



## GDP Growth Unadjusted for Population Change—a Misleading Measure of Canada's Economic Progress

by Ben Eisen, Milagros Palacios, and Lawrence Schembri

### MAIN CONCLUSIONS

- Growth in Canada's Gross Domestic Product (GDP) has been one of the indicators of the country's economic performance most frequently cited by journalists, analysts, and politicians.
- This Research Bulletin shows that, given the large differences in population growth across developed economies, measurements of change in GDP that are presented in aggregate rather than per person are not useful for making international comparisons of economic performance.
- Between 2000 and 2023, Canada had the second highest rate of GDP growth in the G7. However, after an adjustment is made for population growth to measure GDP per person, Canada's growth rate over this period is near the bottom of the group and well below the G7 average.
- Because rates of population growth vary from one time period to another, GDP shown in aggregate is also misleading in historical comparisons of growth rates. Growth in GDP per person, on the other hand, provides a more accurate comparison of economic performance: Canada's economic growth per person has been lower since 2015 than it has been under any of Canada's previous four long-serving prime ministers.
- Comparative analyses across time or countries that seek to use GDP to compare changes in productivity, quality of life, or nearly any other dimension of economic performance should adjust for changes in population by using GDP per person rather than aggregated GDP.

## Introduction

Historically, growth in Canada’s Gross Domestic Product (GDP) has been one of the most frequently cited indicators of the country’s economic performance. Journalists, politicians, and analysts frequently compare Canada’s rate of economic growth to other countries or to Canada’s own past performance on this indicator to advance arguments about the health of the economy and living standards in Canada. Because of the large differences in population growth across developed economies, however, measurements in the change of GDP that are presented in aggregate rather than per person are not useful for making international comparisons of economic performance.

In this Research Bulletin, we demonstrate the limits of growth in aggregated GDP as a useful indicator of economic performance by comparing Canada’s performance in recent years to the rest of the G7 economies using both GDP (inflation-adjusted or real) and GDP per person. We show that, while Canada shows rapid growth in GDP relative to our G7 peers in the twenty-first century, adjusting for population growth inverts the results, with Canada falling near the bottom of the G7. Further, we show that, given the dramatic increase in immigration-driven population growth in Canada since 2015, aggregated GDP is also no longer a useful indicator for comparing the country’s current economic performance to past periods.

## Prominent references to the growth of Canada’s GDP in journalism and politics

Gross Domestic Product is one of the most important and frequently used indicators in economics. GDP measures the inflation-adjusted or real value of final goods and services produced in an entire economy in a given time period—usually a year. The growth rate of GDP is often used to assess the overall health and performance of economies (Callan, 2023).

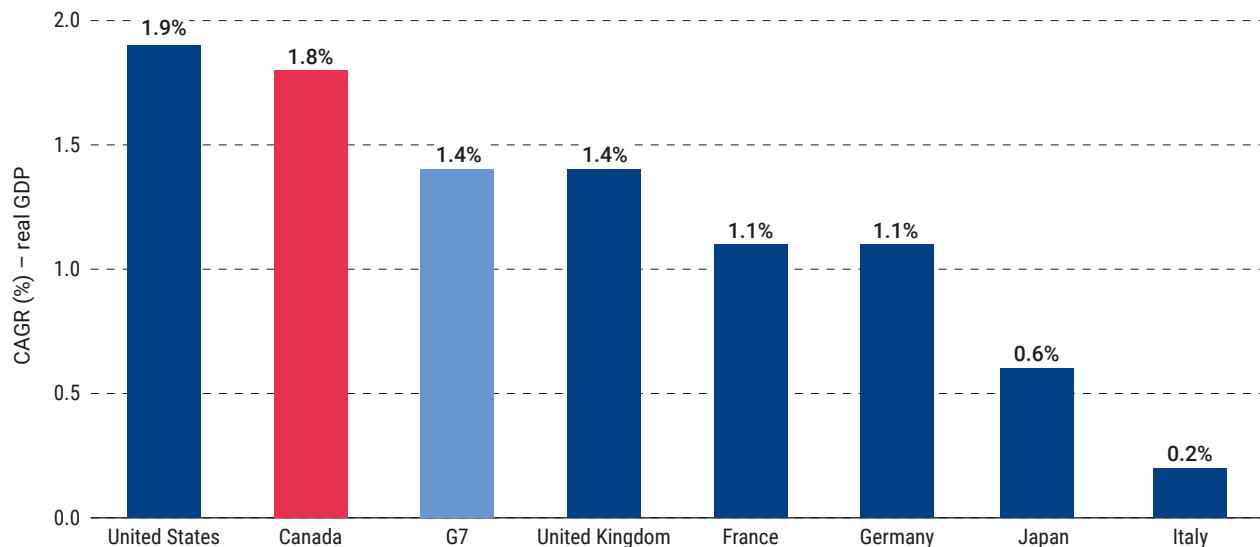
The growth of Canada’s GDP has often been the fastest among rich countries in recent decades. We can see this by comparing average annual economic growth in the Group of Seven (G7) countries. The G7 is an informal grouping of advanced economies and is frequently used to gauge Canada’s economic performance. Its members are Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

**Figure 1** shows the compounded annual economic growth rate (CAGR) in each of the G7 countries, as well as for the G7 taken as a whole, over the period from 2000 to 2023. It shows Canada as having had the second fastest growing economy (1.8% annually) in the G7, just behind the United States (1.9%). Canada significantly exceeded the G7 average of 1.4% over the course of this period, driven almost entirely by increases in population, and thus, employment.

There are countless examples of analysts and commentators referring to Canada’s having faster GDP growth than other rich countries as evidence of strong economic performance, with comparisons to the G7 being particularly frequent. For example, in 2022 Reuters published an analysis with the title “What Slowdown? Canada’s economy to top G7 on high oil, crop prices” (Gordon and Nickel, 2022). The City of Toronto’s webpage makes a case for the city and country as having a “strong economy” and bolsters this claim by noting Canada’s second place ranking in the G7 for average economic growth from the years 2014 to 2018 (City of Toronto, 2023). An analysis published in Bloomberg describes Canada as “booming”, once again pointing to Canada’s fast economic growth relative to G7 countries to support this characterization (Winkler, 2023).

Governing politicians in Canada also frequently point to Canada’s GDP growth rate as evidence of strong economic performance and successful economic policy. Prime Minister Justin Trudeau’s government in particular frequently makes use of this metric. A recent CBC news story detailing recent statements by federal

**Figure 1: Real GDP, compounded annual growth rate (CAGR), 2000–2023**



Sources: International Monetary Fund, 2023; calculations by the authors.

officials about the country’s economic performance refers to Treasury Board President Anita Anand pointing to IMF projections that Canada will lead the G7 in GDP growth in 2024 (Tasker, 2023). In recent remarks about the Canadian economy, federal finance Minister Chrystia Freeland boasted that Canada had experienced the “strongest economic growth in the G7” over 2022 (Freeland, 2023).

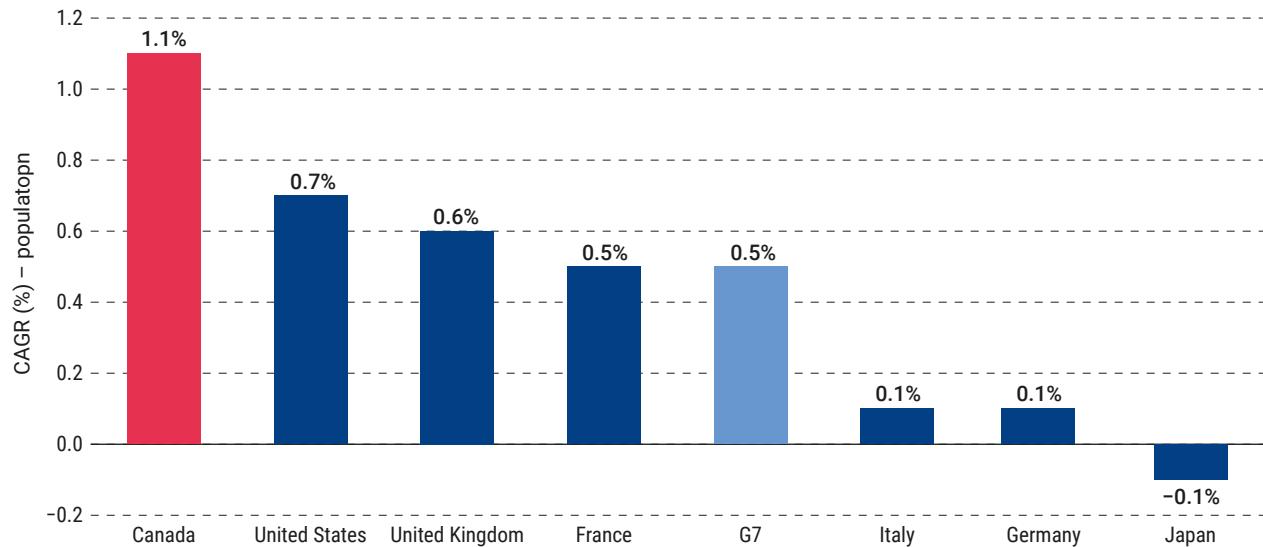
The Trudeau government is fond of international comparisons on growth in GDP as evidence of the success of its economic record, but it certainly is not the first to do so. Prime Minister Harper also frequently used international comparisons of GDP growth as evidence of successful economic policy. In 2015, Mr. Harper stated that Canada was “head and shoulders above all our G7 partners over the long-term” (Fitz-Morris, 2015). Even provincial governments make use of the same line of argument. A 2017 media release from Premier Kathleen Wynne’s government presented the fact that economic growth in Ontario was on track to lead all G7 countries as proof that its “economic plan is working” (Government of Ontario, 2017).

There are countless other examples. This sample illustrates, however, that international comparisons of growth in GDP are frequently employed by analysts and politicians to bolster claims of strong economic performance in Canada.

## Differing rates of population growth drive Canada’s strong comparative performance

Unfortunately, the widespread and frequent reference to Canada’s comparatively rapid rate of economic growth in media and politics does more to obscure public understanding of Canada’s economic performance than it does to enlighten it. The reality is that the statistics described above are not driven by growth in productivity and do not reflect rising living standards. Instead, they are primarily the result of large differences among the G7 countries in the growth of the population and labour force **Figure 2** compares population growth in the G7 countries over the same time period as shown in figure 1, 2000–2023.

**Figure 2: Population, compounded annual growth rate (CAGR), 2000–2023**



Sources: International Monetary Fund, 2023; calculations by the authors.

Figure 2 shows that Canada has had by far the fastest population growth rate in the G7 during this period, growing at an annualized rate of 1.1%. This is more than twice the annual population growth rate of the G7 taken as a whole (0.5%) and is much faster than even the second fastest growing country, which is the United States (0.7%). During this time period, Canada’s population increased by 29.8% compared to growth of just 11.5% in the entire G7.

For analyses of GDP growth to have any usefulness in assessing important dimensions of economic health such as productivity growth and improvements in living standards, comparative measurements of economic growth must be adjusted for population change by comparing growth in GDP per person.

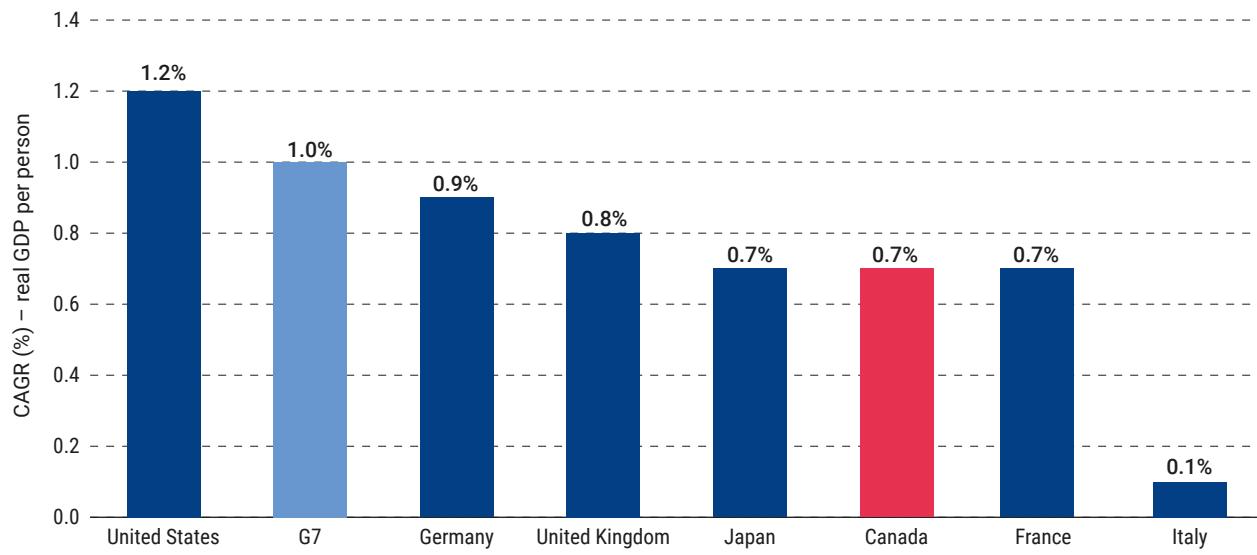
Figure 3 makes this adjustment, comparing the growth in GDP per person of the G7 countries as well as the G7 average from 2000 to 2023. Figure 3 tells a completely different story than figure 1 about the performance of Canada’s economy so far this century. It shows that Canada’s real per-person annual economic growth rate (0.7%) is meaningfully worse than the G7 average (1.0%). The gap with the United States (1.2%) is even larger.

These data show that references to Canada’s comparatively rapid growth in GDP over the course of the 21<sup>st</sup> century to date provide us with essentially no information about comparative living standards, productivity, or other key elements of economic performance. Instead, Canada’s high ranking for that indicator is almost entirely driven by population growth. A straightforward adjustment for differences in population growth completely undermines the narrative of comparatively strong Canadian economic performance during the first decades of the 21<sup>st</sup> century. In fact, Canada has had substantially weaker per-person growth than the United States in this period, is below the G7 average, and near the bottom of the group.

### **Growth in GDP is also not useful for historical comparisons**

We have shown that, because Canada’s population has grown much faster than other developed economies in recent decades, international comparisons of economic growth tell us little about the relative performance of

**Figure 3: Real GDP per person, compounded annual growth rate (CAGR), 2000–2023**



Sources: International Monetary Fund, 2023; calculations by the authors.

Canada’s economy. However, Canada’s rate of population growth has not been constant over this period. Starting in 2016, following the election of Prime Minister Justin Trudeau in October of 2015, increased immigration has led to an increase in population growth. This has had the effect of boosting growth in GDP and, to some extent, obscuring the historically weak economic growth per person during his government.

**Figure 4** compares the annualized economic growth rate of Canada in several historical periods coinciding with the tenures of Canada’s last five long-serving Prime Ministers.<sup>1</sup> This metric shows that the rate of economic growth in Canada has been slower in recent years than in earlier historical periods. Growth during the tenures of Prime Minister Justin Trudeau (1.6%) and Prime Minister Harper (1.5%) have been much slower than under Brian Mulroney (2.1%), Jean Chrétien (3.4%), or Paul Martin (3.0%).

Figure 4, however, understates the extent of the downturn in the performance of Canada’s economy because

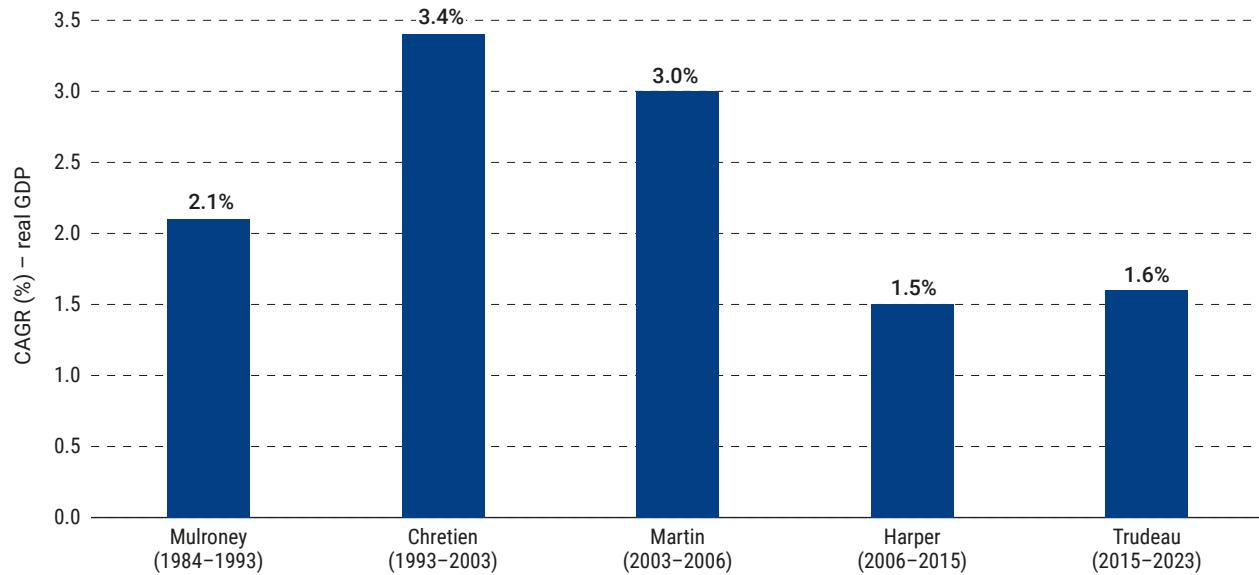
it does not adjust for an increase in population growth in recent years. **Figure 5** adjusts for population by showing the rate of per-person economic growth in Canada in each of these historical periods.

Figure 5 shows that per-person economic growth in Canada has been nearly stagnant in recent years. From 2015 to 2023, during the Trudeau government, real per-person economic growth has averaged just 0.3%. This is down from 0.5% during Prime Minister Stephen Harper’s time in office. Growth during the Harper government was also down compared to previous historical periods with per-person growth rates of 0.8% under Prime Minister Mulroney, 2.4% under Prime Minister Chrétien and 2.0% under Prime Minister Martin.

The data in this section show that as a result of different rates of population growth over time, not only is aggregated GDP growth an unhelpful measure of comparative economic performance among countries, it is also not useful for comparing the evolution of productivity or living standards across different periods of time.

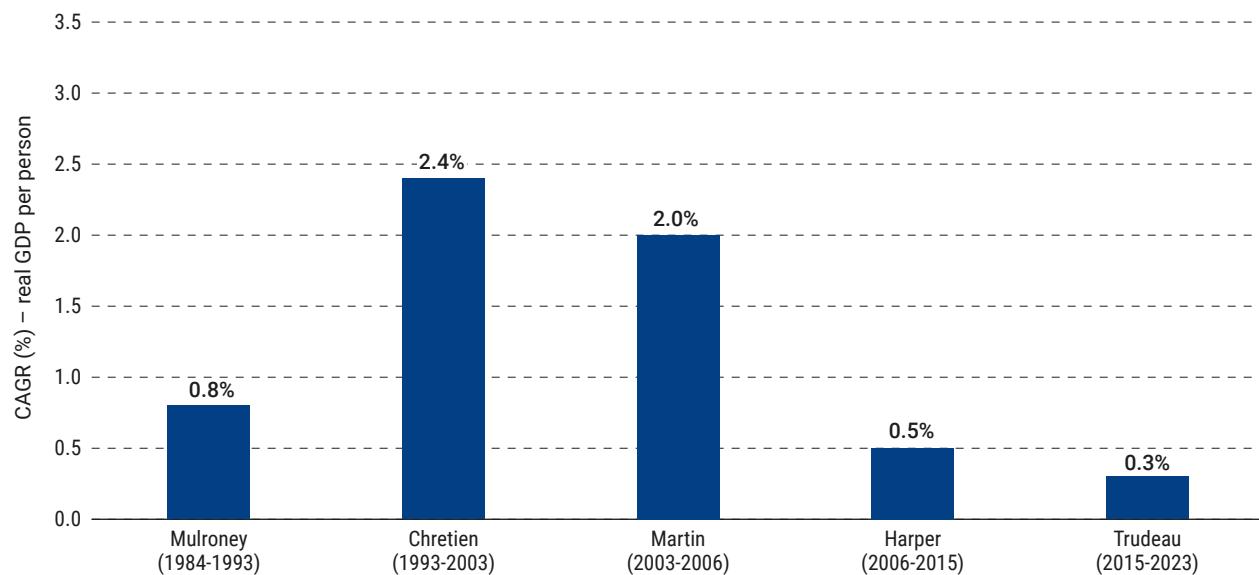
1 The briefly seated governments of Prime Ministers Turner and Campbell are excluded from this analysis.

**Figure 4: Real GDP, compounded annual growth rate (CAGR), Canada, selected periods**



Sources: International Monetary Fund, 2023; calculations by the authors.

**Figure 5: Real GDP per person, compounded annual growth rate (CAGR), Canada, selected periods**



Sources: International Monetary Fund, 2023; calculations by the authors.

## Conclusion

Historically, analysts in politics and the media have often relied on GDP growth as a tool for assessing Canada’s economic performance relative to other countries and over different time periods. This study has shown that the indicator is no longer useful for either of these purposes.

Canada’s GDP has grown at the second fastest rate in the G7 since 2000. However, this is largely the result of a population that grew faster than populations in comparable countries. If we adjust for population by measuring

growth in GDP per person we see that Canada is in fact underperforming against the G7 average and is placed near the bottom of the group.

The acceleration of Canada’s population growth in recent years also renders GDP a misleading indicator for comparing economic growth performance across different historical periods. When we adjust for population by looking at growth in GDP per person, we see that the Canadian economy has been almost completely stagnant with annualized growth of 0.3% since 2015, the lowest growth rates under Canada’s last five long-serving prime ministers.

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## About this Publication

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Lawrence Schembri served as the Deputy Governor of the Bank of Canada from 2013 until his retirement in June 2022. In this capacity, he was one of two deputy governors responsible for overseeing the Bank's analysis and activities promoting a stable and efficient financial system. Starting in 2016, he was responsible for overseeing the Bank's analysis of domestic economic developments. As a member of the Bank's governing council, he shared responsibility for decisions related to monetary policy and financial system stability and for setting the Bank's strategic direction. Mr. Schembri joined the Bank in 1997 as a visiting research advisor in what is now the International Economic Analysis Department. In 2001, he was appointed senior research director in the same department and became its managing director in 2005. In 2010, he was appointed advisor to the governor, with responsibilities for financial stability analysis and coordinating the Bank's contribution to the Financial Stability Board. While at the Bank, Mr. Schembri was an active researcher, publishing research on exchange rate and monetary theory and policy in open economies, the international monetary system, and financial stability. A champion of efforts to promote economic literacy and Indigenous economic opportunity, he sponsored the Bank's Governor's Challenge undergraduate student competition and was a founding member of the Central Bank Network for Indigenous Inclusion. He currently serves on the board of the Tulo Centre of Indigenous Economics. Mr. Schembri received a Bachelor of Commerce degree from the University of Toronto, an MSc in Economics from the London School of Economics and Political Science, and a PhD in Economics from the Massachusetts Institute of Technology. Prior to joining the Bank of Canada, Mr. Schembri was an assistant professor and, later, associate professor of economics at Carleton University.

