

Non-Permanent Residents and their Impact on GDP per capita

Research Note
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Main messages

- The statistic “GDP per capita” has been used by some Canadian commentators as a summary measure to make sweeping claims about the state of the Canadian economy. However, this is misleading. Canada’s GDP per capita should not be used as if it were the sole indicator of economic well-being.
- Many conclude that low growth in GDP per capita over the past decade suggests that Canada’s economic growth has been low. But that is untrue. Canada’s economic growth has been on par or ahead of peer countries. Growth in GDP per capita, however, has been decreased by a high growth in temporary residents, like temporary foreign workers and international students. This is an arithmetic quirk of GDP per capita.
- This paper estimates what our GDP per capita growth would have been if Canada’s intake of temporary residents was more in line with recent historical norms. It also estimates the impact on GDP per capita growth in the coming years as a result simply of lowering our intake of temporary residents. Under both scenarios, Canada’s GDP per capita growth would have looked—and will look—very much like our peers.

Introduction

GDP per capita is a poor measure of economic performance and economic well-being. Using changes in GDP per capita as evidence of either improving or deteriorating economic well-being—or as evidence that economic policies are working or not—is poor economics, poor public policy and poor reasoning.

Per-capita GDP is calculated by dividing real GDP—the total value of goods and services produced—by the total population. In the first quarter of 2025, GDP per capita was estimated to be \$59,146—somewhat higher than in 2024 but bemoaned by economists and the business community alike as not having grown fast enough. However, as has been demonstrated, real GDP growth—the numerator—has not performed poorly by international standards. In fact, Canada’s GDP growth over the last decade has been second only to the U.S. Rather, it is the denominator that explains Canada’s seemingly poor performance by this measure: GDP has grown but not as quickly as the population. This arithmetic quirk means that GDP per capita can increase without real economic growth: policies that decrease the population while having minimal to no effect on GDP will cause GDP per capita to increase without any substantial GDP growth.

In this brief, I look at one such policy: the reduction of non-permanent residents (NPRs) in Canada. Using publicly available data and simplified economic modeling, it is estimated that NPRs contributed between 0.17 and 0.36 percent of GDP from 2019 to 2024 despite making up between 3.6 and 7.4 percent of the Canadian population. Because NPRs make up a large proportion of the Canadian population but do not contribute a large proportion of GDP, NPRs lowered GDP per capita by between 3.6 to 7.6 percent from 2019 to 2024—roughly the same proportion as their proportion of the population. Moreover, had NPRs been capped at two percent of the Canadian population, GDP per capita would have been higher by 5.6 percent in 2024.

Furthermore, had NPRs been capped at two percent over the last decade, Canada’s ranking in GDP per capita growth would have improved modestly. Canada would have jumped from second-

to-last place up to 10th-to-last place (31st place). However, this improvement in ranking does not mean that economic growth improved: it is driven by a population decline offset by a small decline in real GDP.

I also examine the federal government's announced Immigration Levels Plan (ILP) that aims to reduce NPRs to five percent of the population by 2026, down from over seven percent. I estimate that the ILP will increase GDP per capita by 1.8 percent by 2027 relative to what would occur if there was no ILP and it was "business as usual." However, most of this is a result of relatively fewer NPRs and thus a smaller Canadian population—which increases GDP per capita—offset by a smaller real GDP by 0.19 percent compared to "business as usual."

While NPRs contribute positively to GDP, the percent of NPRs in the Canadian population outweighs their contributions to GDP. NPRs work in low productivity, low-wage sectors or not at all (i.e., international students). Reducing NPRs—such as the ILP does—will increase GDP per capita, but this does not indicate economic growth.

GDP per capita will be heavily influenced in Canada in the coming years due to changes in the number and composition of NPRs, just as it has in recent years. Decreasing the number of NPRs, including international students, will produce a higher GDP per capita and potentially increase where Canada sits in the GDP-per-capita growth rankings, but that is an artifact of how the measure is constructed. Using changes to GDP per capita to make sweeping conclusions about the health of the Canadian economy is misleading. Sustainable economic growth will require deeper reforms that increase labour productivity and affordability, not just decrease the population.

Methodology

"Non-permanent residents" refers to persons from another country with a usual (temporary) place of residence in Canada. Non-permanent residents can come to Canada through four main pathways:

- Temporary Foreign Workers Program (TFWP): enables Canadian employers who have obtained a Labour Market Impact Assessment to recruit foreign workers to fill temporary job vacancies for which there are no suitable Canadian citizens or permanent residents available.
- International Mobility Program (IMP): seeks to attract foreign workers who can offer significant economic, social or cultural benefits to Canada; improve the country's competitiveness or meet its bilateral or multilateral trade agreements. IMP work permit holders can be further classified based on their primary objective in Canada, namely work, study, humanitarian and compassionate (H&C) or permanent residency (PR) purposes.
 - The Study Stream includes work permits for: co-op students and post-secondary internships, spouses of international students and post-graduates of certain designated learning institutions.
 - The H&C Stream includes work permits for those who have come to Canada and through no fault of their own or their sponsors, are destitute and have no other way to support themselves.

- The PR Stream is work permits for those who have satisfied PR requirements but are not yet a PR.
- International students: foreign nationals (and their family members) who come to Canada to study at a designated learning institution must obtain a study permit.
- Asylum seekers/refugees: people who have fled their countries because of a well-founded fear of persecution. Asylum claims in Canada are not automatically approved and approval can be a lengthy process. While waiting for a decision, asylum seekers are considered non-permanent residents and may apply for a work or study permit (through IMP or as an international student).

Family members living with work or study permit holders are also included as NPRs, unless these family members are already Canadian citizens or landed immigrants or permanent residents.

To estimate the effect of NPRs on GDP per capita, GDP per capita is calculated as (real) GDP divided by the population. NPRs impact both the denominator (population) and numerator (GDP). The impact of NPRs on the denominator can be easily examined by looking at the how many persons in the population are NPRs. NPR data is publicly available via Statistics Canada Tables 17-10-0121-01 and 17-10-0040-01.

To estimate the impact of NPRs on GDP (the numerator), I first start by using only those NPRs that have employment income (i.e., have a T4). These I refer to as temporary foreign workers (TFWs) regardless of the program through which they entered Canada. I then assume that GDP follows a standard Cobb-Douglas production function where output is a product of technology, capital and labour. I further assume that the elasticity of output with respect to labour is the same for an TFW and a domestic worker and that capital shares and productivity do not change if the number of TFWs changes.

Within a Cobb-Douglas framework, the total share of output contributed by TFW's is the average product of labour multiplied by the labour share of total output multiplied by the labour of TFWs or $\alpha_L \frac{Y}{L} L_{TFW}$ where $L = L_{Domestic} + L_{TFW}$.

Because TFWs are concentrated in low-productivity industries, this output share must be calculated at the industry level and summed across all industries. Statistics Canada provides publicly available estimates of the average product of labour by industry (α_L) and the labour share of total output by industry ($\frac{Y}{L}$). To estimate the labour of TFWs by industry (L_{TFW}), a Statistics Canada report is relied upon, i.e., there is no publicly available data set that contains TFWs by industry for all years. The data that is available is for the years 2010, 2019 and 2020.

To model the impact of NPRs/TFWs on GDP per capita after 2020, several assumptions are made.

- The data on the distribution of TFWs by industry is only available for 2010, 2019, and 2020. I assume that the distribution of TFWs across industries in 2021 to 2027 remains the same

as in 2020. This assumes that the high share of TFWs in less labour productive industries (retail, accommodation and food services, etc.) has not changed.

- Data on labour productivity, labour share, number of jobs and hours worked by industry is only available up until 2023. I assume these variables follow a linear time trend and project the trend from 2024 to 2027.

I use these assumptions to compare actual GDP per capita to two alternatives:

1. What would GDP per capita have been from 2019 to 2024 had there been no NPRs in Canada?
2. What would GDP per capita have been from 2019 to 2024 had NPRs been held steady at around 2 percent of the population? As I will show, NPRs hovered around 2 percent of the population from about 2000 to 2018 (albeit increasing modestly).

To estimate the effect of holding NPRs at 2% on the GDP per capita growth rate from 2015 to 2023, I use the available data and methods (discussed above). Because the distribution of TFWs by industry is only available for 2010, 2019, and 2020, I assume that the distribution of TFWs across industries between 2010 and 2019 follow a linear trend. I estimate and apply the trend. To examine Canada's ranking in GDP per capita growth, data from the OECD on quarterly GDP per capita was used, calendar and seasonally adjusted in US dollars and adjusted for purchasing power parity in 2020. To ensure a consistent comparison, the Canadian GDP per capita re-calculated for adjustments in NPRs was adjusted for USD and purchasing power parity in 2020.

Lastly, to estimate the impact of the ILP that is expected to take effect from 2025 to 2027, I compare two scenarios and make the following assumptions:

- ILP is *not* effective: there is no change in the current trends of NPR levels. NPRs continue to grow according to the average growth rate estimated by regressing NPRs on year.
 - For this scenario, I estimate a linear growth trend of NPRs from 2016 to 2024 and extend it into 2027. As before, I hold the distribution of TFWs across industries at their 2020 levels and use linear time trends to predict labour productivity and job growth by industry into 2027. I use population forecasts from the IMF that were forecasted before the ILF was announced. I use GDP forecasts from the PBO October 2024 outlook that do not take into account the ILP impacts (nor tariff impacts).
- ILP is effective: the ILP is effective at reducing temporary resident levels to 5 percent of the population by the end of 2026.
 - Beginning in 2025, I let NPR levels decline by 10 percent. I chose 10 percent as the ILP cap on new entrants is set to decline by 10 percent in 2025. While this likely underestimates the decline in NPRs in 2025 (i.e., it doesn't take into account outflows due to expiration of permits), it can be thought of as a lower bound. In 2026, I set the number of NPRs equal to 5 percent of the population. In 2027, I assume NPRs grow only at the rate of estimated population growth, maintaining their share at 5 per cent.

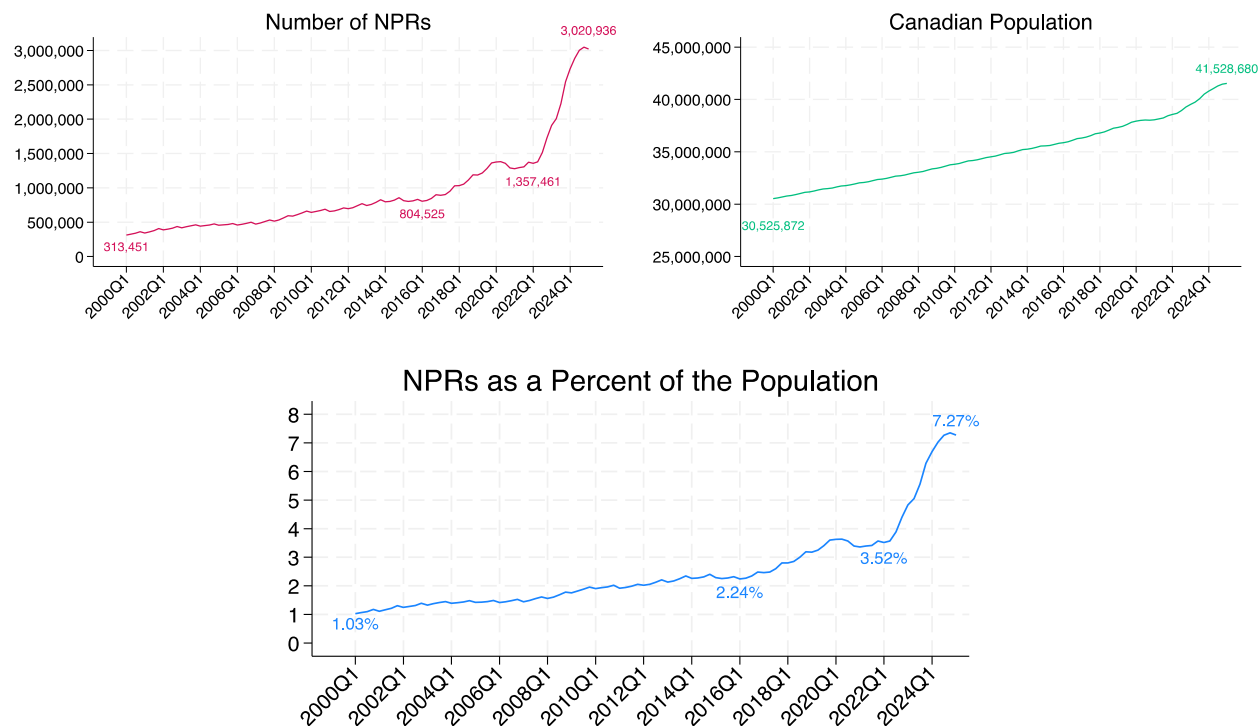
- For the population forecasts, I take the population forecasts from the IMF pre-ILF announcement. I adjust the population numbers for the decrease in NPRs. However, I also assume that 50 percent of NPRs become PRs (i.e., the population forecasts are adjusted downwards by 50 percent of the decline in the NPR population).
- For the GDP estimates, I start with the GDP forecasts from the PBO October 2024 outlook that do not take into account the ILP impacts (nor tariff impacts). These are then adjusted for the estimated decline GDP contributed by NPRs.

Data Trends: Growth of Non-Permanent Residents and GDP Per Capita

As shown in Figure 1, the number of NPRs in Canada grew by 864 percent from January 2000 to January 2025—much faster than the growth of the Canadian population which grew by 36 percent over this same time period. From 2000 to 2016, the number of NPRs grew slowly but steadily. There was a period of more rapid NPR growth from January 2016 to April 2020 (the beginning of the COVID-19 pandemic) after which the number of NPRs flattened out. However, the number of NPRs accelerated rapidly as of about January 2022 (i.e., the COVID-19 pandemic recovery period), increasing by 123 percent from January 2022 to January 2025 and increasing from 3.52 percent of the Canadian population to 7.27 percent of the Canadian population.

During this same period, GDP per capita has increased albeit with small and large fluctuations (Figure 2). GDP per capita increased relatively steadily before a drop in 2008 due to the Great Recession. The economy recovered and GDP per capita grew fairly steadily again until 2020 when the COVID-19 pandemic occurred. There was a partial recovery into late 2022 and early-2023 where once again GDP per capita started to decline.

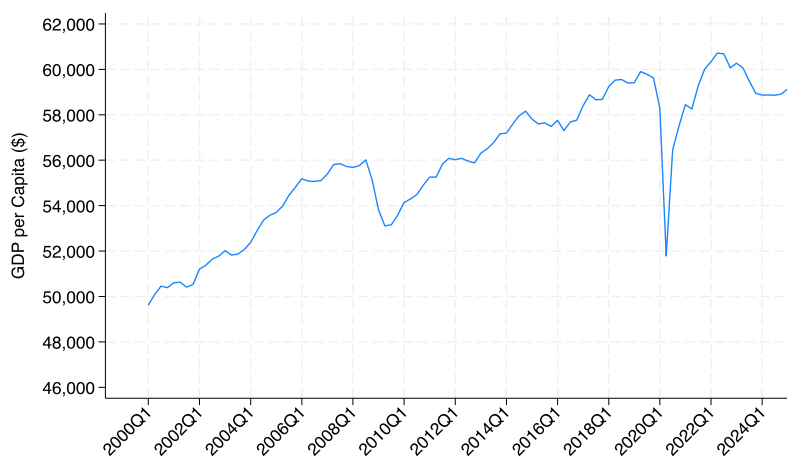
Figure 1: Growth in Non-Permanent Residents Over Time, Quarterly



Data source: Statistics Canada Table 17-10-0121-01, Table 17-10-0040-01, Table: 17-10-0009-01, and author calculations.

Note: the numbers reported here all non-permanent residents (“NPRs”) in Canada defined as persons from another country with a usual place of residence in Canada and who has a work or study permit (i.e., through the TFWP, IMP, or international student) or who has claimed refugee status (asylum claimant). Family members living with work or study permit holders are also included, unless these family members are already Canadian citizens or landed immigrants or permanent residents.

Figure 2: GDP Per Capita, Quarterly



Data source: Statistics Canada Table 36-10-0104-01 and Table:17-10-0009-01

How Large of an Impact do NPRs have on GDP per Capita?

Figure 1 in the last section showed that by 2024/2025, NPRs were just over 7 percent of the Canadian population. In calculating GDP per capita ($=\text{GDP}/\text{population}$), NPRs contributed a large share to the denominator by 2024/2025. Mathematically, the more NPRs there are, the lower GDP per capita is.

NPRs can also increase GDP per capita by contributing to the numerator (GDP). Figure 3 shows the estimated percentage of the Canadian population that are NPRs (purple bar) and the estimated percentage of GDP attributable to TFWs (i.e., NPRs with employment income; green bar). Despite NPRs large contribution to the population, TFWs contribute a disproportionately smaller share of GDP, and the contributed share of GDP did not increase as fast as the NPR share of population. In 2019, NPRs made up 3.63 percent of the population and only contributed 0.17 percent to GDP. In 2024, NPRs were 7.41 percent of the Canadian population but only contributed 0.36 percent of GDP. That is, NPRs as a share of the Canadian population more than doubled whereas their contribution to GDP less than doubled.

This disproportionate low contribution to GDP is likely because TFWs are disproportionately employed in low-productivity sectors such as accommodation and food services, retail trade, and agriculture. From 2010 to 2021, TFW employment became increasingly concentrated in three low-productivity sectors: accommodation and food services; retail trade; and administrative, support, waste management, and remediation services. These three sectors accounted for 45 percent of all TFW employment in 2019 and 42 per cent in 2021, up from 33 per cent in 2010.

Figure 3: Contribution of NPRs to Canadian GDP and Population

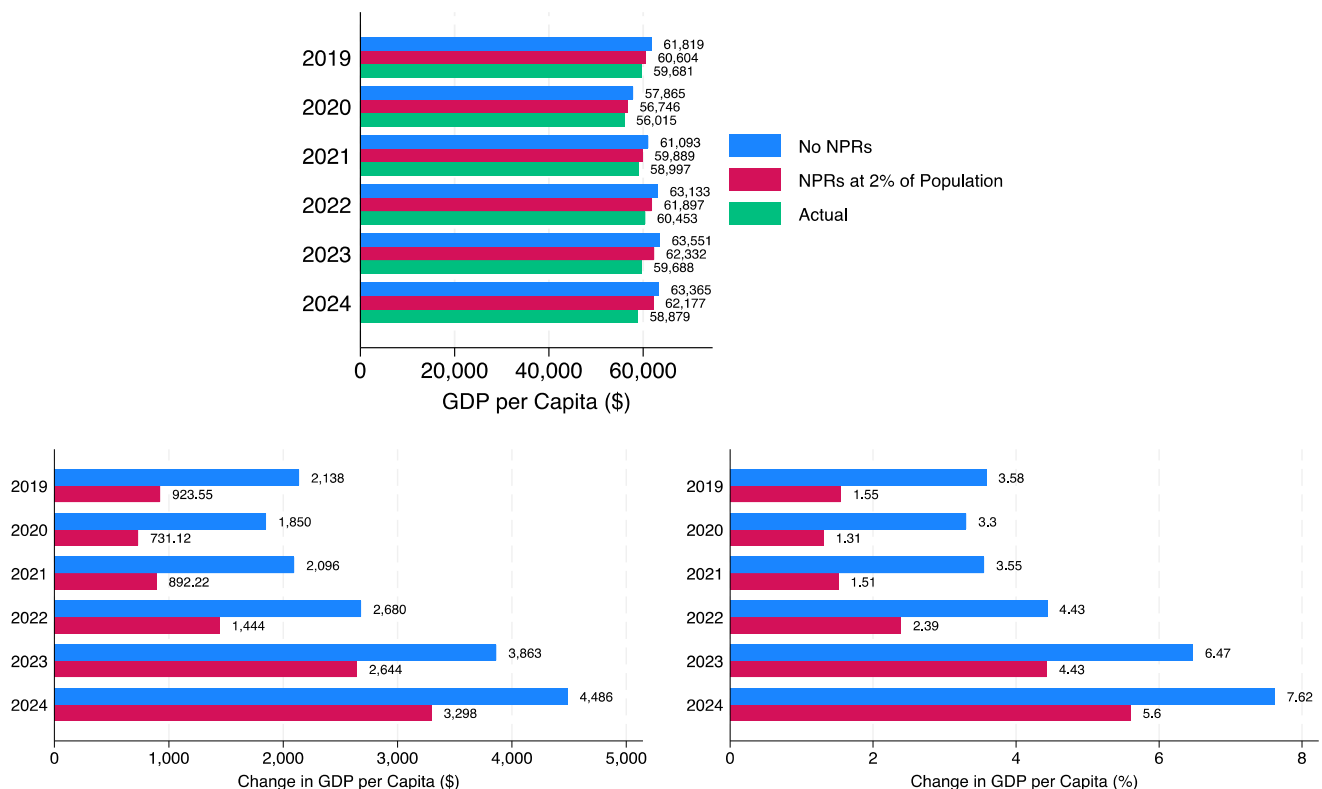
Because NPRs constitute a disproportionately large amount of the population compared to GDP, their effect on GDP per capita will be negative due to arithmetic. In examining the impact of NPRs on GDP per capita, I compare observed GDP per capita to two hypothetical scenarios:

1. What would GDP per capita have been had there been no NPRs from 2019 to 2024? Under this scenario, I simulate what would have happened if Canada had issued zero work and study permits and took in zero asylum claimants. I assume that had there been no NPRs, no other changes in the economy would have occurred.
2. What would GDP have been had the number of NPRs remained at about 2 percent of the Canadian population from 2019 to 2024?

Figure 4 shows how GDP per capita would change from 2019 to 2024 if there were no NPRs in Canada (blue bar) and if NPRs had been held steady at two percent of the Canadian population (red bar). The green bar shows the actual GDP per capita. The top graph shows GDP per capita while the bottom left graph shows the change in dollar terms and the bottom right graph shows the change in percentage terms.

In 2019, GDP per capita was \$59,691/person. It would have been \$61,819/person— \$2,138/person or 3.58 percent higher— if there had been no NPRs. Likewise, in 2024, GDP per capita was \$28,879/person. If there had been no NPRs in 2024, GDP per capita would have been \$63,365/person—\$4,486/person or 7.62 percent higher.

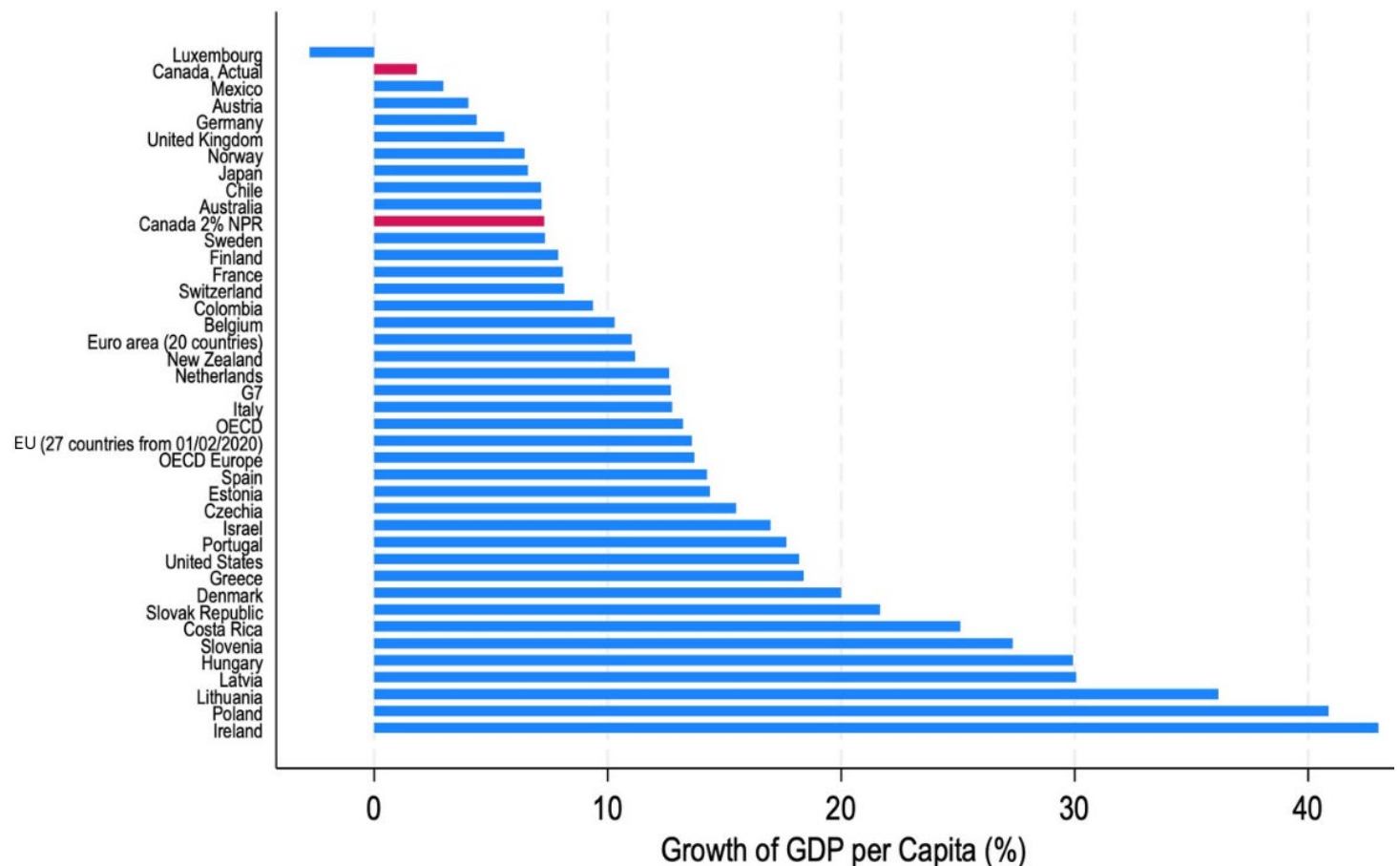
Figure 4: Effect of NPRs on GDP per Capita



Likewise, had NPRs been held at two percent of the population, GDP per capita would have been \$60,604/person in 2019—\$924/person (1.55 percent) higher, and in 2024 it would have been \$62,177/person—\$3,298/person (5.6 percent) higher.

Had NPRs been held at two percent of the population, Canada's ranking in the GDP per capita *growth* table over the last decade would have increased. Figure 5 shows Canada's ranking in GDP per capita growth from 2015 to 2023/24. Over this time, Canada's GDP per capita growth was second-to-last, ahead of only Luxembourg who experienced a decline in GDP per capita. Had NPRs been held at two percent of the population in Canada over this same time, Canada would have jumped up and our GDP per capita growth would be situated squarely in line with our comparator countries: a little bit higher than countries like Germany, the United Kingdom and Australia and a little bit lower than countries like Belgium, Sweden and France. While holding NPRs at a lower level increases Canada's GDP-per-capita growth ranking, this is done without any real economic growth. It is a result of a population decline.

Figure 5: Change in Canada's GDP per Capita Ranking if NPRs held at 2% of Population



Data Source: OECD Data Explorer. Quarterly GDP per capita growth, chained prices in USD adjusted for PPP, Q1 2015 to Q3 2024. Includes OECD countries plus selected aggregates.

Overall, GDP per capita would have been higher had the number of NPRs been lower and Canada would have ranked better in GDP per capita growth. However, this is because NPRs impact GDP per capita predominantly through their impact on the denominator (population). NPRs contribute

relatively little to GDP (i.e., because they are employed in low productivity industries or are not working much, such as international students) and a relatively large amount to the population. Reducing the number of NPRs would have increased GDP per capita, making the economy appear to grow, while having a very small negative effect on real GDP.

How Will the Immigration Labour Plan Impact GDP per Capita?

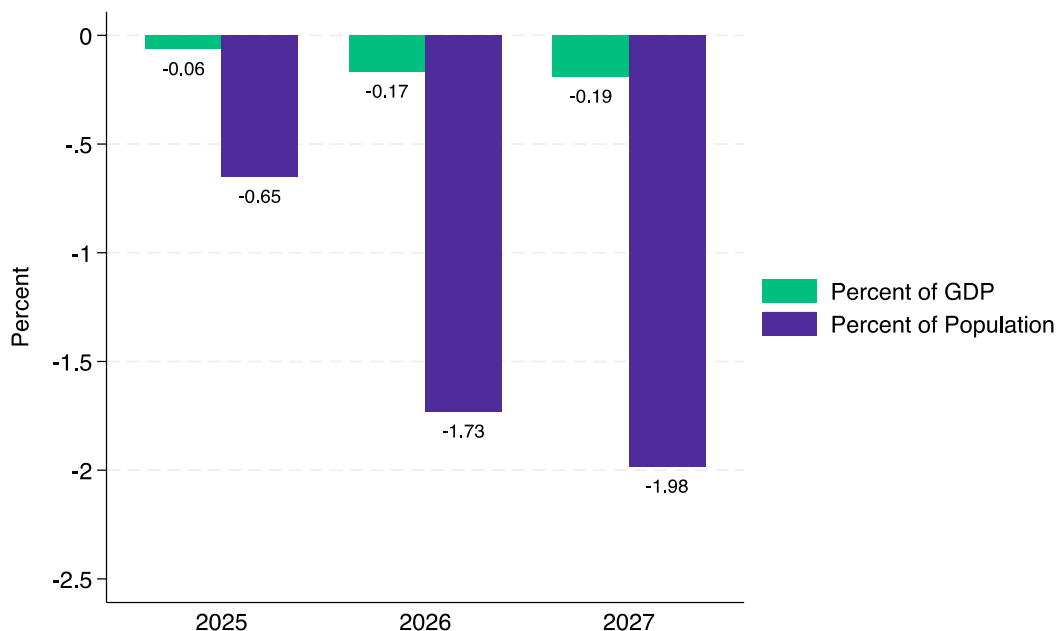
On October 24, 2024, the federal government released its 2025-2027 Immigration Levels Plan (ILP), which included targets for NPRs and permanent residents. The ILP plans to reduce NPRs to 5 percent of the Canadian population by 2026. The Parliamentary Budget Office (PBO) estimates that the new ILP targets for will result in a 1.7 per cent downward revision to real GDP by 2027 but that real GDP per capita will be 1.4 per cent higher by 2027.

To help understand the potential effects of the ILP on NPRs and GDP per capita, I compare two different scenarios:

1. Business as usual: NPRs continue to increase at the same rate as they have over the past 9 years. There are no caps on NPRs.
2. The ILP is effective: NPRs are decreased by 10 percent in 2025 and to 5 percent of the population in 2026 and 2027 as planned in the ILP.

Figure 6 presents forecasts on how the ILP may impact GDP (green bar) and population (purple bar) relative to if it were business as usual for 2025 to 2027—the years in which the ILP will be effective. The ILP is estimated to reduce GDP by 0.06 percent in 2025 and reduce GDP by 0.19 percent in 2027 relative to business as usual. In real GDP terms, the economy is expected to shrink. However, the ILP is also expected to reduce the Canadian population by 0.65 percent in 2025 and by almost 2 percent in 2027 relative to business as usual.

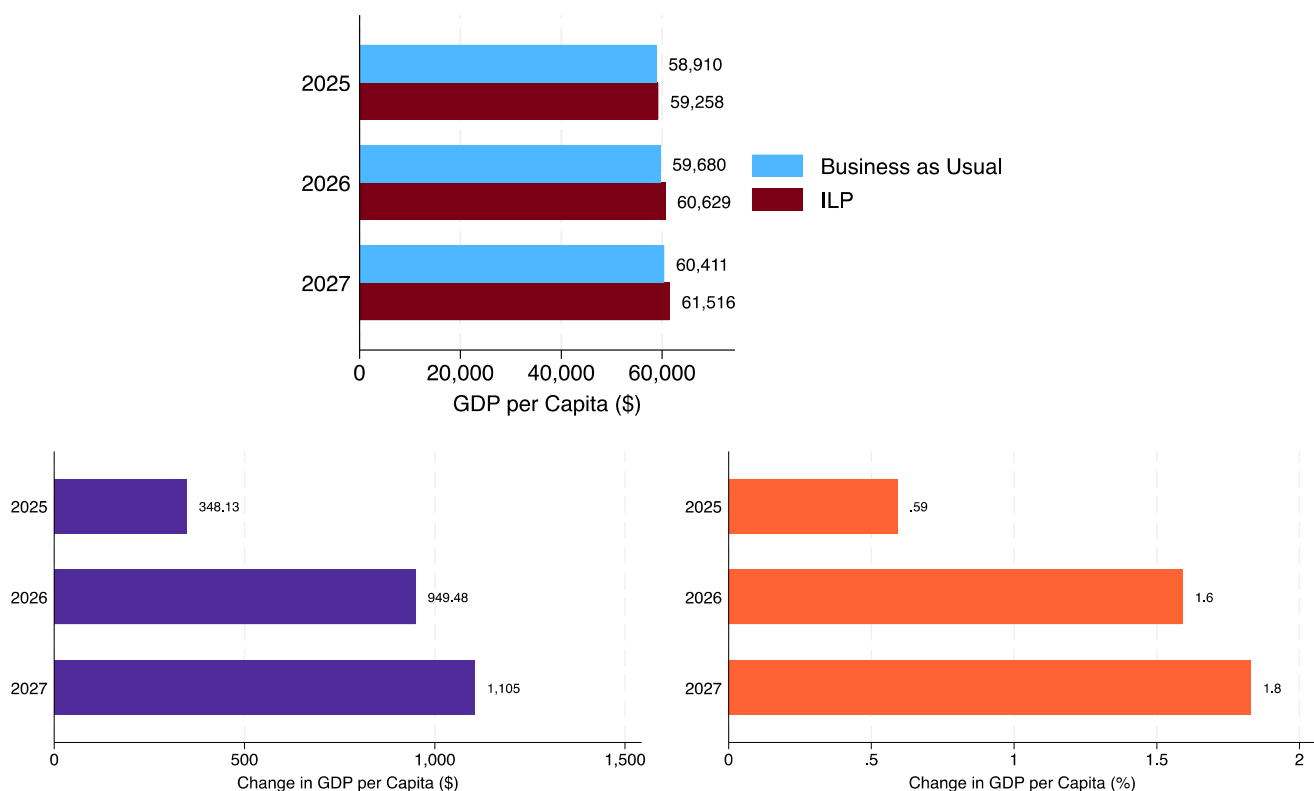
Figure 6: Estimated Impact of ILP on GDP and Population, Forecasted 2025-2027



Despite this decline in real GDP, GDP per capita will increase under the ILP relative to if it were business as usual. Figure 7 shows the forecasted change to GDP per capita when comparing the ILP to business as usual. The top graph shows GDP per capita under the business-as-usual scenario (blue bar) and under the ILP (maroon bar). The bottom left-hand graph shows the change in GDP per capita in dollar terms and the bottom right-hand graph shows the percentage change in GDP per capita.

Figure 7 shows that by reducing NPRs through the ILP, GDP per capita will increase relative to “business as usual.” Beginning in 2025, GDP per capita will increase from \$58,910/person to \$59,258/person—an increase of \$348/person or 0.6 percent. By 2027, GDP per capita will increase from \$60,411/person to \$61,516/person—an increase of \$1,105/person or 1.8 percent. This holds other factors constant, highlighting that an expected boost in GDP per capita in the coming years will in part be a function of decreasing the number of NPRs rather than increasing real economic well-being.

Figure 7: Forecasted Change to GDP Per Capita as a Result of the ILP, 2025-2027



While this increase to GDP per capita makes it appear as if the economy is growing, most of this change will be due to a decrease in the denominator (population), and not because of an increase in GDP. Mathematically, because the decline in population is larger than the decline in GDP, and because a decrease in population *increases* GDP per capita, we get the results in Figure 7 showing that the ILP is expected to increase GDP per capita. Focusing solely on GDP per capita as a measure of economic activity would mislead people into thinking the economy is growing when, in fact, real GDP is declining.

Conclusion

GDP per capita is a poor measure of economic activity. This brief examines one reason why this is so: the presence of NPRs in Canada. NPRs contribute modestly to Canadian GDP but comprise a significant proportion of the Canadian population (at least in recent times). Mathematically, because they make up such a large component of population and contribute so modestly to GDP, removing NPRs will increase GDP per capita and Canada's rankings in GDP-per-capita growth. However, this does not reflect increases in real economic growth or well-being: removing NPRs will decrease real GDP.

The results suggest that, had NPRs been kept at around two percent of the Canadian population in 2024, GDP per capita would have been 5.6 percent higher; however, real GDP would have declined by 0.1 percent. Despite this, Canada would have modestly increased in the rankings of GDP per capita growth. Likewise, while the ILP may increase GDP per capita by 1.8 percent by 2027, real GDP will decline by 0.19 percent. In these instances, increases in GDP per capita and GDP per capita growth are driven by declines in population. This is not sustainable economic growth, nor is it communicating accurately about the state of our economy: it's the result of a mathematical formula and misleading use of the statistics. Sustainable economic growth and improved economic well-being will require deeper reforms that increase productivity and improve affordability.