMA? In fact, Canadian CMAs are diverse in this regard. Some, such as Winnipeg (Figure 1) and Vancouver, have a single dominant cluster of low-income neighbourhoods in the downtown core.

**Chart C: In Toronto, the higher the neighbourhood income, the greater the increase in median income.**



Source: Census of Canada, 1981-2001

**Chart D: Income growth varied considerably by CMA and income decile.**



Source: Census of Canada, 1981-2001

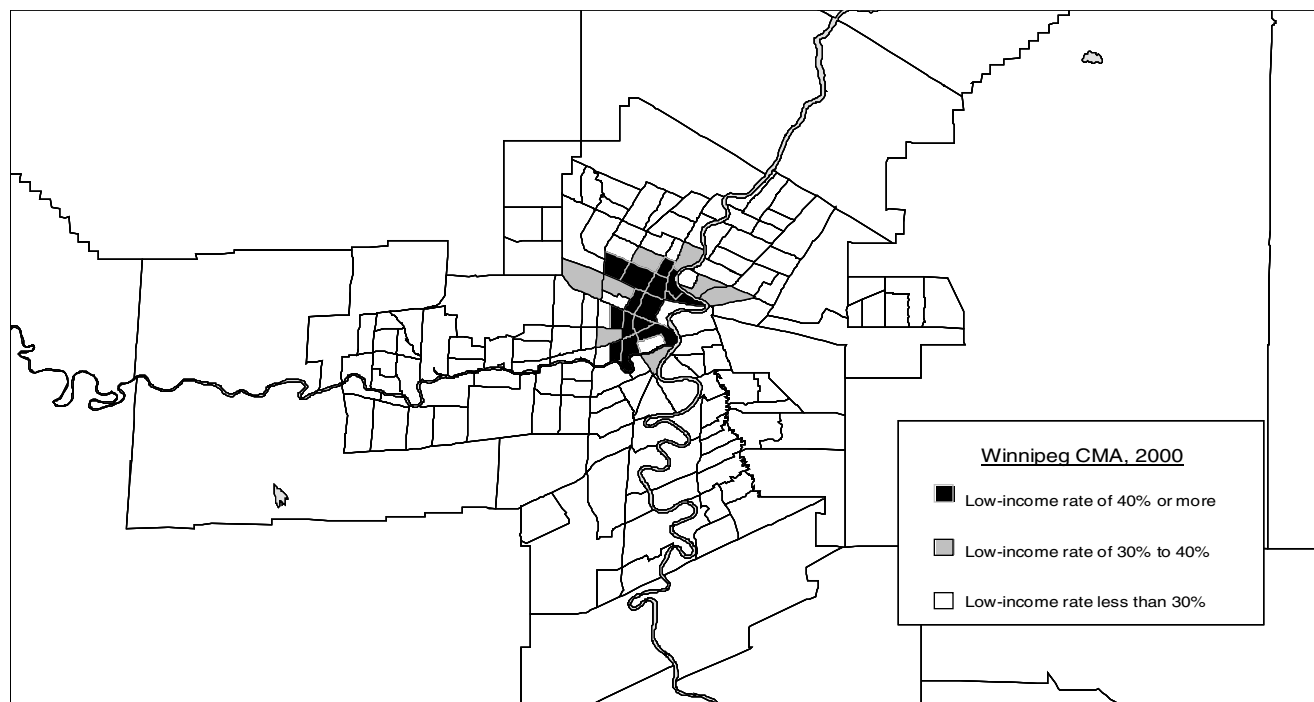
Others, such as Toronto and Montréal, have several distinct clusters surrounding a relatively affluent downtown.

In Toronto and Montréal, low-income neighbourhoods were also less likely to be found downtown and more likely to be found in clusters outside of downtown in 2000 than they were in 1980. In Montréal for example, Plateau Mont-Royal was one of two areas with low-income rates greater than 40% in 1980, but not in 2000 (Figure 2). The other was Old Montréal, the site of a number of new condominium developments. At the same time, three clusters of low-income neighbourhoods farther from the city centre grew over this period: Hochelaga-Maisonneuve in the east end, Côte-des-Neiges, and Park Extension (near Mont-Royal).

**Certain groups more likely to live in low-income neighbourhoods**

Recent immigrants, Aboriginal people and lone-parent families were more likely than other groups to live in low-income neighbourhoods. In 2000, 11.7% of Aboriginal people lived in low-income neighbourhoods, as did 9.7% of recent immigrants, and 8.7% of those living in lone-parent families. Only 4.4% of CMA residents overall lived in low-income neighbourhoods.

**Figure 1: Low-income neighbourhoods\* in Winnipeg, 2000**



Source: Census of Canada, 2001

\* Neighbourhoods are defined by 2001 definitions of census tracts. Low-income neighbourhoods are those with more than 40% of their population in low income.

Residents of low-income neighbourhoods reflected the demographic make-up of the CMA; recent immigrants comprised a large share of low-income neighbourhood residents in Toronto and Montréal, while Aboriginal people represented large shares in Winnipeg, Regina and Saskatoon.

Recent immigrants and Aboriginal people made up a large and rising proportion of residents of low-income neighbourhoods in many CMAs. In Toronto, the share of recent immigrants in low-income neighbourhoods rose from 24.4% in 1980 to 39.1% in 2000. In Montréal, this share went from 7.8% to 19.4%. In Winnipeg, the share of Aboriginal people in low-income neighbourhoods rose from 24.5% in 1995 to 30.8% in 2000.

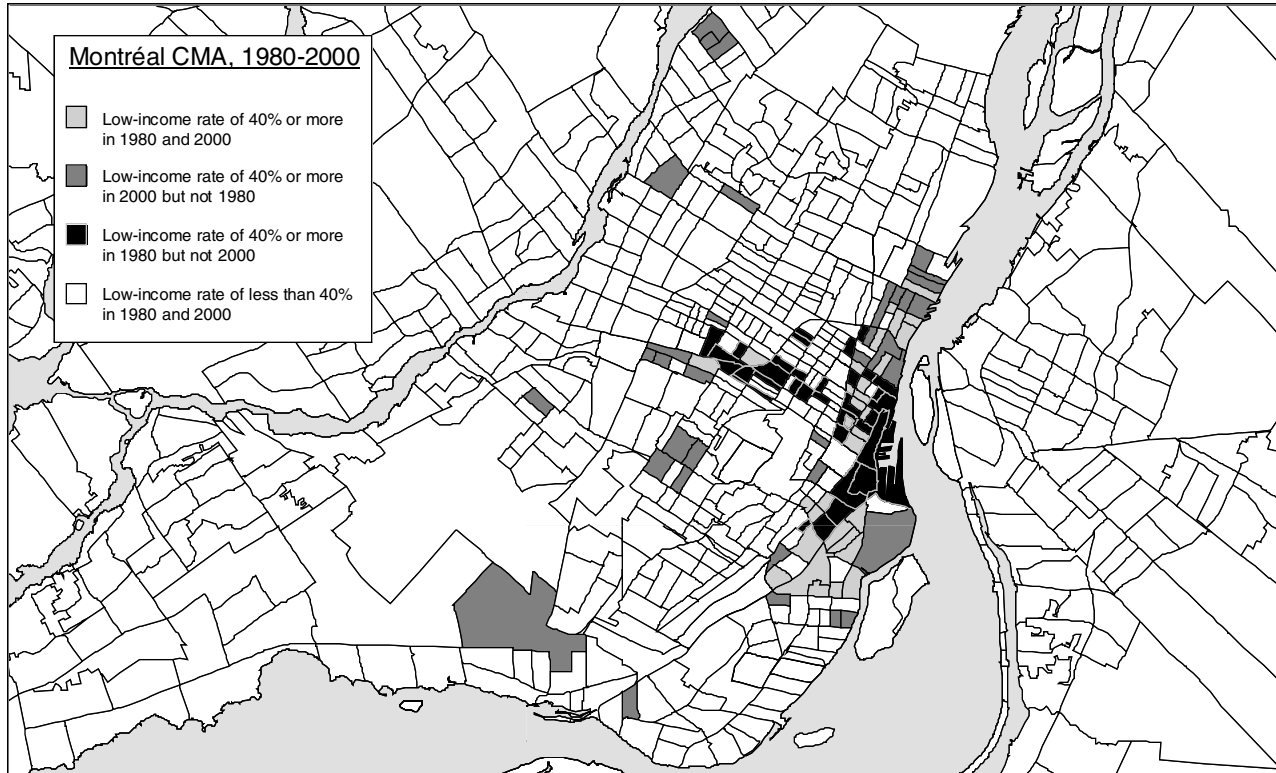
### Summary

Family income growth stalled for many CMA residents in the 1990s. During that decade, income grew for the highest-income families but fell for lower-

income families in many CMAs. Consequently, low-income rates rose in some CMAs and fell in others. Rising low-income rates were seen among recent immigrants who, along with Aboriginal people and lone-parent families, had much higher rates than the general population in 2000. As a result, these groups were highly concentrated among the low-income population in CMAs.

Trends in income and low income observed at the family level were echoed at the neighbourhood level. In most CMAs, income rose more in higher-income neighbourhoods than in lower-income neighbourhoods. The share of neighbourhoods with a low-income rate greater than 40% was about the same in 2000 as in 1980, but recent immigrants, Aboriginal people and lone-parent family members were disproportionately represented. In some CMAs, low-income neighbourhoods were concentrated in the downtown core; in others, they formed distinct

**Figure 2: Low-income neighbourhoods\* in Montréal, 1980 to 2000**



Source: Census of Canada, 1981-2001

\* Neighbourhoods are defined by census tracts. Low-income neighbourhoods are those with more than 40% of their population in low income. For this analysis, census tract boundaries were held constant at their 1981 configurations for computing low-income status, and then graphed using 2001 boundaries.

clusters surrounding a relatively affluent downtown. Low-income neighbourhoods shifted away from the downtown core in some CMAs over the period.

### Perspectives

#### Notes

1 Income of economic families after transfers and before tax. An economic family refers to two or more persons who live in the same dwelling and are related to each other by blood, marriage, common law or adoption. Unattached individuals are excluded. Trends using the adult-equivalent adjusted income of all persons (unattached individuals and economic family persons) were similar. Income refers to total income received in the year preceding the census.

2 Low income is measured on an after-transfer, before-tax basis. A person is deemed to be in low income if their adult-equivalent adjusted income is below one-half the median adult-equivalent adjusted income in their particular CMA. This threshold will vary from CMA to CMA, but on average it was \$33,600 for a family of two adults and two children measured in 2000 dollars. For other years, income was adjusted to 2000 dollars and compared with the fixed threshold.

3 Canadian-born persons living in families headed by immigrants were included in the totals for immigrants. Persons who immigrated in the census year or the year preceding the census were excluded. Annual income for these immigrants will be biased downwards since they spent none or only part of the reference year in Canada.

4 Includes only lone-parent families with at least one child under 18.

# Income replacement among recent widows

*Richard V. Burkhauser, Philip Giles, Dean R. Lillard, and Johannes Schwarze*

**M**uch attention has recently been focused on issues related to aging. One important question is how financially prepared a couple is for the death of one of the partners. Although not directly answering this question, this study looks at part of the issue by comparing the income of women in Canada, the United States, Great Britain and Germany before and after the death of their husbands during the 1990s.

The implications of the death of a spouse are far more wide-ranging than simply how the deceased person's earnings will be replaced. Nevertheless, it is an important issue to understand, particularly for older women. Younger generations of women are much more likely to be active in the labour market and will have higher personal incomes, whereas older generations were more dependent on a spouse. Also, women tend to live longer than men (average life expectancies were 81.2 and 75.4 in 1996) and are usually younger than their husbands—about two years at first marriage, 3.6 at remarriage after divorce, and 6.5 at remarriage after widowhood. Almost half of marriages end in widowhood that lasts over 15 years for women compared with 9 for men (Nault and Bélanger 1996). Indeed, by their late 60s, more than 1 in 5 women are widowed, and by age 75, widows outnumber married women (Statistics Canada 2004).

In some situations, a widow may feel obliged to find a job or increase her work hours by changing from part- to full-time employment. Another step may be to move in with relatives or friends. This study does not examine the factors leading to these decisions, but simply looks at how well the average widow in the 1990s fared financially after the death of her husband.

## Background

Canada and other OECD countries offer an array of government programs to mitigate the effects of major earnings losses on households. Public social insurance systems provide income to a widow based on her husband's past earnings; an assortment of means-tested welfare programs are also available. Such programs typically provide a minimum social safety net for non-workers that may be either universal or targeted (for example, the elderly, disabled, lone parents, survivors).

Private institutions also play an important part in replacing lost earnings. The survivor of a deceased worker may receive payments from the fringe-benefit package offered by the employer. Furthermore, some households can generate income from accumulated wealth, the added market work of other household members, or life insurance settlements.

Researchers who investigate the economic well-being of households after a worker's death often focus on how a given program replaces lost earnings. This is particularly so in cross-national studies. Such studies attempt to measure income available to households after a worker's death. Lack of comparable data, however, often restricts cross-national studies to two types of comparison: a hypothetical average worker's earnings history and the subsequent social insurance benefits (Gruber and Wise 1999), or cross-sectional data on the economic well-being of married women and widows of a given age (Yamada and Casey 2002).<sup>1</sup> More sophisticated studies use synthetic cohort analysis to measure changes in a cohort's economic well-being as it ages and becomes more dominated by widows (Williamson and Smeeding 2002). Such cross-national comparisons convey only part of the story since they are unable to follow actual households.

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This study uses the Cross-National Equivalent File (CNEF), which contains comparable socio-economic information on households in Canada, Germany, Great Britain, and the United States. The CNEF permits the economic well-being of women to be traced following the death of their husbands. While the four countries differ substantially in how specific sources of income change, especially the government and private mix, the overall pattern of replacement rates is remarkably similar.

**Data**

The Cross-National Equivalent File (CNEF) is a longitudinal micro-database of comparably defined variables from the German Socio-Economic Panel, the United States Panel Study of Income Dynamics, the British Household Panel Study, and the Canadian Survey of Labour and Income Dynamics. The CNEF currently contains data starting from 1980 for the United States, 1984 for Germany, 1991 for Great Britain, and 1993 for Canada. It includes standard demographic information, household income and its components, and individual information on employment and earnings. The file is updated annually with additional years of the panels and newly created comparable variables.<sup>2</sup>

This study uses a longitudinal sample based on event history to examine the incomes of women before and after the death of a spouse. Because such a death is a relatively rare event, even at older ages in these long-running longitudinal data sets, the number of deaths among sample members is modest. The sample consists of 361 German, 216 British, 473 Canadian, and 437 United States women whose husbands died sometime during the life of the panel. To measure changes in the economic well-being of the widow’s household, all sources of household income were tracked. For each country, women were pooled by the age of their husbands at death, regardless of the calendar year in which the death occurred. To avoid complication, the analysis focused on household income in the year before and after the husband’s death.<sup>3</sup>

While income is a very useful measure, wealth and how it changed would provide even greater insight into how the economic well-being of women changed following the death of their husbands. Changes in income are included in these datasets but not changes in wealth. This is a problem especially with respect to life insurance. While the flow value from any investments purchased with life insurance payments made to a widow

(for example, the interest from a life insurance payout that was put into a bank account) would be included as income in the years following death, the value of the full life insurance payment that caused the increase would not be captured. The results could be affected if the effect of life insurance settlements on the economic well-being of widows varied according to the husband’s age at death or if it varied among countries. Similarly, the effect of the sale of assets to cover living expenses is not measured.

**Definition of household income**

Each country has a network of government programs that offset lost earnings and provide some level of income protection for non-working citizens. It is always difficult and somewhat arbitrary to equate specific programs across countries. In each of the four countries, all government cash transfer programs were dichotomized into social insurance (or social security) programs and social welfare programs. To be included in the former, a benefit has to be related to past contributions (taxes) paid. For instance, the Canada and Quebec Pension Plans (C/QPP) are financed primarily by a payroll tax, and each worker’s benefit is related to past earnings. The relationship need not be actuarially fair (that is, the present discounted value of expected benefits need not equal taxes paid) but a significant relationship must exist. Second, program benefits cannot be influenced by current income—that is, the program cannot have a means test. So while Employment Insurance benefits are based on contributions, they are reduced in some situations based on overall income. On the other hand, the Old Age Security program is targeted to seniors (the group in which the majority of widows would be found), but it is universal in nature and has been changed in recent years to be means-tested.

Although difficult to define, the distinction between social insurance and social welfare is meaningful because social insurance programs have historically

<b>Social insurance programs</b>	
Canada	Canada and Quebec Pension Plans
Germany	Gesetzliche Rentenversicherung (mandatory retirement insurance program) and related programs
Great Britain	National Insurance Retirement Pension
United States	Old-Age Insurance, Disability Insurance, Survivors Insurance



been well-financed in all four countries, while social welfare programs have had a much more varied level of support. Furthermore, social welfare programs are usually focused on lower-income households, while social insurance programs are more evenly distributed across the income spectrum.

Household income is the sum of all income received during a calendar year by individuals residing in a single dwelling. It is measured as post-transfer, post income-tax, money income. These amounts are adjusted for inflation using the consumer price index in each country. Since the statistic of interest is the ratio of income after the spouse's death to income prior to death, the choice of conversion year is arbitrary. Another advantage of focusing on this ratio is that no conversion between monetary units is necessary.

Finally, household income is adjusted each year for the number of people in the household. Since different-sized households require different levels of income, and household size will change after a husband's death, size must be taken into account to allow proper comparisons. A large literature details the problems associated with measuring the economic well-being of individuals in households of different size (Moon and Smolensky 1977; Burkhauser, Smeeding and Merz 1996). Simply comparing a woman's household income, unadjusted for household size before and after the death of her husband, implicitly assumes perfect returns to scale in household production. Alternatively, assigning each survivor a per-capita share of net-of-tax household income, implicitly assumes no returns to scale. A formula that accommodates these two extremes is:  $E = D/S^e$  where  $E$  is an individual's equivalent income,  $D$  is total household income, and  $S$  is household size (Buhmann et al. 1988).

Assumptions about economies of scale are captured in the value adopted for  $e$ . At one extreme, where  $e = 1$ , no economies of scale exist, and per capita income is assigned to each person in the household. At the other extreme, where  $e = 0$ , economies of scale are perfect, and each person is assigned equivalent income exactly equal to household income.<sup>4</sup> Researchers commonly set  $e$  to 0.5, so this value is adopted here.

### Role of social insurance programs

A first step is to examine social insurance programs to assess how well they respond to reduced earnings following the death. Since the household may already be receiving social insurance income when the death

occurs, the appropriate comparison is the sum of social insurance income and earnings of the husband in the year before death with social insurance income in the year after death. This is quite restrictive since it excludes any changes a widow decides to make, such as taking a job or moving in with adult children.

For each household, the ratio of household size-adjusted social insurance income in the calendar year after death to the sum of household size-adjusted social insurance benefits and husband's earnings in the calendar year prior to death was calculated. This ratio approximates the replacement rate concept used in simulations typically done to measure the degree to which social insurance benefits replace lost earnings.

In all four countries, social insurance benefits provided substantial protection against income loss for the median woman following the death of her husband at older ages (Table 1). The social insurance replacement rates in the 70 and older age group were very similar across countries and higher than for other ages. For women whose husbands died between 62 and 69, an age range where labour force participation of men in these countries varied considerably, the differences in replacement rates were far greater. Canada had the highest replacement rate, at 0.92; the United States had the lowest, at 0.67. The age groups were chosen in line with the U.S. social security program where 62 is an important age in determining benefits. Persons under 62 were divided into two age groups, as were those 62 and over.

In all four countries, social insurance replacement rates were much smaller for the median widow at younger ages than at older ages. The replacement rate was low for women whose husbands died at a relatively young age, largely because survivors did not automatically

**Table 1: Median widow's social insurance replacement rate**

	United States	Germany	Great Britain	Canada
<b>Husband's age at death</b>				
25 to 49	0.41	0.17	0.25	0.12
50 to 61	0.00	0.37	0.33	0.47
62 to 69	0.67	0.87	0.84	0.92
70 or older	0.93	0.92	0.88	0.86

Source: Cross-National Equivalent File, 1980-2002

receive social insurance benefits. In the United States, for example, social security benefits are provided to women whose husbands die before age 62 only if there is a dependent child. Consequently, the median U.S. widow whose husband died between age 50 and 61 received no social security benefits. (The value in the table is zero because the median widow in the sample did not have a dependent child.) In the other countries, the median widow this age found more of her late husband's labour income replaced by social insurance benefits. In Canada, the C/QPP pays survivor benefits to widows and widowers this age immediately after the death of a covered worker, based on the worker's accrued contributions. In Germany, widows and widowers under 45 receive 25% of their deceased spouse's pension (or estimated pension). Those 45 and over receive 60%. In Great Britain, widows qualify for National Insurance benefits at any age as long as the husband worked.

**Household income replacement rates**

As noted, the replacement rate of total post-transfer, post-tax household income (Table 2) provides a more complete understanding of how a woman's economic well-being changes in widowhood than does the social insurance benefit replacement rate.<sup>5</sup> In addition to the husband's dying, other changes in the composition of the widow's household are incorporated through the use of the income of all household members and an equivalence scale. Additionally, the wife may get a job or increase the number of hours at her current job.

In all four countries, the household income replacement rates were much larger than the social insurance replacement rates at younger ages, and usually larger at older ages. However, the rates in Great Britain were

generally different than those observed in the other three countries—perhaps the result of fewer deaths observed in the British sample. Even more important, from a country comparison viewpoint, the range of the post-transfer, post-tax income replacement rates was much smaller at all ages than the range of the social insurance benefit replacement rates. This suggests that non-public institutions and personal networks are often important in allowing a widow to cope economically after the death of her husband.

The similarity across countries raises the question of how replacement rates are distributed at different points of the household income distribution in the year before the husband dies. (To preserve sample size, widows in each country were pooled regardless of the age of their husband at death.)

Looking at the ratio of post-transfer, post-tax household (size-adjusted) income in the year after the husband's death to the same income in the year before death shows that the fraction of widows in each category was similar across the four countries (Table 3). The median and modal replacement rate category in all four countries lay between 0.75 and 0.99. About three-quarters of women in Canada and Germany had replacement rates of 0.75 or more, while the proportion in the other two countries was somewhat less. But a non-trivial minority of women in all countries experienced larger declines in their household size-adjusted income following the death of their husbands. The United States had the highest share of widows with replacement rates in the two lowest categories. About 13% of U.S. widows experienced a decline in their household size-adjusted income of more than

**Table 2: Median widow's household income replacement rate**

	United States	Germany	Great Britain	Canada
<b>Husband's age at death</b>				
25 to 49	0.87	0.80	0.97	0.82
50 to 61	0.83	0.83	1.04	0.75
62 to 69	0.89	0.95	0.92	0.94
70 or older	0.94	0.95	0.76	0.96

Source: Cross-National Equivalent File, 1980-2002

**Table 3: Distribution of household income replacement rate**

	United States	Germany	Great Britain	Canada
	% of widows			
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Less than 0.50	12.8	8.0	7.9	7.6
0.50 to less than 0.75	20.3	17.5	25.0	17.6
0.75 to less than 1.00	27.6	35.5	35.7	36.7
1.00 to less than 1.25	17.4	23.6	14.4	21.0
1.25 to less than 1.50	6.7	8.9	7.4	8.0
1.50 or more	15.3	6.7	9.7	9.2

Source: Cross-National Equivalent File, 1980-2002

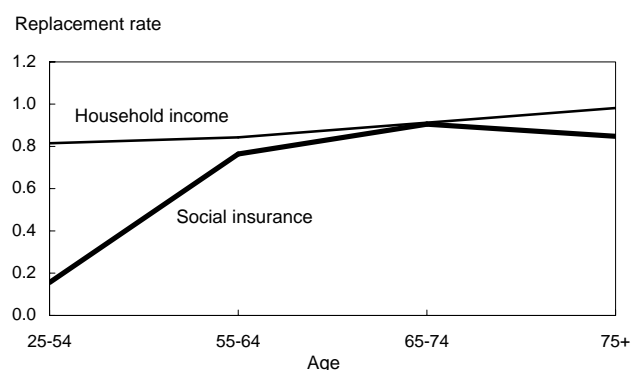


one-half. This fraction is over 60% higher than in the other three countries. On the other hand, a relatively high percentage of widows had replacement rates of 1.50 or more.

As mentioned, the choice of age groups was dictated primarily according to programs in the United States. To see the effect of this choice on Canadian data, the replacement rates were regenerated with different age groupings (Chart). The C/QPP was designed for principal benefits to start at age 65, so this age was key. Again, four age groups were defined. Overall, the results were quite similar for the two sets of age groups. The social insurance replacement rates for the 55-to-64 and 50-to-61 age groups were quite different, but in the expected direction. In general, at these ages, the higher the age, the higher the replacement rate, likely reflecting the higher level of C/QPP contributions of those dying at older ages. The same phenomenon was observed for household income replacement rates, although the differences were not as dramatic.

To further investigate the economic situation of women in the lower end of the income distribution, it is important to see where they stood prior to the husband's death (Table 4). The lowest quintile of women had replacement rates far in excess of 100%. Somewhat surprisingly and encouragingly, the mean replacement rate ranged from 1.30 in Germany to 1.54 in Canada. Mean replacement rates tended to fall at higher income quintiles, with little difference in within-quintile replacement rates across the four countries. Women in the highest income quintiles prior to the husband's death experienced a greater fall in relative income.

**Chart: Canadian replacement rates by age group**



Source: Cross-National Equivalent File, 1980-2002

**Table 4: Mean household size-adjusted income replacement rates, by income quintile the year before husband's death**

	Mean replacement rate	Replacement rate less than 0.50
<b>Lowest quintile</b>		
		% of widows
United States	1.48	2.1
Germany	1.30	5.9
Great Britain	1.45	2.6
Canada	1.54	8.5
<b>Second quintile</b>		
United States	1.10	11.6
Germany	1.03	7.8
Great Britain	0.98	2.2
Canada	0.97	3.6
<b>Third quintile</b>		
United States	0.92	11.3
Germany	0.89	7.8
Great Britain	0.87	10.3
Canada	0.94	2.6
<b>Fourth quintile</b>		
United States	0.82	19.5
Germany	0.88	2.9
Great Britain	0.83	4.4
Canada	0.95	4.0
<b>Highest quintile</b>		
United States	0.75	18.7
Germany	0.82	15.5
Great Britain	0.77	19.2
Canada	0.78	19.0

Source: Cross-National Equivalent File, 1980-2002

The last column in Table 4 provides one final look at the distribution of replacement rate outcomes across income quintiles. It shows the within-quintile proportion of widows with a low replacement rate across the four countries. Sample sizes are relatively small, but results suggest that few dramatic drops in replacement rates occur within the lower income quintiles. It is among women whose pre-death household income places them in the higher quintiles that sharp declines are more likely. Hence, while the overall replacement rates for women in the year following the death of their husband's varied across countries, the bulk of the dramatic drops in replacement rates came from women in households in higher income quintiles.

## Conclusion

The median woman's social insurance replacement rate was uniformly high when her husband died at 70 or over in all four countries, more varied when he died in

his 60s, and much lower when he died at a younger age. However, this variation across age and country was reduced substantially once a broader household size-adjusted income replacement rate measure was used. While the median woman still experienced a greater decline in economic well-being if her husband died at a younger age, the difference was much smaller than implied by social insurance replacement rates, as was the difference across countries. The country difference in household size-adjusted income was even smaller at older ages. Thus, across countries and across widows whose husbands died at different ages, the economic loss measured by total household size-adjusted income was much less, and much less varied, than the loss implied by social insurance replacement rates or household income replacement rates unadjusted by household size.

Measures of replacement rates such as the mean or median can obscure substantial differences in the distribution of replacement outcomes. The distribution was wider in the United States than in other countries, and with the exception of the lowest quintile, United States women were more likely than widows in other countries to experience a greater than 50% decline in their household size-adjusted income following their husband's death. However, the mean replacement rates in all four countries for widows in the lower end of the distribution was much greater than 100%; in other words, the size-adjusted household income was much higher for those with the lowest incomes prior to the husband's death. Large declines in replacement rates were more likely to be experienced by women in the upper end of the distribution. Across countries with widely different mixes of public and private support for widows, the economic well-being of women from the lowest quintile of their pre-widowhood household income distribution was almost the same in all four countries.

These results reflect the financial situation of widows in the year after their husband's death; over the longer term, their situation could be quite different.

### Perspectives

#### Notes

1 See also other studies using cross-sectional data from the Luxembourg Income Study. Internet: [www.lisproject.org/publications/wpapersentire.htm](http://www.lisproject.org/publications/wpapersentire.htm).

2 For a fuller discussion of these data, see Burkhauser et al. (2001).

3 The years used are 1970 to 1997 for the United States, 1984 to 2000 for Germany, 1991 to 2000 for Great Britain, and 1993 to 2000 for Canada. While the use of different time

periods may affect comparisons between countries, the use of the data is of a 'short enough' duration for any particular widow that external social and economic factors would not be significant. Whether the results hold in the long run is another issue.

4 Burkhauser, Smeeding and Merz (1996) show the sensitivity of income inequality and poverty measures to variations in the value of  $e$  but recognize that economic theory does not suggest a particular value.

5 An intermediate step could have been to look at the replacement of social insurance and social welfare programs together. However, since the replacement of household income in its entirety is viewed as preferable, this intermediate step was not carried out.

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