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### Analysis in Brief

# Is Inflation Higher for Seniors?

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## Is Inflation Higher for Seniors?

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# Is Inflation Higher for Seniors?

Radu Chiru, Prices Division

## Summary

The Consumer Price Index (CPI) is widely used to monitor changes in the general level of consumer prices, or in other words, the rate of inflation. Since the purchasing power of money is affected by changes in prices, the CPI is a useful tool for virtually all Canadians.

Consumers can compare movements in the CPI to changes in their personal income to monitor and evaluate changes in their financial situation.

But just how well does the CPI track changes for specific groups, specifically in this case, senior citizens aged 65 and over? The question is valid because the All-items CPI at the national level is used to index old-age pensions.

This study examines the inflation rate experienced by seniors-only households from 1992 to 2004, comparing them with all other households and the official CPI.

The answer, in short, is that the Consumer Price Index tracked very closely the inflation experienced by seniors as a group.

Between 1992 and 2004, seniors experienced no major differences in inflation from the overall average. Prices rose 26.1% for seniors between January 1992 and February 2004, compared with 24.4% for all other households.

In other words, seniors-only households experienced an average annual rate of inflation of 1.95%, just slightly higher than the rate of 1.84% for all other households and 1.86% for all households combined.

Starting in 1998, seniors began to experience price increases that were slightly higher than the rest of the population. As a result, a small gap did grow between inflation for seniors-only households and other households, and it lasted to 2002. This gap was due to items such as mortgage rates and some energy items, where trends in prices had changed since 1992. It was not due to long-term trends in prices for items such as electronics and tuition.

Seniors tend to spend a different proportion of their budget on various items than do other households. However, price gains for many of these items tend to offset each other.

For example, some consumer items such as electronics have continuously declined in price, pushing down inflation for households in general more than they have for seniors. Other items, such as tuition fees have continuously increased at a faster rate than the All-items CPI. This has steadily pushed up inflation for general households. Seniors may not benefit as much from lower electronics prices, but they are not hit as hard by hikes in tuition fees.

The study also shows that there are substantial variations in inflation among seniors from province to province. In addition, inflation rates for seniors varied depending on their household circumstances. For example, senior homeowners had very different inflation rates than seniors who rented.

## Senior households spend differently than others

Seniors may experience different rates of inflation because there are some fairly significant differences in spending patterns between them and other households.

Seniors tend to spend proportionally less on transportation items, such as new cars and gasoline, according to the 2001 Survey of Household Spending.

They also tend to spend a smaller proportion of their income on clothing and most types of entertainment, such as recreational vehicles and audio/visual equipment. And they spend proportionally less on alcohol and tobacco products.

However, they have proportionally higher spending on travel and reading materials, utilities and rent and tenants' expenses.

For example, for every \$100 of their expenditure budget, seniors on average spend \$56 on food and shelter, including utilities, compared with only \$45 among all other households.

### A look at the spending patterns of seniors-only and all other households in 2001, and price changes from January 1992 to February 2004

	Seniors-only households	All other households	Price change Jan. 1992 to Feb. 2004
	%		
Food & non-alcoholic beverages from stores	16.5	14.2	22.3
Food & non-alcoholic drinks from restaurants	3.2	3.7	27.8
Rent / Tenants' expenses	14.7	9.7	19.3
Mortgage, taxes and other homeowners' expenses	14.7	12.7	24.2
Utilities (water, electricity, gas, heating oil)	7.1	4.7	43.6
Household goods and operation	10.4	11.3	13.8
Clothing and footwear	4.2	6.0	4.0
Private transportation (car, licence, gas, etc.)	11.2	15.5	35.7
Public transportation	1.6	1.8	70.5
Health and personal care	7.1	4.7	18.9
Recreational/sports equipment and services	5.8	9.0	19.0
Tuition fees, reading and educational materials	1.0	2.8	78.7
Alcohol and tobacco	2.4	3.9	36.2
<b>All-items</b>	<b>100.0<sup>1</sup></b>	<b>100.0<sup>1</sup></b>	<b>24.4</b>

1. Components might not add up to the total due to rounding.

**Source:** Statistics Canada, special tabulation from the 2001 Survey of Household Spending and the Consumer Price Index.

## All-items CPI closely tracks inflation for seniors

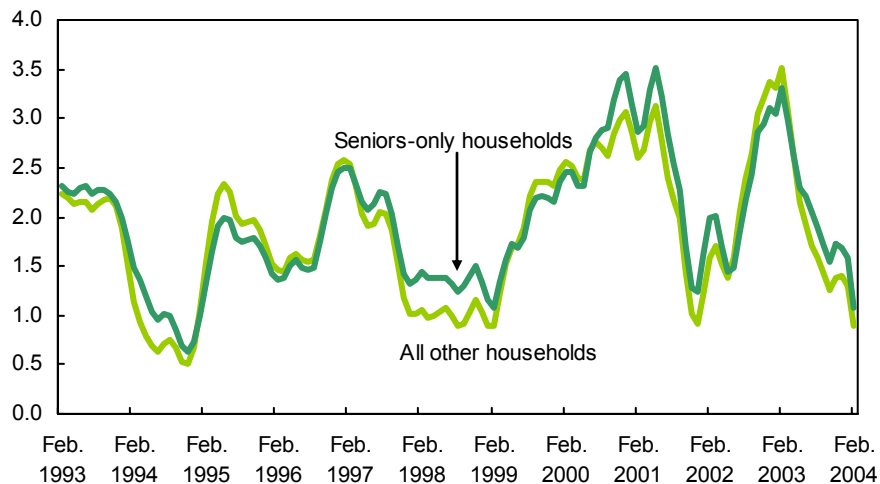
The All-items CPI at the Canada level, which is used to index seniors' old-age pensions, tracked very closely the inflation experienced by seniors as a group.

At the Canada level, small differences appeared for short periods of time between the inflation experienced by seniors as a group and inflation as measured by the All-items CPI.

During 1998, and then again in 2000 and 2001, seniors-only households experienced higher inflation than other households. But in 1995 and late 2002, inflation increased at a slower pace for seniors.

## Inflation for seniors-only households comparable to other households

12-month % change, index smoothed with a centered 3-month moving average



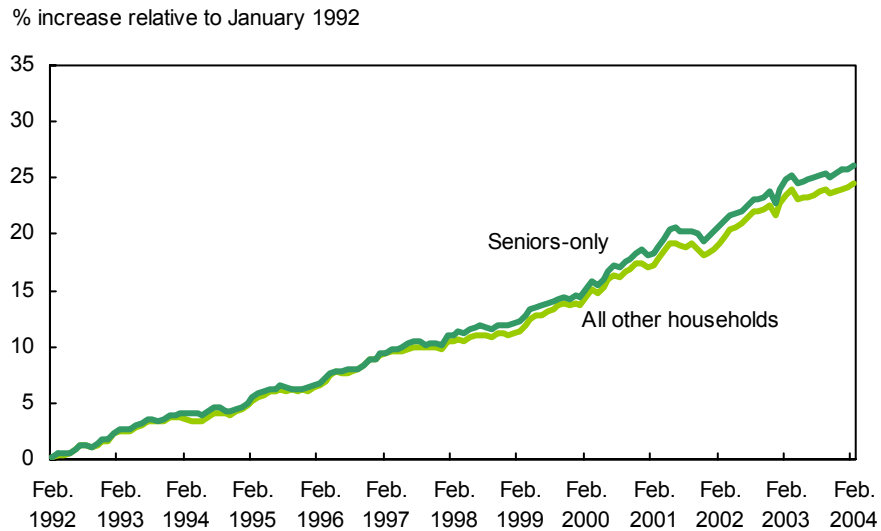
**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

Overall, seniors-only households experienced an average annual rate of inflation of 1.95%, just slightly higher than the rate of 1.84% for all other households and 1.86% for all households combined.<sup>1</sup>

Although the official CPI tracked fairly well the inflation experienced by seniors, a small gap appeared and grew between 1998 and 2002 between seniors and others. Afterwards, it remained relatively unchanged.

1. The rate of 1.86% per year differs slightly from the official CPI which grew at a rate of 1.83% over the period. The difference is due to some differences in methodology in reconstructing these analytical sub-indexes, which are described at the end of the paper.

**A small gap appeared and grew between 1998 and 2002 between seniors and others**



**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

This gap raises an important question: Are seniors experiencing higher inflation because of some long-term price movements that impact them more than other households?

The following sections attempt to answer that question by examining the items that explain this gap.

**Seniors do not benefit as much from lower prices of electronics and clothing**

Recreational and sports equipment and services combined are the most important factors contributing to a slightly higher inflation for seniors-only households. They include such items such as computers, audio/video and photographic equipment, cable television subscriptions, travel as well as recreational vehicles.

Seniors are not benefiting as much as younger households from cheaper electronics. The impact of electronic items is quite large and continuous, as their prices have fallen very steadily over time. Since younger households spend more of their income on these items, their continuous price declines lowered their CPI increases comparatively more than they did for seniors.

In addition, seniors faced higher prices for some of their favourite recreational services, such as cable subscriptions and travel. This also means higher inflation for senior households relative to other households.

Seniors also spend a relatively larger portion of their income on cable television subscriptions, a main item in the recreation category. The price of cable TV has gone up steadily, increasing 75% between January 1992 and February 2004. As a result, the increases in the CPI experienced by seniors were again pushed higher.

Another item in the recreation category, traveller accommodation, also continuously pushed up the rate of inflation for seniors, as prices for accommodation have increased steadily. This item figures

prominently in the seniors' expenditure basket and accounts for just over 0.2 percentage points of the gap between the CPI for seniors and others.

Altogether, the price movements of recreational items contributed almost two percentage points of the difference between the CPI for seniors and all other households.

Apparel items have also experienced much lower price increases than other items in the CPI. Since seniors dedicate a comparatively smaller share of their expense basket to clothing and footwear, these items contributed almost 0.4 of a percentage point in the gap between seniors and other households.

### Factors behind the differences seen between seniors-only and all other households

	CAN	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
	% difference between January 1992 and February 2004										
Seniors-only CPI increase	26.1	21.6	25.0	26.5	24.9	21.2	28.8	26.8	28.9	32.0	27.1
All others' CPI increase	24.4	20.4	23.8	24.4	22.7	20.1	27.4	25.5	27.2	30.4	23.4
<b>Difference</b>	<b>1.6</b>	<b>1.3</b>	<b>1.2</b>	<b>2.1</b>	<b>2.3</b>	<b>1.1</b>	<b>1.4</b>	<b>1.3</b>	<b>1.7</b>	<b>1.6</b>	<b>3.6</b>
	contribution to the difference in percentage points <sup>1</sup>										
Food & non-alcoholic beverages from stores	-0.09	-0.10	-0.05	-0.17	-0.07	0.09	-0.14	-0.10	-0.24	-0.55	-0.08
Food & non-alcoholic drinks from restaurants	-0.01	0.06	0.03	0.06	0.01	-0.03	0.01	0.02	0.01	0.02	-0.02
Rent / Tenants' expenses	-0.22	-0.05	-0.42	-0.22	-0.30	-0.52	-0.15	-0.55	-0.11	-0.40	0.08
Mortgage, taxes and other homeowners' expenses	0.68	0.32	0.29	0.35	0.56	-0.30	0.91	0.35	0.51	0.09	1.95
Utilities (water, electricity, gas, heating oil)	0.60	1.38	0.90	1.59	1.38	0.18	0.53	0.49	1.87	2.17	0.28
Household goods and operation	0.13	0.16	0.19	0.23	0.25	0.49	0.01	0.15	0.14	-0.05	0.03
Clothing and footwear	0.38	0.55	0.39	0.28	0.28	0.18	0.49	0.37	0.65	0.55	0.30
Private transportation (car, licence, gas, etc.)	-0.31	-0.20	0.23	-0.04	-0.24	-0.17	-0.46	-0.47	-0.10	0.07	-0.14
Public transportation	-0.06	-0.04	0.17	0.25	0.07	0.08	-0.18	-0.13	0.04	-0.03	-0.02
Health and personal care	-0.04	-0.44	0.03	-0.10	-0.24	0.13	-0.05	0.16	-0.70	-0.35	0.04
Recreational/sports equipment and services	1.98	1.61	1.11	1.97	1.72	1.68	2.24	1.93	1.59	2.14	2.27
Tuition fees, reading and educational materials	-1.10	-1.71	-1.05	-1.79	-0.80	-0.10	-1.70	-0.42	-1.19	-1.95	-0.89
Alcohol and tobacco	-0.32	-0.31	-0.64	-0.35	-0.34	-0.61	-0.17	-0.45	-0.76	-0.15	-0.20

1. Due to rounding, the contributions may not add to the difference.

**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

## Home tenure an important factor for seniors

Seniors households with different characteristics, such as homeownership, also had very different inflation rates. For example, the national rate of inflation between January 1992 and February 2004 for seniors who were renters was only 22.7%, well below the pace of 28.1% among seniors who were homeowners.

This gap was also much larger than between the rate of inflation of senior households and all others. This is because differences in spending habits between different types of seniors-only households are quite large.

Low mortgage interest rates since 1992 lowered the inflation of other households more than for seniors, while lower increases in rental fees partly made up for this difference.

The late 1990s and early 2000s was generally a period of low interest rates. From 1992 until early 2004, mortgage interest costs increased by just over 14% across Canada. Low mortgage interest rates did not dampen inflation felt by seniors as much as it did for the rest of the population, as few seniors make mortgage payments.

Rents throughout Canada also increased at a slower pace than the All-items CPI. Since seniors on average tend to spend a higher proportion of their income on rent, this actually worked in their favour. It lowered their total price increases relative to all other households.

The combined impact of mortgage payments and rent contributed to an increase of about 0.4 percentage points in the gap between average senior-only and other households.

## Seniors less affected by swings in private transportation costs

Seniors-only households spend a slightly smaller portion of their income on purchasing automobiles and gasoline and are less affected by swings in car and gasoline prices.

The effect of the cost of private transportation has changed many times during this period.

Starting in 1993, the prices of automobiles began rising at a faster pace than the All-items CPI. By the middle of 1997, average car prices had increased by over 25% compared with January 1992, while the All-items CPI had increased by just over 9%.

In 1998, however, car prices had slowed substantially and started to fall. Thus, at the beginning of this period, car prices lowered the inflation rate for seniors-only households relative to that of all others, while the opposite effect occurred after 1998.

Gasoline prices also tend to have a pronounced effect on differences between the two groups. Gasoline prices fluctuate very much in tandem with world prices and the Canada/US exchange rate. As a result, the direction of this effect has changed many times over this period<sup>2</sup>. High gasoline prices are more likely to raise the CPI increases of all other households, but less so for seniors.

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2. See Radu Chiru, "The soaring loonie and prices: lower inflation for consumers?", *Analysis in Brief*, Statistics Canada Catalogue no. 11-621-MWE2004014.



## **Large increases in tuition fees not felt by seniors**

While tuition fees have steadily risen faster than the All-items CPI at the Canada level hardly any seniors pay tuition fees.

By “avoiding” these price increases, seniors benefited from a lower inflation rate. The rate of inflation for senior households would have been more than one percentage point higher between 1992 and 2004 if they had spent as much as other households on tuition.

Tuition had a continuous impact because tuition fees increased at a faster pace than the All-items CPI every year over this 12-year period.

## **Gap varies widely from province to province**

Differences in the inflation rate between senior households and others are small at the national level. However, they varied greatly from one province to another between 1992 and 2004.

The inflation rate for seniors households was at or above the national average of 24.4% in five provinces: Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

On average, inflation for seniors ranged from a low of 21.2% in Québec during this time period to a high of 32.0% in Alberta. This reflects the very different inflation rates experienced by all households in the various provinces.

In addition, the inflation rate for seniors was less than the rate for all other households in every province. But the gap between the two groups varied substantially, and it was widest in British Columbia and New Brunswick.

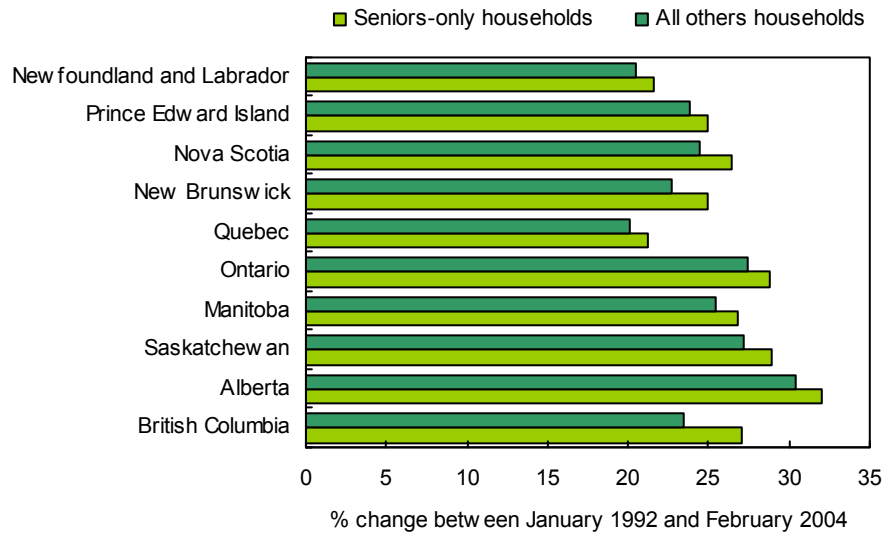
The All-items CPI tracked seniors’ inflation at the national level fairly well. But this was not the case at the provincial level. This is because differences in inflation between the provinces are much larger than the average difference between seniors-only and all other households at the national level.

Differences in inflation between provinces are mostly due to the very different price movements of some items that are important for all households.

Some items such as gasoline prices, clothing and electronics tend to move very much in tandem across Canada. But price movements of some other large items, such as tuition, car insurance and rent vary widely between the provinces.

For example, tuition fees caused pronounced differences between provincial inflation rates for all other households. Tuition went up at different times across the country, more than doubling in the Atlantic Provinces, but increasing at rates below that of the All-items CPI in Manitoba and Québec.

**Differences between provinces are greater than differences between seniors and other households**



**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

**Energy items behind important differences between provinces**

Price swings and spending differences for energy-related commodities are also among the most important causes of differing provincial CPI increases.

For example, households in the Atlantic Provinces do not tend to use piped gas as a heating source for their homes. They use mostly fuel oil.

Because fuel oil prices did not increase as fast as natural gas between 1992 and 2004, inflation did not go up as much in Atlantic Canada. Conversely, the price spikes in the cost of natural gas heating have affected mostly households in western and central Canada.

Between 1992 and 2004, the price of natural gas more than doubled, while fuel oil prices increased by 60%.

When world crude prices hit lows, such as in the winter months of late 1993 and early 1994, as well as late 1998 and early 1999, inflation was lowered further in the Atlantic Provinces because of the type of home heating used.

Inflation in Quebec is lower partly because of lower heating bills. There, households use mostly electricity to heat their home and these prices have not been increasing as fast as those of other energy sources.

## No systematic bias behind the gap

Seniors are not experiencing higher inflation because of long-term price movements. During this period, a few expenditure items in the consumer basket had lower or higher price movements than the All-items CPI, year after year.

Some of these price trends contributed to a higher CPI for seniors, while others had the opposite effect. Overall these price trends explain less than 10% of the gap between senior-only and other households.

However, identifying these items and measuring their effects is interesting because they give an indication of whether seniors' average CPI increases may have had a bias over the long term.

The most important long-term price movement was related to tuition fees, which steadily increased until 2004, when they were well over double (+133.7%) their levels in 1992. Since seniors spend nearly nothing on tuition fees, this had the effect of lowering their inflation rate by 1.15 percentage points compared with all other households.

However, the impact of higher tuition fees was offset by declining prices for computer equipment, which fell 82% during this period, and for home entertainment products, which fell 13.3%. This is because seniors spend a relatively smaller percentage of their income on these items which fell in price relative to the All-items CPI year after year.

### Contribution to difference between seniors-only and all other households, from expenditures items with long-term price movements

Expenditure items with continuous effects (from a total of 88)	Price change from Jan. 1992 to Feb. 2004	Contribution to the difference between seniors-only and other households
	%	% point
Cooking appliances	-5.6	0.00
City bus & subway transportation	58.1	-0.07
Rail, highway bus and other inter-city transportation	56.9	0.02
Other health care goods	-0.1	-0.10
Computer equipment & supplies	-82.0	0.98
Home entertainment equipment & services	-13.3	0.30
Spectator entertainment performances (excl. cablevision)	67.9	-0.11
Cablevision (including pay TV)	74.3	0.23
Tuition fees	133.7	-1.15
<b>Total continuous effects</b>	.	<b>0.11</b>
<b>Total difference between seniors and non-seniors</b>	...	<b>1.60</b>

. not available

... not applicable

**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

Other factors that had a smaller impact on lowering inflation for seniors included city public transportation and spectator entertainment, on which seniors spend a smaller proportion of their income. These items have steadily increased in price. By February 2004, prices for city public transportation 58% higher than in 1992, while prices for spectator entertainment were 66% higher.

Since continuous effects mostly cancel each other out, the gap in inflation experienced by senior-only and other households was not due to these. The gap occurred because of items whose more recent price movements increased the average CPI for seniors more so than for other households.

### **Larger differences between different types of seniors**

Seniors-only households experienced different inflation rates depending on their level of income and their home tenure.

Differences between sub-groups of seniors are also noticeably larger than the differences between seniors-only and other households. This suggests that the group CPI of seniors-only households does not closely track the CPI of seniors that are homeowners or who are relatively richer or poorer.

Previous research<sup>3</sup> has shown that no matter how we define our sub-groups, inflation experiences tend to vary much more for households *within* these groups than *between* them.

The largest inflation differences are between seniors that rent compared to home-owning seniors, which are much larger than the differences between seniors and all other households. Also important are the differences between high income seniors, those in the highest 20% of the income scale (5<sup>th</sup> quintile), and low income seniors, those in the lowest 20% (1<sup>st</sup> quintile).

In some provinces, household composition was important, with single senior households experiencing large inflation differences compared to two-senior households. In each case, the inflation differences between different groups of seniors were more pronounced than the differences between seniors and all others.

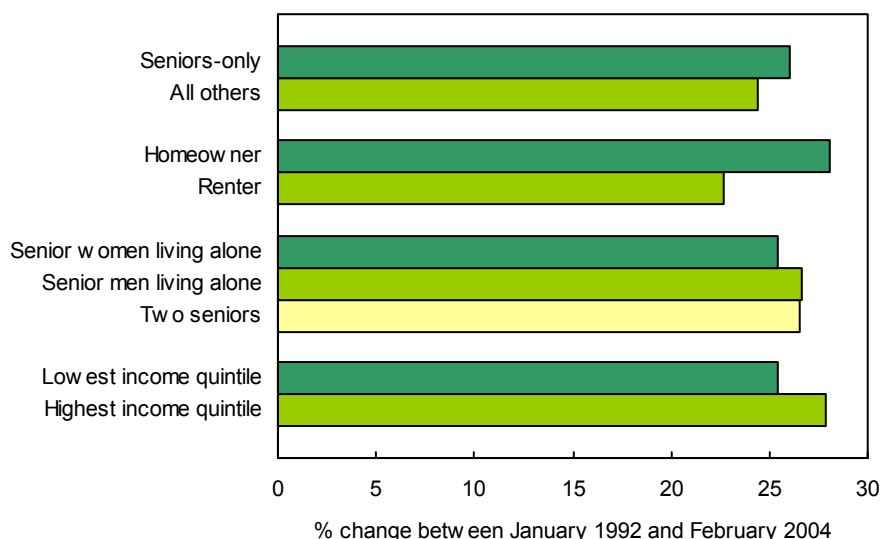
A future article will deal with the wide variety of household characteristics within the groups of seniors-only household and all others. An analysis of variance was performed to identify the interaction of many different household characteristics and the strength of their impact on inflation for seniors and all others. These characteristics include the type of heating employed in a home, having a smoker in the house and renting or owning a home.

It is found that the province of residence, type of home ownership, home heating and some other characteristics are more important than age in explaining different inflation rates. When these variables are controlled for, there is no statistically significant effect of being a seniors-only household on the inflation experienced.

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3. See R. T. Michael, 1979, "Variation in Across Households in the Rate of Inflation," *Journal of Money, Credit and Banking*, 11(1): 32-46.

**Larger gap in inflation between different types of seniors households than between seniors-only and other households**



**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

**Differences in inflation rates between sub-groups of seniors**

	CAN	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
% difference between January 1992 and February 2004											
Seniors-only	26.1	21.6	25.0	26.5	24.9	21.2	28.8	26.8	28.9	32.0	27.1
All others	24.4	20.4	23.8	24.4	22.7	20.1	27.4	25.5	27.2	30.4	23.4
<b>Difference</b>	<b>1.6</b>	<b>1.3</b>	<b>1.2</b>	<b>2.1</b>	<b>2.3</b>	<b>1.1</b>	<b>1.4</b>	<b>1.3</b>	<b>1.7</b>	<b>1.6</b>	<b>3.6</b>
Homeowner	28.1	23.0	27.3	28.7	27.4	23.2	30.6	28.8	30.7	35.2	29.3
Renter	22.7	16.6	21.0	20.4	19.1	18.9	25.8	23.7	23.0	25.5	23.8
<b>Difference</b>	<b>5.4</b>	<b>6.4</b>	<b>6.2</b>	<b>8.3</b>	<b>8.3</b>	<b>4.4</b>	<b>4.8</b>	<b>5.1</b>	<b>7.7</b>	<b>9.7</b>	<b>5.5</b>
Female-only	25.4	20.8	24.7	25.8	24.0	21.0	28.0	26.5	28.6	30.1	26.5
Male-only	26.6	23.0	25.1	29.1	26.9	19.3	30.7	28.2	30.2	37.2	26.5
Two seniors	26.5	22.0	25.2	26.3	25.4	21.9	29.0	26.5	28.7	31.9	27.8
1 <sup>st</sup> quintile	25.4	20.3	27.3	27.3	24.0	21.0	27.9	26.5	28.9	29.6	25.9
5 <sup>th</sup> quintile	27.9	22.6	22.5	26.7	26.9	20.9	31.8	28.1	28.3	33.9	28.4
<b>Difference</b>	<b>-2.5</b>	<b>-2.3</b>	<b>4.8</b>	<b>0.6</b>	<b>-2.9</b>	<b>0.1</b>	<b>-3.9</b>	<b>-1.6</b>	<b>0.7</b>	<b>-4.4</b>	<b>-2.5</b>

**Source:** Statistics Canada, special tabulation based on the Survey of Household Spending and the Consumer Price Index.

### **Note to readers**

This paper does not provide a measure of senior inflation; it is a study to examine the differences between seniors and other households.

The study has only examined inflation differences between seniors and all other households due to different spending patterns. However, inflation differences could also arise if seniors experience different price movements than other households for the same good or service.

For example, if seniors tend to shop for clothes at a certain outlet while all other households tend to favour another outlet where prices moved differently, different inflation would be experienced by seniors as compared to other households. Since there are no price data available by class of consumers, this study assumes that price changes are the same for all households.

Results slightly different from official CPI: due to mortgage interest, chaining and less detail in consumer baskets.

Mortgage payments are considered to consist of two portions: principal on the home and interest. The interest portion of mortgage payments was fixed at 47.6% of the mortgage payments of all mortgage-paying households, a figure established as the Canada-wide average by Price Division, Statistics Canada.

Less detail was used to calculate individual household expenditure baskets for this study than in the official CPI. From January 1992 to January 2001, individual household CPIs were calculated by using the 1997 Survey of Household Spending to a detail of 88 expenditure items and applying price movements as collected by Prices Division.

For January 2001 to February 2004, household CPIs were calculated by using the 2001 Survey of Household Spending to a detail of 111 expenditure items. These individual CPIs were chained at January 2001.

These items and their contribution to the differences seen between seniors-only households and all others were then regrouped into more general expenditure categories to show their cumulative effects. Most of the missing details were in the Food and Clothing categories.

### **Calculating the factors behind differences in two groups' CPIs**

The factors behind divergence at a certain cut-off point can be investigated. Using a Bortkiewicz decomposition analysis, two baskets (representing two distinct groups) can be studied in light of the same price movements. These price movements can be at the Canada level or at the provincial level. This analysis allows us to pinpoint what items had the largest impact in differentiating group CPIs.

For an item to have an impact in differentiating groups' CPIs, it would have to both be bought in different proportions (out of total expenditure) by the two groups and also have experienced price movements higher or lower than the rest of the items in the consumer basket.

### **Definition of continuous, long-term effects**

An item can cause continuous, long term effects between two groups' inflation rates if in all years of the 12-year period studied, this item's average price change over the previous year was either above or below the All-items CPI at the Canada level.