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Household purchasing power at different income levels since 2019



OFFICE OF THE PARLIAMENTARY BUDGET OFFICER
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The Parliamentary Budget Officer (PBO) supports Parliament by providing economic and financial analysis for the purposes of raising the quality of parliamentary debate and promoting greater budget transparency and accountability.

This report examines household purchasing power at different income levels since 2019. The Parliamentary Budget Officer (PBO) assessed the share of income needed to purchase a 2019 basket of goods and services and tracked changes over time based on two income measures—market income and disposable income—for three periods. The first of these looks at quarters 19Q4 and 21Q1 to assess household purchasing power almost a year after the start of the pandemic. The period from 21Q1 to 22Q2 was then examined to consider the sharp rise in prices. Lastly, the period from 19Q4 to 22Q4 PBO was delved into to estimate households' situation as the pandemic drew to its end.

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Highlights

Almost three years after the start of the pandemic, the PBO notes that purchasing power had improved for all households when considering disposable income — it increased by 5%.

However, the PBO also sees evidence of the regressive impact of inflation on household purchasing power. He observes that household income alone for household in the lower income quintiles is not enough to address the rising cost of living; they rely significantly on government transfers to preserve their purchasing power. Higher-income households are better able to handle the rising cost of living using their own sources of income.

Summary

This report examines household purchasing power at different income levels since 2019. The Parliamentary Budget Officer (PBO) assessed the share of income needed to purchase a 2019 basket of goods and services and tracked changes over time based on two income measures—market income and disposable income—for three periods: from 19Q4 to 21Q1, from 21Q1 to 22Q2 and from 19Q4 to 22Q4.

When considering market income, the PBO finds that the impact on household purchasing power varied. In the first period, inflation was below the Bank of Canada's inflation target, while employment income slumped only for households in the three lowest income brackets. However, household purchasing power was clearly bolstered by the launch of—or increase in—income benefits associated with the COVID-19 pandemic response. The PBO determines that all households could consume the 2019 basket while spending less of their disposable income.

By the end of the second period, inflation had risen, whereas income did not keep pace over the observed quintiles. Based on market income, households in the second, third and fifth quintiles—unlike those in the remaining groups—could rely on higher employment income to maintain their purchasing power. However, when COVID-19 income benefits ended and income tax was considered, earlier gains were neutralized and the situation for households in the other quintiles was exacerbated.

Consequently, the PBO's review of disposable income reveals that the rise in prices outpaced income growth and all households saw their purchasing power decline.

By the last period, almost three years after the start of the pandemic, the PBO notes that purchasing power had improved for all households, regardless of the income measure chosen.¹ There is one exception to this observation: the purchasing power of households in the lowest income

quintile deteriorated when only market income was factored in. Based on these findings, the PBO observes that household income alone (as a component of market income) for households in the lower income quintiles was not enough to address the rising cost of living; they rely significantly on government transfers to preserve their purchasing power. Higher-income households are better able to handle the rising cost of living using their own sources of income.

Introduction

According to Statistics Canada, inflation in Canada peaked in June 2022 at an annual rate of 8.1%—an interesting contrast with the prepandemic period, when the inflation rate was at the lower end of the Bank of Canada’s inflation target. While the COVID-19 pandemic gave rise to its own set of challenges starting in March 2020, in 2022 Canadian households had to deal with rising prices.

The idea that higher prices affect household purchasing power based on income is not new—some economists consider that inflation has a regressive impact on household purchasing power. Vulnerable households are affected the most, while more affluent households can adapt more easily. In its September 2022 report, the United States’ Congressional Budget Office wrote that “...the effects of inflation have changed over time and varied by income group and income measure.”²

Following this publication, the PBO studied Canadian household purchasing power at different income levels since 2019, measuring the share of income required to buy a basket of goods and services in 2019, as well as changes to this figure, broken down by income quintile from 19Q4 to 21Q1, to assess household purchasing power almost a year after the start of the pandemic. The PBO then examined the sharp rise in prices from 21Q1 to 22Q2. Lastly, the PBO estimated households’ situation from 19Q4 to 22Q4 as the pandemic drew to its end. Inflation and changes in income were also reviewed over these periods.

The report is divided into two sections: the first outlines the methodological approach used for this study, while the second presents an analysis of the results. Appendix A contains additional tables showing income by household for a given quarter.

Income share, quintiles and inflation: How do they work?

Data

For this analysis, the PBO used the following Statistics Canada databases: Distributions of household economic accounts, income, consumption and saving (36-10-0663 and 36-10-0587-01); Household final consumption expenditure (36-10-0107-01); and Current and capital accounts – Households (36-10-0112-01).³ The dataset for household economic accounts was distributed according to disposable income, then divided into five groups—the quintiles. The other series are aggregates of these economic accounts, representing the household sector in the Canadian economy.⁴ For this report, the PBO looked at three economic accounts and their components: household final consumption expenditure, market income and disposable income.^{5,6} They are expressed in average dollars per household.⁷

Inflation

To build a measure of inflation, the PBO used the series on household final consumption expenditure. A deflator was built for each expenditure category, and quarterly changes were calculated. To compare price increases with income increases, inflation in consumption expenditure was measured in terms of percentage change between two quarters. The PBO also assessed inflation by income quintile using household spending habits (i.e., the respective weight of expenditure categories) based on the appropriate income quintile.⁸

Income

The PBO considered two related income measures—market income (i.e., income before transfers and income tax) while disposable income comprises market income, net transfers and income tax.⁹ Changes in income are also expressed as a percentage change. Lastly, the PBO also looked at components of this income and variations, from employee compensation to current transfers paid, giving the PBO an understanding of the sources of income changes.

Share of income needed to purchase the 2019 basket of goods and services

To examine changes in household purchasing power, the PBO defined a basket of goods and services in the fourth quarter of 2019¹⁰ that was made up of the 13-household final consumption expenditure categories. As of the following quarter, the change in deflator of an expenditure category (calculated earlier) was multiplied by its corresponding deferred nominal value (i.e., from the previous quarter), and estimated total consumption for the quarter was determined based on the total of the categories. As a result, a basket of goods and services could be set according to 2019 quantities while measuring it at current prices over time. The share of income needed to buy this basket was then defined as the ratio of its estimated nominal value in dollars and the value of the selected income measure. The change in the share of income between two quarters is represented as a percentage change. In measuring the 2019 basket of goods and services at current prices, any changes in the measured share were based on two sources of variation: prices and income. It could be said, for example, that household purchasing power improved when income increased faster than inflation. In this example, the percentage change is

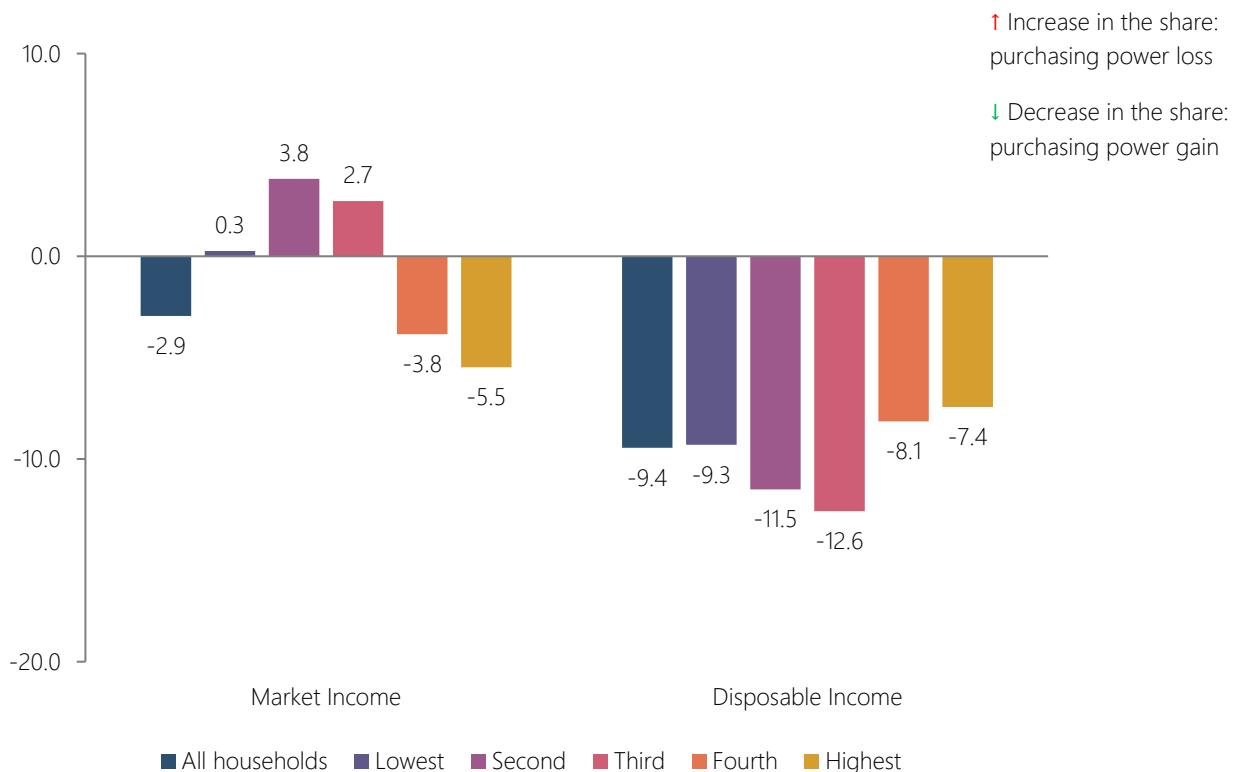
negative—households would spend a smaller share of their income buying the same quantities of goods and services.¹¹

Change in the share of income needed to purchase the 2019 basket of goods and services

From 19Q4 to 21Q1

Figure 1

Change in share of income needed to purchase the 2019 consumption basket from 19Q4 to 21Q1, by income quintile



Textual description:

Income quintile	Market income	Disposable income
All households	-2.9	-9.4
Lowest	0.3	-9.3
Second	3.8	-11.5
Third	2.7	-12.6
Fourth	-3.8	-8.1
Highest	-5.5	-7.4

Sources:

Office of the Parliamentary Budget Officer; Statistics Canada.

Notes:

The change in the share of income needed to purchase the 2019 consumption basket is expressed as a percentage change. A negative value indicates more purchasing power, while a positive value represents less purchasing power. Because the values of income and consumption expenditure are household averages, the proportion of income and its change over time are also average values.

Market income

In the first quarter of 2021, households in the first three income quintiles had to spend a larger share of their market income to purchase the same quantities of goods and services, compared with the fourth quarter of 2019. Households in the second income quintile saw the highest increase—their purchasing power dropped 3.8%. Meanwhile, this share decreased for those in the fourth and fifth quintiles.

Over this period, market income decreased for the second and third income quintiles. Among the groups whose market income rose, the highest income quintile saw its market income increase by 7.1%. However, inflation in household final consumption expenditure further ate away at the share available for consumption in households that experienced a drop in market income during this period. For the other distribution levels, the rise in market income outpaced inflation, which explains the better share seen in households in the fourth and fifth quintiles.

Lower market income for many Canadian households coincided with the implementation of tighter restrictions imposed by various levels of government—provincial and federal—to fight the COVID-19 pandemic in the first quarter of 2021. Because the restaurant, hospitality, recreation and retail sectors were particularly hard hit by these restrictions, incomes dropped compared with levels in the first quarter of 2019 for the first three income distribution quintiles. Furthermore, the average wages in these industries are lower.¹² However, it is important to note that gains in investment income¹³ for the lowest-income households offset wage losses.

Therefore, the PBO's analysis shows that changes in purchasing power differed by income quintile.

Disposable income

In the first quarter of 2021, all households saw their share of disposable income drop from prepandemic levels when purchasing the same basket of goods and services. In this respect, all households had the same consumption volumes as they benefited from a 9.4% improvement in their purchasing power.

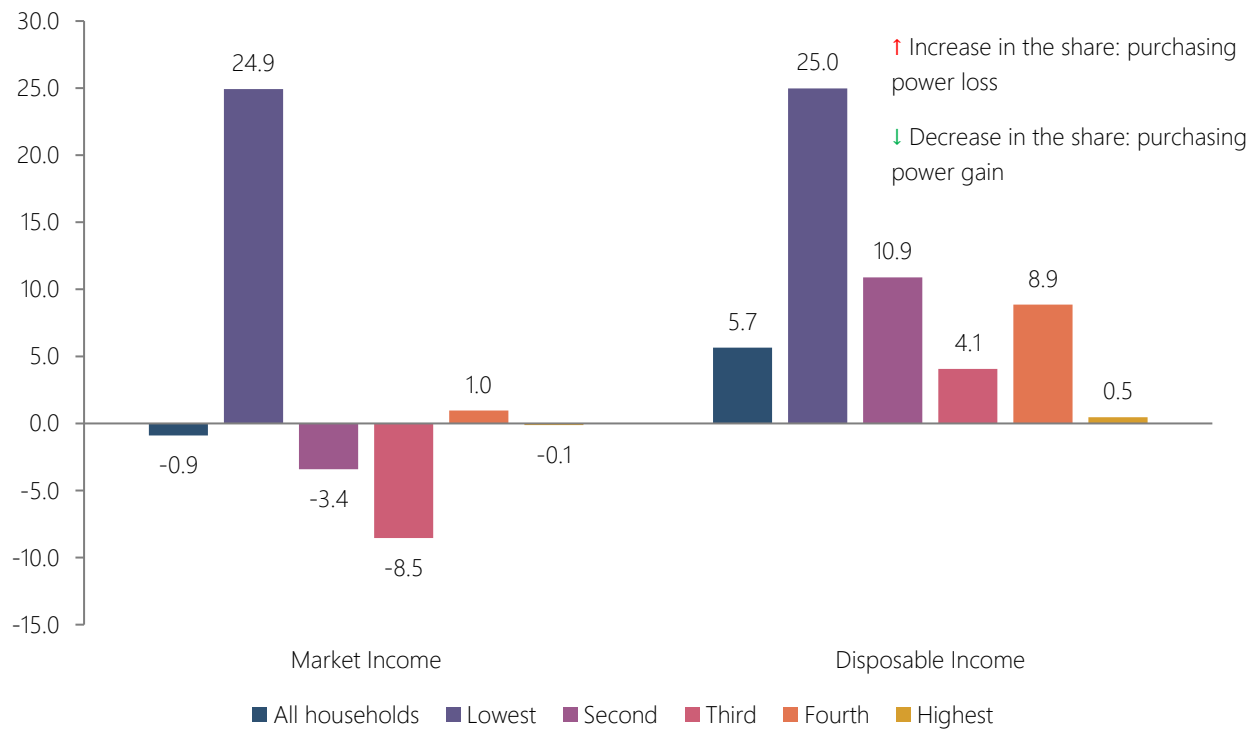
Households in the third income quintile saw the greatest drop in the share of income—12.6%.

During this period, disposable income rose faster than consumer prices for each income quintile. It was 11.8% higher for all households at the end of the first quarter of 2021, while prices had risen 1.2%. Current transfers received by households contributed most to these income gains. The rise in disposable income could be attributed primarily to the creation of—or increase in—COVID-19 income benefits. This suggests that Canadian households were able to maintain the same consumption level with a smaller proportion of their disposable income, thereby improving their purchasing power.

From 21Q1 to 22Q2

Figure 2

Change in the share of income needed to purchase the 2019 consumption basket from 21Q1 to 22Q2, by income quintile



Textual description:

Income quintile	Market income	Disposable income
All households	-0.9	5.7
Lowest	24.9	25.0
Second	-3.4	10.9
Third	-8.5	4.1
Fourth	1.0	8.9
Highest	-0.1	0.5

Sources:

Office of the Parliamentary Budget Officer; Statistics Canada.

Notes:

The change in the share of income needed to purchase the 2019 consumption basket is expressed as a percentage change. A negative value indicates a gain in purchasing

power, while a positive value represents a loss in purchasing power. Because the values of income and consumption expenditure are household averages, the proportion of income and its change over time are also average values.

Market income

In the second quarter of 2022, the change in the share of income needed to purchase the 2019 basket remained disparate from one income quintile to the next. Households in the lowest income quintile saw their share of market income required to purchase the same basket of goods and services increase 24.9% over the first quarter of 2021, while those in the second and third quintiles saw a drop of 3.4% and 8.5%, respectively. Households in these quintiles saw a marked improvement in their purchasing power compared with the other income brackets. Among households with higher incomes, the highest group saw a 1% increase, while the second highest saw a slight drop of 0.1%.

From 21Q1 to 22Q2, Canadian households—except those in the lowest income quintile—saw a jump in their market income because of significant wage increases. However, inflationary pressures outpaced these gains in most cases, increasing by 7.8% nationwide. Households in the second and third income quintiles withstood this pressure (with their wages bouncing back strongly) and increased by 16.3% and 11.3%, respectively, thereby contributing to an increase in market income that exceeded inflation. On the other hand, households in the lowest income quintile saw their self-employment income¹⁴ shrink, leading to the drop in market income. Their purchasing power shrank considerably because of soaring inflation and a decline in their market income.

The PBO noted that inflationary pressures cancelled out the rise in employment income.¹⁵ Wage increases associated with economic recovery and a tight labour market were not high enough to offset the surge in prices for some households, including those with the lowest incomes.

From a market income perspective, the PBO identifies two trends: Canadian households in the second, third and fifth quintiles were generally able to maintain the same level of consumption with a lesser share of their market income; households in the fourth quintile saw a slight decline in their purchasing power; and households in the lowest quintile saw a significant deterioration in their purchasing power.

Disposable income

When considering disposable income, the PBO found that households across all income quintiles spent a larger share of their disposable income to get the same basket of goods and services, compared with the first quarter of 2021. While the average increase for all households was 5.7%, it was highest for households in the lowest quintile (25%). In contrast, this figure was 0.5% for households in the highest income quintile.

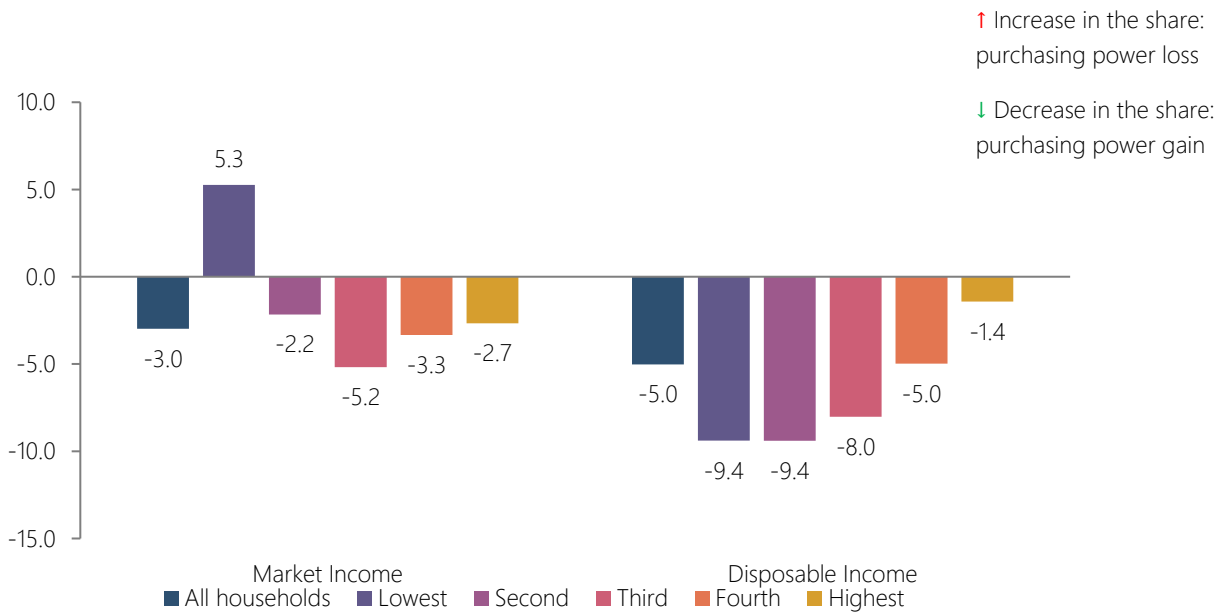
Consumer prices rose faster than disposable income for Canadian households across all income brackets over the same period, with an increase of 7.8% and 2.1%, respectively, since the first quarter of 2021. The PBO found that wage increases kept pace with rising prices for some quintiles and contributed positively to the increase in disposable income observed. However, the decrease in government transfers received between 21Q1 and 22Q2 adversely affected the increase in disposable income—substantially so for some households. This was the case for households in the lowest two income quintiles, where the decrease in government transfers counteracted wage gains. The end of COVID-19 pandemic-related benefits explains this trend.¹⁶

The PBO found that inflation outpaced the cost of living from 21Q1 to 22Q2, suggesting a deterioration in Canadians' purchasing power.

From 19Q4 to 22Q4

Figure 3

Change in the share of income needed to purchase the 2019 consumption basket from 19Q4 to 22Q4, by income quintile



Textual description:

Income quintile	Market income	Disposable income
All households	-3.0	-5.0
Lowest	5.3	-9.4
Second	-2.2	-9.4
Third	-5.2	-8.0
Fourth	-3.3	-5.0
Highest	-2.7	-1.4

Sources:

Office of the Parliamentary Budget Officer; Statistics Canada.

Notes:

The change in the share of income needed to purchase the 2019 consumption basket is expressed as a percentage change. A negative value indicates a gain in purchasing power, while a positive value represents a loss in purchasing power. Because the values of income and consumption expenditure are household averages, the proportion of income and its change over time are also average values.

Market income

From 19Q4 to 22Q4, households in all income quintiles were able to allocate a smaller share of their income on the same basket of goods and services— except for households in the first quintile. Their share of market income needed to purchase an equivalent basket rose 5.3%.

Market income rose significantly—by an average of 14.3% across the country—compared with the last quarter of 2019. As noted above, consumer prices rose but did not match the increase in market income, ending the fourth quarter of 2022 at 10.9%. Once again, aside from households in the lowest income quintile, the rise in employment income contributed significantly to gains in market income and outpaced inflation.

According to this definition of income, most households saw purchasing power gains over prepandemic levels.

However, it is important to note that this was not the case for households in the lowest income quintile. Although their market income rose by 5.1%, inflation had gone up by 10.7% since the last quarter of 2019. The increase in market income can be attributed primarily to gains in investment income. However, these were substantially offset by an increase in property income paid. The Bank of Canada's policy interest rate hike led to higher interest payments for all households,¹⁷ but the PBO believes that low-income households were disproportionately affected because of the significant—but negative—contribution of property income paid.

Therefore, the purchasing power of households in the first income quintile dropped from their prepandemic level.

Disposable income

In the fourth quarter of 2022, households in all quintiles saw the share of disposable income required to purchase the same initial basket of goods and services drop compared with before the COVID-19 pandemic.

Canadians' purchasing power improved by 5%. This figure was 9.4% for households in the first two income brackets.

Over this period, disposable income increased relative to consumer prices by 16.7% and 10.9%, respectively, at the end of the fourth quarter of 2022. Wage increases alone outpaced the rate of inflation for households in the three highest income quintiles. For the first and second quintiles, increases to current transfers received largely and positively affected disposable income. In contrast, it is important to note that the increase in current transfers paid had a significant negative impact on the change in disposable income for all household groups. However, it was insufficient to reverse the trend of the previous three years. As a result, the PBO's observations suggest that Canadian household purchasing power has improved from prepandemic levels.

Appendix A: Income measures by household

Table A.1

Income measures¹⁸ by household in 21Q1

Income quintile	Market income	Disposable income
All households	25,214	22,849
Lowest	3,599	7,129
Second	10,350	14,827
Third	18,490	19,576
Fourth	31,770	27,573
Highest	61,860	45,137

Table A.2

Income measures by household in 22Q2

Income quintile	Market income	Disposable income
All households	27,431	23,318
Lowest	3,100	6,138
Second	11,568	14,435
Third	21,808	20,292
Fourth	33,950	27,329
Highest	66,742	48,412

Table A.3

Income measures by household in 22Q4

Income quintile	Market income	Disposable income
All households	27,625	23,859
Lowest	3,748	7,802
Second	12,045	15,884
Third	21,954	21,426
Fourth	34,636	27,804
Highest	65,730	46,371

Notes

¹ Despite making this observation, the PBO notes that it is based on the “average household” in an income quintile. In practice, some households in an income bracket may experience different-than-average economic circumstances.

² Carloni, Dorian. (2022). How Inflation Has Affected Households at Different Income Levels Since 2019. Congressional Budget Office. Retrieved from the [Congressional Budget Office website](#).

³ For a better understanding of these data sources, consult the study on [Distributions of Household Economic Accounts](#) in Statistics Canada’s Methodological Guide: Canadian System of Macroeconomic Accounts.

⁴ Similarly, the study on [Current and Capital Accounts](#) is also available for consultation, in the same Statistics Canada guide.

⁵ The values of economic account distributions are initially expressed in nominal terms, not adjusted on a quarterly basis. These data were seasonally adjusted by the PBO on a quarterly basis, using implied seasonal factors of the corresponding aggregate series for the household sector taken from tables 36-10-0107-01 and 36-10-0112-01. This approach is based on the hypothesis that consumption habits and household incomes are equally affected by the same seasonal factors.

⁶ Economic accounts for income and in-kind consumption were excluded from the analysis because their prices are not economically significant. Therefore, this study uses the unadjusted version of these economic accounts. See Statistics Canada’s [Social transfers in kind concordance and mapping](#) page.

⁷ For brevity, the seasonally adjusted nominal average income—calculated by household on a quarterly basis—is called “disposable income.” This also

applies to market income and consumption expenditures. The PBO made further adjustments for this analysis. As a result, these data may differ from Statistics Canada's public data.

⁸ The PBO has hypothesized that all households are facing the same price levels. Consumption habits by income quintile allow for variability to be used when measuring inflation.

⁹ See Statistics Canada's [Income Reference Guide](#) for more information on definitions of income.

¹⁰ The PBO used the annual data series on distribution of accounts for 2019 (36-10-0587-01) as a starting point for this analysis. To compare them with quarterly series beginning in 2020 (36-10-0663), the economic account values were divided by 4, which assumes that households consume and earn their income at a uniform rate over the year in 2019.

¹¹ A negative change in the share of income indicates a purchasing power gain, while a positive value indicates a purchasing power loss.

¹² Statistics Canada. (February 5, 2021). "Labour Force Survey, January 2021". Retrieved from [The Daily](#).

¹³ Investment income received refers—in particular—to investment income from various investment vehicles and savings products, life insurance and pension plans. For more information, consult Statistics Canada's [Property income received](#) web page.

¹⁴ Self-employment income (i.e., mixed income) refers to net self-employment income of both farm and non-farm unincorporated businesses and professional practices, and net rental income. For more information, consult Statistics Canada's [Mixed income](#) web page.

¹⁵ Statistics Canada. (October 3, 2022). "Distributions of household economic accounts for income, consumption and saving of Canadian households, second quarter 2022." Retrieved from [The Daily](#).

¹⁶ Ibid.

¹⁷ Statistics Canada. (March 31, 2023). "Distributions of household economic accounts for income, consumption, saving and wealth of Canadian households, fourth quarter 2022." Retrieved from [The Daily](#).

¹⁸ See note 5.

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