INSTITUT C.D. HOWE INSTITUTE

COMMENTARY
NO. 647

Working Harder for Less: More People but Less Capital Is No Recipe for Prosperity

Rapid population growth and declining capital per worker are putting Canada on a path to a labour-intensive, low-productivity and low-pay economy. Spurring business investment is an urgent challenge for Canadian governments.

William B.P. Robson and Mawakina Bafale

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Commentary No. 647
November 2023

Daniel Schwanen
Vice President, Research

$12.00
ISBN 978-1-77881-011-4
ISSN 0824-8001 (print);
ISSN 1703-0765 (online)

Working Harder for Less: More People but Less Capital Is No Recipe for Prosperity

by William B.P. Robson and Mawakina Bafale

- **Business investment in Canada has been so weak since 2015 that capital per worker has been falling – part of an ominous pattern of stagnating productivity and living standards.**
- **A longstanding gap between investment per available worker in Canada compared to the United States and other OECD countries narrowed from the late 1990s through the early 2010s, but has since widened to a chasm. In 2023, Canadian workers will likely receive only 65 cents of new capital for every dollar received by their counterparts in the OECD as a whole, and 58 cents for every dollar received by their counterparts in the United States.**
- **Productivity and investment are mutually reinforcing. Productivity growth creates opportunities and competitive threats that spur businesses to invest. Investment increases productivity by equipping workers with better tools. Investment per worker that is lower in Canada than abroad tells us that businesses see less opportunity in Canada, and prefigures weaker growth in Canadian earnings and living standards than elsewhere.**
- **If pro-growth policies cannot boost business investment enough to raise capital per worker and increase productivity, higher immigration may accelerate Canada's evolution to an economy producing labour-intensive goods and services, with low productivity and low living standards.**

Introduction and Overview

Through a wrenching cycle of COVID restrictions, debt-financed consumption, and an inflationary blow-off, the reality of stagnant living standards is becoming apparent to Canadians. Real gross domestic product (GDP) per person grew at a meagre 0.3 percent annual rate from 2015 to 2022. Many forecasters, including the International Monetary Fund and the Bank of Canada (IMF World Economic Outlook 2023; Monetary Policy Report, October 2023), predict falling GDP per person over the course of 2023 and well into 2024. The gap between GDP per person in the United States and in Canada is widening, and GDP per person in other OECD countries has decisively surpassed that in Canada (Figure 1).

This report is part of an ongoing C.D. Howe Institute research project comparing Canadian business investment and capital stock to past performance and experience abroad. We thank people who commented on earlier reports in the project, as well as Alexandre Laurin, Daniel Schwanen, Charles DeLand, Parisa Mahboubi, John Lester, Tim Sargent, Mikal Skuterud, and several anonymous reviewers for comments on an earlier draft of this report. We are responsible for any errors and the views expressed.

Policy Areas: Innovation and Business Growth; Fiscal and Tax Policy.
Related Topics: Business Investment; Immigration.
To cite this document: Robson, William B.P., and Mawakina Bafale. 2023. *Working Harder for Less: More People but Less Capital Is No Recipe for Prosperity.* Commentary 647. Toronto: C.D. Howe Institute.

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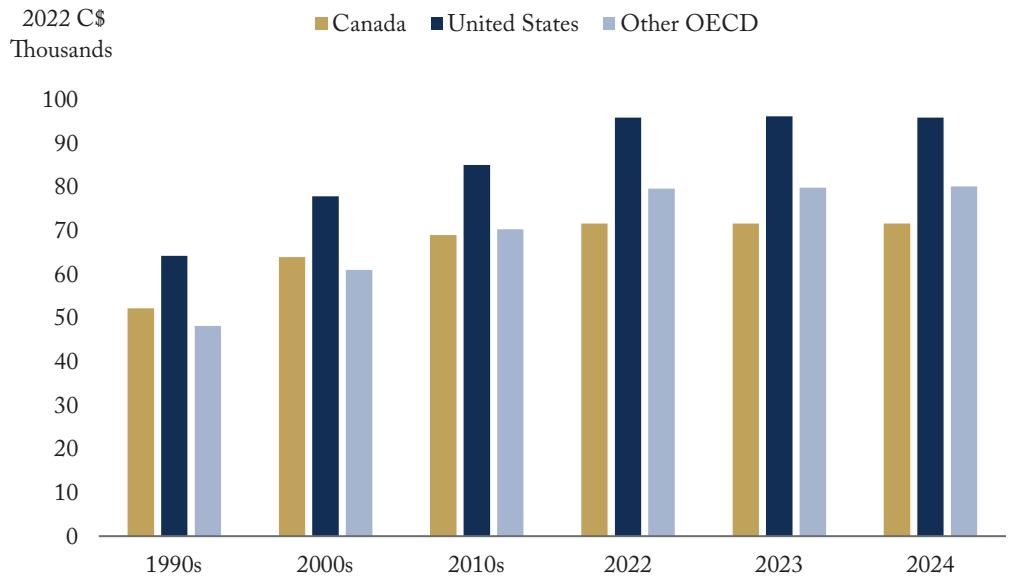
Figure 1: Real GDP per Person in Canada, the United States, and Other OECD Countries



Note: National currencies converted to Canadian dollars at purchasing power parity, divided by GDP deflator. Figures for 2023 and 2024 are forecasts.

Source: OECD Economic Outlook No. 113.

Weak business investment in Canada is both a symptom of and a contributor to this problem. High or low levels of capital and productivity tend to go together. Rising productivity, whether it results from improvements in human capital that raise potential output per worker, or whether it results from technological progress that raises potential output per unit of all kinds of inputs – often called "multifactor productivity" – promotes business investment because rising productivity creates opportunities for profit as well as competitive threats. Higher business investment, in turn, boosts productivity because investment gives workers newer, better tools and spurs multifactor productivity as businesses "learn by doing."[1] The links between investment and capital on the one side and productivity on the other make recent figures on Canada's capital stock and new investment worrying. Canada's capital stock has barely grown over the past seven years. A growing workforce has meant that capital per worker has been falling, a trend higher immigration has exacerbated lately.

1 The idea that capital accumulation drives economic growth goes back centuries. A key formal model of the process was that of Solow (1956), who showed how a rising stock of capital expands output and output per worker. Driven in part by recognition that models like Solow's predict similar productivity growth across countries and constant saving rates, when growth and saving rates actually differ across countries over long periods of time, other models have explored possible reinforcing effects of investment on multifactor productivity and vice versa. Sala-i-Martin (1997) and Caselli and Feyrer (2007) provide key investigations of the correlation between growth and investment at the national level.

To the extent that capital and labour are complementary factors of production, a faster-growing workforce ought to induce businesses spurred by opportunities and competitive pressure to invest more than they would otherwise. But businesses in Canada seem to be responding very slowly and incompletely to these incentives.

Moreover, capital and labour are also substitutes. Different products and modes of production use labour and capital more or less intensively, and as countries trade with each other, capital-intensive countries are likelier to specialize in capital-intensive goods and services, and labour-intensive countries are likelier to specialize in labour-intensive goods and services. Since living standards are higher in capital-intensive countries, we worry about the possibility that low business investment and fast workforce growth are leading Canada down a labour-intensive path.

The United States and other countries in the Organisation for Economic Co-operation and Development (OECD) are not following that path. They are investing at higher rates. Business investment per available Canadian worker was approaching comparable US and OECD measures from the early 2000s to the mid-decade, plummeted during the pandemic, and has lagged badly since.

In its latest Economic Survey of Canada, the OECD (2023) remarked: "for Canada to escape years of low investment and tepid productivity growth, reforms to improve the business climate are long overdue." Canada's workers, whether born in Canada or abroad, need better tools to thrive and compete. Governments should change policies that threaten to take Canada's economy down a more labour-intensive, lower-wage path.

The Numbers

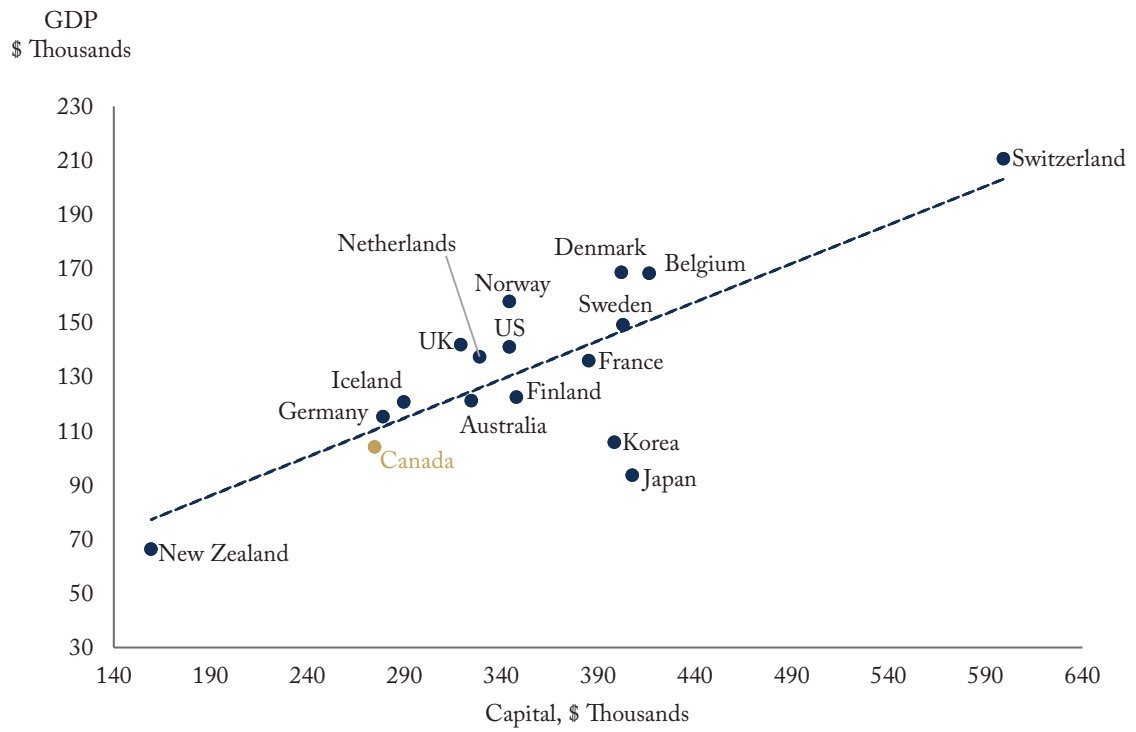
Many types of capital enhance productivity and living standards. Our focus in this report is "built capital" in the business sector. Human capital and natural capital such as land and water matter, but we lack good measures of either and cannot compare them internationally. Capital created and owned by governments also matters, but the services it yields are harder to relate to production and income.

Measures of built capital in the business sector are relatively robust, and easier to compare internationally. Non-residential buildings include items such as offices, warehouses and industrial facilities, as well as engineering structures such as transportation infrastructure. Machinery and equipment (M&E) includes items such as motor vehicles, tools and electronic equipment. Intellectual property products (IPP) have three major sub-components: mineral exploration and evaluation, research and development, and software.[2] These complement human and natural capital, and government infrastructure, in producing goods and services, generating incomes, and helping workers compete internationally.

Notwithstanding the importance of other inputs and other influences such as organization of firms that fall into the "multifactor productivity" category, it is clear that countries with high productive capital stocks tend to enjoy high output. Productivity growth and investment interact. Anticipated higher productivity creates opportunities and competitive threats for businesses, which incent investment, which increases the quantity and quality of the capital stock. A larger, newer capital stock raises productivity, and workers' incomes. The correlation

2 Mineral exploration and evaluation, research and development, and software are the IPP sub-components measured in the Canadian income and expenditure accounts. Many countries also include entertainment, literary or artistic originals, and databases, but the Canadian accounts exclude the former because of data limitations and exclude the latter because they are very small (Statistics Canada 2016).

Figure 2: GDP and Non-residential Capital Stock per Available Worker, Various Countries



Note: The line is a fitted linear trend. We convert GDP and productive capital stocks from their national currencies to Canadian dollars using the OECD's 2017 purchasing power parity for gross capital formation.

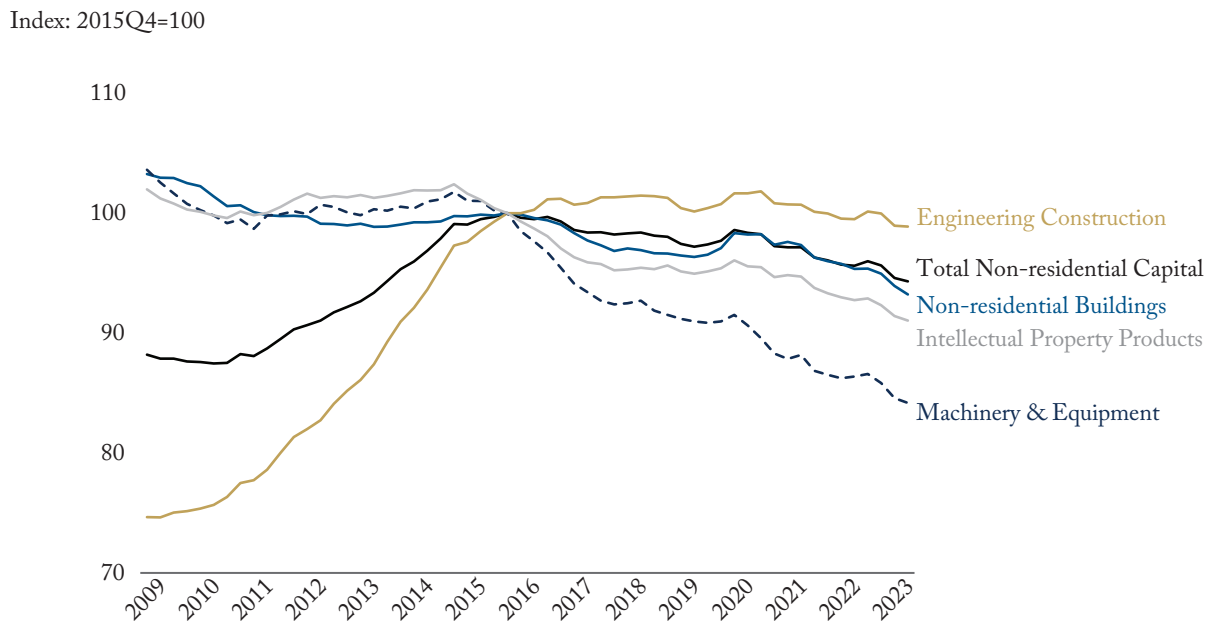
Source: Authors' calculations based on OECD Economic Outlook Database No.113.

between capital stock per member of the labour force[3] – for which we use the term "available worker" – and output per available worker across countries is clear (Figure 2).[4]

3 OECD labour-force data are based on national labour force surveys. Canada's Labour Force Survey counts people age 15 and older. Many countries, including the United States, count people age 16 and over. The labour-force participation rate of 15-year-olds is low, so this difference affects comparisons of capital and investment per available worker very little, and affects trends over time even less.

4 We divide capital stock by labour force to provide per-available-worker measures for several reasons. It highlights the links among capital, productivity, and incomes at the level of individual workers. It is a reasonable compromise among alternatives, such as capital per person of labour-force age or capital per employed person, when making comparisons over time and across countries. Labour-force participation, like business investment, varies with the economic cycle but the labour force is less volatile than employment, yielding measures less subject to big short-term swings (such as occurred during the COVID pandemic). We use the total labour force because capital invested by business generates the incomes that support both private-sector and public-sector workers, and because different jurisdictions classify private- and public-sector workers differently, so total labour-force figures are likelier to be comparable.

Figure 3: Real Stocks of Business Capital per Available Worker, by Type, Canada, 2009Q1–2023Q2



Note: The labour force in the second quarter of 2020 is the average of the first- and third-quarter figures, to reduce the distortion of the COVID-19 crisis in the spring of 2020. The last observation is 2023Q2.

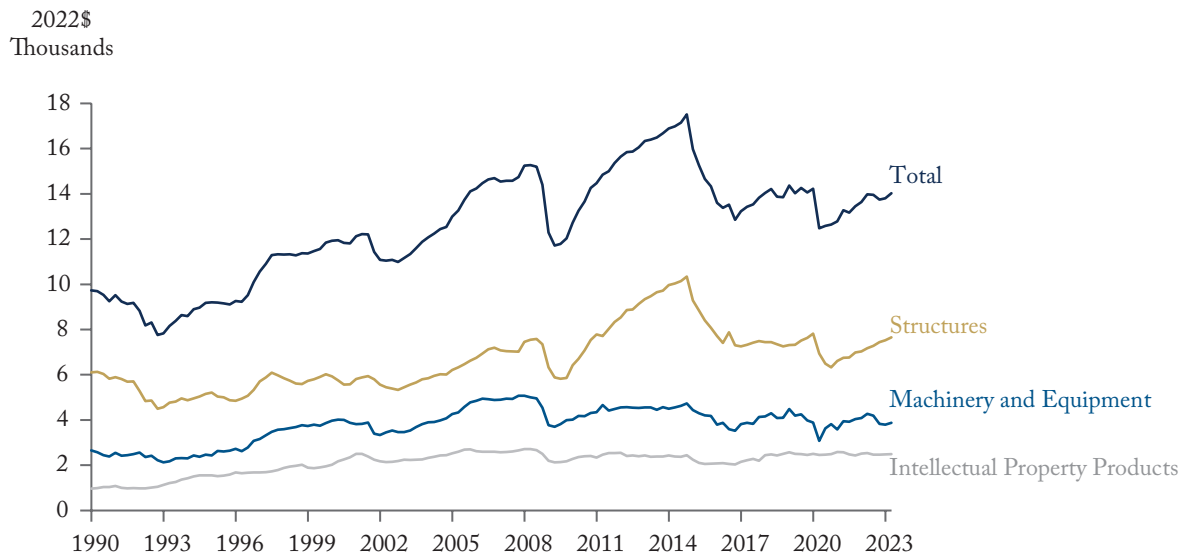
Sources: Authors' calculations based on Statistics Canada, Table 34-10-0163-01, "Flows and stocks of fixed non-residential and residential capital, by sector and asset"; and Statistics Canada, Table 14-10-0287-01, "Labour force characteristics, monthly, seasonally adjusted and trend-cycle."

The fact that capital formation is both a result of productivity growth and a driver of it makes recent trends in Canada's capital stock troubling. Figure 3 shows real stocks of each type of capital per member of Canada's labour force.

Total non-residential capital per available worker peaked in the last quarter of 2015. By the second quarter of 2023, all types of capital were below their late 2015 levels. Engineering construction held up best: its stock per available worker was down a comparatively small 1 percent. Non-residential buildings did worse: 7 percent below their peak by early 2023. IPP was worse yet, down 9 percent from its peak. M&E was worst of all, down 16 percent from its peak. The dismal summary: the latest figures show the average member of Canada's labour force with less capital to work with than she or he had in 2015.

Because we do not have comparable capital-stock numbers for many other countries, we turn to the related flow measure – gross business investment – to set up an international comparison over time. Figure 4 shows the Canadian numbers for the three types of business investment: non-residential structures (both buildings and engineering), M&E and IP products since 1990.

Figure 4: Gross Business Investment per Available Worker, by Type, Canada, 1990–2023



Note: Data are quarterly.

Source: Authors' calculations based on Statistics Canada, Table 36-10-0104-01, "Gross domestic product, expenditure-based, Canada, quarterly" and Statistics Canada, Table 14-10-0287-01, "Labour force characteristics, monthly, seasonally adjusted and trend-cycle."

Absent changes in estimated depreciation and write-offs, changes in gross investment should reconcile with changes in net capital stock. As the net stock figures prefigure, the gross investment figures show relative strength in non-residential structures before mid-decade and weaker performances in M&E and IPP. Per-available-worker investment in the second quarter of 2023 was only about $14,000 in 2022 dollars – down almost a quarter from its peak of $17,500 in 2014.

From 1990 to 2014, the trend in investment per worker was up, punctuated by setbacks during the slump of the early 1990s, and the financial crisis and recession of 2008-2009. During the second half of the 2010s, investment in structures and M&E per member of the workforce declined, and investment in IPP flat-lined. The COVID pandemic and the associated economic shut-downs and uncertainty hurt all kinds of investment. Although per-worker investment in structures has recovered somewhat, an incipient recovery in M&E has collapsed. IPP investment per worker has been particularly disconcerting: although it did not fall as much as other types of investment during the pandemic, it has stagnated since.[5]

5 M&E investment may be as particularly important for productivity growth (Sala-i-Martin 2001, Rao et al. 2003, Stewart and Atkinson 2013). IPP investment is a plausible indicator of Canada's likely future performance in a world where intangible capital is increasingly important (Marple 2021, Bafale and Robson 2022).

Canada's Investment Performance against Other Countries

COVID affected many countries. Other factors that might affect traditional capital formation, such as the growing importance of intangible assets and the declining materials intensity of economic activity generally, also affect other countries. We can check Canada's experience against that of the United States and other OECD countries with comparable data (those shown in Figure 2). Is Canada's apparent path toward lower capital intensity – with its implication of lower productivity and wages – part of a broader global pattern, or is it unique?

Canada versus the United States

Canada and the United States collect similar capital investment data and Statistics Canada takes particular care to compare Canadian to US prices. So we can measure investment per available worker in the two countries with some confidence that we are getting meaningful numbers.

We convert the different types of capital investment into Canadian dollars using Statistics Canada's measures of relative capital-equipment price levels to adjust for purchasing power differences.[6] Our adjustment provides a better idea of bang per buck spent on structures, M&E or IP products on either side of the border. The results of these calculations appear in Figure 5, panels A through D.

Canada has an edge in investment in structures (panel A), a type of capital on which Canadian businesses, with their relatively greater focus on natural resources, tend to invest more. This edge became less important after 2014, with lower oil prices and a policy environment in Canada more hostile to the development of natural resources, but became more prominent again after the pandemic, thanks to stronger energy prices. Recently, investment in structures has been about $2,200 per worker higher in Canada than in the United States.

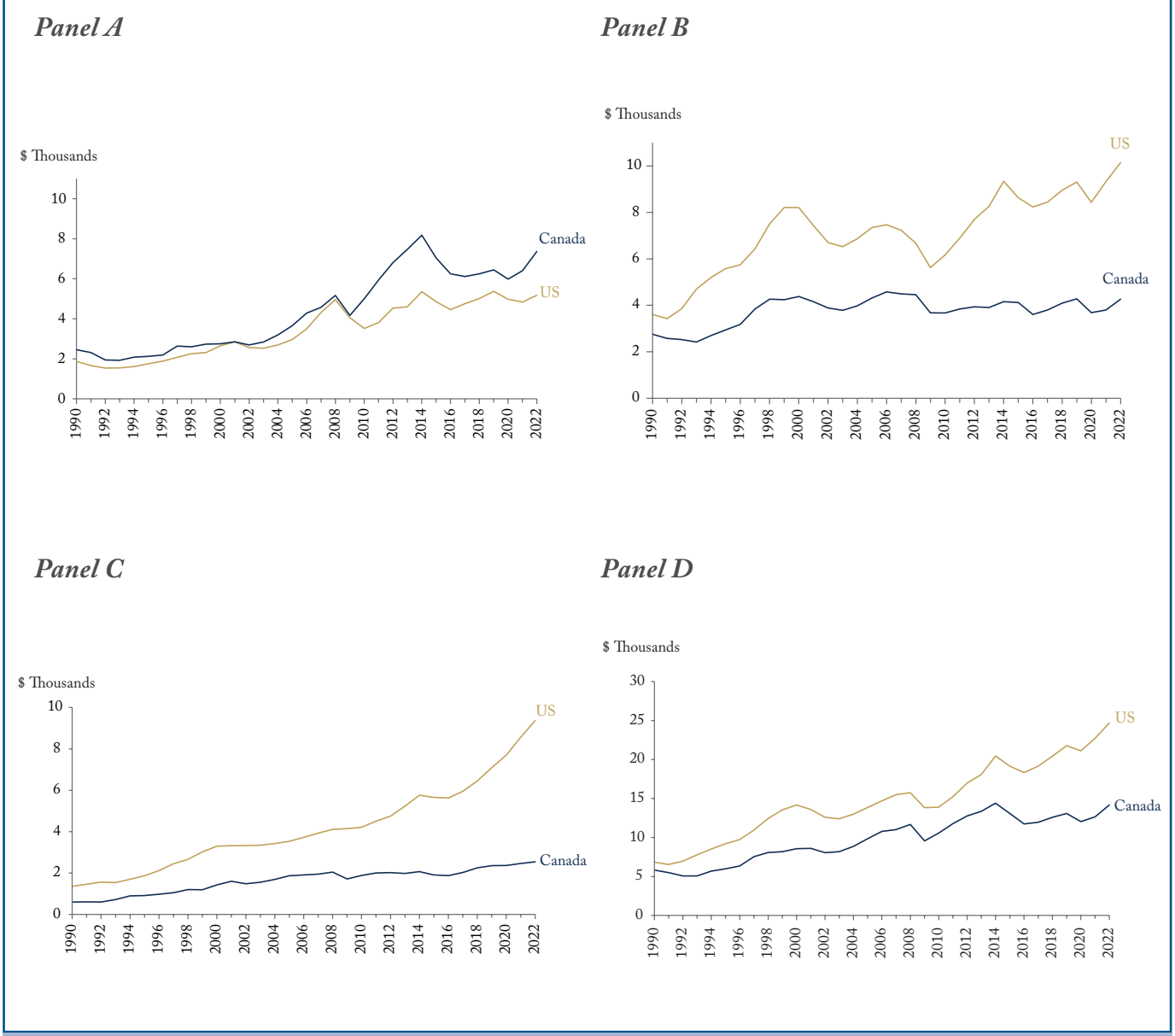
The comparison in M&E investment (panel B) is much less favourable to Canada. The United States has a longstanding edge in that type of investment, which has recently become more pronounced. US M&E investment per available worker has lately been about 2½ times higher than Canadian M&E investment per worker – about $10,000 annually in the United States and $4,000 annually in Canada.

The IPP gap (panel C) is astonishingly worse. In 2008, Canadian businesses' spending on these products was about $2,000 per available worker, and the US figure was about $4,000. In 2022, the Canadian figure had crept up to $2,500, while the US figure had soared to almost $9,500. Some of the current gap reflects slumping exploration expenditures by Canada's struggling resource sector. More generally, this gap might reflect greater use by Canadian businesses of services produced by intellectual property products owned abroad, with ambiguous implications for productivity. Reliance on services from foreign-owned IPP might be simply a smart business decision, or it might reflect Canada's lack of competitiveness in commercializing the intellectual property Canadian firms own, leading to lower accumulation of products containing it in Canada. Whatever the nuances, IPP investment per available worker that is running almost four times higher in the United States than in Canada has to raise concerns about productivity and competitiveness.

The gap in all three types of investment together (panel D) has run in the United States' favour since the 1990s. It narrowed in the 2000s but widened markedly after the mid-2010s and

6 Investment goods and services tend to be less expensive in the United States than in Canada. For that reason, using the market exchange rate to convert US to Canadian dollars would understate the relative bang US companies get per investment buck. Statistics Canada used the triennial benchmark estimates from the OECD to extrapolate purchasing power of investment spending between Canada and the US – data are available in Table 36-10-0367-01.

Figure 5: Investment per Available Worker, Canada and the United States

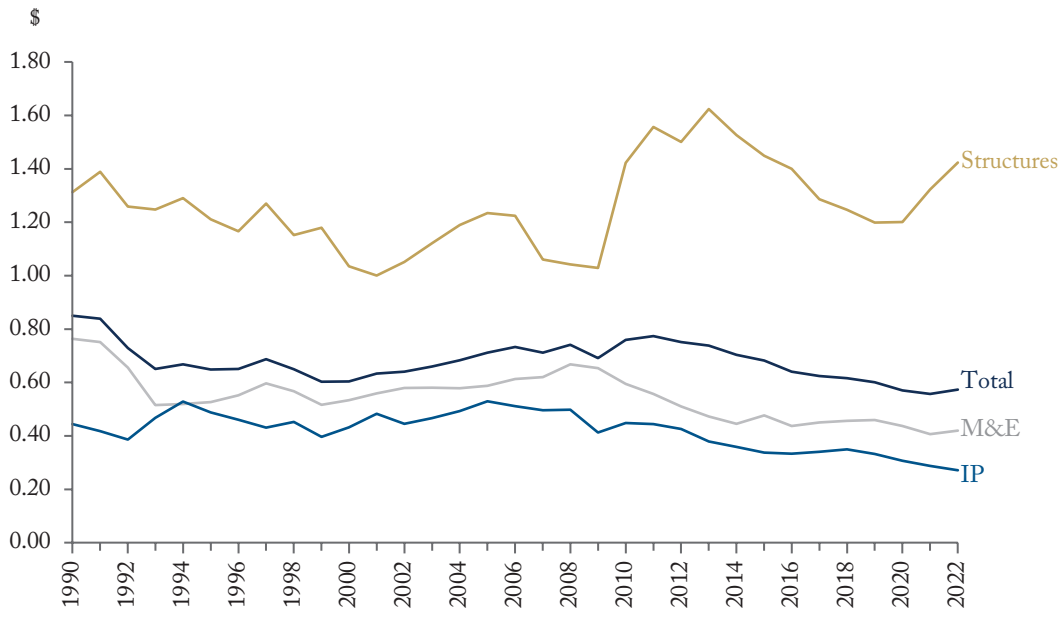


Note: We adjust US investment numbers from US dollars to Canadian dollars using purchasing power adjustments for each category from Statistics Canada Table 36-10-0367-01. The latest purchasing power data are for 2019. We use those numbers for subsequent years.

Source: Authors' calculations based on:

- Statistics Canada: Table 36-10-0104-01, "Gross domestic product, expenditure-based, Canada, quarterly," Table 14-10-0287-01, "Labour force characteristics, monthly, seasonally adjusted and trend-cycle," and Table 36-10-0367-01, "Ratio of real consumption per capita in the United States compared with Canada, by expenditure category, on an International Comparison Program Classification basis."
- US Bureau of Economic Analysis: "Private Fixed Investment: Nonresidential: Structures [B009RC1Q027SBEA]," "Gross Private Domestic Investment: Fixed Investment: Nonresidential: Equipment [Y033RC1Q027SBEA]," and "Gross Private Domestic Investment: Fixed Investment: Nonresidential: Intellectual Property Products [Y001RC1Q027SBEA].
- US Bureau of Labor Statistics, "Current Population Survey [LFAC64TTUSQ647S]."

Figure 6: Investment per Available Worker in Canada, for Every Dollar of Investment per Available Worker in the United States, by Type of Investment, 1990–2022



Source: Authors' calculations based on sources for Figure 5.

has widened further since the pandemic. The gap between gross investment per available worker in the United States and in Canada was almost $11,000 in 2022. That is a chasm. It represents a significant shortening of the replacement and upgrade cycle for equipment such as trucks, excavators or machine tools, workplace equipment, and the potential replacement of entire information and communications technology systems. All are examples of improvements that US workers are getting more of than their Canadian counterparts.

Asking how many cents of new investment per available Canadian worker occurs for every dollar of new investment per available US worker yields a comparative measure. In Figure 6, we show our measure of investment in Canada per dollar of its US equivalent in total and in each investment category.

Canada's relatively robust rate of structures investment stands out in Figure 6. The surge to the 2013 peak – when each available Canadian worker was getting more than $1.60 for every dollar of new structures enjoyed by her or his US counterpart – is striking. So is the subsequent decline to $1.20 in 2019 and 2020. In this category, at least, the 2021 and 2022 comparisons are positive for Canada. By 2022, the average member of the Canadian workforce received $1.42 of new capital for every dollar received by the average member of the US workforce.

The contrast is worse with respect to M&E. After improving from just 60 cents around the turn of the century to close to 70 cents around the time of the 2008–2009 financial crisis and slump, M&E investment per available worker in Canada for every dollar enjoyed by a US worker dropped to a dismal 42 cents in 2022.

The situation with IP products is worse yet. A declining trend since the mid-2000s has led to the

point where the average member of the Canadian workforce in 2022 enjoyed only 27 cents of new investment in IP products for every dollar enjoyed by his or her US counterpart.

Add the three types of capital together, and new investment per available worker in Canada, adjusted for purchasing power, was only 57 cents for every dollar of investment per US worker in 2022. That is lower than at any point since the beginning of the 1990s. As an indicator of businesses' judgements about the attractiveness of capital investment in Canada versus the United States, this record raises concerns about competitiveness. The implications for the future incomes of employees on the northern side of the border are ominous.

Canada versus the OECD

Widening the international comparison offers more perspective on Canada's situation. We now extend our view to other OECD countries,[7] and take advantage of OECD projections to see how Canada is likely to compare when the 2023 numbers are in.

This broader and more forward-looking view comes with caveats. Not all OECD countries break down business investment by type as Canada and the United States do, and not all measure IP products the same way. So we use aggregate investment with less confidence that we are comparing like with like. We also do not have current measures of relative prices for different types of investment. So we resort to a less precise bang-per-buck adjustment: purchasing-power-adjusted exchange rates benchmarked to relative prices of capital investment goods and services in 2017.

For consistency, we use the same OECD measures for the United States as well, which means that the per-available-worker numbers in Canadian dollars are not identical to those in our Canada-US comparison. But the big picture – notably, the story of Canadian underperformance – is consistent (Figure 7).[8]

Investment per available worker in the other OECD countries with comparable data has typically been less robust than in the United States, but more robust than in Canada. This became less true in the early 2010s, when Canada's resources sector was booming and many other advanced economies were still suffering from the lingering effects of the 2008-09 crisis and slump. At that point, the gap between investment per member of the labour force in Canada and the other OECD countries (excluding the United States) narrowed, and the two measures were essentially equal in 2014.

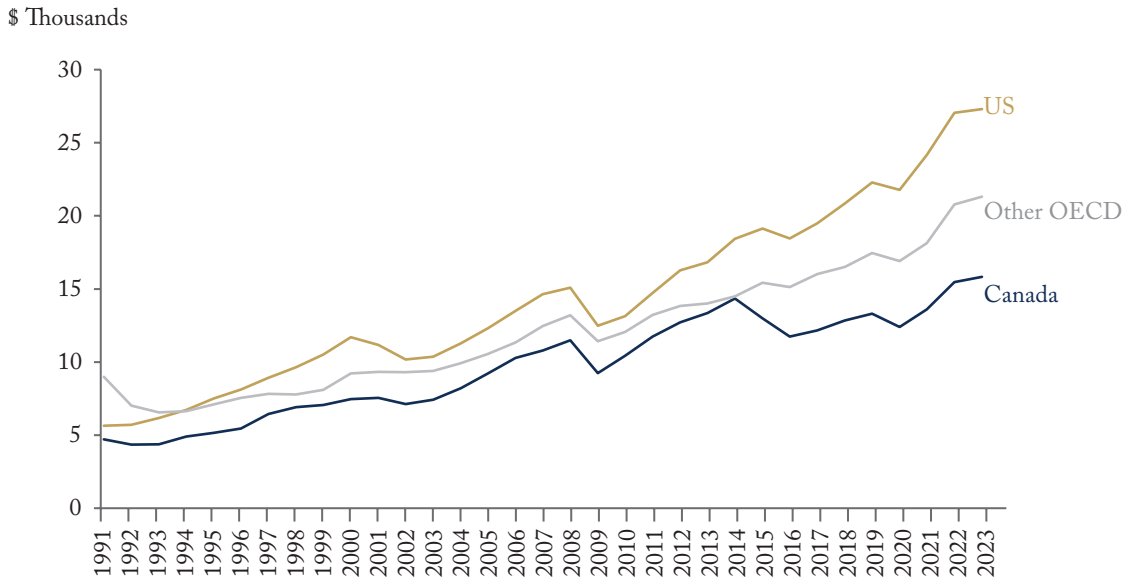
Since then, slumping investment in Canada and steady growth in the other OECD countries has made the gap wider than at any time since the early 1990s. Notwithstanding some improvement in Canada's performance considered on its own, the OECD's projections for 2023 yield a figure of $21,300 of new capital per available worker this year for the other OECD countries compared to $15,800 for Canada. In other words, the OECD's projections for countries other than Canada and the United States indicate that gross new capital per available worker in Canada will be about one-quarter less than in those countries this year.

In Figure 8, we highlight Canada's relative performance by showing Canadian investment per

7 The OECD measure of business investment per available worker is aggregate business investment – the sum of business investment in each OECD country in Canadian dollars adjusted for purchasing power – by aggregate labour force – the sum of the labour force in each country. The measures for other OECD countries are the aggregates minus Canada and the United States.

8 Here, we use the OECD purchasing power data, the most recent being for 2017, when the purchasing power of a US dollar with respect to investment goods and services was C$1.16 – that is, US$100 of investment goods and services would cost US$116 in Canada.

Figure 7: Business Investment per Available Worker in Canada, Other OECD Countries and the United States, 1991–2023



Note: Series begin in 1991 because no data for united Germany exist before then.

Source: Authors' calculations based on data from OECD Economic Outlook No. 113 Database (2023).

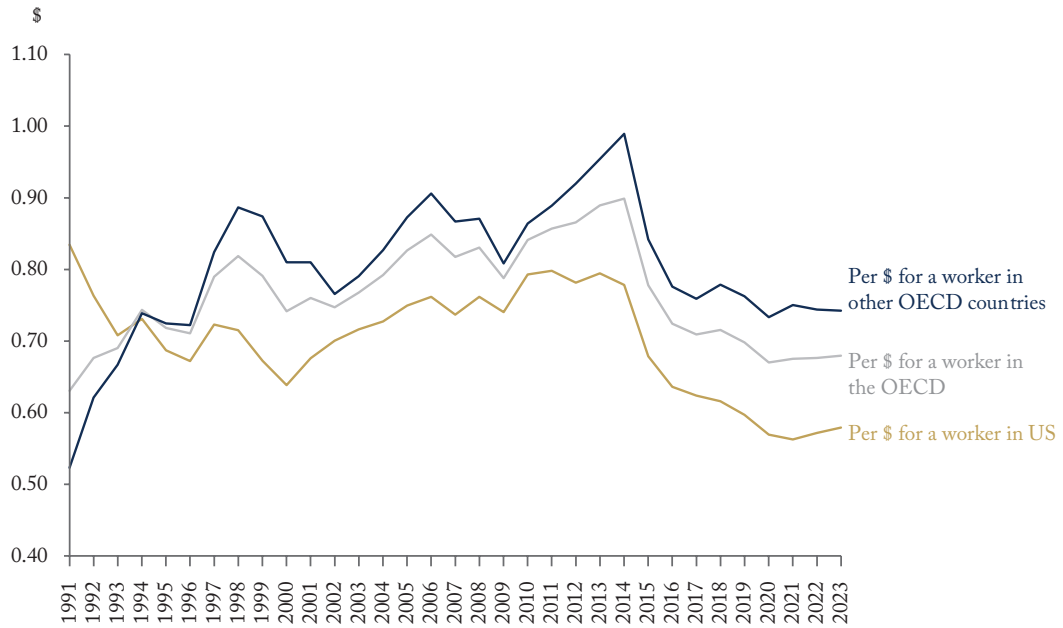
worker for each dollar invested elsewhere. The figure shows how much new capital each available worker in Canada enjoyed per dollar of new capital per available worker in the United States, the OECD as a whole and in the other OECD countries since 1991, along with the figures calculated from the OECD's projections for 2023.

For every dollar of investment enjoyed by the average member of the labour force in the OECD as a whole, Canadian counterparts enjoyed about 75 cents in the early 2000s. Compared to other OECD countries excluding the United States, Canadian workers received more than 80 cents. By 2014, the average member of the Canadian labour force was enjoying some 90 cents of new investment per dollar invested per worker in the OECD as a whole, and the same amount as workers in the other OECD countries. In 2023, however, Canadian workers will likely enjoy only about 68 cents of new capital for every dollar enjoyed by their counterparts in the OECD as a whole. The figure compared to workers in the other OECD countries is 74 cents. The figure compared to workers in the United States is a dismal 58 cents.

Canada's Productivity Performance against Other Countries

Higher investment is not a goal in its own right. Subsidies and regulation that spur investment in uneconomic assets could raise capital spending but lower productivity and future incomes. Actual and potential examples of this include intermittent electricity generation lacking suitable storage or transmission (Trebilcock 2017), dairy farms that

Figure 8: Investment per Available Worker in Canada for Every Dollar of Investment per Available Worker in the Other OECD Countries and the United States, 1991–2023



Source: Authors' calculations based on data from OECD Economic Outlook No. 113 Database (2023).

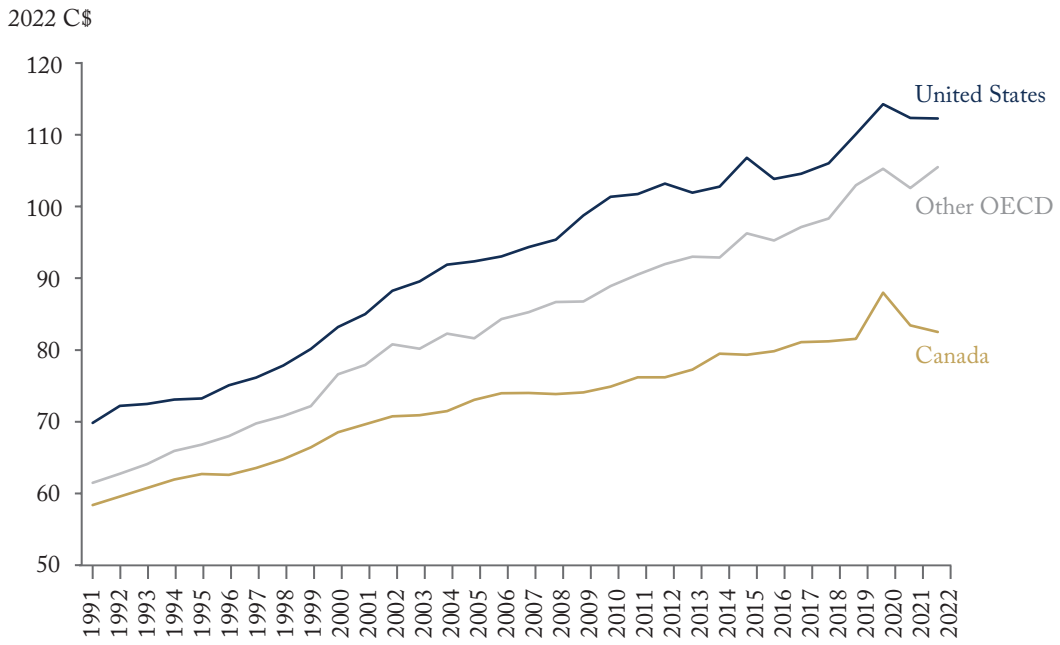
require prohibitive tariffs to survive (Schwanen 2018), an inefficient new public agency to pursue vaccine self-sufficiency (Grootendorst et al. 2022), or subsidizing the manufacture of batteries for electric vehicles that may not sell (Raymunt 2023, Parliamentary Budget Office 2023).

Our concern about these numbers is their implication that Canadian businesses do not see opportunities and threats that would prompt them to undertake productivity-improving capital projects, or that when they see opportunities and threats they respond very slowly or incompletely. To that extent, these numbers presage trouble for Canadian workers. As one would expect from the relationship between capital stock and output per available worker in Figure 2, and as previous research such as Rao et al. (2003) has noted, countries with higher capital intensity tend to have higher productivity and higher wages, and countries with lower capital intensity tend to have lower productivity and lower wages.

Labour productivity is a measure of how much output – goods and services – workers produce. Human capital and multifactor productivity – that is, output beyond what inputs of labour and capital can explain – also matter for labour productivity, but a key driver is the amount of capital per worker. Absent offsetting changes in multifactor productivity, for which there is no evidence in Canada, less business investment means lower labour productivity.

In the 1990s, US workers produced $13 more per hour of work than their Canadian counterparts, and the gap has widened since. In the 2000s and 2010s, Canada generated respectively $72 and $79 per hour worked, compared with $91 and $105

Figure 9: GDP per Hour Worked in Canada, the United States and the OECD



Note: We divided nominal GDP in national currency by hours worked, then converted to C$ with purchasing power parity and used the 2022 GDP deflator to get labour productivity in 2022$.

Sources: Authors' calculations based on OECD, Level of GDP per capita and productivity (December 2022); OECD Economic Outlook No. 113.

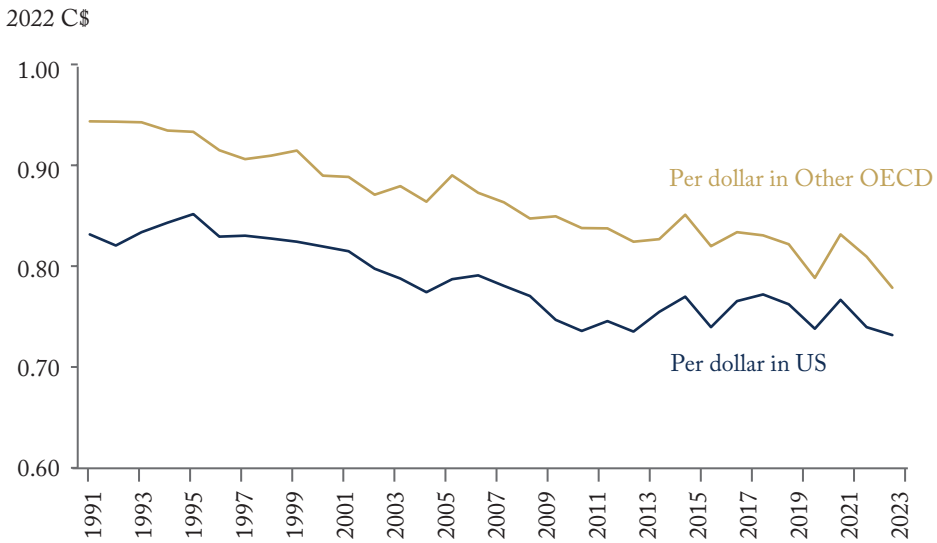
for the US. In 2022, Canada generated $83 per hour worked compared to $113 of output per hour worked in the United States – a $30 difference (Figure 9).

The gap between output per hour in other OECD countries and output per hour in Canada was narrower in the early 1990s, but has since widened. Other OECD countries have increased their productivity at a rate similar to the US rate, while Canada has lagged. In the 1990s, Canada generated $62 per hour worked compared to $67 per hour of work in other OECD countries – a $5 difference. In 2022, other OECD countries produced $23 more per hour worked than Canada.

As we did with respect to investment per available worker, we can highlight Canada's relative performance by showing Canadian output per hour worked for each dollar of output generated per hour worked elsewhere (Figure 10). In the 1990s, Canadian workers produced 84 cents for every dollar of output generated by US workers, and the gap has widened since. By 2022, Canada generated only 73 cents for every dollar produced per hour worked in the United States.

Compared to the average of other OECD countries, Canada shows somewhat better in levels, but the trend is worse. In the 1990s, Canada generated 93 cents per hour worked for every

Figure 10: Output per Hour in Canada for Every Dollar of Output per Hour in the United States and Other OECD Countries, 1991–2022



Sources: Authors' calculations based on sources cited in Figure 9.

dollar in other OECD countries. By 2022, Canada generated 78 cents for every dollar of production per hour worked in other OECD countries.

Looking at the most recent quarterly data, labour productivity in Canada has been falling since the second quarter of 2022. It fell by 3 percent between the first quarter of 2022 and the second quarter of 2023 alone (Statistics Canada 2023). Labour productivity in the US is up over the same period (US Bureau of Labor Statistics 2023).

Implications of Faster Immigration

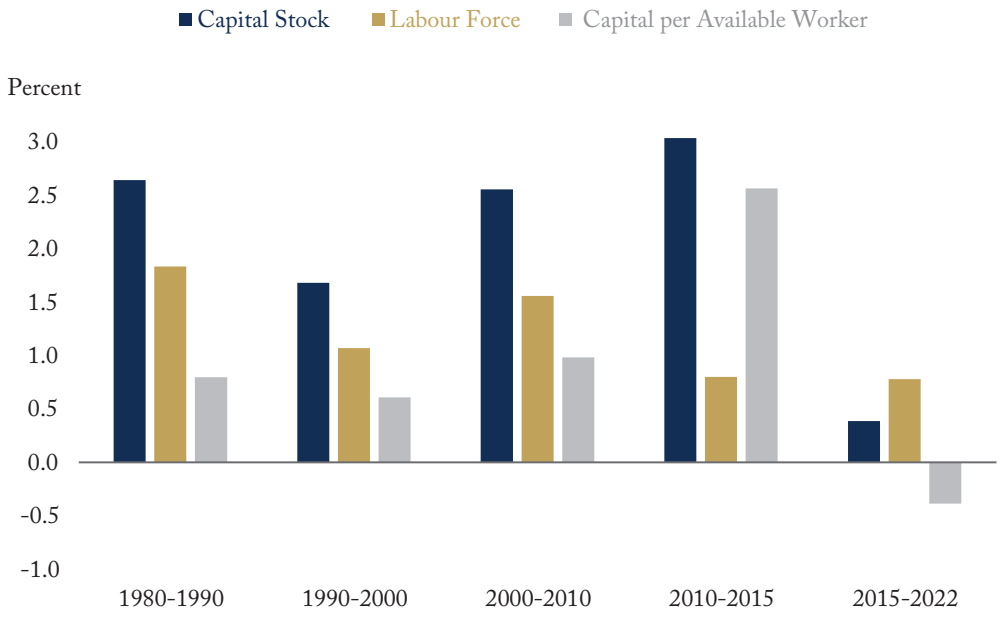
Our concern about Canada's low investment numbers gets added urgency from the rapid – and unique among OECD countries – expansion of Canada's workforce by recent high levels of permanent and temporary immigration. Without higher capital investment, rapid immigration will make Canada a more labour-intensive economy, with problematic implications for productivity and wages.

Impact on Labour Force Growth

The federal government has dramatically raised its annual targets for immigration in recent years. In 2016, its target for newcomers was 300,000. The 2023-2025 immigration plan presented in 2022 aimed to increase the number of permanent new arrivals to 500,000 by 2025 (Immigration, Refugees and Citizenship Canada 2022).

Canada has long had relatively high rates of immigration, and the vaunted economic successes of its approach have underpinned widespread acceptance of large-scale immigration. Historically, however, immigration-boosted increases in Canada's labour force have been accompanied by larger increases in Canada's capital stock (Figure 11). The coincidence of another immigration-boosted rise in the labour force and anemic growth in Canada's capital stock raises the concern that labour productivity and wages will not accompany population growth this time.

Figure 11: Annual Changes in Capital Stock, Labour Force, and Capital per Available Worker



Note: The quarterly capital stock data underlying Figure 3 only go back to 2009. We splice them to annual data going back further using ratios between the time series in 2009.

Sources: Authors' calculations based on Statistics Canada, Table 34-10-0163-01, "Flows and stocks of fixed non-residential and residential capital, by sector and asset"; Statistics Canada, Table 36-10-0096-01, "Flows and stocks of fixed non-residential capital, by industry and type of asset"; and Statistics Canada, Table 14-10-0287-01, "Labour force characteristics, monthly, seasonally adjusted and trend-cycle."

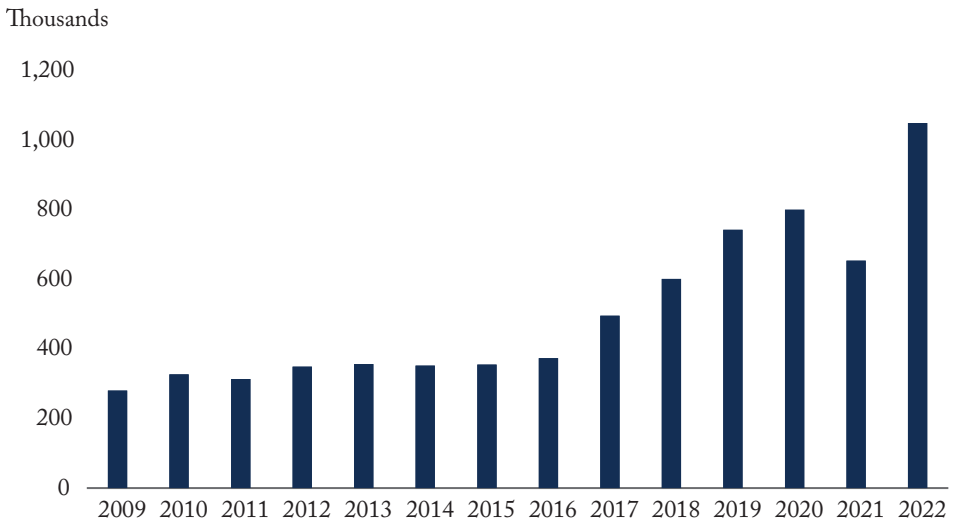
Doyle, Skuterud and Worswick (2023) have warned that complementary inputs need to keep pace with increased immigration to avoid lowering per-person incomes, and that recent trends in capital accumulation in Canada do not bode well for living standards. Without stronger business investment, higher immigration may coincide with declining output and incomes per worker.

Taking Account of Temporary Residents

In addition to immigration covered by targets for new permanent residents, Canada has recently experienced a dramatic influx of temporary residents – 2.2 million between July 2022 and July 2023 alone (Statistics Canada 2023). We do not have definitive tallies of the number of temporary residents, nor of how many of them may be in the workforce, but the number of temporary residents in the labour force is almost certainly larger than measured by the Labour Force Survey (LFS). Skuterud (2023) shows that data from Immigration, Refugees, and Citizenship Canada (IRCC) imply that there could have been as many as 1.6 million temporary foreign workers employed in Canada in 2022 – compared to the LFS figure of 0.5 million. The gap between these two sources of information has tripled since 2015 (Figure 12).

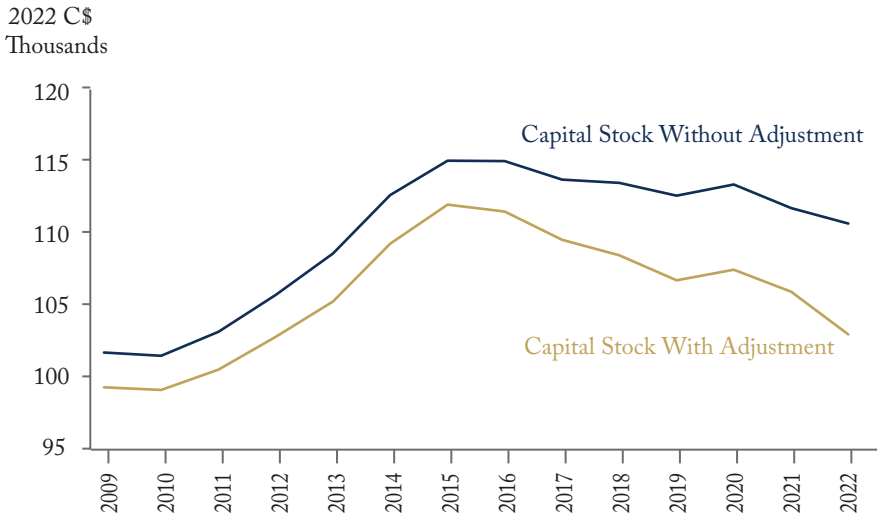
If we use IRCC numbers as an upper bound estimate to recalculate capital stock per worker, we get a more severe drop since the middle of the last decade (Figure 13). The actual number of temporary residents

Figure 12: Difference in Temporary Residents Employment Using IRCC and LFS Data, Canada, 2009–2022



Sources: Authors' calculations based on sources for Figure 3 and Skuterud (2023).

Figure 13: Stock of Business Capital per Available Worker, Without and With Adjustment for Undercount of Temporary Foreign Workers



Note: The Capital Stock Without Adjustment line is the total non-residential capital stock divided by the labour force as measured in the LFS from Figure 3. The Capital Stock with Adjustment line is the total non-residential capital stock divided by the larger number of workers implied by IRCC data. The actual number of temporary workers is between the LFS and IRCC numbers, so the appropriate adjustment is between these two lines.

Sources: Authors' calculations based on sources for Figure 3 and Skuterud (2023).

in the labour force is somewhere between the numbers in the LFS and those implied by the IRCC numbers, but in broad terms, adjusting for undercounted temporary residents implies that the stock of business capital per available worker in Canada in 2022 was not appreciably different in 2022 from what it was in 2012 – not promising for any Canadian worker, whether recently arrived or not.

Equipping Canadian Workers Better

The Bank of Canada's latest Business Outlook Survey (Bank of Canada 2023a) showed lacklustre investment intentions, and Statistics Canada's 2023 capital expenditure survey showed that businesses intend to spend less on capital this year than last (Statistics Canada 2023). So it is hard to be optimistic that the unprecedentedly long decline in capital per worker in Canada will end any time soon.

There are many suspects behind Canadian businesses' apparent failure to respond to the opportunities and threats created by a growing labour force and technological advances. Among them are an uncongenial environment for production and transmission of fossil fuels, taxes that reduce the return on capital investments, restricted access to finance for small and mid-size firms, fiscal and regulatory policies that favour consumption and housing investment over nonresidential investment, and lack of competitive pressure in key economic sectors. The key message from our 2023 report is that Canadian governments, particularly the federal government, need to make policies that promote investment and productivity growth a much higher priority.

The decline in business investment and capital per available worker in Canada is both a likely effect of weak productivity growth in the present and a harbinger of weak productivity growth in the future. Although the boost more immigrants give the labour force should increase the incentive for businesses to raise their capital spending, that incentive does not seem to have had much effect so far. Problematically, the higher immigration targets have caused Canada to relax its standards for admission in the economic category, and temporary workers tend to be occupied in low-skill jobs or students (Doyle et al. 2023). A more abundant labour force resulting from high immigration will not be the recipe for higher living standards – either for people already in Canada or those coming to it – that many assume, if we do not equip our workers with better tools to produce and compete.

The prospect that Canadians and the immigrants who will come to Canada under the higher targets will find themselves increasingly relegated to lower value-added activities relative to workers in the United States and elsewhere should spur Canadian policymakers to action. The first step is to recognize that recent trends are a symptom of threats to Canada's prosperity and competitiveness – that low business investment is a problem that governments can and should address.

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