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■ HIGH-INCOME
CANADIANS

■ SPENDING PATTERNS
IN CANADA AND
THE U.S.



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...	not applicable
p	preliminary
r	revised
x	confidential
E	use with caution
F	too unreliable to be published

Highlights

In this issue

■ High-income Canadians

- In 2004, 5% of Canadian taxfilers had an income of \$89,000 or more; only 1% reached \$181,000 or more.
- In 2004, the top 5% of taxfilers received 25% of total income and paid 36% of income and payroll taxes.
- The prevalence of high income peaks in the 45-to-64 age group. In 2004, individuals of that age represented less than a third of all income recipients, but made up more than half of the top 5%.
- Calgary had the highest proportion of families with income over \$250,000 in 2004, but Toronto had by far the most families with such incomes, almost one-third of the national total.
- Of the 1.2 million taxfilers who made up the top 5% of income recipients in 2004, three-quarters were men, even though men accounted for less than half of all taxfilers. However, since 1982 there has been an 11% increase in the portion of women in the top 5% of tax filers.

■ Spending patterns in Canada and the U.S.

- In the last two decades, overall consumer spending patterns have not changed significantly in either Canada or the United States. These patterns were closer for core labour force age households than for retirees.
- Among older households, proportionately more live in owned houses and drove owned vehicles in the United States than in Canada
- Both Canadian and American households allocate one-third of their spending dollar to housing and one-fifth to transportation.
- Canadians spend more than Americans on public transportation; in both countries, those 75 and over generally spend the most.
- Between the early 1980s and 2003, household spending on health increased slightly more in Canada, but it still remained much lower than in the United States.

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High-income Canadians

Brian Murphy, Paul Roberts and Michael Wolfson

Media interest in those with very high incomes seems never-ending. However, this interest goes beyond celebrity watching. Canada has a progressive system of taxes and transfers, which means that high-income recipients contribute a disproportionate portion of total taxes, which in turn help finance a range of government activities including transfer payments to those lower in the income distribution. The status of the high-income population is thus important to the financing of government activities. Changes to the income tax system may affect their behaviour. For example, increasing tax rates have been tied to issues such as the brain drain.

Considerable effort has been devoted over time and across countries to measure and characterize those with low incomes, but not those with high incomes. One reason is that only a few data sources (income tax data in particular) can support the study of this relatively small population. This study uses tax returns and survey data to explore trends in the number and characteristics of high-income Canadians, as well as their wealth and the effective income tax rates they face. It is intended to help inform current debate on topics such as tax fairness and income inequality.

There is no agreed-upon definition of high income, either in terms of absolute dollar thresholds or as a fixed percentage of the population. While defining poverty exhibits similar difficulties, numerous studies have discussed concepts such as 'deprivation' and 'strained circumstances,' providing some general support for selecting a threshold below which one is considered to be in low income. No corresponding literature exists for defining high income.

Survey data tend to have very small sample sizes at the upper tail of the income distribution, and also tend to suffer from a higher level of underreporting. The T1 Family File (T1FF) overcomes these problems. The

T1FF has had very good coverage, even of those with low or zero income, since the advent of refundable income tax credits—for children in 1978 and for everyone (the GST credit) in 1992. Additionally, the T1FF systematically links spouses and dependent children into families as appropriate (Patenaude and Clark 2000).¹

Where to draw the high-income line?

A number of thresholds have been used for defining high income. Just as with low income, these thresholds can be absolute dollar figures or expressed in terms of relative portions of the population. In each case, the aim is to describe the upper tail of an income distribution and separate those with high income from those without (Table 1).

Absolute nominal thresholds

Thresholds defined in nominal dollar terms are the simplest. Absolute thresholds refer to a particular dollar amount—for example, \$100,000. Those with incomes higher than a given figure are considered to have high income. However, such thresholds suffer from changing monetary conditions, most particularly the effect of inflation. What might have seemed a sufficiently high threshold amount one or two decades ago may not be viewed the same way today, to the extent that some groups' income levels have risen or earnings have been eroded by inflation.

Examples of commonly applied absolute nominal thresholds include \$250,000, the highest income grouping used for many years by the Canada Revenue Agency (CRA);² \$150,000, used in Statistics Canada's census tables; \$100,000, used by the province of Ontario in their 'sunshine list' made available under the *Public Sector Salary Disclosure Act* (Campbell 1996); and the threshold at which the top federal tax rate begins—\$113,804 in 2004.³

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Relative thresholds

While absolute nominal thresholds are easy to understand, they suffer from changing 'real' values in the face of inflation. One alternative, as in the case of income tax bracket thresholds, is to index to the CPI so that their value is maintained. However, as with the longstanding discussion of relative versus absolute poverty or low-income lines, a parallel argument exists for defining high income in a relative manner. According to this argument, when the income of an average worker rises (because of real per capita economic growth, not just inflation), the threshold for high income ought to rise in the same proportion. A relative threshold divides an income distribution using a quantile cut-point to define those with higher incomes.⁴

Examples of relative threshold cut-offs include individuals or families at or above three times the median income (Murphy, Finnie and Wolfson 1994), the top third (Morissette and Ostrovsky 2005), the top fifth and top tenth (Morissette and Zhang 2006), the top 5% (Frenette, Green and Picot 2004; Atkinson 2003), and the top 1% (Rashid 1994). Each of these thresholds was used to divide the total 2004 income distribution for individuals and families into those with high incomes and those without.⁵ These thresholds convey the wide variation in what may be considered high income. For individuals in 2004, it could be \$37,000 (top third of the income distribution) or \$250,000 (top 0.6%). In comparison, the top third of families had a high-income threshold of \$64,000, while an income of \$250,000 would categorize 1.5% of families as high-income.

Table 1 Income thresholds for individuals and families

	Individuals		Families	
	Cut-off	Above cut-off	Cut-off	Above cut-off
Absolute threshold	\$	%	\$	%
CRA	250,000	0.6	250,000	1.5
Census tables	150,000	1.4	150,000	5.4
Ontario 'sunshine list'	100,000	3.7	100,000	15.3
Top federal tax rate	113,804	2.4	113,804	11.3
Relative threshold				
Three times median	75,000	8.1	129,000	8.2
Top third	37,000	33.3	64,000	33.3
Top 20%	50,000	20.0	88,000	20.0
Top 10%	69,000	10.0	119,000	10.0
Top 5%	89,000	5.0	154,000	5.0
Top 1%	181,000	1.0	305,000	1.0

Source: Statistics Canada, T1 Family File, 2004

Not surprisingly, different thresholds produce varying pictures of the high-income category. Given the arbitrariness of any specific choice, the analysis uses a range of thresholds. However, the predominant focus is on relative thresholds, and generally those involving the top 10% of the population or less.

The income parade

Jan Pen, a Dutch economist, uses the image of a parade of dwarfs (and a few giants) to illustrate the general shape of income distribution (Pen 1971, 48). Everyone in the country lines up in a parade in order of income. People with average income have the average height, and those with more or less than the average have their statures magically stretched or shrunk in proportion. The parade is timed to pass in front of a reviewing stand over a period of exactly one hour.

A Canadian with the average income in 2004 would not pass the reviewing stand until 40 minutes

into the one-hour parade. At about the 54-minute mark, individuals would be about twice the average height (in the 90th percentile). At 57 minutes, those passing by would be two and a half times the average (95th percentile), and only two and a half minutes later they would be 5 times the average (99th percentile). With less than 4 seconds remaining in the parade, the passers by (top 0.1%) would be about 19 times the average height. The last fraction of a second would be taken up by giants at over 165 times the average height (top 0.01%).

Then and now

On the one hand, the cut points up to and including the 80th percentile for individuals, and up to the median for families have been generally stable for over two decades (Table 2). On the other hand, the top 1% and smaller groups experienced major increases, much more so from 1992 to 2004 than in the previous decade.

Table 2 Income thresholds

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	2004 \$ ('000)					
Bottom 1%	0	0	0	0	1	0
Bottom 5%	0	2	1	3	7	7
10%	2	5	5	9	11	11
20%	8	10	10	17	16	17
25%	11	12	12	21	20	21
40%	19	18	19	33	31	33
50%	25	23	25	42	39	43
60%	31	30	31	51	49	55
75%	44	42	44	69	69	77
80%	49	47	50	76	77	88
90%	64	63	69	99	102	119
Top 5%	80	78	89	123	128	154
Top 1%	142	139	181	210	220	305
Top 0.1%	383	402	648	546	597	1,045
Top 0.01%	1,360	1,319	2,833	1,781	1,949	4,301

Source: Statistics Canada, T1 Family File

For example, for individuals, the real-dollar median was essentially flat at \$25,000 in 1982 and in 2004, while for families, the 50% threshold fluctuated between \$39,000 and \$43,000. Some variation did occur in the lower-income quantile cut points, but it was relatively limited. The first decile for individuals, for example, increased in real dollars from approximately \$2,000 in 1982 to \$5,000 by 2004; the change for families was from \$9,000 to \$11,000.

By contrast, the cut points for the highest quantiles increased significantly—the top 5% of individuals from \$80,000 to \$89,000, and the top 0.01% from \$1,360,000 to \$2,833,000. Similar changes occurred for families. One way of illustrating the magnitude of these constant dollar changes is to relate them to the median (Table 3). The highest percentiles of income earners, whether individuals or families, experienced very high growth. In 1982, the top 5% of individual incomes were 322% of the corresponding median; by 2004 this had increased to 364%. A similar change was observed for families.

These changes were more dramatic for the very highest quantile thresholds. In 1982, the top 0.01% income threshold for individuals was 55 times larger than the median, and by 2004, it was over 115 times larger. For families, the pattern was the same—over 40 times the median in 1982 and 100 times by 2004.

Table 3 Income cut-off as a proportion of median income

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	%					
25%	44	51	48	50	50	49
50%	100	100	100	100	100	100
75%	177	180	181	163	174	180
90%	258	273	282	235	258	277
Top 5%	322	339	364	294	324	358
Top 1%	572	601	737	501	558	707
Top 0.1%	1,544	1,743	2,644	1,301	1,511	2,425
Top 0.01%	5,475	5,723	11,552	4,243	4,934	9,976

Source: Statistics Canada, T1 Family File

Threshold income values, in constant dollars or as a proportion of the median, can understate the magnitude of changes in the income distribution. For example, the constant dollar threshold for the top 5% of individual filers and top 5% of families increased by 11% and 25% respectively from 1982 to 2004. However, the average income of the top 5% of individuals increased 34% (from \$133,000 to \$178,000) while that of families jumped 50% (Table 4).

These increases, for the most part, were not paralleled in lower parts of the income spectrum. Individuals with incomes in the bottom four-fifths, for example,

Table 4 Average income

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	2004 \$ ('000)					
Bottom 5%	-90	0	0	-12	2	2
Bottom 10%	-5	2	2	-1	6	6
Bottom 20%	2	5	5	6	10	10
20% to 40%	14	14	14	25	23	25
40% to 60%	25	23	25	42	40	43
60% to 80%	40	37	40	63	62	70
Top 20%	79	77	93	120	124	158
Top 10%	102	100	128	153	160	215
Top 5%	133	130	178	197	206	296
Top 1%	269	268	429	380	404	684
Top 0.1%	852	822	1,641	1,143	1,196	2,493
Top 0.01%	2,903	2,547	5,920	3,658	3,490	8,443

Source: Statistics Canada, T1 Family File

experienced little or no real increase in mean income. Families in the first and fourth quintiles did experience some growth, but those in the second and third quintiles saw little or no change. Increases in average incomes were generally limited to the top quintile and were increasingly marked in the higher reaches of the upper tail.

More people or higher incomes?

Yet another way to display these trends is by the shares accruing to each segment of the income spectrum (Table 5). Whether the bottom 90% or 95%, whether individuals or families, their shares of the income pie decreased, especially between 1992 and 2004. In contrast, the share of the top 5% increased by about one-quarter, the top 1% by about half, and the top 0.1% and 0.01% by nearly 100%. For example, the top 0.01% of individuals had less than 1% of all income in 1982 and in 1992, but by 2004 they had 1.7%.

Table 5 Shares of income

	Individuals			Families		
	1982	1992	2004	1982	1992	2004
	%					
Bottom 5%	-1.0	-0.1	0.0	-0.8	0.2	0.2
5% to 10%	0.1	0.6	0.4	0.6	0.9	0.7
10% to 15%	0.6	1.0	0.9	1.1	1.2	1.1
15% to 20%	1.1	1.4	1.2	1.5	1.5	1.3
20% to 25%	1.5	1.7	1.5	1.9	1.7	1.6
25% to 30%	1.9	2.0	1.8	2.3	2.1	1.9
30% to 35%	2.3	2.3	2.1	2.6	2.4	2.2
35% to 40%	2.8	2.7	2.5	3.0	2.8	2.6
40% to 45%	3.2	3.0	2.8	3.5	3.2	2.9
45% to 50%	3.7	3.5	3.2	3.9	3.6	3.3
50% to 55%	4.2	3.9	3.7	4.3	4.0	3.7
55% to 60%	4.7	4.5	4.2	4.8	4.5	4.2
60% to 65%	5.2	5.0	4.7	5.3	5.0	4.7
65% to 70%	5.9	5.6	5.3	5.8	5.6	5.3
70% to 75%	6.6	6.3	5.9	6.4	6.3	6.0
75% to 80%	7.3	7.1	6.7	7.1	7.0	6.7
80% to 85%	8.2	8.0	7.7	7.9	7.9	7.7
85% to 90%	9.4	9.3	9.0	9.0	9.1	8.9
90% to 95%	11.2	11.2	11.0	10.7	10.9	11.0
Top 5%	21.0	20.9	25.3	19.3	19.9	24.1
Top 1%	8.5	8.6	12.2	7.4	7.8	11.2
Top 0.1%	2.7	2.6	4.7	2.2	2.3	4.1
Top 0.01%	0.9	0.8	1.7	0.7	0.7	1.4

Note: Total income includes capital gains and RRSP withdrawals.
Source: Statistics Canada, T1 Family File

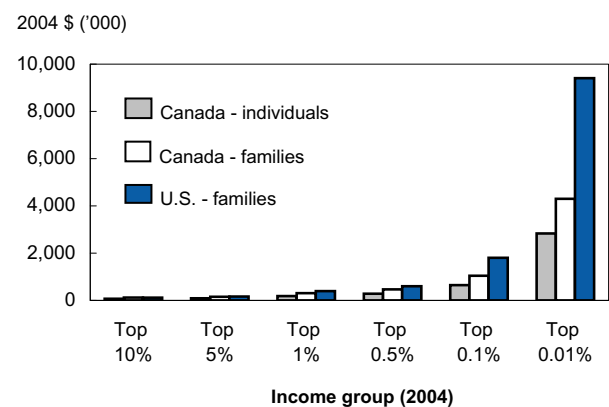
Shares of income as a relative indicator say little about the absolute numbers who have high income. In 1982, the proportion of individuals reporting \$100,000 or more stood at 2.6%. This fell to 2.3% in 1992 before climbing to 3.7% in 2004. By 2004, therefore, not only had the share of income accruing to the top 5% of individuals grown, so too had the number of high-income recipients.

The situation was similar for families, except that they saw a steady increase from 1982 to 2004. From 1982 to 1992, the proportion of families receiving \$100,000 or more increased from 9.7% to 10.6%. However, from 1992 to 2004, it increased by over 4.5 percentage points to 15%—from less than 1 in 10 families in 1982 to more than 1 in 7 by 2004. The proportions of families reporting at least \$500,000 more than doubled.

Richer down south?

Comparisons between Canada and the U.S. are made constantly, for everything from the cost of gasoline and housing to the incomes of physicians and corporate executives. Many of these discussions touch on income. Up to some point in the first two-thirds of the income distribution, Canadian families equaled or even surpassed their American counterparts in the mid-1990s (Wolfson and Murphy 1998). But how do those with high incomes compare? The most striking

Chart A Income threshold disparity most striking at the extreme high end



Note: Purchasing power parity adjusted Canadian dollars.
Sources: Statistics Canada, T1 Family File; U.S.: Piketty and Saez (2003), updated tables and figures

difference is the increasing divergence from the 90th percentile threshold to the top 0.01 percent cut-off (Chart A). In Canada, the top 5% of tax filing families in 2004 had an income of at least \$154,000. The 5% threshold for the U.S. was only slightly larger at \$165,000 (using purchasing power parity values). However, further up the income distribution, the U.S. and Canadian thresholds diverge considerably. The threshold for the top 0.01% in Canada is approximately \$4.3 million, compared with \$9.4 million in the U.S.⁶

However, these differences pale when comparing average income: \$296,000 for the top 5% of families in Canada in 2004, compared with \$416,000 for the U.S., or 40 percent more (Chart B). The differences grow even larger higher up the income distribution. For the top 0.01%, the U.S. average (\$25.8 million) was over 3 times the Canadian figure (\$8.4 million).⁷

Where the money comes from

From 1946 to 2000, those with the highest incomes saw their main income sources change (Saez and Veall 2003). In the 1940s they relied on a combination of wages, capital (dividends, interest and capital gains) and entrepreneurial sources (self-employed professionals and sole proprietorship owners). For those with the very highest incomes (top 0.1% and 0.01%), however, wages were relatively less important. By the 1990s, wages and salaries had become increasingly more important for all high-income recipients, while capital and entrepreneurial sources had become less important.

This paper focuses on three main income sources: employment (wages and self-employment), investments (dividends and interest), and capital gains.⁸ From 1982 to 2004, non-high-income (bottom 95%) individuals and families increased the proportion of income from employment from 90% to 95%. Investment income became less important, while capital gains remained unimportant.

Meanwhile, the highest-income individuals increased their proportion from employment at a considerably faster rate between 1982 and 2004—the top 1% from 59% to 74%, the top 0.01% from 36% to 62%. These two groups also saw an increase in capital gains income—the top 1% from 8% to 15%, the top 0.01% from 21% to 24%. Correspondingly, both groups experienced decreases in the proportion of investment income—the top 1% from 33% to only 10%, the top 0.01% from 43% to just 14%. Similar patterns occurred for families.

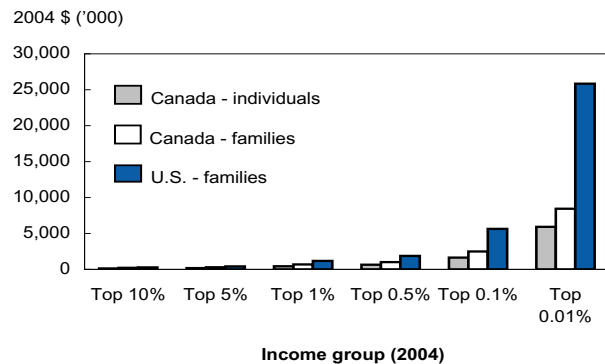
Characteristics of high-income Canadians

The high-income group is quite different from the overall population in socio-demographic terms (Table 6). Of the 1.2 million Canadians who make up the top 5% of income recipients, three-quarters were men, even though men were a minority of individual income recipients in general (48%). This relationship becomes even more skewed the higher one proceeds up the income distribution. About one in nine individuals in the top 0.01% of income recipients were women in 2004. However, women have made substantial gains in their representation in the top 5% of taxfilers, gaining a further 10% share since 1982. These gains did not extend into the top 0.1%, where women’s share was stable.

The prevalence of high income peaks in the pre-retirement years. In 2004, individuals aged 45 to 64 represented less than a third of all income recipients (33%), but were the majority in the top 5% (54%). In the top 0.01%, those aged 45 to 64 accounted for 3 in 5 high-income individuals. Individuals aged 25 to 44 years were the second largest group of high-income recipients in the top 5%, but seniors (23%) were second in the top 0.01%.

Almost half of the top 5% of individuals (46%) lived in Ontario, followed distantly by Quebec (18%), Alberta (15%) and British Columbia (13%). However, among the top 0.01% of individuals, Alberta was second at 23%, while Quebec was fourth at just 10%.

Chart B Average income disparity even more pronounced



Note: Purchasing power parity adjusted Canadian dollars. Sources: Statistics Canada, T1 Family File; U.S.: Piketty and Saez (2003), updated tables and figures

Table 6 Individual taxfilers by income group

	Total	Bottom 95%	Top			
			5%	1%	0.1%	0.01%
Total	23,438	22,253	1,186	237	24	2
			'000			
			%			
Men	48.3	46.8	75.7	78.8	84.3	88.7
Women	51.7	53.2	24.3	21.2	15.7	11.3
Age						
0 to 24	13.0	13.7	0.3	0.3	F	F
25 to 44	36.9	37.0	35.2	28.8	22.0	x
45 to 64	32.9	31.7	54.1	56.3	59.7	59.1
65 and over	17.3	17.6	10.4	14.6	18.1	22.6
Newfoundland and Labrador	1.7	1.7	0.8	0.7	F	F
Prince Edward Island	0.4	0.5	0.2	0.2	F	F
Nova Scotia	3.0	3.0	1.8	1.7	1.2	F
New Brunswick	2.4	2.5	1.2	1.0	F	F
Quebec	24.6	25.0	17.6	17.9	13.2	10.1
Ontario	37.9	37.5	46.2	47.1	50.4	51.1
Manitoba	3.6	3.7	2.3	2.1	1.7	F
Saskatchewan	3.0	3.1	2.0	1.8	1.2	F
Alberta	10.0	9.8	14.7	15.1	18.7	23.3
British Columbia	13.0	13.0	12.6	12.4	12.5	11.5
Single	43.4	44.5	21.8	19.4	17.1	17.3
Married	56.6	55.5	78.2	80.6	82.9	82.7

Source: Statistics Canada, T1 Family File, 2004

Over three-quarters (78%) of all high-income individuals were married, as were 83% of the top 0.01%.

Overall, from 1992 to 2004, each demographic group experienced real increases in income.⁹ Some groups, such as individuals aged 45 to 64 and those living in Alberta, experienced much larger changes, with both seeing increases of approximately 60%. Overall, though, many groups experienced very little change—younger individuals (under 45), older individuals (65 and older), and those living in the smaller provinces.

Individual taxfilers, for the most part, saw little overall change from 1992 to 2004. Aggregate total income, for instance, increased by 10% for taxfilers aged 25 to 44.

However, the bottom 95% experienced no change whereas those in the top 5% saw an increase of approximately 30%. The increase was even greater in the top 0.01%, where income more than doubled.

Overall, individuals in the highest income ranges experienced the largest changes in aggregate total income from 1992 to 2004. High-income individuals in Alberta more than doubled their aggregate income ratio, while the province's top 0.01% more than quintupled theirs. Other groups in the top 0.01% that experienced large increases included men and women, individuals in Quebec and Ontario, middle-aged individuals (45 to 64), and both single and married persons. No group in the bottom 95% had a ratio larger than 1.6.

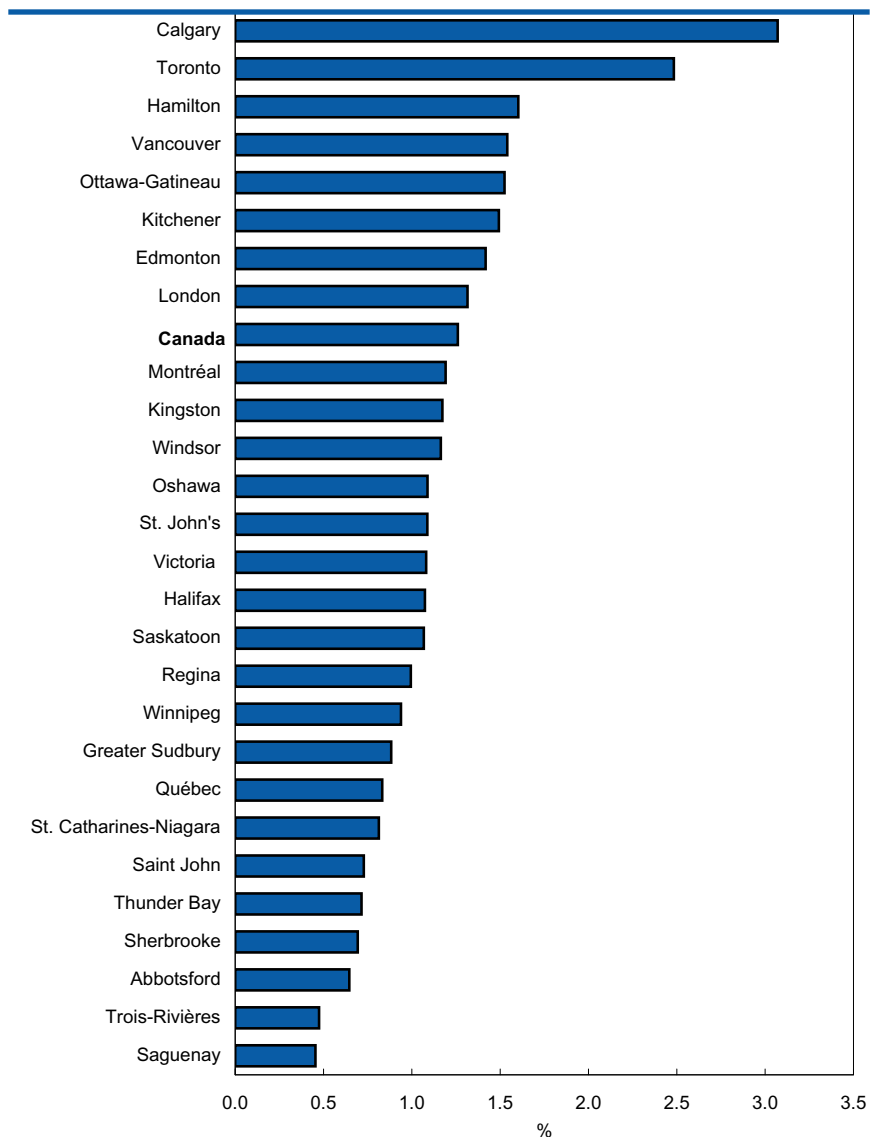
In 2004, 1.3% of families had incomes over \$250,000 (Chart C). Of 27 urban centres examined, fully 17 had at least 1.0% of families with such incomes, with Calgary (3.1%) and Toronto (2.5%) standing out. Almost one-third (30.6%) of all families with incomes over \$250,000 lived in Toronto, followed more distantly by Montréal (11.4%), Vancouver (8.2%), and Calgary (8.0%) (Chart D). This distribution and the province of these urban centres mirrored the provincial distribution of individuals.

Wealth of high-income Canadians

Economic well-being is not solely a function of income, but also of wealth. In fact, “consumption inequality is probably the better measure of inequality in well-being or economic resources” (Crossley and Pendakur 2006, 147). Given that both income and wealth are used to fund current consumption and together constitute economic well-being, to what degree are high-income Canadians also high-wealth Canadians?

The T1FF contains no information on assets or debts, only the taxfiler's annual income, deductions and tax credits. Statistics Canada's periodic Survey of Financial Security (SFS) measures income and net worth, and was most recently conducted in 2005 with a sample of 9,000 dwellings. The previous study was conducted for 1999 and had 23,000 dwellings. Given the sparseness of high-income families, the 1999 SFS was used to ensure adequate sample size. The sampling techniques used also help ensure a good response from high-income neighbourhoods.¹⁰

Chart C Eight of 27 census metropolitan areas had a higher than average proportion of families with income over \$250,000



Note: Excludes capital gains.
Source: Statistics Canada, T1 Family File, 2004

Average income and net worth

In 1999, the average income for the bottom 80% of families was \$38,000 while their average net worth was about five times higher at \$192,000. The top 1% had aver-

age income of \$366,000 and average net worth of \$1.9 million, also roughly five times income. It follows that both the average income and average wealth of the top 1% are about 10 times that of the bot-

tom 80%. The implication is that some lower-income families have relatively high net worth (for example the elderly) while some high-income families have relatively low net worth (the young).

Not surprisingly, the importance of housing and vehicular assets declines as income increases. While houses and cars accounted for 31% of average net worth for the 80% of families with the lowest incomes, they accounted for only 16% for the top 1%. These top income families had 61% of their net worth in financial assets compared with 37% for the bottom 80%. Pension assets are far more evenly distributed—21% of net worth for the top 1% of families, 32% for the bottom 80%.

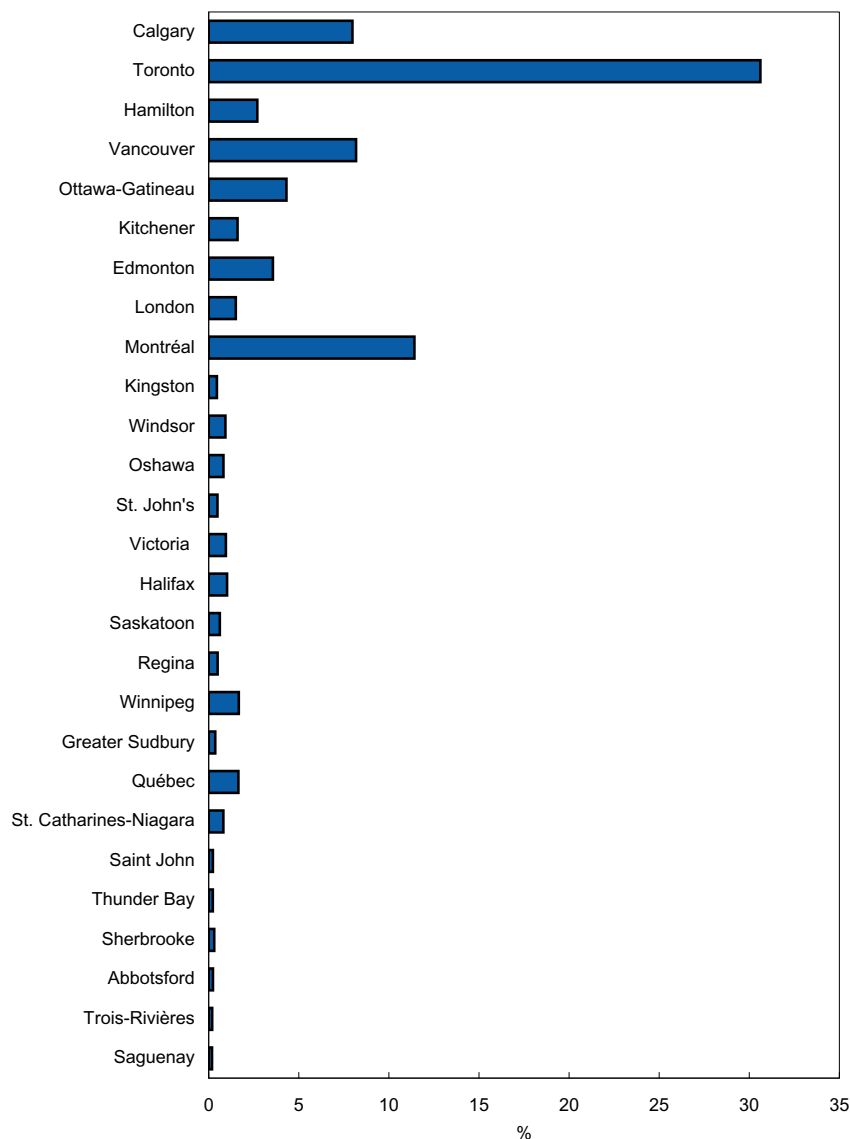
Concentration of income and wealth

While the distribution of annual income is highly concentrated, wealth-holding is even more so (Davies 1991).

Concentration of income and wealth (more precisely, net worth) can be examined several ways. One is to look at either income or wealth on its own. Another is to look at the joint distribution. In 1999, the 5% of families with the highest net worth held 35% of all net worth but received only 12% of income. The 5% of families with the highest incomes received 18% of total income and held 19% of net worth. Therefore, the concentration of wealth in the top 20th of the wealth distribution was almost twice the concentration of income in the top 20th of the income distribution.

The top 1% of families show similar but somewhat more pronounced patterns, with a share of wealth 2.4 times that of income. In fact, some of the very highest

Chart D Toronto is home for almost one-third of families with income over \$250,000



Note: Census metropolitan areas ordered by incidence of high-income families; income excludes capital gains.
 Source: Statistics Canada, T1 Family File, 2004

income families had lower net worth than many families further down in the income distribution. At first glance, it may seem odd that the share of wealth of high-

income families so closely follows their share of income. However, wealth accumulation takes time and as such, life-cycle effects and age must be taken into consideration.

Not surprisingly, the elderly had a higher median net worth at all levels of income. Their overall median was \$214,000, 2.5 times larger than the \$84,000 for the non-elderly. Even among lower-income elderly, median net worth was higher than for younger families, who had not had the time to accumulate assets. The gap decreases as the high income of younger families starts to provide wealth accumulation, narrowing the gap to about 2:1 in the top few vintiles. The elderly shares peak in the lower half of the distribution and then drop steadily through the upper half because incomes of the elderly decline as people retire from the labour market.

The very high-income elderly (top 1%) derive a smaller proportion of their net worth from principal residence and the actuarial value of pensions than do their younger counterparts. The very high-income elderly also have a significantly larger share of net worth in financial assets—68% compared with 35% for elderly families in the top 5% of income recipients.

The question of taxes

The ratio of taxes to total income rises with income. In 2004, the bottom 95% of the taxfiler population received 75% of income and paid 64% of taxes, while the top 5% received 25% of income and paid 36% of taxes.¹¹

Tax rates are an important indicator of the fairness of a tax system. The pattern of tax rates in relation to income is an indicator of vertical equity of the system, where a basic principle is taxation according to ability to pay. This is generally interpreted to mean that those with higher incomes should face higher rates. However, fairness also

means that people in similar circumstances should be taxed in a similar way (horizontal equity). The tax system is also asked to meet other, often competing goals, such as simplicity, efficiency, revenue generation, and the granting of various concessions and incentives referred to as tax expenditures. The political process determines the appropriate balance.

A number of different tax rates can be examined. Nominal (statutory) tax rates are provided in legislation and are higher for higher incomes. The marginal tax rate applies to the last dollar of income. These rates are sensitive to the kind of income and the unit of analysis—individual or family. The effective tax rate (ETR) is simply the ratio of taxes paid to total income.

The more common approach to calculating the ETR is to divide the taxes paid by all filers in a group by their corresponding income. This method shows that 20.2% of all income goes for taxes. The second method is to calculate each filer's ETR and then average these individual rates. This results in lower effective tax rates, 12.2% overall.¹² In the first case, the effective tax rate is weighted by income, giving more significance to the tax rates paid by high-income Canadians. In the second case, each individual's rate has the same importance. This can be seen by the convergence of the two rates as income increases and group size declines (Chart E). The latter method is used in the rest of this analysis. Either way, however, shows a generally progressive structure of effective tax rates in Canada. From 11.4%, the rate climbs to 27.1%, 30.5%, 32.3%, before dipping marginally to 31.7% for the highest income group.

The ETRs may still seem low, averaging well under 20% overall and about 28% for the top 5%, especially when compared with the top statutory tax rate of 46% in Ontario in 1995. It is important, however, to keep in mind the difference between average and statutory marginal tax rates. ETRs are always lower because the income in the denominator has been taxed at a mixture of statutory rates, including an initial bracket, determined largely by personal tax credits, where the rate is essentially zero.

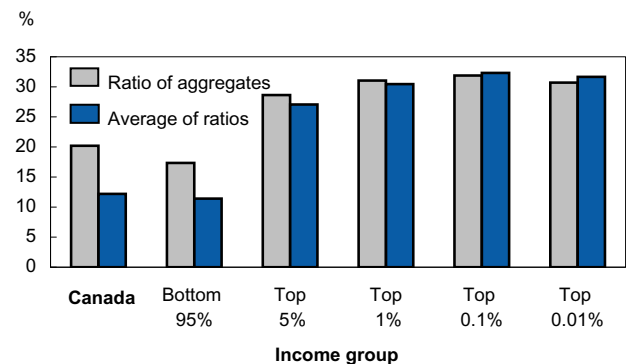
The distinction between marginal and average rates can be illustrated using the Social Policy Simulation Database and Model (Bordt et al. 1990). The tax and transfer system rules, rates and levels from each of the years 1984 to 2004 were applied to fixed populations of individual taxpayers and the results split into two income groups: the bottom 95% and the top 5%.¹³

For the bottom 95%, ETRs generally increased through the 1980s, remained roughly constant at just over 15% throughout the 1990s, and declined at the turn of the millennium, remaining steady through 2004. More fluctuation was evident in the high-income population because of high-income surtaxes and numerous changes to top federal tax brackets. They had a more pronounced rise in the mid-to-late 1980s, declining more sharply in 1988 with the introduction of tax reform, which reduced 10 brackets to 3 and converted many deductions to tax credits.

Marginal tax rates, in contrast, were estimated by simulating the incremental tax liability each individual would have incurred if their earnings had been increased by a small amount. The resulting marginal tax rates were then averaged across all filers within each income group. They are consistently at least 15 percentage points higher than the ETRs for the bottom 95%.¹⁴ For high-income Canadians, the gap is naturally smaller at about 5% to 10%, as a greater proportion of income is subject to the top marginal rate. This gap has been shrinking as a result of the major tax reforms of 1998 and 2000/2001.

While the progressive structure of statutory income tax rates causes simulated marginal tax rates to rise with income, tax rates also vary significantly within a given income range. The group with the largest range is the top 0.01% where 90% of filers experience an ETR of between 9% and 46%. The filers in the 19th vingtile have the smallest spread, from 14% to 32%. This nar-

Chart E Effective individual income tax rates vary by method of calculation



Source: Statistics Canada, T1 Family File, 2004

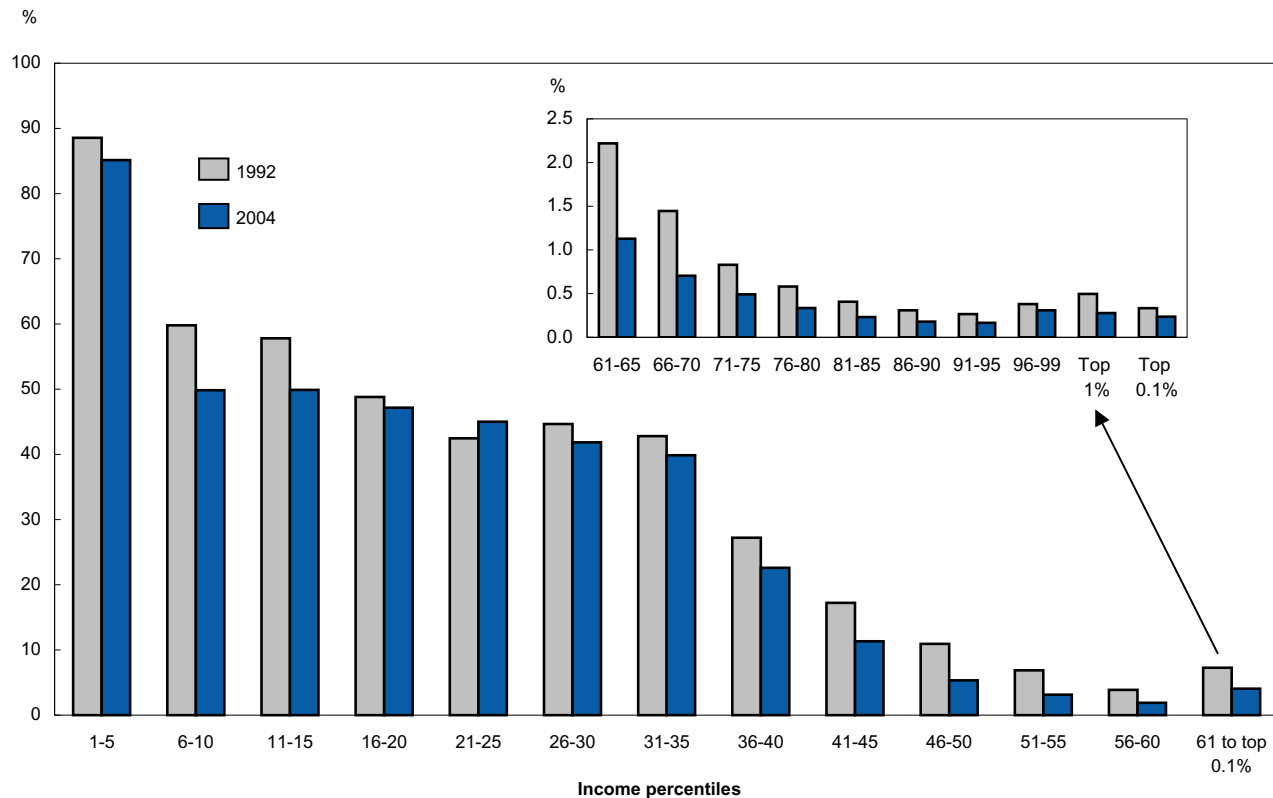
rower range of ETRs indicates a more homogeneous use of deductions and credits than any other income group among the top 60% of filers. Fully 5% of individuals with incomes in excess of \$3.5 million paid effective tax rates of less than 10% after deductions and credits.

Over 85% of the 5% of Canadians with the lowest incomes in 2004 paid no income or payroll taxes (Chart F). While some individuals may have no income taxes payable, Employment Insurance and Canada or Quebec Pension Plan contributions may still be payable. The proportion paying no taxes drops sharply after the first vingtile but remains over 40% until the 35th percentile. It then drops quickly to below 1% approximately two-thirds of the way up the income distribution.

In the upper tail of the income distribution, a small increase in the proportion of filers paying no tax can be seen beginning with the top 5%. The proportion of filers paying no tax remains below 0.5%, and in the very highest income group, about 100 filers paid no tax. Tax deductions such as business losses and gifts to the Crown are responsible for a number of these situations. The proportion of filers reporting zero taxes declined at almost all income levels between 1992 and 2004.

While a very few high-income Canadians reduce their taxes to zero, far more have relatively high ETRs (Chart G). In 2004, 3% of individual taxfilers experienced ETRs in excess of 30%. Only 1% of non-high-income filers had ETRs greater than 30%, compared with 37% of those with high income. For the higher-income group, this proportion rises to between 58%

Chart F The proportion of taxfilers paying zero taxes declined at almost all income levels



Source: Statistics Canada, T1 Family File

and 65%. While the overall proportion of high-income Canadians (the top 5%) with ETRs over 40% is 3%, almost one-third of those in the top 0.01% have ETRs over 40%. These filers expose enough income to the top marginal rate to essentially bring their average rate close to the marginal rate.

ETRs are determined by the interplay of the distribution of income by source and the structure of the tax and transfer system. Both of these changed between 1992 and 2004. The income share of the top 5% increased from 20% to 24% while tax rates fell, especially with the reforms of 2000/2001.¹⁵ The 2004 ETRs are slightly lower than 1992 for all the income groups shown. However, for the top 0.01% of individuals, the mean tax rate dropped by a quarter, from 42% to 31% (Chart H).

For the top 0.01%, the mean ETR in 2004 was 74% of the 1992 ETR. Overall, high-income Canadians increased their income share by 21% from 1992 to 2004. Meanwhile the tax rate dropped from 31% to 29% (a 6% reduction), while the share of total taxes paid by high-income Canadians went from 31% to 36% (an 18% increase). The differences were larger for the highest income group with a 26% drop in the tax rate and a 57% increase in the share of taxes paid.

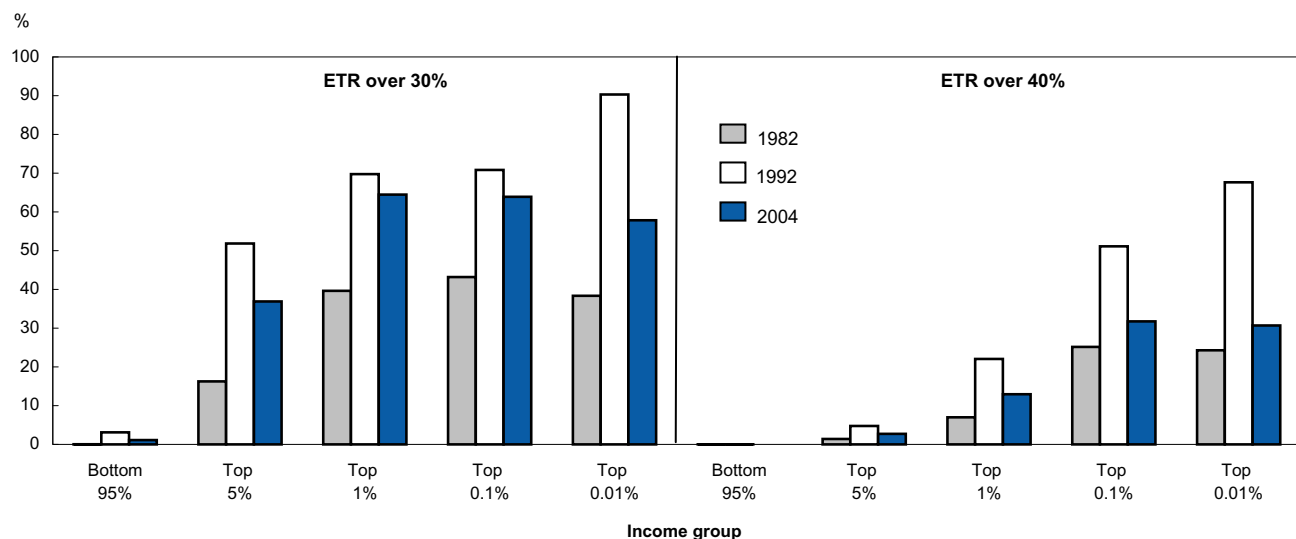
Conclusion

Some 5% of individual taxfilers had incomes of \$89,000 or more in 2004. Regardless of the threshold used, incomes in the upper tail of the distribution as well as the share of total income increased substantially from 1992 to 2004. In contrast, individuals in the bottom 50% to 80% generally saw little improvement in constant dollar income.

Compared with the U.S., Canada had significantly fewer high-income recipients in 2004, and their incomes were considerably less. High-income Canadians increasingly receive more of their income from employment than from other sources.¹⁶ Investment income has been a decreasing proportion, even among those with the highest incomes.

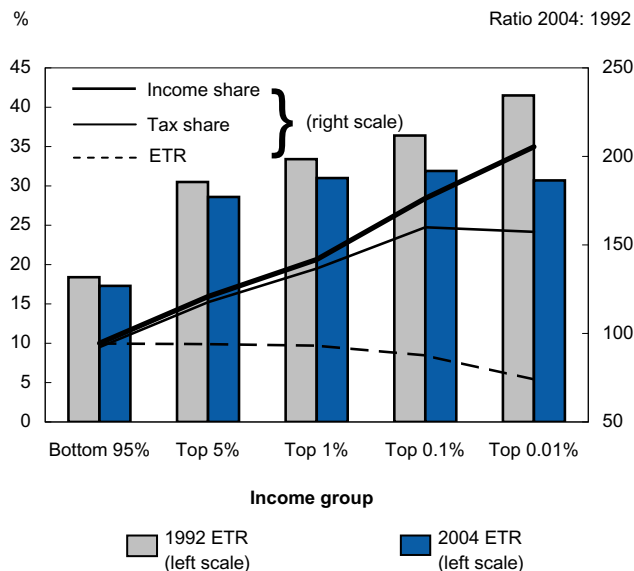
In line with their increasing share of total income, high-income Canadians have been paying an increasing share of total personal income taxes. As well, effective income tax rates are clearly higher in the higher-income groups, reflecting the progressive nature of the income tax system. But there is considerable heterogeneity in effective tax rates at the individual level. Effective rates vary widely across the income distribution as well as among individuals within the highest income group. Many in the top 0.01% of the distribution face an

Chart G High-income taxfilers more likely to face higher effective tax rates



Source: Statistics Canada, T1 Family File

Chart H For the top 0.01% of taxfilers, the mean ETR dropped by a quarter



Source: Statistics Canada, T1 Family File

effective tax rate of over 45%, while some pay as little as 10%. Interestingly, the proportion of taxfilers who pay zero taxes decreased between 1992 and 2004.

Perspectives

Notes

- 1 Whatever statistics for families are presented they include families of size one (usually referred to as unattached individuals or persons not in families). The incomes of families have not been adjusted with any equivalence scale.
- 2 Each year the CRA publishes tax statistics for taxfilers, including level of income, sources of income, and taxes paid. The \$250,000 income level is not selected to conform to any particular governmental policy or regulation, but rather is chosen simply to represent a convenient measure of the highest level of income while protecting the confidentiality of individuals.
- 3 In contrast to the other nominal thresholds, this one is currently indexed to the CPI and refers to taxable income. In this it is more akin to an absolute low-income threshold, since virtually no low-income cut points fail to adjust at least for inflation.

4 These cut points are typically expressed in terms of percentiles, deciles, quintiles, quartiles, etc. An alternative relative threshold would be a level expressed as a multiple of a quantile, such as 10 times the median for a high-income threshold, similar to the more common half median used as a cut point for demarcating low income.

5 The T1 Family File provides information on individual taxfilers and families. For this study, each of these two groups is ordered from lowest to highest total income, and then divided into 10,000 equally sized quantiles, with corresponding dollar income thresholds for each. The total income associated with the change from one quantile to the next provides the dollar figure used to determine the value of any particular threshold. Except where noted, T1FF income figures include total capital gains and RRSP withdrawals.

6 There is an important caveat to this analysis of taxes paid. An unknown number of high-income individuals and families receive business income through a corporation, and may hold investments in corporations, trusts, or charitable foundations. These are used in sophisticated tax planning and are not considered in this analysis because of data limitations.

7 The U.S. data come from Piketty and Saez (2003), updated tables and figures.

8 This analysis of income sources following Saez and Veall (2003, 37) does not include other sources such as alimony, taxable social security benefits, or taxable Employment Insurance benefits. These are less important for high-income individuals. The total income variable in this paper does include them.

9 The change in aggregate income is represented by the ratio of 2004 income to 1992 income.

10 The SFS main sample consisted of approximately 21,000 dwellings. This area sample was a stratified, multi-stage sample selected from the Labour Force Survey sampling frame. The second portion of the sample, approximately 2,000 households, was drawn from geographic areas in which a large proportion of households had what was defined as high income. This sample was included to improve the quality of the estimates of net worth, as higher-income families tend to hold a disproportionate share of net worth. For purposes of this sample, the income cut-off was total family income of at least \$200,000 or investment income of at least \$50,000. The latter was used to take into account families that may not have high income from employment but who do have substantial assets that generate investment income.

11 The shares are calculated as the ratio of total income or taxes for each income group to total income or taxes for all Canadians. Total tax, federal plus provincial, includes repayment of social benefits and payroll taxes. Total income is reported on tax forms using *total* capital gains and dividend income plus the Child Tax

Credit and Sales Tax Credit. The Canada Revenue Agency publishes information on taxable capital gains and taxable dividend income. These have been adjusted to represent total income from these sources—that is, dividends are divided by 5/4 and capital gains by 3/4.

12 Some taxpayers report a negative income and some report taxes that exceed income. To control for the impact of such outliers and to preserve sample, tax rates were bounded between 0% and 100%.

13 The methodology employed shows the impact on tax rates of the changes to the tax system independent of business cycles and demographic change. The simulated average effective tax rates were roughly the same as those calculated using the T1FF data.

14 They are slightly lower than maximum combined federal plus provincial statutory rates in the tax system because they have been averaged across filers with different levels of income and deductions.

15 The level at which the highest federal tax rate starts to be paid increased to \$100,000 from \$60,000, and the lowest rate dropped from 17% to 16%. Provincial governments moved to their own rate schedules.

16 This agrees with the findings of Saez and Veall (2003).

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Spending patterns in Canada and the U.S.

Raj K. Chawla

In addition to sharing a border, Canada and the United States share many demographic and economic characteristics. For instance, both have aging populations, the median age in 2005 reaching 38.0 in Canada and 35.9 in the U.S. In that year, two-thirds of each country's working-age population was in the labour force, and unemployment was low at 6.8% in Canada and 5.1% in the U.S. Persons 65 and over accounted for 13.1% of the population in Canada compared with 12.3% in the U.S. And in both countries, the majority lived in conventional two-spouse households.

While the business cycle and economic integration by way of NAFTA have varied to some degree in Canada and the U.S., both countries have moved from a high-interest environment in the early 1980s to a low-interest one in the 2000s. At the same time, consumer spending rose as a percentage of economic activity (from 52.8% to 58.9% in Canada and from 61.4% to 70.0% in the U.S.), causing the personal savings rate to fall.¹

On average, income and spending change in predictable patterns as people age. Young people earn less and borrow to pay for houses and possessions. Through the middle years, work experience brings a rise in income, which along with increased family size spurs spending. Income tends to peak for workers in their 50s and spending declines as mortgages are paid off and the nest empties, leaving greater potential for savings. Retirement signals a reduction in income but also in spending as employment-related expenses disappear. While these general patterns hold in most advanced economies, they can vary from country to country and change over time. This article compares household spending in Canada and the U.S. between the early 1980s and 2003.²

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Households are grouped by age of the reference person in order to compare spending in peak income years and after retirement. All money figures are in 2003 Canadian dollars (see *Data sources and definitions*). Seven categories of expenditure are used: food, housing, clothing, transportation, health, recreation, and 'other.' Since the means are based on two cross-sectional sources, an increase over time for a given component implies that households spent more in 2003 than their counterparts spent in the early 1980s.

Little difference in the demographics of households in Canada and the U.S.

Between the early 1980s and 2003, Canadian households aged slightly more than their U.S. counterparts. In Canada, the median age of the reference person rose from 42.9 in 1982 to 47.9 in 2003, while in the U.S. it went from 43.5 to 46.9 between 1984 and 2003 (Table 1). In 2003, the proportions of households with a reference person 75 and over were fairly close—9.3% in Canada, 9.9% in the U.S. On the other hand, the proportion of young households (under 35) was higher in the U.S. by 4.3 percentage points.

The average Canadian household was a little larger than its American counterpart in the early 1980s, but by 2003 it was the same size—2.5 persons. In both countries, household size peaked in the 35-to-44 age group (3.2) and then dropped as the age of the reference person increased, reaching 1.5 for elderly households (75 and over).

The rate of homeownership was similar in both countries for households in the 15-to-54 age range, but the gap widened for older groups in favour of the U.S.—from 6 or 7 percentage points for those in the 55-to-64 group to 13 or 14 points for the 75-and-over group in 2003. The rate of homeownership has increased in both countries over the last 25 years, leaving the overall gap virtually unchanged. Nonetheless, downsizing with advancing age was evident in both countries as the rate of homeownership dipped after age 65.

Table 1 Demographics of households

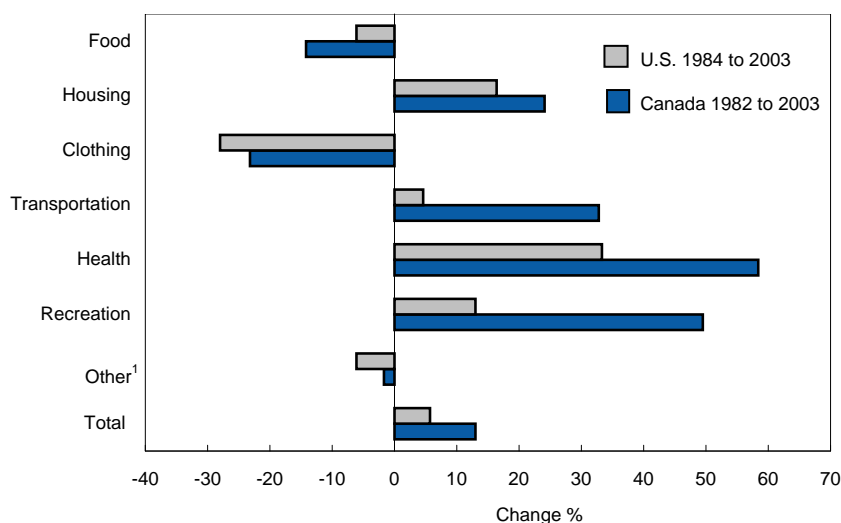
	Households				Average household size				Own home			
	Canada		United States		Canada		United States		Canada		United States	
	1982	2003	1984	2003	1982	2003	1984	2003	1982	2003	1984	2003
Total	8,410	12,033	90,223	115,356	2.8	2.5	2.6	2.5	60.7	65.8	62.0	67.0
	'000				Persons				%			
Reference person	%				Persons				%			
Under 25	6.5	3.5	9.8	7.3	2.0	2.1	1.8	1.8	12.1	16.4	12.0	15.0
25 to 34	25.5	16.6	22.2	17.1	2.8	2.6	2.8	2.9	46.7	49.0	48.0	48.0
35 to 44	20.4	22.8	19.0	21.2	3.7	3.2	3.4	3.2	71.0	68.5	69.0	69.0
45 to 54	15.8	22.2	14.4	20.1	3.2	2.8	3.1	2.6	75.8	72.4	77.0	76.0
55 to 64	14.3	15.5	14.8	14.4	2.4	2.2	2.5	2.1	72.4	75.9	80.0	82.0
65 to 74	11.2	10.1	11.9	10.0	1.8	1.8	1.9	1.9	68.3	75.7	77.0	83.0
75 and over	6.3	9.3	7.9	9.9	1.5	1.5	1.6	1.5	56.7	64.0	69.0	78.0
	Years											
Median age	42.9	47.9	43.5	46.9	...	...	...	...	...	...	...	...

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

Housing tops the expenditure list

In both the early 1980s and 2003, households in both countries allocated one-third of their spending dollar to housing and another one-fifth to transportation.³ The third principal component was food, which accounted for another 15 to 21 cents. These three components made up 71 cents of each spending dollar in the early 1980s compared with around 75 cents in 2003 (Table 2). In both periods, households spent 17 cents per dollar on clothing, recreation and entertainment, and health. Overall spending patterns did not change drastically—Canadian households spent only 9 cents of their consumer dollar differently in 2003 than in the 1980s, their U.S. counterparts just 5 cents. However, with Canadian households spending relatively more, patterns in the two countries had become more similar by 2003.

Chart A Consumer spending on health showed the greatest increase in both countries



¹ Personal care, reading materials, education, tobacco products and alcoholic beverages, gifts and contributions, and miscellaneous.
Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

Table 2 Consumer expenditure of households

	Total	Age of reference person						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
Canada								
1982	37,700	32,200	39,600	47,100	46,600	34,200	23,000	16,700
				CAN\$ 2003				
				%				
Housing	33.9	33.1	36.8	33.9	30.2	30.7	35.9	42.3
Transportation	16.2	17.6	15.3	15.1	17.2	18.7	16.6	11.7
Food	20.5	17.2	18.8	20.8	21.0	21.6	23.0	24.7
Clothing	8.2	8.5	7.8	8.8	9.1	7.7	6.6	6.1
Recreation	6.2	7.0	6.3	6.9	6.3	5.3	4.8	3.3
Health	2.6	2.0	2.3	2.5	2.8	3.0	2.8	3.1
Other ¹	12.5	14.4	12.7	12.0	13.4	13.0	10.4	8.8
2003	42,700	32,200	42,600	49,300	51,600	43,300	30,200	21,700
				CAN\$ 2003				
				%				
Housing	37.3	34.3	40.2	39.2	35.4	34.0	35.6	43.5
Transportation	19.0	17.8	18.4	18.0	19.7	21.6	19.4	13.6
Food	15.5	14.9	14.5	15.3	15.1	15.4	17.7	18.7
Clothing	5.6	6.0	5.6	5.7	6.0	5.6	4.9	3.8
Recreation	8.2	8.8	8.9	8.6	8.1	7.9	7.2	5.1
Health	3.6	2.3	2.6	3.0	3.5	4.3	5.5	6.8
Other ¹	10.9	16.0	9.8	10.2	12.2	11.1	9.7	8.5
United States								
1984	41,500	26,900	42,700	52,800	53,000	43,000	31,000	21,600
				CAN\$ 2003				
				%				
Housing	34.5	29.8	36.0	35.6	32.4	33.5	33.9	39.7
Transportation	22.2	26.4	23.0	20.8	24.0	22.4	20.7	14.0
Food	17.0	16.6	15.7	17.5	17.5	17.3	17.8	17.2
Clothing	6.8	7.5	6.9	7.7	6.6	6.7	6.1	4.3
Recreation	5.4	5.2	6.0	6.1	5.1	5.3	4.1	3.7
Health	5.4	3.0	3.7	4.0	5.0	6.2	10.3	14.9
Other ¹	8.7	11.6	8.6	8.5	9.4	8.7	7.0	6.3
2003	43,900	25,600	44,200	50,500	52,600	46,900	37,200	27,600
				CAN\$ 2003				
				%				
Housing	37.9	34.4	40.4	39.5	36.8	36.3	35.9	39.0
Transportation	22.0	22.6	22.7	21.8	23.0	23.0	20.1	16.3
Food	15.1	16.5	14.9	15.4	15.0	14.6	15.2	14.4
Clothing	4.6	5.4	5.2	5.1	4.6	4.1	4.0	2.7
Recreation	5.8	4.6	5.5	6.2	5.7	6.4	6.7	4.1
Health	6.8	2.6	4.1	5.2	5.8	8.1	12.1	17.3
Other ¹	7.7	13.9	7.1	6.7	9.0	7.5	6.1	6.1

1 Personal care, reading materials, education, tobacco products and alcoholic beverages, gifts and contributions, and miscellaneous.
Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

Households in both Canada and the U.S. spent much more on housing, transportation, health, and recreation in 2003 than in the early 1980s, and less on food and clothing (Chart A). (The relatively larger growth in expenditures on transportation and recreation in Canada was partly due to the addition in 2003 of sub-categories such as leasing and rental of vehicles under

transportation, and packaged tours under recreation.) In contrast, inter-country differences in the rates of decline in expenditures on food and clothing were quite small.

Mean consumer expenditure drops as households move from their peak income years (45 to 54) through their elder years (75 and older) (Chart B). In Canada,

Data sources and definitions

Data for Canada were taken from the 1982 **Family Expenditure Survey** and the 2003 **Survey of Household Spending**. Even though many improvements in survey content, collection and processing have been introduced over the years, the core classification of total expenditure by components has remained unchanged. To reduce response burden, the 2003 survey included 425 questions compared with 625 in 1982. Both surveys used personal interviews. For more details, see Statistics Canada (1984, 2000, and 2005).

Data for the United States are from the 1984 and 2003 **Consumer Expenditure Survey** (CES), conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. Data are collected in two parts: a diary, or recordkeeping survey completed by participating respondents over two consecutive weeks; and an interview survey, in which expenditures are obtained in five interviews conducted at three-month intervals (BLS, 2005, p.4). The diary captures expenses on small and frequently purchased items, whereas the interview survey collects details that consumers can reasonably recall for a period of three months or longer.

Total expenditure

Despite differences in collection, the basic framework and broad components of total expenditure in the two countries are fairly comparable. In Canada, it represents the sum of current consumer expenditure, contributions for security, other cash gifts and contributions, and personal income tax. In the U.S., it is the sum of the first three components only. The exclusion of income tax in the U.S. is due to the relatively weaker and nationally non-representative data on pre-tax income and income tax collected by the CES. Given such data limitations, any link between households' incomes and expenditures could not be compared; the focus is strictly on consumer expenditure as used by CES in the U.S.

Expenditures are transaction costs for goods and services consumed during a given reference year, including customs and excise taxes; federal, state (provincial) and local sales taxes; and other duties. Expenditures are out-of-pocket expenses as well as those for which payments were still to be made (for example, items purchased on credit or buy-now-pay-later plans). All expenditures are net of trade-in amounts. Items purchased for business purposes were excluded.

Current consumer expenditure comprises expenditures for food, shelter, household operation, furnishings and equipment, clothing, transportation, health, personal care, recreation, reading and printed materials, education, tobacco products and alcoholic beverages, and miscellaneous. For details, see Statistics Canada (1984, 2005) and BLS (2005). For this article, these 13 broad components have been collapsed into 7: housing, transportation, food, clothing, recreation, health, and the rest, primarily because the first 6 account for around 90% of total consumer expenditure (also referred to as total consumer spending). Since expenditures on housing, transportation, and health have risen over time in both Canada and the U.S., changes in these components are further studied in terms of their sub-components.

Housing expenditures include mortgage payments on an owner-occupied home, property tax, rent, maintenance, repairs, insurance, other property-related expenses, utilities (fuel, water, and electricity), expenditures on a vacation home, hotel or motel accommodation, household operation, furnishings, and equipment. In the 1982 Family Expenditure Survey, mortgage interest was included under shelter costs, while the principal was included under net changes in assets and debts.

Transportation costs cover private and public transportation. The former includes net outlay for vehicle purchases, rental, leases, licences and other charges, operation of owned or leased vehicles, and vehicle insurance.

Health expenditure includes all out-of-pocket costs for medical supplies and services and drugs, and premiums for health insurance.

A **household** consists of a person living alone or a group of persons occupying one dwelling unit (also treated as a consumer unit). The number of households, therefore, equals the number of occupied dwellings.

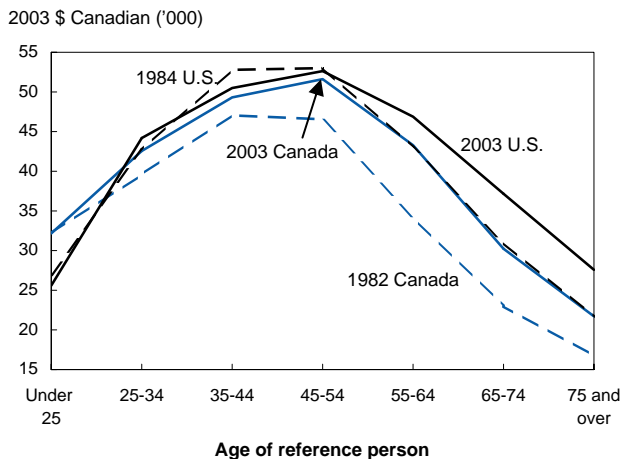
Households are classified by **age of head/reference person** to highlight how spending patterns change with age. Despite some differences, head (the concept used in 1982 in Canada) and reference person are used here synonymously. The husband was treated as the head in families consisting of couples with or without children, as was the parent in lone-parent families, and normally the eldest in all other families. On the other hand, the reference person was chosen by the household member being interviewed as the person mainly responsible for the financial maintenance of the household.

For both Canada and the U.S., data were first converted to 2003 dollars in their respective currencies. While the prices of all goods and services may not have risen at the same pace as the all-items CPI, the use of one conversion factor simplifies the analysis as it keeps the initial ranking of expenditure by components intact (Snider 2005). Then, to facilitate inter-country comparison of mean spending, all U.S. money data were converted into Canadian dollars using the GDP purchasing power parities (PPP) for 1984 and 2003 (see the OECD Web site at www.oecd.org/std/ppp). PPPs eliminate differences in price levels between countries.

A shift in consumer spending by component is quantified by an **index of differentiation**: $(\sum |P_{C,i} - P_{U,i}|)/2$, where $P_{C,i}$ and $P_{U,i}$ represent cents spent on component i in Canada and the U.S., and the summation is taken over all components of spending. This index shows the difference in two percentage distributions of spending, or put another way, the percentage points required to make the two distributions similar. This index can also be used to quantify a shift over time.

Average expenditure by item is obtained by dividing the aggregate amount for that item by total number of households rather than the number reporting that item. Per capita expenditure is the average expenditure divided by the average household size.

Chart B Consumer expenditure peaks in middle age



Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

it fell by 64% in 1982 and 58% in 2003. For households in the U.S., on the other hand, the corresponding drops were 59% in 1984 and 48% in 2003. While the inter-country gap in mean spending narrowed over time—more for households in their peak income years than for the elderly—the spending of elderly households increased more in the U.S. than in Canada.

In both the early 1980s and 2003, the elderly used about 40 cents of their spending dollar for housing. The rest was spent somewhat differently in the two countries—Canadians more on food and clothing, their U.S. counterparts more on transportation and health. Although spending on health increased among the elderly in both countries (from 3 to 7 cents in Canada and from 15 to 17 cents in the U.S.), those in Canada benefited from universal health care as well as provincially subsidized drug plans. Inter-country differences in elderly spending patterns remained almost unchanged—13.2 percentage points in 2003 compared with 14.5 points in the early 1980s, with differences largely attributable to U.S. spending on transportation, health, and food.

Like elderly households, those in their peak income years spent around one-third of every dollar on housing. The remainder was spent differently in the two

countries, but the differences narrowed over time (from an index of differentiation of 11.2 percentage points in the early 1980s to 7.2 points by 2003), largely because Canadian households increased their spending on housing, transportation, and health.

Expenditure on housing

In 2003, 67% of American and 66% of Canadian households owned a home, with 30 to 43 cents of their spending dollar going toward shelter costs, household operation, and furnishings and equipment. Housing expenditures reached their peak in the 35-to-44 age group, whereas pre-tax income and overall consumer expenditure peaked in the 45-to-54 group. Between the early 1980s and 2003, mean spending on housing rose from \$12,800 to \$15,900 for Canadians and from \$14,300 to \$16,700 for Americans (Table 3).

In both countries, shelter alone accounted for 70% to 72% of total housing costs; the rest was attributed to household operation, furnishings and equipment. Regular mortgage payments were the major component for households in the 25-to-54 group. For elderly households, on the other hand, property taxes and maintenance and repairs accounted for most of the spending on owned quarters. The elderly, most of whom live in mortgage-free homes, spent about half the amount of those in their peak income years.

Households with a reference person under 25, who were mostly renters in both countries, spent the largest proportion on rent—45 cents of their housing dollar in 2003 in Canada and 51 cents in the U.S. Since homeownership rises with age until main income earners reach their mid-60s, rent expenditures fall in inverse proportion. The proportion spent on rent rises in later years as some of the elderly move to rental accommodation. This appears to be more prevalent in Canada, while more elderly Americans continue to live in owned homes.

Canadians spend more on public transportation

Like housing, the rate of vehicle ownership was higher in the U.S. than in Canada—88% versus 78% in 2003. While the overall gap widened from the early 1980s, it narrowed for the elderly as their ownership rate rose more in Canada (Table 4). The rate varied by age, attaining its highest value for those in the 45-to-54 age group in the U.S. (92%), but for those in the 55-to-64 group in Canada (83%) in 2003. Irrespective of age,

Table 3 Spending on housing

	Total	Age of reference person							
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over	
Canada		CAN\$ 2003							
1982	12,800	10,700	14,600	15,900	14,100	10,500	8,300	7,100	
				%					
Shelter	68.6	67.5	68.2	68.6	67.6	68.2	71.1	74.6	
Owned	32.3	9.8	32.4	39.6	34.7	30.1	26.6	20.7	
Mortgage	15.9	6.0	21.3	22.9	14.3	6.9	2.6	0.7	
Property tax	7.8	1.1	5.0	7.9	9.9	11.8	11.3	10.5	
Maintenance	8.6	2.7	6.2	8.8	10.5	11.4	12.8	9.6	
Rented	18.4	48.0	22.8	11.9	11.2	13.7	20.0	32.2	
Other accommodation	3.9	2.1	2.6	3.8	5.9	5.7	4.3	2.9	
Utilities	13.9	7.6	10.4	13.3	15.8	18.7	20.1	18.8	
Household operation	17.1	15.8	17.4	17.5	16.6	17.4	16.7	16.1	
Furnishings/equipment	14.3	16.6	14.4	13.9	15.8	14.4	12.3	9.3	
2003		15,900	11,000	17,100	19,300	18,300	14,700	10,800	9,400
				%					
Shelter	71.4	70.3	71.2	71.4	71.6	70.4	71.2	74.4	
Owned	39.7	15.1	37.9	44.5	43.4	39.0	33.0	25.7	
Mortgage	22.0	9.4	25.5	28.5	24.8	16.6	7.1	2.6	
Property tax	8.3	2.3	5.1	7.3	8.4	11.0	14.0	11.9	
Maintenance	9.4	3.4	7.3	8.7	10.2	11.4	11.9	11.2	
Rented	15.4	45.1	22.1	12.5	11.1	10.9	15.2	27.7	
Other accommodation	4.1	2.0	2.5	3.5	5.0	5.9	5.3	3.4	
Utilities	12.1	8.0	8.7	10.9	12.0	14.6	17.7	17.5	
Household operation	17.5	17.9	16.9	18.1	17.0	17.7	18.1	17.7	
Furnishings/equipment	11.1	11.8	11.9	10.5	11.5	11.9	10.8	8.0	
United States		CAN\$ 2003							
1984	14,300	8,000	15,400	18,800	17,200	14,400	10,500	8,600	
				%					
Shelter	70.3	72.1	71.5	71.1	68.6	67.6	70.3	72.1	
Owned	30.9	12.3	31.4	36.2	33.6	30.4	25.7	23.4	
Mortgage	18.7	9.6	24.2	26.6	20.3	11.4	5.0	2.8	
Property tax	6.3	1.0	3.4	5.0	7.0	10.7	10.5	9.8	
Maintenance	5.8	1.7	3.7	4.5	6.3	8.4	10.1	10.8	
Rented	16.0	43.3	22.5	13.4	9.3	9.4	11.4	19.5	
Other accommodation	5.3	5.1	3.2	5.3	6.6	6.6	7.8	3.6	
Utilities	18.0	11.3	14.3	16.2	19.2	21.2	25.4	25.6	
Household operation	15.8	14.6	16.0	14.7	15.6	15.7	18.1	19.3	
Furnishings/equipment	13.9	13.3	12.5	14.1	15.7	16.7	11.6	8.6	
2003		16,700	8,800	17,800	20,000	19,400	17,000	13,300	10,800
				%					
Shelter	72.5	74.5	72.9	72.8	73.1	70.6	71.7	72.7	
Owned	39.2	10.8	33.6	43.1	44.1	42.1	40.0	31.4	
Mortgage	22.0	6.3	23.4	28.2	26.2	20.0	12.5	4.0	
Property tax	10.0	3.2	6.3	9.2	10.4	12.9	13.7	15.3	
Maintenance	7.2	1.2	3.8	5.7	7.6	9.2	13.8	12.1	
Rented	16.2	50.6	26.6	14.4	10.6	8.6	9.7	18.7	
Other accommodation	3.3	3.0	1.7	2.6	4.4	4.5	3.9	3.4	
Utilities	13.8	10.0	11.0	12.7	13.9	15.4	18.1	19.3	
Household operation	16.3	15.1	16.2	16.4	15.4	16.1	17.3	19.7	
Furnishings/equipment	11.1	10.4	10.9	10.8	11.5	13.4	11.0	7.6	

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

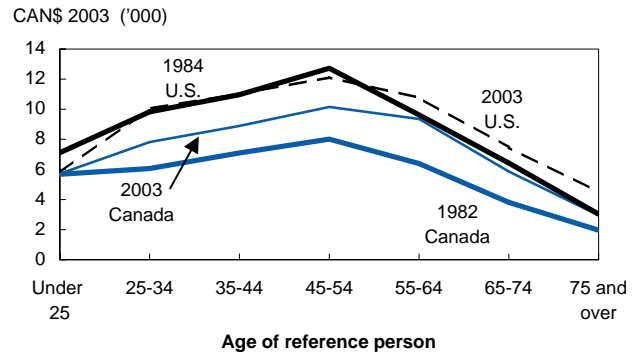
households in Canada spent less on transportation (Chart C). The elderly in both countries sharply increased their spending on private transportation from the early 1980s to 2003, more than offsetting declines in public transportation expenditures.

Canadians spent more than Americans on public transportation and its use became more extensive in retirement (when fewer households owned a vehicle). In their peak income years, Canadian households spent 8 cents of each transportation dollar on public transportation in 2003 while the elderly spent 11 cents; in the U.S., both spent around 5 cents.

Spending on health has risen in both Canada and the U.S.

Between the early 1980s and 2003, household spending on health increased from \$1,000 to \$1,500 in Canada and from \$2,200 to \$3,000 in the U.S. (Table 5). The gap in out-of-pocket spending on health narrowed slightly but remained large, reflecting differences in the health care systems of each country. Prescription drug expenditures grew by 112% in Canada compared with 62% in the U.S. Nevertheless, Canadian households aged 25 and over continued to

Chart C Canadians generally spend less on transportation



Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

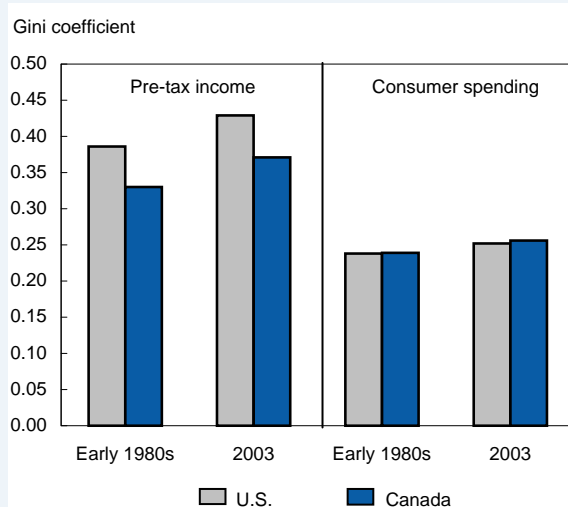
pay less than Americans. Over the same period, health insurance premiums increased from one-third to one-half of health expenditures for an American household.

Income and spending inequality

In both Canada and the U.S., consumer spending is more equally distributed than pre-tax income, largely because the former is less sensitive to transitory business and economic conditions. Lower spending inequality may also be attributed to basic thresholds households need to maintain for housing, transportation, food, clothing, or health (depending on the number and age of members). Pre-tax income remained more unequally distributed in the U.S. in 2003, whereas the inequality in consumer spending was fairly stable.⁴ Using the Gini coefficient as a measure of inequality, spending inequality was about 40% less than income inequality in Canada compared with 46% in the U.S.

Even though pre-tax income inequality rose by about 12% in both countries between the early 1980s and 2003, spending inequality increased only around 7%. One of the key factors was the use of credit for consumption purposes. Households in both countries have liberal access to credit through credit cards and home equity loans. As a result, they had more personal debt liability in 2003 than at the beginning of the 1980s (see note 1).

The decomposition of overall spending inequality shows that expenditure on housing was the major contributor to inequality in both countries, followed by transportation.



Of the total spending inequality in the 1980s, these two components alone accounted for 49% in Canada and 58% in the U.S.; by 2003, their relative shares had increased to 56% and 62% respectively.

Table 4 Spending on transportation

	Total	Age of reference person						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
Canada		CAN\$ 2003						
1982	6,100	5,700	6,100	7,100	8,000	6,400	3,800	2,000
Owned/leased a vehicle				%				
Private transportation	80.0	69.9	85.6	89.4	87.9	79.7	66.5	41.2
Purchase	90.5	89.8	91.1	91.8	89.9	90.3	89.2	80.2
Rent/lease ¹	30.3	31.1	28.1	30.9	31.9	30.6	32.1	21.9
Operation	..	..	..	..	..	..	..	..
Insurance	48.5	46.9	51.6	49.8	46.2	47.3	44.7	45.4
Public transportation	11.7	11.9	11.5	11.1	11.8	12.3	12.3	13.0
	9.5	10.2	8.9	8.2	10.1	9.7	10.8	19.8
2003		CAN\$ 2003						
1982	8,100	5,700	7,800	8,900	10,200	9,400	5,900	3,000
Owned/leased a vehicle				%				
Private transportation	78.3	60.8	75.9	82.5	81.4	83.3	78.7	62.8
Purchase	91.4	87.0	90.5	91.3	91.5	93.0	92.2	89.0
Rent/lease ¹	34.5	36.4	33.7	34.2	34.0	38.4	32.4	26.4
Operation	7.8	4.2	8.7	8.0	8.5	7.1	7.1	5.0
Insurance	35.2	30.9	34.4	35.8	35.1	34.4	37.1	40.4
Public transportation	13.9	15.5	13.8	13.3	13.9	13.1	15.6	17.1
	8.6	13.0	9.5	8.7	8.5	7.0	7.8	11.0
United States		CAN\$ 2003						
1984	9,200	7,100	9,800	11,000	12,700	9,600	6,400	3,000
Owned/leased a vehicle				%				
Private transportation	85.0	68.0	88.0	91.0	92.0	90.0	81.0	60.0
Purchase	94.1	96.3	94.9	94.4	94.7	93.1	91.4	86.0
Rent/lease ¹	42.1	49.3	46.6	39.2	42.7	40.4	37.6	25.8
Operation	3.1	2.4	3.2	3.7	3.0	2.9	2.7	2.9
Insurance	40.7	38.5	38.3	43.2	40.9	40.8	41.5	43.3
Public transportation	8.1	6.2	6.7	8.3	8.1	9.1	9.6	14.0
	5.9	3.7	5.1	5.6	5.3	6.9	8.6	14.0
2003		CAN\$ 2003						
1984	9,600	5,800	10,100	11,000	12,100	10,800	7,500	4,500
Owned/leased a vehicle				%				
Private transportation	88.0	71.0	89.0	91.0	92.0	91.0	87.0	76.0
Purchase	95.1	96.0	95.8	95.4	95.1	94.3	93.8	93.8
Rent/lease ¹	48.0	47.9	48.5	47.9	47.4	49.4	46.1	47.5
Operation	5.6	4.7	6.1	5.5	5.6	5.6	5.7	4.7
Insurance	29.9	32.6	30.0	30.8	29.8	28.5	30.1	26.2
Public transportation	11.6	10.8	11.2	11.2	12.3	10.7	12.0	15.3
	4.9	4.0	4.2	4.6	4.9	5.7	6.2	6.2

¹ In 1982, data on this component was not collected.

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

In the U.S., out-of-pocket spending on health increases steadily with age. In Canada, households with a reference person aged 55 to 64 spent the most. The inter-country gap in health spending was largest among the

elderly. However, between the early 1980s and 2003, spending on health by the elderly grew faster in Canada (3 times) than in the U.S. (1.5 times), narrowing the gap somewhat.

Table 5 Spending on health

	Total	Age of reference person						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 64	65 to 74	75 and over
Canada								
1982	1,000	600	900	1,200	1,300	1,000	600	500
					CAN\$ 2003 %			
Direct costs	63.6	58.5	58.4	62.0	63.8	63.7	80.5	79.7
Medical supplies and services	43.7	38.4	40.0	44.2	45.5	40.4	53.5	55.3
Drugs	19.9	20.1	18.4	17.9	18.2	23.3	27.0	24.4
Health insurance premiums	36.4	41.5	41.6	38.0	36.2	36.3	19.5	20.3
2003	1,500	700	1,100	1,500	1,800	1,900	1,700	1,500
					CAN\$ 2003 %			
Direct costs	66.7	69.4	60.8	64.4	66.1	65.1	72.1	78.6
Medical supplies and services	40.1	43.1	40.2	42.4	42.5	37.0	34.2	40.6
Drugs	26.6	26.3	20.6	22.0	23.7	28.2	37.9	38.0
Health insurance premiums	33.3	30.5	39.2	35.6	33.9	34.9	27.9	21.4
United States								
1984	2,200	800	1,600	2,100	2,700	2,700	3,200	3,200
					CAN\$ 2003 %			
Direct costs	64.7	71.2	66.6	69.1	68.4	63.9	56.0	62.1
Medical supplies and services	48.8	56.1	53.5	55.3	53.9	46.3	37.5	43.1
Drugs	15.9	15.1	13.1	13.7	14.5	17.6	18.5	19.0
Health insurance	35.3	29.1	33.2	31.0	31.6	36.1	44.0	37.9
2003	3,000	700	1,800	2,600	3,100	3,800	4,500	4,800
					CAN\$ 2003 %			
Direct costs	48.2	48.7	44.8	47.3	53.0	48.6	45.6	47.3
Medical supplies and services	28.9	30.4	31.1	33.0	34.5	28.1	22.4	22.1
Drugs	19.3	18.3	13.8	14.3	18.5	20.5	23.1	25.2
Health insurance	51.8	51.5	55.2	52.7	47.0	51.4	54.4	52.7

Sources: Statistics Canada, Family Expenditure Survey and Survey of Household Spending; U.S. Bureau of Labor Statistics, Consumer Expenditure Survey

Summary

Compared with the early 1980s, households in 2003 in both Canada and the United States spent proportionately more on housing, transportation and health, and less on food and clothing. While the market value of homes accelerated over this period, so did the cost of furnishings, rent, household operation, and property taxes. Similarly, vehicle costs were up in 2003. An increase in health expenditures was due to the rising costs of prescribed drugs and other medical services for households in Canada and to rising health insurance premiums in the U.S.

Overall, the spending patterns of households in Canada and the U.S. were more similar in 2003 than in the early 1980s, largely because of changes in the spending patterns of Canadians. For example, Canadian households spent 11% less than Americans on housing in the early 1980s but only 4% less by 2003. Similarly the gap in transportation expenditures narrowed from 34% to 17%. Because of universal health care, households in Canada continued to spend much less on health, although the gap narrowed from 56% in the 1980s to 48% in 2003.

Households in both countries reached their maximum spending in their peak income years, age 45 to 54, after which both income and spending began to slide. Spending patterns were more alike for households in the 45-to-54 group than for those 75 and over. The elderly in both countries improved their shares of total spending, largely because of improved levels of income. More elderly lived in owned homes and drove owned vehicles in the United States, while their counterparts in Canada spent more on public transportation.

Spending patterns evolve over time and are affected by many things, including business cycles and changes in demographics. While economic integration and the ascendance of consumer spending may be eroding differences in spending patterns, distinctive models of health care delivery in Canada and the U.S. dampen the convergence.

Perspectives

■ **Notes**

1 In Canada, the personal savings rate declined from 20.2% in 1982 to 1.6% in 2005, while dropping in the U.S. from 7.5% in 1981 to -0.4% in 2005. Over the same period, households in both countries increased their indebtedness—from 55 cents to \$1.16 per dollar of disposable income for Canadians and from 61 cents to \$1.24 for Americans.

2 Expenditures are generally considered a better long-term measure of economic behaviour since families tend to smooth spending over time by borrowing against future income or by drawing down savings at different points in the life cycle.

3 Using the U.S. definition, expenditure on housing includes the sum of expenditures on shelter, household operation, and furnishings and equipment. Although separate data on these three components are available for both countries, the classification of items varied slightly; for instance, expenditures on telephone services are treated

under utilities in the U.S. and as part of household operations in Canada. Moreover, broader groups of expenditure are used to condense the size of statistical tables presented here.

4 As a check for the robustness of this conclusion based on Gini coefficients, Theil's T-measure of inequality when applied on grouped data for relative shares of spending by age was calculated and showed a similar conclusion.

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